

# FINAL REGISTRATION REPORT

## **Part B**

### **Section 3**

#### **Efficacy Data and Information**

Concise summary

Product code: CHR/H/MEZO 30 OD

Product name(s): Pacyfik 30 OD/ Vidal 30 OD

Chemical active substance(s):

Mesosulfuron-methyl 30 g/L

Sejfner: mefenpyr-dietyl – 90 g/L

Central Zone

Zonal Rapporteur Member State: Poland

Core dossier

(authorization)

Applicant: Innvigo Sp. z o.o.

Submission date: December 2023

MS Finalisation date: July 2024; November 2024

## Version history

| When    | What  |
|---------|---|
| 07/2024 | ZRMs evaluated dRR submitted by Applicant             |
| 11/2024 | The final Registration Report after commenting period |
|         |   |
|         |   |

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### 3 Efficacy Data and Information (including Value Data) on the Plant Protection Product (KCP 6)

#### Transformation of the dRR (applicant version) into the RR (zRMS version)

|                   |  |
|-------------------|--|
| Comments of zRMS: | Comments of ZRMs are presented in commenting boxes at the end of each chapter. The text of dRR was generally not changed or rewritten (small changes in the document are marked by grey colour). |
|-------------------|--|

#### 3.1 Summary and conclusions of zRMS on Section 3: Efficacy (KCP 6)

##### Abstract

Overall summaries are not necessary here. It was provided at the end of each chapter of the dRR. **In briefly summary, CHR/H/MEZO 30 OD can be granted in Poland in line to accepted GAP table and label project.**

**Table 3.1-1: Acceptability of intended uses (and respective fall-back GAPs, if applicable)**

|                          |  |                       |                                     |          |                    |
|--------------------------|--|-----------------------|-------------------------------------|----------|--------------------|
| PPP (product name/code): | CHR/H/MEZO 30 OD/ Pacyfik 30 OD/ Vidal 30 OD | Formulation type:     | OD <sup>(a, b)</sup>                | GAP rev. | , date: 2022-08-09 |
| Active substance 1:      | mesosulfuron-methyl                          | Conc. of as 1:        | 30 g/L <sup>(c)</sup>               |          |                    |
| Active substance 2:      | -  | Conc. of as 2:        | - <sup>(c)</sup>                    |          |                    |
| Active substance 3:      | -  | Conc. of as 3:        | - <sup>(c)</sup>                    |          |                    |
| Safener:                 | mefenpyr                                     | Conc. of safener:     | 90 g/L <sup>(c)</sup>               |          |                    |
| Synergist:               | -  | Conc. of synergist:   | - <sup>(c)</sup>                    |          |                    |
| Applicant:               | Innvigo Sp. z o.o.                           | Professional use:     | <input checked="" type="checkbox"/> |          |                    |
| Zone(s):                 | Central <sup>(d)</sup>                       | Non professional use: | <input type="checkbox"/>            |          |                    |
| Verified by MS:          | no   |                       |                                     |          |                    |
| Field of use:            | herbicide                                    |                       |                                     |          |                    |

| 1   | 2                  | 3  | 4   | 5   | 6                                | 7   | 8   | 9   | 15   | 11   | 12                          | 13            | 14  | 15                 |  |
|---|--------------------|--|---|---|----------------------------------|---|---|---|--|--|-----------------------------|---------------|---|--------------------|--|
| Use-<br>No. <sup>(e)</sup>  | Member<br>state(s) | Crop and/<br>or situation<br><br>(crop destination /<br>purpose of crop) | F,<br>Fn,<br>Fpn<br>G,<br>Gn,<br>Gpn<br>or<br>I | Pests or Group of pests<br>controlled<br><br>(additionally: developmen-<br>tal stages of the pest or<br>pest group) | Application                      |   |   |   | Application rate   |  |                             | PHI<br>(days) | Remarks:<br>e.g. g safen-<br>er/synergist<br>per ha<br><sup>(f)</sup> | ZRMs<br>Conclusion |  |
|   |                    |  |   |   | Method<br>/ Kind                 | Timing /<br>Growth stage<br>of crop &<br>season | Max. number<br>a) per use<br>b) per crop/<br>season | Min. interval<br>between appli-<br>cations (days) | kg or L<br>product / ha<br>a) max. rate<br>per appl.<br>b) max. total<br>rate per<br>crop/season | g or kg as/ha<br>a) max. rate per appl.<br>b) max. total rate per<br>crop/season | Water L/ha<br><br>min / max |               |   |                    |  |
| Zonal uses (field or outdoor uses, certain types of protected crops)  |                    |  |   |   |                                  |   |   |   |  |  |                             |               |   |                    |  |
| 1   | PL                 | Winter wheat<br>(TRZAW)  | F   | Mono and dicotyledonous<br>weeds  | Spray,<br>medi-<br>um<br>sprayer | spring<br>BBCH 21-32                            | a)1<br>b)1  | n/a   | a) 0.5 L/ha<br>b) 0.5 L/ha   | a) 15 g a.s./ha<br>b) 15 g a.s./ha   | 200-300                     | n/a           | -   | Accepted.          |  |
| 2   |                    |  |   |   |                                  |   |   |   |  |  |                             |               |   |                    |  |
| Interzonal uses (use as seed treatment, in greenhouses (or other closed places of plant production), as post-harvest treatment or for treatment of empty storage rooms) |                    |  |   |   |                                  |   |   |   |  |  |                             |               |   |                    |  |
| 3   |                    |  |   |   |                                  |   |   |   |  |  |                             |               |   |                    |  |
| 4   |                    |  |   |   |                                  |   |   |   |  |  |                             |               |   |                    |  |

| Minor uses according to Article 51 (zonal uses)      |    |   |   |                                  |                                  |                      |            |     |                            |                                    |         |     |   |           |
|--|----|---|---|----------------------------------|----------------------------------|----------------------|------------|-----|----------------------------|------------------------------------|---------|-----|---|-----------|
| 5  | PL | Spelt<br><i>Triticum spelta</i><br>(3SPWC)<br>Emmer wheat<br><i>Triticum dicoccum</i><br>(TRZDI)<br>Einkorn wheat<br><i>Triticum monococ-<br/>cum</i><br>(TRZMO)<br>Durum wheat<br><i>Triticum durum</i><br>(TRZDW)<br>Spring Rye<br><i>Secale cereale</i><br>(SECCS) | F | Mono and dicotyledonous<br>weeds | Spray,<br>medi-<br>um<br>sprayer | spring<br>BBCH 21-32 | a)1<br>b)1 | n/a | a) 0.5 L/ha<br>b) 0.5 L/ha | a) 15 g a.s./ha<br>b) 15 g a.s./ha | 200-300 | n/a | - | Accepted. |
| 6  |    |   |   |                                  |                                  |                      |            |     |                            |                                    |         |     |   |           |
| Minor uses according to Article 51 (interzonal uses) |    |   |   |                                  |                                  |                      |            |     |                            |                                    |         |     |   |           |
| 7  |    |   |   |                                  |                                  |                      |            |     |                            |                                    |         |     |   |           |
| 8  |    |   |   |                                  |                                  |                      |            |     |                            |                                    |         |     |   |           |

**Remarks table heading:**

(a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)  
(b) Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008  
(c) g/kg or g/L

(d) Select relevant  
(e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1  
(f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use.

**Remarks columns:**

1 Numeration necessary to allow references  
2 Use official codes/nomenclatures of EU Member States  
3 For crops, the EU and Codex classifications (both) should be used; when relevant, the use situation should be described (e.g. fumigation of a structure)  
4 F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application  
5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.  
6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench  
Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated.

7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application  
8 The maximum number of application possible under practical conditions of use must be provided.  
9 Minimum interval (in days) between applications of the same product  
10 For specific uses other specifications might be possible, e.g.: g/m<sup>3</sup> in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.  
11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).  
12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.  
13 PHI - minimum pre-harvest interval  
14 Remarks may include: Extent of use/economic importance/restrictions

- \* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1.
- \*\* F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

Column 15: zRMS conclusion.

|      |  |
|------|--|
| A    | Acceptable                               |
| R    | Acceptable with further restriction      |
| C    | To be confirmed by cMS                   |
| N    | Not acceptable / evaluation not possible |
| n.r. | Not relevant for section 3               |



## 3.2 Efficacy data (KCP 6)

### Introduction

This document summarizes the information related to the efficacy of the product CHR/H/MEZO 30 OD containing active substance: mesosulfuron-methyl.

CHR/H/MEZO 30 OD applies in the Central Registration Zone for the registration of in winter wheat at BBCH 21-32 applied once per season at the maximum rate of 15 g a.s./ha mesosulfuron-methyl per application for the control of mono- and dicotyledonous weeds.

### Description of active substances

The descriptions of active substances will be provided in Section 1,2 4 to 8 and Part C.

### Mode of action

#### Active substances:

#### **Mesosulfuron-methyl 30 g/L**

CAS no 208465-21-8

CIPAC No.: 663.201

IUPAC name: Methyl-2-[(4,6-dimethoxypyrimidin-2-ylcarbamoyl)sulfamoyl]- $\alpha$ -(methanesulfonamido)-ptoluate

Mesosulfuron-methyl was developed for agricultural use. Mesosulfuron-methyl is a sulfonylurea herbicide for post-emergence use in winter wheat and rye. In order to ensure optimum selectivity, it is applied in combination with safener mefenpyr-diethyl. The active ingredient Mesosulfuron-methyl is related to the chemical group of the Sulfonylureas, which mode of action is the inhibition of the acetolactate synthase (ALS). This inhibition as a result prevents the formation of branched chain amino acids (leucine, isoleucine and valine). After product application, sensitive weeds do not develop any further. They first show yellow discoloration that evolves into necrosis and finally plant die four to six weeks later.

**Table 3.2-1: Details of the active substances**

| Active substance                        | Mesosulfuron-methyl   |
|---|---|
| Concentration<br>(Unit: g/kg or g/L...) | 30 g/L  |
| Chemical group                          | sulfonylureas   |
| Mode of action                          | inhibits the plant enzyme acetolactate synthase (ALS)   |
| Biological action                       | Mesosulfuron-methyl acts as a selective systemic herbicide. It works on the target weed with phloem-xylemsystemic properties both via the foliage and the soil, with a clear predominance of foliar action. In grass species foliar uptake occurs mainly the day of application, with little further increase after. Foliar uptake is very significantly influenced by humidity. Of the amount taken up by a fully developed leaf, between 5 and 10% is subsequently translocated to the other parts of the plant. Translocation to the shoot base and the root is usually higher than the translocation to the shoot parts above the treated leaf. |

### Description of the plant protection product

CHR/H/MEZO 30 OD is to be applied in spring:

BBCH 21-32 in winter wheat.

The suggested dose of the product:

Used solo:

0.5 L/ha once a season in winter wheat which are corresponding to 15 g a.s./ha mesosulfuron-methyl.

CHR/H/MEZO 30 OD containing mesosulfuron-methyl as the active substance is prepared for the use in agricultural practice as a herbicide in the form OD – oil dispersion.

Product submitted to registration under two different marketing names: Pacyfik 30 OD/ Vidal 30 OD

Information on the composition of product CHR/H/MEZO 30 OD are included in the confidential part of the registration dossier: Registration Report – Part C.

**Table 3.2-2: Simplified table of currently registered uses and requested uses for the product code.**

| Uses         |                               | Member State | Currently registered rate(s) |                                 | Requested rate(s)  |                                 | Comments / Other relevant details on GAPs |
|--------------|-------------------------------|--------------|------------------------------|---------------------------------|--------------------|---------------------------------|---|
| Crop(s)      | Target(s)                     |              | max. rate per appl           | max. total rate per crop/season | max. rate per appl | max. total rate per crop/season |   |
| winter wheat | Mono- and dicotyledones weeds | PL           | -                            | -                               | 0.5 L/ha           | 0.5 L/ha                        |   |

Further details are in the table “All intended uses” in Part B - Section 0.

### Description of the target pests

**Table 3.2-3: Glossary of pests mentioned in the dossier.**

| EPPO code | Scientific name                | Common name*         |
|-----------|--------------------------------|----------------------|
| APESV     | <i>Apera spica-venti</i>       | silky bent           |
| ALOMY     | <i>Alopecurus myosuroides</i>  | black twitch         |
| POAAN     | <i>Poa annua</i>               | annual meadowgrass   |
| BROMO     | <i>Bromus hordeaceus</i>       | soft brome           |
| LOLPE     | <i>Lolium perennium</i>        | English ryegrass     |
| VIOAR     | <i>Viola arvensis</i>          | field pansy          |
| BRSNW     | <i>Brassica napus</i>          | winter rape          |
| ANTAR     | <i>Anthemis arvensis</i>       | corn chamomile       |
| PAPRH     | <i>Papaver rhoeas</i>          | common poppy         |
| SINAR     | <i>Sinapsis arvensis</i>       | wild mustard         |
| CAPBP     | <i>Capsella brusa-pastoris</i> | blind weed           |
| STEME     | <i>Stellaria media</i>         | common chickweed     |
| VERHE     | <i>Veronica herderifolia</i>   | ivy-leaved speedwell |

\* optional

**Table 3.2-4: Major / minor status of intended uses (for all cMS and zRMS).**

| Crop and/or situation | Crop status |       | Pests or group of pests controlled | Pest status |       |
|-----------------------|-------------|-------|------------------------------------|-------------|-------|
|                       | major       | minor |                                    | major       | minor |
| winter wheat          | PL          | -     | <i>Apera spica-venti</i>           | PL          | -     |
|                       |             |       | <i>Alopecurus myosuroides</i>      | PL          | -     |
|                       |             |       | <i>Poa annua</i>                   | -           | PL    |
|                       |             |       | <i>Bromus hordeaceus</i>           | PL          | PL    |
|                       |             |       | <i>Lolium perennium</i>            | -           | PL    |
|                       |             |       | <i>Viola arvensis</i>              | PL          | -     |
|                       |             |       | <i>Brassica napus</i>              | PL          | -     |
|                       |             |       | <i>Anthemis arvensis</i>           | -           | PL    |
|                       |             |       | <i>Papaver rhoeas</i>              | PL          | -     |
|                       |             |       | <i>Sinapsis arvensis</i>           | -           | PL    |
|                       |             |       | <i>Capsella brusa-pastoris</i>     | -           | PL    |
|                       |             |       | <i>Stellaria media</i>             | -           | PL    |
|                       |             |       | <i>Veronica herderifolia</i>       | -           | PL    |

### Compliance with the Uniform Principles

The overall assessment was performed according to the uniform principles. There were no deviations from the EPPO guidelines with the trials conducted in North-East EPPO zone.

### Information on trials submitted (3.1 Efficacy data)

The 28 trials have been carried out in winter wheat in 2020 and 2021 in the North-East EPPO zone within the Central registration zone to evaluate the efficacy of applied at the proposed label rate of 15 g a.s./ha mesosulfuron-methyl for the weed control in winter wheat (Table 3.2 6). Trials were conducted in the main winter wheat growing areas in the North-East EPPO zone in Poland.

**Table 3.2-5: Presentation of trials efficacy trials**

| Crop(s) *                              | Target(s)*                    | Country | Years     | Type of trial** | Number of trials<br>(number of valid trials) |   | GEP, non-GEP, official*** | Comments<br>(any other relevant information) |
|--|-------------------------------|---------|-----------|-----------------|--|---|---------------------------|--|
|  |                               |         |           |                 | North-East zone                              | - |                           |  |
| winter wheat post-emergence BBCH 21-32 | <i>Apera spica-venti</i>      | Poland  | 2021      | E               | 11(11)                                       | - | GEP                       | -  |
|  | TOTAL                         | -       | 2021      | -               | 11(11)                                       | - | -                         | -  |
|  | <i>Alopecurus myosuroides</i> | Poland  | 2020      | E               | 2(2)   | - | GEP                       | -  |
|  |                               | Poland  | 2021      | E               | 4(4)   | - | GEP                       | -  |
|  | TOTAL                         | -       | 2020-2021 | -               | 6(6)   | - | -                         | -  |
|  | <i>Poa annua</i>              | Poland  | 2020      | E               | 1(1)   | - | GEP                       | -  |
|  |                               | Poland  | 2021      | E               | 6(6)   | - | GEP                       | -  |
|  | TOTAL                         | -       | 2020-2021 | -               | 7(7)   | - | -                         | -  |
|  | <i>Bromus hordeaceus</i>      | Poland  | 2020      | E               | 2(2)   | - | GEP                       | -  |
|  |                               | Poland  | 2021      | E               | 4(4)   | - | GEP                       | -  |
|  | TOTAL                         | -       | 2020-2021 | -               | 6(6)   | - | -                         | -  |
|  | <i>Lolium perennium</i>       | Poland  | 2020      | E               | 1(1)   | - | GEP                       | -  |
|  |                               | Poland  | 2021      | E               | 5(5)   | - | GEP                       | -  |
|  | TOTAL                         | -       | 2020-2021 | -               | 6(6)   | - | -                         | -  |
|  | <i>Viola arvensis</i>         | Poland  | 2020      | E               | 5(5)   | - | GEP                       | -  |
|  |                               | Poland  | 2021      | E               | 10(10)                                       | - | GEP                       | -  |

|       |                                |        |           |   |          |   |     |   |
|-------|--------------------------------|--------|-----------|---|----------|---|-----|---|
|       | TOTAL                          | -      | 2020-2021 | - | 15(15)   | - | -   | - |
|       | <i>Brassica napus</i>          | Poland | 2020      | E | 4(4)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 5(5)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 9(9)     | - | -   | - |
|       | <i>Anthemis arvensis</i>       | Poland | 2020      | E | 1(1)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 7(7)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 8(8)     | - | -   | - |
|       | <i>Papaver rhoeas</i>          | Poland | 2020      | E | 2(2)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 5(5)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 7(7)     | - | -   | - |
|       | <i>Sinapsis arvensis</i>       | Poland | 2020      | E | 1(1)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 5(5)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 6(6)     | - | -   | - |
|       | <i>Capsella brusa-pastoris</i> | Poland | 2020      | E | 2(2)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 5(5)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 7(7)     | - | -   | - |
|       | <i>Stellaria media</i>         | Poland | 2020      | E | 3(3)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 3(3)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 6(6)     | - | -   | - |
|       | <i>Veronica herderifolia</i>   | Poland | 2020      | E | 3(3)     | - | GEP | - |
|       |                                | Poland | 2021      | E | 3(3)     | - | GEP | - |
|       | TOTAL                          | -      | 2020-2021 | - | 6(6)     | - | -   | - |
| TOTAL | 28                             | -      | 2020-2021 | - | 28 (100) | - | -   | - |

\* According to the GAP table. Timing of the application(s) can be added if relevant (e.g. P-re-mergence vs post-emergence, spring vs spring).

\*\* P = preliminary trial, MED = minimum effective dose, E = efficacy trial.

\*\*\* GEP: Good Experimental Practices. Official: carried out by a national official organisation.

**Table 3.2-6: Presentation of reference standards used in trials efficacy trials**

| Crop(s)      | Reference standard                | Country(ies) where the product is registered <sup>(1)</sup> | Authorization number          | Active substance(s)  | Formulation         |                                | Registered application | Application                    | Remark <sup>(4)</sup> |
|--------------|-----------------------------------|---|-------------------------------|--|---------------------|--------------------------------|------------------------|--------------------------------|-----------------------|
|              |                                   |   |                               |  | Type <sup>(2)</sup> | Concentration of a.s.          |                        | rate in trials (per treatment) |                       |
| winter wheat | Atlantis Star + Biopower 276,5 SL | Poland  | R – 62/2020d;<br>R - 174/2017 | mesosulfuron-methyl<br>thiencarbazone-methyl<br>iodosulfuron-methyl - sodium | OD – oil dispersion | 45 g/kg<br>22,5 g/kg<br>9 g/kg | 0.15-0.333 kg/ha       | 0.333 kg/ha                    | -                     |

(1) only on use(s) applied for (with the test product).

(2) e.g. WP (wetttable powder), EC (emulsifiable concentrate), etc.

(3) dose(s) / dose range authorized on that use in the country.

(4) Other relevant information (e.g. uses, number of applications, spray volume, method of application, etc.).

|                         |  |
|-------------------------|--|
| <b>Comments of ZRMs</b> | <p>This document summarizes the information related to the efficacy of the plant protection product – Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD). CHR/H/MEZO 30 OD containing mesosulfuron-methyl (30 g/L) as the active substance is prepared for the use in agricultural practice as a herbicide in the form OD – oil dispersion. In order to ensure optimum selectivity, it is applied in combination with safener mefenpyr-diethyl.</p> <p>For now, this mentioned active substance is on the list of approved active substances. Mesosulfuron-methyl is a selective herbicide used primarily in cereal crops to control various grass and broadleaf weeds. It belongs to the sulfonylurea class of herbicides, which are known for their effectiveness at low application rates.</p> |
|-------------------------|--|

|  |   |
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|  | <p>Mesosulfuron-methyl inhibits the acetolactate synthase (ALS) enzyme, also known as acetoxyacid synthase (AHAS). This enzyme is crucial for the synthesis of branched-chain amino acids. Inhibition of ALS leads to the cessation of cell division and plant growth, ultimately causing the weed to die. Herbicides with mesosulfuron-methyl are absorbed through the foliage and roots of the target weeds and is translocated throughout the plant, ensuring comprehensive weed control.</p> <p>Mesosulfuron-methyl is highly selective, meaning it effectively targets specific grass and broadleaf weeds without harming cereal crops like wheat and barley. Due to its high potency, mesosulfuron-methyl is effective at very low application rates, reducing the amount of chemical needed. It offers residual weed control, providing extended protection against new weed emergence after application.</p> <p>Mesosulfuron-methyl is a valuable tool for controlling weeds in cereal crops, offering effective and selective control at low application rates. However, careful management is necessary to prevent resistance development and to adhere to crop rotation restrictions. Integrated weed management strategies, combining chemical, cultural and mechanical control methods are recommended to sustain the efficacy of mesosulfuron-methyl and other herbicides.</p> <p>All necessary information's about tested plant protection product, its active compound, studied weed species, reference products, etc. are correctly presented in this dRR by the Applicant. In Poland, 17 PPPs with mesosulfuron-methyl are already registered. No PPP with 30 g/L of mesosulfuron methyl is registered in OD formulation in Poland yet.</p> <p>The product – Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD) containing mesosulfuron-methyl (30 g/L) by Innvigo Sp. z.o.o. has not been previously evaluated in any country according to Uniform Principles. Poland is a ZRMs. Lack of cMS.</p> |
|--|---|

### 3.2.1 Preliminary tests (KCP 6.1)

Preliminary studies on product CHR/H/MEZO 30 OD were not carried out because this herbicide contains mesosulfuron-methyl 30 g/L, which is a well-known active substance that has been used for many years in agricultural practice.

According to EPPO PP1/225(2) lower doses have been tested in the efficacy studies, therefore no specific studies were conducted to fill this data point.

#### Summary and conclusions on the preliminary trials

Preliminary studies on product CHR/H/MEZO 30 OD were not carried out because this herbicide contains mesosulfuron-methyl 30 g/L, which is a well-known active substance that has been used for many years in agricultural practice.

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | <p>Mesosulfuron-methyl was first registered for use in the early 2000s, with widespread adoption occurring over the subsequent years. Mesosulfuron-methyl is primarily used to control grass weeds and some broadleaf weeds in cereal crops, such as wheat and barley. It is particularly effective against problematic weeds like wild oats, ryegrass and certain species of brome. In Poland, 17 PPPs with mesosulfuron-methyl as an active compound are registered and commonly used. So, many efficacy trials are available to evaluate the effectiveness of products containing this active compound, <b>Preliminary tests were not necessary in this case in the opinion of ZRMs.</b> This is complied with uniform principles.</p> |
|-------------------------|---|

### 3.2.2 Minimum effective dose tests (KCP 6.2)

No specific studies were conducted to fill this data point.

On the basis of information included in KCP point 3.2.3 the assessment of efficacy and phytotoxicity trials in KCP point 3.2.3 of herbicide CHR/H/MEZO 30 OD in winter wheat the minimum effective dose of product CHR/H/MEZO 30 OD used is:

Used solo:

0.5 L/ha once a season in in winter wheat, which are corresponding to 15 g a.s./ha mesosulfuron-methyl.

According to EPPO PP1/225(2) lower doses have been tested in the efficacy studies, therefore the minimum effective trials were not conducted.

#### Winter wheat

28 field trials were established in order to determine the minimum effective dose for the control of the weeds in winter wheat. CHR/H/MEZO 30 OD was tested at:

0.2, 0.3, 0.4 and 0.5 L/ha once per season at BBCH 21-32

in winter wheat for the control of weeds. The rates reflect the proposed label rate of CHR/H/MEZO 30 OD, in accordance with the EPPO standard PP 1/225 '*Minimum effective dose*'.

A summary of the dose response results is provided in **Błąd! Nieprawidłowy odsyłacz do zakładki: wskazuje na nią samą..**

**Table 3.2-7: Minimum effective dose. Efficacy of CHR/H/MEZO 30 OD at proposed label rate, at 0.5 L/ha dose rates on winter wheat at assessment timing against weeds**

| Grouping*                      | Number of trials | Infestation in the untreated control (unit) |              | % control with CHR/H/MEZO 30 OD at rate |               |                                |               |                                |               |                         |               |
|--------------------------------|------------------|---|--------------|---|---------------|--------------------------------|---------------|--------------------------------|---------------|-------------------------|---------------|
|                                |                  |   |              | 0.2 L/ha<br>(40% of full rate)          |               | 0.3 L/ha<br>(60% of full rate) |               | 0.4 L/ha<br>(80% of full rate) |               | 0.5 L/ha<br>(full rate) |               |
|                                |                  | Mean  | Min & Max    | Mean                                    | Min & Max     | Mean                           | Min & Max     | Mean                           | Min & Max     | Mean                    | Min & Max     |
| <i>Apera spica-venti</i>       | 11               | 93.0  | 7.5 & 450.0  | 73.47                                   | 39.18 & 88.30 | 81.86                          | 54.95 & 95.00 | 86.65                          | 70.80 & 98.30 | 92.12                   | 76.80 & 99.50 |
| <i>Alopecurus myosuroides</i>  | 6                | 164.8                                       | 56.0 & 500.0 | 77.75                                   | 66.30 & 83.27 | 85.74                          | 68.80 & 100   | 89.68                          | 75.00 & 100   | 94.77                   | 85.00 & 100   |
| <i>Poa annua</i>               | 5                | 38.3  | 7.0 & 130.0  | 57.27                                   | 52.50 & 61.30 | 68.38                          | 58.80 & 77.50 | 76.28                          | 61.30 & 81.30 | 85.52                   | 75.00 & 100   |
| <i>Bromus hordeaceus</i>       | 6                | 29.0  | 10.0 & 83.0  | 48.78                                   | 23.80 & 75.00 | 51.45                          | 31.30 & 87.50 | 64.91                          | 32.50 & 96.80 | 77.73                   | 55.00 & 99.00 |
| <i>Lolium perennium</i>        | 6                | 54.1  | 9.0 & 180.0  | 46.45                                   | 14.40 & 77.50 | 65.88                          | 18.60 & 87.50 | 78.27                          | 54.10 & 91.00 | 89.66                   | 72.70 & 100   |
| <i>Viola arvensis</i>          | 15               | 19.2  | 5.0 & 115.0  | 16.26                                   | 0.00 & 47.50  | 22.11                          | 0.00 & 57.80  | 28.26                          | 0.00 & 58.80  | 38.38                   | 20.00 & 63.80 |
| <i>Brassica napus</i>          | 9                | 5.7   | 5.0 & 10.3   | 86.70                                   | 65.00 & 94.00 | 94.46                          | 83.00 & 99.00 | 96.72                          | 86.50 & 100   | 97.42                   | 91.00 & 100   |
| <i>Anthemis arvensis</i>       | 5                | 5.4   | 5.0 & 6.0    | 67.10                                   | 47.50 & 73.80 | 74.92                          | 68.80 & 80.00 | 80.70                          | 75.00 & 88.50 | 86.64                   | 78.80 & 95.30 |
| <i>Papaver rhoeas</i>          | 7                | 7.5   | 5.0 & 14.0   | 66.56                                   | 52.50 & 75.00 | 71.61                          | 55.80 & 82.80 | 78.99                          | 55.80 & 90.00 | 82.89                   | 57.30 & 91.50 |
| <i>Sinapsis arvensis</i>       | 6                | 7.6   | 5.0 & 11.3   | 80.58                                   | 62.50 & 87.80 | 91.82                          | 81.30 & 95.00 | 97.58                          | 90.00 & 100   | 98.00                   | 90.00 & 100   |
| <i>Capsella brusa-pastoris</i> | 7                | 6.3   | 5.0 & 8.0    | 57.76                                   | 50.00 & 65.00 | 72.45                          | 57.50 & 80.00 | 81.48                          | 73.75 & 85.30 | 86.94                   | 83.75 & 89.00 |
| <i>Stellaria media</i>         | 6                | 6.9   | 5.0 & 11.0   | 67.50                                   | 65.00 & 70.00 | 60.91                          | 15.00 & 88.80 | 74.71                          | 37.50 & 99.00 | 79.66                   | 37.50 & 99.0  |
| <i>Veronica herderifolia</i>   | 6                | 7.8   | 5.0 & 12.0   | 29.85                                   | 0.00 & 51.25  | 31.93                          | 0.00 & 58.75  | 33.89                          | 0.00 & 63.75  | 40.71                   | 0.00 & 71.25  |

## Summary and conclusions on the minimum effective dose

According to the presented results, the dose of 0.5 L/ha of CHR/H/MEZO 30 OD provided the optimum overall control and should be considered as effective against these major and minor weeds in winter wheat for which activity of product is claimed.

As a result, the proposed rate of 0.5 L/ha of CHR/H/MEZO 30 OD for Poland should be considered the minimum effective dose to deliver broad spectrum control of targets under a wide range of environmental conditions.

Comments of ZRMs

Mesosulfuron-methyl is a selective post-emergence herbicide used primarily for controlling weeds in cereal crops. The BBCH scale stages 21-32 for winter wheat range from the beginning of tillering (BBCH 21) to the beginning of stem elongation (BBCH 32). The minimum effective dose of mesosulfuron-methyl for winter wheat can vary based on factors such as weed species present, weed growth stage and environmental conditions. Typical application rates is 9 to 15 grams of mesosulfuron-methyl per hectare. For high weed density or more resistant species, the upper end of the dose range (15 g a.i./ha) is more effective.

In order to provide information to establish the minimum effective dose, some of the trials conducted to demonstrate efficacy should include at least on lower dose(s), for example: 60-80% of recommended dose, to that which would be recommended.

The trials submitted to support the MED of CHR/H/MEZO 30 OD are the same as the efficacy trials described under next section. It is utilized to achieve the desired effect. During field trials, Applicant used different doses: 0.2 L/ha (0.4N) – only in trials from 2021, 0.3 L/ha (0.6N), 0.4 L/ha (0.8N) and 0.5 L/ha (N recommended dose). So, in the appropriate researches of efficacy were tested differ doses and to register was chosen the lowest effective, which is in line to EPPO 1/225. What is more, herbicides containing mesosulfuron-methyl have been allowed to use for many years.

To ensure that a satisfactory level of control is achieved with the proposed dose rate of 0.5 L/ha, it is recommended that CHR/H/ MEZO 30 OD is applied under optimal conditions.

Following weeds species were studied during 28 efficacy trials carried out on winter wheat in 2020 and 2021 in Poland (N-E EPPO zone): APESV (11 trials), ALOMY (6), POAAN (7), BROMO (6), LOLPE (6), VIOAR (15), BRSNN (9), ANTAR (8), PAPRH (7), SINAR (6), CAPBP (7), STEME (6) and VERHE (6).

| Weed  | Number of trials | Mean eff. at 0.2 L/ha | Mean eff. at 0.3 L/ha | Mean eff. at 0.4 L/ha | Mean eff at 0.5 L/ha (recommended) |
|-------|------------------|-----------------------|-----------------------|-----------------------|------------------------------------|
| APESV | 11               | 73.5                  | 81.9                  | 86.7                  | 92.1                               |
| ALOMY | 6                | 77.8                  | 85.7                  | 89.7                  | 94.8                               |
| POAAN | 7                | 57.3                  | 68.4                  | 76.3                  | 85.5                               |
| BROMO | 6                | 48.8                  | 51.5                  | 64.9                  | 77.7                               |
| LOLPE | 6                | 46.5                  | 65.9                  | 78.3                  | 89.7                               |
| VIOAR | 15               | 16.3                  | 22.1                  | 28.3                  | 38.4                               |
| BRSNN | 9                | 86.7                  | 94.5                  | 96.7                  | 97.4                               |
| ANTAR | 8                | 67.1                  | 74.9                  | 80.7                  | 86.6                               |
| PAPRH | 7                | 66.6                  | 71.6                  | 79.0                  | 82.9                               |
| SINAR | 6                | 80.6                  | 91.8                  | 97.6                  | 98.0                               |
| CAPBP | 7                | 57.8                  | 72.5                  | 81.5                  | 86.9                               |
| STEME | 6                | 67.5                  | 60.9                  | 74.7                  | 79.7                               |
| VERHE | 6                | 29.9                  | 31.9                  | 33.9                  | 40.7                               |

On the basis on obtained results it has been noted that:

✓ *for dose 0.2 L/ha* – 6 weeds were characterized by tolerant (POAAN, BROMO, LOLPE, VIOAR, CAPBP, VERHE), 3 weeds as moderately tolerant (ANTAR, PAPRH, STEME), 3 weeds as moderately susceptible (APESV, ALOMY, SI-



|  |  |
|--|--|
|  | <p>NAR) and one weed as a susceptible weed (BRSNN);</p> <p>✓ <i>for dose 0.3 L/ha</i> – 3 weeds were classified as a tolerant weeds (BROMO, VIOAR, VERHE), 3 weeds as a moderately tolerant (POAAN, LOLPE, STEME), 4 weeds as a moderately susceptible (ANTAR, PAPRH, CAPBP) and 3 weeds as a susceptible (ALOMY, BRSNN, SINAR);</p> <p>✓ <i>for dose 0.4 l/ha</i> – 2 weeds were characterized by tolerant (VIOAR, VERHE), 1 weed as a moderately tolerant (BROMO), 6 weeds as a moderately susceptible (POAAN, LOLPE, ANTAR, PAPRH, CAPBP, STEME) and 4 weeds as a susceptible (APESV, ALOMY, BRSNN, SINAR);</p> <p>✓ <i>for dose 0.5 L/ha</i> – 2 weeds were classified as a tolerant weeds (VIOAR, VERHE), lack of moderately tolerant weeds, 3 weeds as a moderately susceptible (BROMO, PAPRH, STEME) and 8 weeds as a susceptible (APESV, ALOMY, POAAN, LOLPE, BRSNN, ANTAR, SINAR, CAPBP).</p> <p>In the opinion of ZRMs, trials submitted by Applicant are sufficient for MED dose. The clear dose response were observed for the most of studied weed species. The most effective was dose 0.5 L/ha and should be claimed as a recommended dose for use against weeds in winter wheat.</p> |
|--|--|

### 3.2.3 Efficacy tests (KCP 6.2)

#### Materials and methods

The applicant submitted 28 reports (in total) showing the results in research into product efficacy carried out in 2020 and 2021 in winter wheat. List of these reports is contained in Appendix 1.

#### Site

Trials were conducted in different regions in Poland where winter wheat is grown commercially. The experiment was established on a set of complete randomized blocks in 4 replications. Details on trial sites, applications and data on effectiveness are included in Appendix 4 and 5.

#### Testing units

Efficacy studies on herbicide CHR/H/MEZO 30 OD were performed in 2020 and 2021 by:

- SynTech Research Poland Sp. z o.o., ul. Jagiellońska 69/1, 85-027 Bydgoszcz, Poland
- A.T Sp. z o.o., ul. Przemysłowa 3, 88-300 Mogilno, Poland
- Poznań University of Life Sciences, Research and Education Center Gorzyń, ul. Wojska Polskiego 28, 60-637 Poznań, Poland

#### Experimental details

The efficacy trials were designed, conducted and reported according to the following EPPO guidelines:

- PP 1/135 (3) Phytotoxicity assessment
- PP 1/152 (3) Design and analysis of efficacy evaluation trials
- PP 1/181 (3) Conduct and reporting of efficacy evaluation trials including good experimental practice

They were carried out on the field in the conditions of natural agrofag infestation. The efficacy trials were concluded according to the EPPO standards:

- PP 1/93 (3) Weeds in cereals

#### Assessment methods

#### Statistical Analysis

The test results were statistically evaluated using the ARM 2020.1 statistical program. All assessment data was analyzed by analysis of variance (two-way analysis of variance). Significance of differences between the combinations was assessed using the Student-Newman-Keuls test at a significance level of p

= 0.05 using "ARM 9" (version 9.1.5). All data were tested for homogeneity using the Bartlett test for homogeneity. for any data columns that did not pass this test, automatic data transformations were performed in the ARM (see ARM action codes below each scoreboard) Care should be taken when interpreting these data columns Efficacy was analyzed by Abbott's test (% of control).

Software for analysis of the results was ARM Revision 2017.4 from Gylling Data Management. Data were analysed using analysis of variance (ANOVA) on untransformed data and on transformed ones when the Bartlett's test indicated so. If transformation did not improve the distribution, original values were used and therefore significant differences reported should be interpreted with caution. The probability of no significant differences occurring between treatment means was calculated as the F probability value (Treatment Prob(F)). Student-Newman-Keuls (S-N-K) tests were applied when treatment differences were identified on the basis of the ANOVA test. Mean comparison performed only when AOV Treatment P(F) is significant at level selected. Results obtained were indicated by a letter-treatment means with no letters in common are significantly different in accordance with a S-N-K conducted at a 95% confidence level. Where data have been transformed, letters are included in the transformed data.

The treatment means of the assessment dates were calculated and compared using Student-Newman-Keuls test (P=0.05). The statistical procedures were applied using ARM 2020.1 software.

#### Assessment of efficacy

The effectiveness of the control of monocotyledonous and dicotyledonous weeds was assessed visually by comparing the condition of individual weeds on the herbicide-treated plots and on the untreated objects. In addition, 262 DAAs were counted for panicle for monocotyledonous weeds. Results were presented as percent damage using a 0-100 scale, where 0 - no efficacy, 100 - total weed control. Both before the application of the preparation and on each evaluation day, the number of individual weeds was determined on the control plots on the area of 1 m<sup>2</sup>.

#### Assessment of phytotoxicity

The phytotoxicity assessment of the tested preparations was carried out by visually assessing the intensity of chlorosis, necrosis, leaf twisting, reduction of plant turgor, etc. on the surface of the entire plots and comparing each plot with the control plot. The assessment was made directly on the plantation. The results are presented on a 0-100 scale, where 0 - no phytotoxicity, 100 - complete destruction of plants.

#### Applications methods and rates

The applications were carried out by a T-BOOM – BACCAI, plot sprayer BICSPR.

**Tested herbicide was applied at the growth stage in winter wheat:**  
BBCH 21-32.

The product CHR/H/MEZO 30 OD has been used:  
in winter wheat at the following rates of 0.2, 0.3, 0.4, 0.5 L/ha.  
Atlantis Star + Biopower 276,5 SL was used as a reference product in winter wheat.  
The experiment was established on a set of complete randomized blocks in 4 replications.

#### **Experiment pattern:**

##### **Winter wheat in 2020**

| No. | Name                              | Rate (L/ha) | other rate (g a.s./ha) | Appl code | Growth Stage<br>BBCH |
|-----|-----------------------------------|-------------|------------------------|-----------|----------------------|
| 1   | Untreated Check                   |             |                        |           |                      |
| 2   | CHR/H/MEZO 30 OD                  | 0.3 L/ha    | 9 g a.s./ha            | A         | BBCH 21-32           |
| 3   | CHR/H/MEZO 30 OD                  | 0.4 L/ha    | 12 g a.s./ha           | A         | BBCH 21-32           |
| 4   | CHR/H/MEZO 30 OD                  | 0.5 L/ha    | 15 g a.s./ha           | A         | BBCH 21-32           |
| 5   | Atlantis Star + Biopower 276,5 SL | 0.333 kg/ha | 25.47 g a.s./ha        | A         | BBCH 21-32           |

##### **Winter wheat in 2021**

| No. | Name                              | Rate (L/ha) | other rate (g a.s./ha) | Appl code | Growth Stage<br>BBCH |
|-----|-----------------------------------|-------------|------------------------|-----------|----------------------|
| 1   | Untreated Check                   |             |                        |           |                      |
| 2   | CHR/H/MEZO 30 OD                  | 0.2 L/ha    | 6 g a.s./ha            | A         | BBCH 21-32           |
| 3   | CHR/H/MEZO 30 OD                  | 0.3 L/ha    | 9 g a.s./ha            | A         | BBCH 21-32           |
| 4   | CHR/H/MEZO 30 OD                  | 0.4 L/ha    | 127 g a.s./ha          | A         | BBCH 21-32           |
| 5   | CHR/H/MEZO 30 OD                  | 0.5 L/ha    | 15 g a.s./ha           | A         | BBCH 21-32           |
| 6   | Atlantis Star + Biopower 276,5 SL | 0.333 kg/ha | 25.47 g a.s./ha        | A         | BBCH 21-32           |

## Details of experiments

### Winter wheat 2020

| Report code             | A.T/2020/051/PO       | A.T/2020/052/PO     | A.T/2020/053/PO       | A.T/2020/054/PO       | A.T/2020/055/PO          | AH/20/PO/6/Pr/MEZO   | SRPL20-230-336HE       | SRPL20-231-336HE      |
|-------------------------|-----------------------|---------------------|-----------------------|-----------------------|--------------------------|----------------------|------------------------|-----------------------|
| Location                | Kocanowo/ Poland      | Angowice/ Poland    | Świerki/ Poland       | Wilcze/ Poland        | Rogowo/ Poland           | Przybroda/ Poland    | Baborówko/Poland       | Bychowo/Poland        |
| Plant /cultivar         | winter wheat/ Apostel | winter wheat/ Etana | winter wheat/ Arkadia | winter wheat/ Arkadia | winter wheat/ Medalistka | winter wheat/ Succes | winter wheat / Arkadia | winter wheat / Patras |
| Seeding date            | 20.09.2019            | 25.09.2019          | 30.09.2019            | 16.09.2019            | 24.09.2019               | 03.10.2019           | 04.10.2019             | 26.11.2019            |
| Seeding rate            | 168 kg/ha             | 190 kg/ha           | 160 kg/ha             | 200 kg/ha             | 160 kg/ha                | 230 kg/ha            | 185 kg/ha              | 170 kg/ha             |
| Forecrop                | winter wheat          | winter triticale    | winter rape           | winter wheat          | winter barley            | winter wheat         | winter wheat           | winter wheat          |
| Type of sprayer         | BACCAI                | BACCAI              | BACCAI                | BACCAI                | BACCAI                   | SPRBIC               | Backpack sprayer       | Backpack sprayer      |
| Date of treatment       | 07.04.2020            | 06.04.2020          | 05.04.2020            | 06.04.2020            | 07.04.2020               | 07.04.2020           | 08.04.2020             | 23.04.2020            |
| Plant development phase | BBCH 30-32            | BBCH 30-31          | BBCH 31-32            | BBCH 30-31            | BBCH 30-32               | BBCH 31              | BBCH 30-32             | BBCH 30-32            |
| Soil type               | loamy sand            | sandy loam          | silt loam             | loamy sand            | loamy sand               | sandy loam           | loamy sand             | sandy loam            |
| pH                      | 5.5                   | 5.2                 | 5.3                   | 7.0                   | 6.0                      | 5.8                  | 6.8                    | 6.1                   |
| Water (L/ha)            | 300 L/ha              | 200 L/ha            | 200 L/ha              | 200 L/ha              | 200 L/ha                 | 200 L/ha             | 200 L/ha               | 300 L/ha              |

## Winter wheat 2021

| Report code              | A.T/20 21/011/ PO     | A.T/20 21/012/ PO    | A.T/20 21/014/ PO     | A.T/20 21/015/ PO    | A.T/20 21/016/ PO       | A.T/20 21/017/ PO     | A.T/20 21/018/ PO           | A.T/20 21/019/ PO           | A.T/20 21/020/ PO     | A.T/20 21/021/ PO      | A.T/20 21/022/ PO         | A.T/20 21/023/ PO        | A.T/20 21/024/ PO           | SRPL2 1-403-336HE    | SRPL2 1-404-336HE     | SRPL2 1-405-336HE   | SRPL2 1-406-336HE     | SRPL2 1-407-336HE     | SRPL2 1-408-336HE           | SRPL2 1-409-336HE    |
|--------------------------|-----------------------|----------------------|-----------------------|----------------------|-------------------------|-----------------------|-----------------------------|-----------------------------|-----------------------|------------------------|---------------------------|--------------------------|-----------------------------|----------------------|-----------------------|---------------------|-----------------------|-----------------------|-----------------------------|----------------------|
| Location                 | Kopaszyn/ Poland      | Parkowo/ Poland      | Gaj Mały/ Poland      | Marzęcino/ Poland    | Nowa Wieś Ujska/ Poland | Zamar-te/ Poland      | Lubomin/ Poland             | Wronczyn (Zaparcin)/ Poland | Zamar-te/ Poland      | Karsy/ Poland          | Glinka Szlachecka/ Poland | Trze-mięto-wo/ Poland    | Lubomin/ Poland             | Leonów/ Poland       | Żnin/ Poland          | Owczary/ Poland     | Turze/ Poland         | Babórwko/ Poland      | Krasie-nin Kolo-nia/ Poland | Gudni-ki/ Poland     |
| Plant /cultiva r         | winter wheat/ Arkadia | winter wheat/ Julius | winter wheat/ Tonacja | winter wheat/ Hondia | winter wheat/ Euforia   | winter wheat/ Arkadia | winter wheat/ RGT Metro-nom | winter wheat/ Linus         | winter wheat/ Arkadia | winter wheat/ Kera-mik | winter wheat/ Rotax       | winter wheat/ RGT Reform | winter wheat/ RGT Metro-nom | winter wheat/ Hondia | winter wheat/ Solehio | winter wheat/ Linus | winter wheat/ Apostel | winter wheat/ Arkadia | winter wheat/ Owacja        | winter wheat/ Patras |
| Seeding date             | 19.09.2 020           | 23.09.2 020          | 25.09.2 020           | 20.10.2 020          | 09.11.2 020             | 02.09.2 020           | 10.09.2 020                 | 01.10.2 020                 | 02.10.2 020           | 26.09.2 020            | 23.09.2 020               | 25.09.2 020              | 10.09.2 020                 | 26.09.2 021          | 23.09.2 021           | 05.10.2 020         | 06.10.2 020           | 06.10.2 020           | 03.11.2 020                 | 26.09.2 020          |
| Seeding rate             | 205 kg/ha             | 140 kg/ha            | 190 kg/ha             | 170 kg/ha            | 185 kg/ha               | 180 kg/ha             | 150 kg/ha                   | 175 kg/ha                   | 180 kg/ha             | 140 kg/ha              | 125 kg/ha                 | 130 kg/ha                | 150 kg/ha                   | 180 kg/ha            | 180 kg/ha             | 180 kg/ha           | 190 kg/ha             | 180 kg/ha             | 200 kg/ha                   | 225 kg/ha            |
| Fore-crop                | winter barley         | winter oilseed rape  | winter barley         | spring wheat         | spring barley           | spring barley         | winter oilseed rape         | sugar beet                  | spring barley         | sugar beet             | winter rape               | winter oilseed rape      | winter oilseed rape         | winter oilseed rape  | winter triticale      | winter oilseed rape | winter wheat          | winter oilseed rape   | potato                      | NNNF W               |
| Type of sprayer          | BAC-CAI               | BAC-CAI              | BAC-CAI               | BAC-CAI              | BAC-CAI                 | BAC-CAI               | BAC-CAI                     | BAC-CAI                     | BAC-CAI               | BAC-CAI                | BAC-CAI                   | BAC-CAI                  | BAC-CAI                     | BAC-CAI              | BAC-CAI               | BAC-CAI             | BAC-CAI               | BAC-CAI               | SPR-BIC                     | BAC-CAI              |
| Date of treat-ment       | 30.03.2 021           | 30.03.2 021          | 31.03.2 021           | 19.04.2 021          | 07.05.2 021             | 17.04.2 021           | 31.03.2 021                 | 28.04.2 021                 | 31.03.2 021           | 31.03.2 021            | 31.03.2 021               | 01.04.2 021              | 31.03.2 021                 | 02.04.2 021          | 09.04.2 021           | 22.04.2 021         | 16.04.2 021           | 16.04.2 021           | 12.04.2 021                 | 14.04.2 021          |
| Plant developmen t phase | BBCH 25-29            | BCH 26-30            | BBCH 23-27            | BBCH 21-23           | BBCH 29-32              | BBCH 30-31            | BBCH 21-23                  | BBCH 20-22                  | BBCH 22-24            | BBCH 21-23             | BBCH 25-30                | BBCH 24-26               | BBCH 21-23                  | BBCH 21-22           | BBCH 21-22            | BBCH 21-23          | BBCH 23-25            | BBCH 24-26            | BBCH 26-27                  | BBCH 21-22           |
| Soil type                | sandy loam            | loamy sand           | sandy loam            | silt                 | loamy sand              | sandy loam            | loamy sand                  | sandy loam                  | sandy loam            | loamy sand             | sand                      | sandy loam               | loamy sand                  | sandy loam           | clayey sand           | sandy loam          | clay loam             | loamy sand            | silt loam                   | sandy loam           |
| pH                       | 7.4                   | 5.6                  | 6.9                   | 5.3                  | 5.2                     | 6.2                   | 5.8                         | 5.9                         | 6.2                   | 5.6                    | 6.1                       | 5.9                      | 5.8                         | 6.6                  | 6.8                   | 6.5                 | 7.1                   | 6.5                   | 6.5                         | 4.2                  |
| Water (L/ha)             | 300 L/ha              | 200 L/ha             | 300 L/ha              | 200 L/ha             | 300 L/ha                | 200 L/ha              | 300 L/ha                    | 200 L/ha                    | 200 L/ha              | 200 L/ha               | 200 L/ha                  | 200 L/ha                 | 200 L/ha                    | 300 L/ha             | 300 L/ha              | 300 L/ha            | 200 L/ha              | 200 L/ha              | 300 L/ha                    | 200 L/ha             |

Details of agricultural measures, fertilization, and other plant protection products applied during the experiments are included in detailed field study reports listed above.

Summary of the data from effectiveness trials can be found at Appendix 5.

### Efficacy tests

The 28 efficacy trials have been carried out in winter wheat in 2020 and in 2021 in Poland. The herbicide CHR/H/MEZO 30 OD was applied once per season in the spring:

in winter wheat at the following rates of 0.2, 0.3, 0.4, 0.5 L/ha.

Tested herbicide was applied at the growth stage:

BBCH 21-32 in winter wheat.

**Table 3.2-8: Details on trial methodology**

|                                   |   |   |
|-----------------------------------|---|---|
| <b>Guidelines</b>                 | General guidelines  | PP 1/152 (3) Design and analysis of efficacy evaluation trials  |
|                                   |   | PP 1/181 (3) Conduct and reporting of efficacy evaluation trials including good experimental practice   |
|                                   |   | PP 1/135 (3) Phytotoxicity assessment   |
|                                   | Specific guidelines                                       | PP 1/93 (3) Weeds in cereals  |
| <b>Experimental design</b>        | Plot design   | Randomized Complete Block (RCB) – (28)  |
|                                   | Plot size   | Winter wheat: 10.0-20.0 m <sup>2</sup>  |
|                                   | Number of replications                                    | 4 (28)  |
| <b>Crop</b>                       | Trials per crop   | Winter wheat (28)   |
|                                   | Varieties per crop  | Winter wheat: Apostel, Etana, Arkadia, Medalistka, Succes, Julius, Tonacja, Hondia, Euforia, RGT Metronom, Linus, Keramik, Rotax, RGT Reform, Solehio, Owacja, Patras |
|                                   | Sowing period   | Winter wheat: 16.09.2019-03.10.2019, 02.09.2020-09.11.2020  |
| <b>Application</b>                | Crop stage (BBCH)* at application                         | Winter wheat: BBCH 21-32  |
|                                   | Timing<br>Pest stage at application (1)                   | The data available in Appendix 4.   |
|                                   | Number of applications<br>Intervals between applications  | 1 (28 trials), interval – n/a   |
|                                   | Spray volumes   | Winter wheat: 200-300 L/ha  |
| <b>Assessment</b>                 | Assessment types  | Assessment of efficacy<br>Assessment of phytotoxicity   |
|                                   | Assessment dates  | Assessment dates deatalis is available in Appendix 4  |
| <b>Other relevant information</b> | e.g. Soil type, pH (in case of soil active substance ...) | Winter wheat pH: 4.2-7.4  |
|                                   | e.g. Natural / artificial inoculation...                  | n/a   |
|                                   | e.g. Field / Greenhouse...                                | n/a   |
|                                   | ...   | n/a   |

\* BBCH for weeds, pre-emergence, preventive / curative application, insect stage...

### Winter wheat

A total of 28 trials were carried out in season 2020 and 2021 in Poland to evaluate the efficacy of product CHR/H/MEZO 30 OD for the control of mono- and dicotyledonous weeds in winter wheat.

### 3.2.3-1 Efficacy tests of CHR/H/MEZO 30 OD

#### 3.2.3-1.1 The efficacy of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti*

##### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti* were investigated in 11 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 13-14 DA-A. The effectiveness fluctuated from 39.83–61.64%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 64.00% (14 DA-A), at rate 0.3 L/ha from 5.00% (14 DA-A) to 72.00% (14 DA-A), at rate 0.4 L/ha from 10.00% (14 DA-A) to 81.30% (14 DA-A), at rate 0.5 L/ha from 20.00% (14 DA-A) to 84.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 65.35% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 1).

##### 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti* were investigated in 11 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 21-28 DA-A. The effectiveness fluctuated from 54.44– 80.06%.

The effectiveness fluctuated at rate 0.2 L/ha from 21.30% (28 DA-A) to 81.30% (22 DA-A), at rate 0.3 L/ha from 32.50% (28 DA-A) to 87.50% (22 DA-A), at rate 0.4 L/ha from 47.50% (28 DA-A) to 93.00% (22 DA-A), at rate 0.5 L/ha from 62.30% (28 DA-A) to 95.80% (22 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 82.88% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 2).

#### LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti* were investigated in 11 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 56-100 DA-A. The effectiveness fluctuated from 73.47– 92.12%.

The effectiveness fluctuated at rate 0.2 L/ha from 39.18% (56 DA-A) to 88.30% (89 DA-A), at rate 0.3 L/ha from 54.95% (56 DA-A) to 95.00% (89 DA-A), at rate 0.4 L/ha from 70.80% (85 DA-A) to 98.30% (76 DA-A), at rate 0.5 L/ha from 76.80% (85 DA-A) to 99.50% (76 DA-A).

The efficacy of the tested herbicide was comparable the standard products. In the trials efficacy amounted above 91.33% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 3).

#### 3.2.3-1.2 The efficacy of CHR/H/MEZO 30 OD in control of ALOMY *Alopecurus myosuroides*

##### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of ALOMY *Alopecurus myosuroides* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 12-14 DA-A. The effectiveness fluctuated from 48.13– 61.38%.

The effectiveness fluctuated at rate 0.2 L/ha from 40.00% (15 DA-A) to 52.50% (14 DA-A), at rate 0.3 L/ha from 18.30% (14 DA-A) to 77.50% (14 DA-A), at rate 0.4 L/ha from 30.00% (12 DA-A) to 93.80% (14 DA-A), at rate 0.5 L/ha from 35.00% (12 DA-A) to 99.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 64.15% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 4).

## 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of ALOMY *Alopecurus myosuroides* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium to high level of efficacy 27-28 DA-A. The effectiveness fluctuated from 71.28–91.05%.

The effectiveness fluctuated at rate 0.2 L/ha from 60.00% (28 DA-A) to 81.30% (28 DA-A), at rate 0.3 L/ha from 62.50% (27 DA-A) to 95.80% (28 DA-A), at rate 0.4 L/ha from 73.80% (27 DA-A) to 100% (28 DA-A), at rate 0.5 L/ha from 77.50% (27 DA-A) to 100% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 93.43% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 5).

## LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of ALOMY *Alopecurus myosuroides* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium to high level of efficacy 45-100 DA-A. The effectiveness fluctuated from 77.75–94.77%.

The effectiveness fluctuated at rate 0.2 L/ha from 66.30% (53 DA-A) to 83.27% (56 DA-A), at rate 0.3 L/ha from 68.80% (66 DA-A) to 100% (56 DA-A), at rate 0.4 L/ha from 75.00% (66 DA-A) to 100% (56 DA-A), at rate 0.5 L/ha from 85.00% (66 DA-A) to 100% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 96.22% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 6).

### 3.2.3-1.3 The efficacy of CHR/H/MEZO 30 OD in control of POAAN *Poa annua*

#### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 13-14 DA-A. The effectiveness fluctuated from 20.21–46.05%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 37.50% (13 DA-A), at rate 0.3 L/ha from 0.00% (14 DA-A) to 48.80% (13 DA-A), at rate 0.4 L/ha from 6.30% (14 DA-A) to 52.50% (14 DA-A), at rate 0.5 L/ha from 22.50% (14 DA-A) to 61.30% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 54.49% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 7).

#### 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 22-28 DA-A. The effectiveness fluctuated from 33.98–71.44%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (28 DA-A) to 61.30% (278 DA-A), at rate 0.3 L/ha from 0.00% (28 DA-A) to 71.30% (27 DA-A), at rate 0.4 L/ha from 12.50% (28 DA-A) to 81.30% (27 DA-A), at rate 0.5 L/ha from 37.50% (28 DA-A) to 90.00% (28 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 86.26% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 8).



## LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* were investigated in 7 trials. Two reports (A.T/2021/016/PO and SRPL21-409-336HE) showed significantly lower efficacy results, which may have been due to the low air temperature during and just after the treatment. For this reason, these results are presented separately.

The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 53-76 DA-A. The effectiveness fluctuated from 57.27–85.52%.

The effectiveness fluctuated at rate 0.2 L/ha from 52.50% (76 DA-A) to 61.30% (72 DA-A), at rate 0.3 L/ha from 58.80% (53 DA-A) to 77.50% (76 DA-A), at rate 0.4 L/ha from 61.30% (53 DA-A) to 81.30% (76 DA-A), at rate 0.5 L/ha from 75.00% (53 DA-A) to 100% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 92.72% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 9a and 9b).

### 3.2.3-1.4 The efficacy CHR/H/MEZO 30 OD in control of BROMO *Bromus hordeaceus*

#### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of BROMO *Bromus hordeaceus* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 14 DA-A. The effectiveness fluctuated from 21.25–49.18%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 55.00% (14 DA-A), at rate 0.3 L/ha from 0.00% (14 DA-A) to 72.50% (14 DA-A), at rate 0.4 L/ha from 6.30% (14 DA-A) to 72.50% (14 DA-A), at rate 0.5 L/ha from 37.50% (14 DA-A) to 77.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 56.27% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 10).

#### 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of BROMO *Bromus hordeaceus* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 22-28 DA-A. The effectiveness fluctuated from 26.88–70.88%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (22 DA-A) to 70.00% (28 DA-A), at rate 0.3 L/ha from 6.30% (28 DA-A) to 86.30% (28 DA-A), at rate 0.4 L/ha from 10.00% (28 DA-A) to 92.50% (28 DA-A), at rate 0.5 L/ha from 52.50% (28 DA-A) to 99.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 73.57% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 11).

## LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of BROMO *Bromus hordeaceus* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 47-85 DA-A. The effectiveness fluctuated from 48.78–77.73%.

The effectiveness fluctuated at rate 0.2 L/ha from 23.80% (85 DA-A) to 75.00% (49 DA-A), at rate 0.3 L/ha from 31.30% (85 DA-A) to 87.50% (49 DA-A), at rate 0.4 L/ha from 32.50% (85 DA-A) to 96.80% (49 DA-A), at rate 0.5 L/ha from 55.00% (85 DA-A) to 99.00% (49 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 87.28% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 12).

### **3.2.3-1.5 The efficacy of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium***

#### **14 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 12-14 DA-A. The effectiveness fluctuated from 15.76– 45.80%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 41.30% (14 DA-A), at rate 0.3 L/ha from 0.00% (14 DA-A) to 55.00% (14 DA-A), at rate 0.4 L/ha from 0.00% (14 DA-A) to 68.80% (14 DA-A), at rate 0.5 L/ha from 16.30% (14 DA-A) to 71.30% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 52.27% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 13).

#### **21-28 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 27-28 DA-A. The effectiveness fluctuated from 22.76– 63.38%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (28 DA-A) to 40.00% (28 DA-A), at rate 0.3 L/ha from 0.00% (28 DA-A) to 68.80% (28 DA-A), at rate 0.4 L/ha from 11.30% (28 DA-A) to 80.00% (28 DA-A), at rate 0.5 L/ha from 32.50% (28 DA-A) to 82.50% (28 DA-A).

The efficacy of the tested herbicide was lower to the standard products. In the trials efficacy amounted above 76.18% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 14).

#### **LAST ASSESSMENT**

The efficiency of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low to medium level of efficacy 54-89 DA-A. The effectiveness fluctuated from 46.45– 89.66%.

The effectiveness fluctuated at rate 0.2 L/ha from 14.40% (85 DA-A) to 77.50% (89 DA-A), at rate 0.3 L/ha from 18.60% (85 DA-A) to 87.50% (89 DA-A), at rate 0.4 L/ha from 54.10% (85 DA-A) to 91.00% (89 DA-A), at rate 0.5 L/ha from 72.70% (85 DA-A) to 100% (89 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 93.87% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 15).

### **3.2.3-1.6 The efficacy of CHR/H/MEZO 30 OD in control of VIOAR *Viola arvensis***

#### **14 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of VIOAR *Viola arvensis* were investigated in 15 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 13-14 DA-A. The effectiveness fluctuated from 10.76– 29.30%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 31.30% (14 DA-A), at rate 0.3 L/ha from 0.00% (14 DA-A) to 58.30% (14 DA-A), at rate 0.4 L/ha from 0.00% (14 DA-A) to 56.80% (14 DA-A), at rate 0.5 L/ha from 0.00% (14 DA-A) to 57.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 44.93% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 16).

## 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of VIOAR *Viola arvensis* were investigated in 15 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 21-28 DA-A. The effectiveness fluctuated from 16.26– 38.38%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (21 DA-A) to 47.50% (28 DA-A), at rate 0.3 L/ha from 0.00% (21 DA-A) to 57.80% (28 DA-A), at rate 0.4 L/ha from 0.00% (21 DA-A) to 58.80% (28 DA-A), at rate 0.5 L/ha from 20.00% (21 DA-A) to 63.80% (28 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 68.02% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 17).

## LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of VIOAR *Viola arvensis* were investigated in 9 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 49-78 DA-A. The effectiveness fluctuated from 0.00– 33.91%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (49 DA-A) to 0.00% (78 DA-A), at rate 0.3 L/ha from 0.00% (49 DA-A) to 85.50% (56 DA-A), at rate 0.4 L/ha from 2.50% (49 DA-A) to 85.00% (56 DA-A), at rate 0.5 L/ha from 2.50% (49 DA-A) to 85.50% (56 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 75.28% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 18).

### 3.2.3-1.7 The efficacy of CHR/H/MEZO 30 OD in control of BRSNW *Brassica napus*

## 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of BRSNW *Brassica napus* were investigated in 9 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 12-14 DA-A. The effectiveness fluctuated from 59.24– 80.10%.

The effectiveness fluctuated at rate 0.2 L/ha from 31.30% (14 DA-A) to 88.30% (14 DA-A), at rate 0.3 L/ha from 32.50% (14 DA-A) to 94.50% (14 DA-A), at rate 0.4 L/ha from 37.50% (14 DA-A) to 99.00% (14 DA-A), at rate 0.5 L/ha from 45.00% (14 DA-A) to 99.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 82.21% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 19).

## 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of BRSNW *Brassica napus* were investigated in 9 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 27-28 DA-A. The effectiveness fluctuated from 86.70– 97.42%.

The effectiveness fluctuated at rate 0.2 L/ha from 65.00% (28 DA-A) to 94.00% (28 DA-A), at rate 0.3 L/ha from 83.00% (27 DA-A) to 99.00% (27 DA-A), at rate 0.4 L/ha from 86.50% (27 DA-A) to 100% (28 DA-A), at rate 0.5 L/ha from 91.00% (27 DA-A) to 100% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 97.89% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 20).

## LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of BRSNW *Brassica napus* were investigated in 8 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 49-78 DA-A. The effectiveness fluctuated from 87.95– 98.00%.

The effectiveness fluctuated at rate 0.2 L/ha from 77.50% (56 DA-A) to 92.50% (76 DA-A), at rate 0.3 L/ha from 83.50% (78 DA-A) to 100% (76 DA-A), at rate 0.4 L/ha from 86.80% (78 DA-A) to 100% (76 DA-A), at rate 0.5 L/ha from 92.00% (78 DA-A) to 100% (76 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 99.88% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 21).

### 3.2.3-1.8 The efficacy of CHR/H/MEZO 30 OD in control of **ANTAR** *Anthemis arvensis*

#### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of **ANTAR** *Anthemis arvensis* were investigated in 8 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 12-14 DA-A. The effectiveness fluctuated from 45.11– 58.31%.

The effectiveness fluctuated at rate 0.2 L/ha from 25.00% (13 DA-A) to 68.30% (14 DA-A), at rate 0.3 L/ha from 22.50% (12 DA-A) to 73.80% (14 DA-A), at rate 0.4 L/ha from 27.50% (12 DA-A) to 84.50% (14 DA-A), at rate 0.5 L/ha from 30.00% (12 DA-A) to 91.50% (14 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 71.10% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 22).

#### 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of **ANTAR** *Anthemis arvensis* were investigated in 8 trials. Three reports (A.T/2021/017/PO, A.T/2021/020/PO and A.T/2021/021/PO) showed significantly lower efficacy results, which may have been due to the low air temperature during and just after the treatment. For this reason, these results are presented separately.

The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 21-28 DA-A. The effectiveness fluctuated from 67.10– 86.64%.

The effectiveness fluctuated at rate 0.2 L/ha from 47.50% (27 DA-A) to 73.80% (28 DA-A), at rate 0.3 L/ha from 68.80% (27 DA-A) to 80.00% (28 DA-A), at rate 0.4 L/ha from 75.00% (27 DA-A) to 88.50% (28 DA-A), at rate 0.5 L/ha from 78.80% (27 DA-A) to 95.30% (28 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 93.96% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 23a and 23b).

### LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of **ANTAR** *Anthemis arvensis* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium to high level of efficacy 54-85 DA-A. The effectiveness fluctuated from 61.86– 88.75%.

The effectiveness fluctuated at rate 0.2 L/ha from 45.00% (89 DA-A) to 75.00% (76 DA-A), at rate 0.3 L/ha from 55.00% (89 DA-A) to 82.50% (76 DA-A), at rate 0.4 L/ha from 68.80% (89 DA-A) to 86.30% (76 DA-A), at rate 0.5 L/ha from 77.50% (89 DA-A) to 100% (85 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 98.55% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 24).

### 3.2.3-1.9 The efficacy of CHR/H/MEZO 30 OD in control of **PAPRH** *Papaver rhoeas*

#### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of PAPRH *Papaver rhoeas* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 13-14 DA-A. The effectiveness fluctuated from 40.75– 56.62%.

The effectiveness fluctuated at rate 0.2 L/ha from 30.00% (14 DA-A) to 70.00% (14 DA-A), at rate 0.3 L/ha from 30.00% (14 DA-A) to 75.00% (14 DA-A), at rate 0.4 L/ha from 30.00% (14 DA-A) to 81.00% (14 DA-A), at rate 0.5 L/ha from 40.00% (14 DA-A) to 85.00% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 65.56% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 25).

#### **21-28 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of PAPRH *Papaver rhoeas* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 27-28 DA-A. The effectiveness fluctuated from 66.56– 82.89%.

The effectiveness fluctuated at rate 0.2 L/ha from 52.50% (28 DA-A) to 75.00% (28 DA-A), at rate 0.3 L/ha from 55.80% (27 DA-A) to 82.80% (28 DA-A), at rate 0.4 L/ha from 55.80% (27 DA-A) to 90.00% (28 DA-A), at rate 0.5 L/ha from 57.30% (27 DA-A) to 91.50% (28 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 87.48% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 26).

#### **LAST ASSESSMENT**

The efficiency of CHR/H/MEZO 30 OD in control of PAPRH *Papaver rhoeas* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 45-100 DA-A. The effectiveness fluctuated from 65.33– 89.61%.

The effectiveness fluctuated at rate 0.2 L/ha from 55.00% (56 DA-A) to 75.00% (100 DA-A), at rate 0.3 L/ha from 57.50% (56 DA-A) to 88.80% (56 DA-A), at rate 0.4 L/ha from 75.00% (56 DA-A) to 90.00% (56 DA-A), at rate 0.5 L/ha from 82.50% (45 DA-A) to 100% (47 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 94.63% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 27).

#### **3.2.3-1.10 The efficacy of CHR/H/MEZO 30 OD in control of SINAR *Sinapsis arvensis***

##### **14 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of SINAR *Sinapsis arvensis* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 12-14 DA-A. The effectiveness fluctuated from 56.42– 74.03%.

The effectiveness fluctuated at rate 0.2 L/ha from 30.00% (14 DA-A) to 85.80% (14 DA-A), at rate 0.3 L/ha from 37.50% (14 DA-A) to 89.80% (14 DA-A), at rate 0.4 L/ha from 40.00% (14 DA-A) to 93.80% (14 DA-A), at rate 0.5 L/ha from 51.30% (14 DA-A) to 97.50% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 76.95% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 28).

##### **21-28 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of SINAR *Sinapsis arvensis* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 27-28 DA-A. The effectiveness fluctuated from 80.58– 98.00%.

The effectiveness fluctuated at rate 0.2 L/ha from 62.50% (28 DA-A) to 87.80% (28 DA-A), at rate 0.3 L/ha from 81.30% (27 DA-A) to 95.00% (28 DA-A), at rate 0.4 L/ha from 90.00% (27 DA-A) to 100% (28 DA-A), at rate 0.5 L/ha from 90.00% (27 DA-A) to 100% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 98.33% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 29).

#### LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of SINAR *Sinapsis arvensis* were investigated in 5 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 49-76 DA-A. The effectiveness fluctuated from 82.83– 100%.

The effectiveness fluctuated at rate 0.2 L/ha from 78.80% (56 DA-A) to 87.50% (54 DA-A), at rate 0.3 L/ha from 88.00% (66 DA-A) to 100% (56 DA-A), at rate 0.4 L/ha from 95.00% (66 DA-A) to 100% (76 DA-A), at rate 0.5 L/ha from 100% (49 DA-A) to 100% (76 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 100% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 30).

#### 3.2.3-1.11 The efficacy of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris*

##### 14 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 14 DA-A. The effectiveness fluctuated from 46.01– 68.86%.

The effectiveness fluctuated at rate 0.2 L/ha from 33.80% (14 DA-A) to 67.50% (14 DA-A), at rate 0.3 L/ha from 31.30% (14 DA-A) to 75.00% (14 DA-A), at rate 0.4 L/ha from 40.00% (14 DA-A) to 76.30% (14 DA-A), at rate 0.5 L/ha from 50.00% (14 DA-A) to 82.50% (14 DA-A).

The efficacy of the tested herbicide was lower than the standard products. In the trials efficacy amounted above 75.59% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 31).

##### 21-28 DA-A

The efficiency of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 21-28 DA-A. The effectiveness fluctuated from 57.76– 86.94%.

The effectiveness fluctuated at rate 0.2 L/ha from 50.00% (28 DA-A) to 65.00% (28 DA-A), at rate 0.3 L/ha from 57.50% (28 DA-A) to 80.00% (28 DA-A), at rate 0.4 L/ha from 73.75% (28 DA-A) to 85.30% (28 DA-A), at rate 0.5 L/ha from 83.75% (21 DA-A) to 89.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 94.23% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 32).

#### LAST ASSESSMENT

The efficiency of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* were investigated in 4 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 47-58 DA-A. The effectiveness fluctuated from 60.63– 91.14%.

The effectiveness fluctuated at rate 0.2 L/ha from 58.75% (56 DA-A) to 62.50% (49 DA-A), at rate 0.3 L/ha from 62.50% (47 DA-A) to 81.30% (49 DA-A), at rate 0.4 L/ha from 76.25% (56 DA-A) to 86.30% (49 DA-A), at rate 0.5 L/ha from 86.25% (56 DA-A) to 100% (47 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 91.38% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 33).

### **3.2.3-1.12 The efficacy of CHR/H/MEZO 30 OD in control of STEME *Stellaria media***

#### **14 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of STEME *Stellaria media* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 14-15 DA-A. The effectiveness fluctuated from 38.13– 52.15%.

The effectiveness fluctuated at rate 0.2 L/ha from 27.50% (14 DA-A) to 45.00% (14 DA-A), at rate 0.3 L/ha from 5.00% (14 DA-A) to 60.00% (14 DA-A), at rate 0.4 L/ha from 17.50% (14 DA-A) to 67.50% (14 DA-A), at rate 0.5 L/ha from 27.50% (14 DA-A) to 76.30% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 65.49% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 34).

#### **21-28 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of STEME *Stellaria media* were investigated in 7 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the medium level of efficacy 22-28 DA-A. The effectiveness fluctuated from 67.50– 79.66%.

The effectiveness fluctuated at rate 0.2 L/ha from 65.00% (28 DA-A) to 70.00% (28 DA-A), at rate 0.3 L/ha from 15.00% (28 DA-A) to 88.80% (28 DA-A), at rate 0.4 L/ha from 37.50% (28 DA-A) to 99.00% (28 DA-A), at rate 0.5 L/ha from 37.50% (28 DA-A) to 99.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 84.34% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 35).

### **LAST ASSESSMENT**

The efficiency of CHR/H/MEZO 30 OD in control of STEME *Stellaria media* were investigated in 5 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the high level of efficacy 45-58 DA-A. The effectiveness fluctuated from 68.78– 87.96%.

The effectiveness fluctuated at rate 0.2 L/ha from 66.25% (56 DA-A) to 71.30% (45 DA-A), at rate 0.3 L/ha from 30.00% (56 DA-A) to 87.50% (56 DA-A), at rate 0.4 L/ha from 40.00% (56 DA-A) to 99.00% (45 DA-A), at rate 0.5 L/ha from 70.00% (56 DA-A) to 100% (47 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 92.50% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 36).

### **3.2.3-1.13 The efficacy of CHR/H/MEZO 30 OD in control of VERHE *Veronica hederifolia***

#### **14 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of VERHE *Veronica hederifolia* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 14 DA-A. The effectiveness fluctuated from 10.85– 31.06%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (14 DA-A) to 26.25% (14 DA-A), at rate 0.3 L/ha from 0.00% (14 DA-A) to 51.30% (14 DA-A), at rate 0.4 L/ha from 0.00% (14 DA-A) to 51.80% (14 DA-A), at rate 0.5 L/ha from 0.00% (14 DA-A) to 51.30% (14 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 50.55% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 37).

#### **21-28 DA-A**

The efficiency of CHR/H/MEZO 30 OD in control of VERHE *Veronica hederifolia* were investigated in 6 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 27-28 DA-A. The effectiveness fluctuated from 29.85– 40.71%.

The effectiveness fluctuated at rate 0.2 L/ha from 0.00% (28 DA-A) to 51.25% (28 DA-A), at rate 0.3 L/ha from 0.00% (28 DA-A) to 58.75% (28 DA-A), at rate 0.4 L/ha from 0.00% (28 DA-A) to 63.75% (28 DA-A), at rate 0.5 L/ha from 0.00% (28 DA-A) to 71.25% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 65.73% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 38).

#### **LAST ASSESSMENT**














The efficiency of CHR/H/MEZO 30 OD in control of VERHE *Veronica hederifolia* were investigated in 4 trials. The tested product at rates: 0.2 L/ha, 0.3 L/ha, 0.4 L/ha, 0.5 L/ha controlled this species of weed at the low level of efficacy 51-66 DA-A. The effectiveness fluctuated from 37.83–51.25%.

The effectiveness amounted at rate 0.2 L/ha from 51.25% (56 DA-A), fluctuated at rate 0.3 L/ha from 0.00% (51 DA-A) to 81.30% (56 DA-A), at rate 0.4 L/ha from 0.00% (51 DA-A) to 82.50% (56 DA-A), at rate 0.5 L/ha from 0.00% (51 DA-A) to 82.30% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard products. In the trials efficacy amounted above 69.75% for Atlantis Star + Biopower 276,5 SL during the assessment (Appendix 5 tab. 39).



**Table 3.2-1: Efficacy of product CHR/H/MEZO 30 OD at the timing of assessment**

| Target | Grouping*                      | Number of trials | Infestation in the untreated control (unit) |              | % control                    |               |                              |               |                              |               |                              |               |  |               | No of trials where product is >, <, = compared to standard(s)**                         |
|--------|--------------------------------|------------------|---|--------------|------------------------------|---------------|------------------------------|---------------|------------------------------|---------------|------------------------------|---------------|--|---------------|---|
|        |                                |                  |   |              | CHR/H/MEZO 30 OD at 0.2 L/ha |               | CHR/H/MEZO 30 OD at 0.3 L/ha |               | CHR/H/MEZO 30 OD at 0.4 L/ha |               | CHR/H/MEZO 30 OD at 0.5 L/ha |               | Atlantis Star + Biopow-er 276,5 SL at 0.333 kg/ha + 1.0 L/ha |               |   |
|        |                                |                  | Mean  | Min & Max    | Mean                         | Min & Max     | Mean                         | Min & Max     | Mean                         | Min & Max     | Mean                         | Min & Max     | Mean   | Min & Max     |   |
| weeds  | <i>Apera spica-venti</i>       | 11               | 93.0  | 7.5 & 450.0  | 73.47                        | 39.18 & 88.30 | 81.86                        | 54.95 & 95.00 | 86.65                        | 70.80 & 98.30 | 92.12                        | 76.80 & 99.50 | 91.33  | 68.80 & 100   | -    |
|        | <i>Alopecurus myosuroides</i>  | 6                | 164.8                                       | 56.0 & 500.0 | 77.75                        | 66.30 & 83.27 | 85.74                        | 68.80 & 100   | 89.68                        | 75.00 & 100   | 94.77                        | 85.00 & 100   | 96.22  | 89.80 & 100   | -    |
|        | <i>Poa annua</i>               | 5                | 38.3  | 7.0 & 130.0  | 57.27                        | 52.50 & 61.30 | 68.38                        | 58.80 & 77.50 | 76.28                        | 61.30 & 81.30 | 85.52                        | 75.00 & 100   | 92.72  | 86.30 & 100   | -    |
|        | <i>Bromus hordeaceus</i>       | 6                | 29.0  | 10.0 & 83.0  | 48.78                        | 23.80 & 75.00 | 51.45                        | 31.30 & 87.50 | 64.91                        | 32.50 & 96.80 | 77.73                        | 55.00 & 99.00 | 87.28  | 63.80 & 98.80 | -    |
|        | <i>Lolium perennium</i>        | 6                | 54.1  | 9.0 & 180.0  | 46.45                        | 14.40 & 77.50 | 65.88                        | 18.60 & 87.50 | 78.27                        | 54.10 & 91.00 | 89.66                        | 72.70 & 100   | 93.87  | 85.50 & 100   | -    |
|        | <i>Viola arvensis</i>          | 15               | 19.2  | 5.0 & 115.0  | 16.26                        | 0.00 & 47.50  | 22.11                        | 0.00 & 57.80  | 28.26                        | 0.00 & 58.80  | 38.38                        | 20.00 & 63.80 | 68.02  | 23.75 & 90.00 | -    |
|        | <i>Brassica napus</i>          | 9                | 5.7   | 5.0 & 10.3   | 86.70                        | 65.00 & 94.00 | 94.46                        | 83.00 & 99.00 | 96.72                        | 86.50 & 100   | 97.42                        | 91.00 & 100   | 97.89  | 94.50 & 100   | -    |
|        | <i>Anthemis arvensis</i>       | 5                | 5.4   | 5.0 & 6.0    | 67.10                        | 47.50 & 73.80 | 74.92                        | 68.80 & 80.00 | 80.70                        | 75.00 & 88.50 | 86.64                        | 78.80 & 95.30 | 93.96  | 85.00 & 100   | -    |
|        | <i>Papaver rhoeas</i>          | 7                | 7.5   | 5.0 & 14.0   | 66.56                        | 52.50 & 75.00 | 71.61                        | 55.80 & 82.80 | 78.99                        | 55.80 & 90.00 | 82.89                        | 57.30 & 91.50 | 87.48  | 57.50 & 99.00 | -   |
|        | <i>Sinapsis arvensis</i>       | 6                | 7.6   | 5.0 & 11.3   | 80.58                        | 62.50 & 87.80 | 91.82                        | 81.30 & 95.00 | 97.58                        | 90.00 & 100   | 98.00                        | 90.00 & 100   | 98.33  | 90.00 & 100   | -  |
|        | <i>Capsella brusa-pastoris</i> | 7                | 6.3   | 5.0 & 8.0    | 57.76                        | 50.00 & 65.00 | 72.45                        | 57.50 & 80.00 | 81.48                        | 73.75 & 85.30 | 86.94                        | 83.75 & 89.00 | 94.23  | 85.00 & 100   | -  |
|        | <i>Stellaria media</i>         | 6                | 6.9   | 5.0 & 11.0   | 67.50                        | 65.00 & 70.00 | 60.91                        | 15.00 & 88.80 | 74.71                        | 37.50 & 99.00 | 79.66                        | 37.50 & 99.0  | 84.34  | 37.50 & 100   | -  |
|        | <i>Veronica herderifolia</i>   | 6                | 7.8   | 5.0 & 12.0   | 29.85                        | 0.00 & 51.25  | 31.93                        | 0.00 & 58.75  | 33.89                        | 0.00 & 63.75  | 40.71                        | 0.00 & 71.25  | 65.73  | 41.30 & 94.30 | -  |

\* A, B, C can be a “trial group” (as defined in page 10, e.g. EPPO climatic zone A) or a specific target (e.g. weed A, weed B...). In order to adapt the table to the data presented, it is possible:  
- to add lines or columns,  
- to duplicate the table (e.g. one table for “trial group 1”, one table for “trial group 2”, one table for “all”).

\*\* Optional

## Minor use

Not applicable In line to GAP table – Applicant would like to register CHR/H/MEZO 30 OD in line to Article 51 for controlling weeds in minor crops: spelt, Emmer wheat, Einkorn wheat, Durum wheat, Triticum durum, Spring Rye.

## Yield (and relevant quality indicators), from efficacy trials (in the presence of challenging pest populations)

Not applicable

## Summary and conclusion

The obtained data in performed trials show that CHR/H/MEZO 30 OD provides benefits against the most important weeds in winter wheat as shown in the tables below.

The following table describes the effectiveness of weeds:

|                             |   |
|-----------------------------|---|
| S (Susceptible)             | > 85% (within each trial the average must be higher than 85%) |
| MS (Moderately Susceptible) | 70 – 85%  |
| MT (Moderately Tolerant )   | 60 – 70%  |
| T (Tolerant)                | < 60%   |

The following table shows the average sensitivity of weeds in winter wheat:

| Product code (L, kg/ha)      | EPPO code | Scientific name                | DA-A        | Average | Efficacy |
|------------------------------|-----------|--------------------------------|-------------|---------|----------|
| CHR/H/MEZO 30<br>OD 0.2 L/ha | APESV     | <i>Apera spica-venti</i>       | 56-100 DA-A | 73.47   | MS       |
|                              | ALOMY     | <i>Alopecurus myosuroides</i>  | 45-100 DA-A | 77.75   | MS       |
|                              | POAAN     | <i>Poa annua</i>               | 53-76 DA-A  | 57.27   | T        |
|                              | BROMO     | <i>Bromus hordeaceus</i>       | 45-85 DA-A  | 48.78   | T        |
|                              | LOLPE     | <i>Lolium perennium</i>        | 54-89 DA-A  | 46.45   | T        |
|                              | VIOAR     | <i>Viola arvensis</i>          | 21-28 DA-A  | 16.26   | T        |
|                              | BRSNW     | <i>Brassica napus</i>          | 27-28 DA-A  | 86.70   | S        |
|                              | ANTAR     | <i>Anthemis arvensis</i>       | 21-28 DA-A  | 67.10   | MT       |
|                              | PAPRH     | <i>Papaver rhoeas</i>          | 27-28 DA-A  | 66.56   | MT       |
|                              | SINAR     | <i>Sinapsis arvensis</i>       | 27-28 DA-A  | 80.58   | MS       |
|                              | CAPBP     | <i>Capsella brusa-pastoris</i> | 21-28 DA-A  | 57.76   | T        |
|                              | STEME     | <i>Stellaria media</i>         | 22-28 DA-A  | 67.50   | MT       |
|                              | VERHE     | <i>Veronica herderifolia</i>   | 27-28 DA-A  | 29.85   | T        |
|                              | APESV     | <i>Apera spica-venti</i>       | 56-100 DA-A | 81.86   | MS       |
| CHR/H/MEZO 30<br>OD 0.3 L/ha | ALOMY     | <i>Alopecurus myosuroides</i>  | 45-100 DA-A | 85.74   | S        |
|                              | POAAN     | <i>Poa annua</i>               | 53-76 DA-A  | 68.38   | MT       |
|                              | BROMO     | <i>Bromus hordeaceus</i>       | 45-85 DA-A  | 51.45   | T        |
|                              | LOLPE     | <i>Lolium perennium</i>        | 54-89 DA-A  | 65.88   | MT       |
|                              | VIOAR     | <i>Viola arvensis</i>          | 21-28 DA-A  | 22.11   | T        |
|                              | BRSNW     | <i>Brassica napus</i>          | 27-28 DA-A  | 94.46   | S        |
|                              | ANTAR     | <i>Anthemis arvensis</i>       | 21-28 DA-A  | 74.92   | MS       |
|                              | PAPRH     | <i>Papaver rhoeas</i>          | 27-28 DA-A  | 71.61   | MS       |
|                              | SINAR     | <i>Sinapsis arvensis</i>       | 27-28 DA-A  | 91.82   | S        |
|                              | CAPBP     | <i>Capsella brusa-pastoris</i> | 21-28 DA-A  | 72.45   | MS       |
|                              | STEME     | <i>Stellaria media</i>         | 22-28 DA-A  | 60.91   | MT       |
|                              | VERHE     | <i>Veronica herderifolia</i>   | 27-28 DA-A  | 31.93   | T        |
| CHR/H/MEZO 30                | APESV     | <i>Apera spica-venti</i>       | 56-100 DA-A | 86.65   | S        |

|   |       |                                |             |       |    |
|---|-------|--------------------------------|-------------|-------|----|
| OD 0.4 L/ha   | ALOMY | <i>Alopecurus myosuroides</i>  | 45-100 DA-A | 89.68 | S  |
|   | POAAN | <i>Poa annua</i>               | 53-76 DA-A  | 76.28 | MS |
|   | BROMO | <i>Bromus hordeaceus</i>       | 45-85 DA-A  | 64.91 | MT |
|   | LOLPE | <i>Lolium perennium</i>        | 54-89 DA-A  | 78.27 | MS |
|   | VIOAR | <i>Viola arvensis</i>          | 21-28 DA-A  | 28.26 | T  |
|   | BRSNW | <i>Brassica napus</i>          | 27-28 DA-A  | 96.72 | S  |
|   | ANTAR | <i>Anthemis arvensis</i>       | 21-28 DA-A  | 80.70 | MS |
|   | PAPRH | <i>Papaver rhoeas</i>          | 27-28 DA-A  | 78.99 | MS |
|   | SINAR | <i>Sinapsis arvensis</i>       | 27-28 DA-A  | 97.58 | S  |
|   | CAPBP | <i>Capsella brusa-pastoris</i> | 21-28 DA-A  | 81.48 | MS |
|   | STEME | <i>Stellaria media</i>         | 22-28 DA-A  | 74.71 | MS |
|   | VERHE | <i>Veronica herderifolia</i>   | 27-28 DA-A  | 33.89 | T  |
| CHR/H/MEZO 30<br>OD 0.5 L/ha                                      | APESV | <i>Apera spica-venti</i>       | 56-100 DA-A | 92.12 | S  |
|   | ALOMY | <i>Alopecurus myosuroides</i>  | 45-100 DA-A | 94.77 | S  |
|   | POAAN | <i>Poa annua</i>               | 53-76 DA-A  | 85.52 | S  |
|   | BROMO | <i>Bromus hordeaceus</i>       | 45-85 DA-A  | 77.73 | MS |
|   | LOLPE | <i>Lolium perennium</i>        | 54-89 DA-A  | 89.66 | S  |
|   | VIOAR | <i>Viola arvensis</i>          | 21-28 DA-A  | 38.38 | T  |
|   | BRSNW | <i>Brassica napus</i>          | 27-28 DA-A  | 97.42 | S  |
|   | ANTAR | <i>Anthemis arvensis</i>       | 21-28 DA-A  | 86.64 | S  |
|   | PAPRH | <i>Papaver rhoeas</i>          | 27-28 DA-A  | 82.89 | MS |
|   | SINAR | <i>Sinapsis arvensis</i>       | 27-28 DA-A  | 98.00 | S  |
|   | CAPBP | <i>Capsella brusa-pastoris</i> | 21-28 DA-A  | 86.94 | S  |
|   | STEME | <i>Stellaria media</i>         | 22-28 DA-A  | 79.66 | MS |
| Atlantis Star +<br>Biopower 276,5 SL<br>0.333 kg/ha + 1.0<br>L/ha | VERHE | <i>Veronica herderifolia</i>   | 27-28 DA-A  | 40.71 | T  |
|   | APESV | <i>Apera spica-venti</i>       | 56-100 DA-A | 91.33 | S  |
|   | ALOMY | <i>Alopecurus myosuroides</i>  | 45-100 DA-A | 96.22 | S  |
|   | POAAN | <i>Poa annua</i>               | 53-76 DA-A  | 92.72 | S  |
|   | BROMO | <i>Bromus hordeaceus</i>       | 45-85 DA-A  | 87.28 | S  |
|   | LOLPE | <i>Lolium perennium</i>        | 54-89 DA-A  | 93.87 | S  |
|   | VIOAR | <i>Viola arvensis</i>          | 21-28 DA-A  | 68.02 | MT |
|   | BRSNW | <i>Brassica napus</i>          | 27-28 DA-A  | 97.89 | S  |
|   | ANTAR | <i>Anthemis arvensis</i>       | 21-28 DA-A  | 93.96 | S  |
|   | PAPRH | <i>Papaver rhoeas</i>          | 27-28 DA-A  | 87.48 | S  |
|   | SINAR | <i>Sinapsis arvensis</i>       | 27-28 DA-A  | 98.33 | S  |
|   | CAPBP | <i>Capsella brusa-pastoris</i> | 21-28 DA-A  | 94.23 | S  |
|   | STEME | <i>Stellaria media</i>         | 22-28 DA-A  | 84.34 | MS |
|   | VERHE | <i>Veronica herderifolia</i>   | 27-28 DA-A  | 65.73 | MT |

On the basis of submitted research, it is possible to state that CHR/H/MEZO 30 OD used at dose controlled:

Dose CHR/H/MEZO 30 OD 0.2 L/ha

Susceptible: BRSNW *Brassica napus*,

Moderately Susceptible: APESV *Apera spica-venti*, ALOMY *Alopecurus myosuroides*, SINAR *Sinapsis arvensis*,

Moderately Tolerant: ANTAR *Anthemis arvensis*, PAPRH *Papaver rhoeas*, STEME *Stellaria media*,

Tolerant: POAAN *Poa annua*, BROMO *Bromus hordeaceus*, LOLPE *Lolium perennium*, VIOAR *Viola arvensis*, CAPBP *Capsella brusa-pastoris*, VERHE *Veronica herderifolia*,

Dose CHR/H/MEZO 30 OD 0.3 L/ha

Susceptible: ALOMY *Alopecurus myosuroides*, BRSNW *Brassica napus*, SINAR *Sinapsis arvensis*,

Moderately Susceptible: APESV *Apera spica-venti*, ANTAR *Anthemis arvensis*, PAPRH *Papaver rhoeas*, CAPBP *Capsella brusa-pastoris*,

Moderately Tolerant: POAAN *Poa annua*, LOLPE *Lolium perennium*, STEME *Stellaria media*,

Tolerant: BROMO *Bromus hordeaceus*, VIOAR *Viola arvensis*, VERHE *Veronica herderifolia*,

Dose CHR/H/MEZO 30 OD 0.4 L/ha

Susceptible: APESV *Apera spica-venti*, ALOMY *Alopecurus myosuroides*, BRSNW *Brassica napus*, SINAR *Sinapsis arvensis*,

Moderately Susceptible: POAAN *Poa annua*, LOLPE *Lolium perennium*, CAPBP *Capsella brusa-pastoris*, ANTAR *Anthemis arvensis*, , PAPRH *Papaver rhoeas*, STEME *Stellaria media*,

Moderately Tolerant: BROMO *Bromus hordeaceus*,

Tolerant: VIOAR *Viola arvensis*, VERHE *Veronica herderifolia*,

Dose CHR/H/MEZO 30 OD 0.5 L/ha

Susceptible: APESV *Apera spica-venti*, POAAN *Poa annua*, ANTAR *Anthemis arvensis*, BRSNW *Brassica napus*, SINAR *Sinapsis arvensis*, ALOMY *Alopecurus myosuroides*, CAPBP *Capsella brusa-pastoris*, LOLPE *Lolium perennium*,

Moderately Susceptible: BROMO *Bromus hordeaceus*, PAPRH *Papaver rhoeas*, STEME *Stellaria media*,

Tolerant: VIOAR *Viola arvensis*, VERHE *Veronica herderifolia*

|                         |  |
|-------------------------|--|
| <b>Comments of ZRMs</b> | <p>All details about efficacy methodology used during efficacy trials (in total 28) were presented above by Applicant. Submitted reports were from field trials carried out on winter wheat, include a detailed data on soil and field conditions, agrotechnological procedures, fore-crop as well as meteorological conditions and technical details of the spraying.</p> <p>Applicant properly presented efficacy results. Only trials with greater than 4-5 weeds/m<sup>2</sup> or over 2% ground cover should be taken for assessment. According to EPPO PP 1/226 at least 6 fully supportive results for major weeds and 2 trials for minor weeds should be required. Applicant performed studies in two growing seasons (2020 and (2021) in line to EPPO 1/181. In Poland, 17 PPPs with mesosulfuron-methyl are already registered. No PPP with 30 g/L of mesosulfuron methyl is registered in OD formulation in Poland yet. So, for major weeds Applicant should presented at least 6 trials and for minor – at least 3 trials.</p> <p>Accepted weed species were presented with appropriate weed scale of sensitivity:</p> <ul style="list-style-type: none"> <li>– S (Susceptible) &gt;85%</li> <li>– MS (Moderately susceptible) 70-85%</li> <li>– MT (Moderately tolerant) 60-70%</li> <li>– T (tolerant) &lt; 60%</li> </ul> <p>Submitted studies (28) were carried out by testing unit mandated to conduct research in the field of efficacy of plant protection products by the Chief Inspector of Plant Health and Seed Inspection and are officially GEP recognized. Number of trials for winter wheat is acceptable for Poland.</p> <p>The ZRMs considers the reference product used to be acceptable. All trials had 4 replicates, a randomised block design and an appropriate plot size. Water volumes of 200-300 L/ha was tested (200 L/ha in 18 trials and 300 L/ha in 10 trials, which encompasses the full range proposed in the GAP table (200-300 L/ha).</p> <p>Applicant proposed following window application: BBCH 21-32 in spring. During trials following BBCH was studied: 21-32. In the opinion of ZRMs, proposed by Applicant application window BBCH 21-32 can be accepted in compliance with application deadlines for mesosulfuron-methyl for winter wheat, submitted trials and based on cereal protection programs.</p> |
|-------------------------|--|

| Weed  | Number of trials | Level of infestation (no/m <sup>2</sup> ) | Mean eff at 0.5 L/ha (N dose) | St. Ref. product (Atlantis Star+Bipower 276.5 SL at 0.333 kg/ha+1.0 L/ha) |
|-------|------------------|---|-------------------------------|---|
| APESV | 11               | 93.0                                      | 92.1                          | 91.3  |
| ALOMY | 6                | 164.8                                     | 94.8                          | 96.2  |
| POAAN | 7                | 38.3                                      | 85.5                          | 92.7  |
| BROMO | 6                | 29.0                                      | 77.7                          | 87.3  |
| LOLPE | 6                | 54.1                                      | 89.7                          | 93.9  |
| VIOAR | 15               | 19.2                                      | 38.4                          | 68.0  |
| BRNN  | 9                | 5.7                                       | 97.4                          | 97.9  |
| ANTAR | 8                | 5.4                                       | 86.6                          | 94.0  |
| PAPRH | 7                | 7.5                                       | 82.9                          | 87.5  |
| SINAR | 6                | 7.6                                       | 98.0                          | 98.3  |
| CAPBP | 7                | 6.3                                       | 86.9                          | 94.2  |
| STEME | 6                | 6.9                                       | 79.7                          | 84.3  |
| VERHE | 6                | 7.8                                       | 40.7                          | 65.7  |

Number of trials for all mentioned above weed species (13) in table was acceptable. Also, all trials were characterized by sufficient level of infestation.

On the basis on submitted results it can be stated that for dose 0.5 L/ha of CHR/H/MEZO 30 OD – 8 weeds were classified as a susceptible (APESV, ALOMY, POAAN, LOLPE, BRNN, ANTAR, SINAR, CAPBP), 3 weeds as a moderately susceptible (BROMO, PAPRH and STEME) and 2 weeds were tolerant against CHR/H/MEZO 30 OD (VERHE and VIOAR).

In all trials standard reference product was used (Atlantis Star+Bipower 276.5 SL at 0.333 kg/ha+1.0 L/ha). Efficacy of then is presented in the table above by ZRMs. In generally it can be stated that CHR/H/MEZO 30 OD have comparable efficacy to st. reference product (against 9 studied weeds). Only in case of 4 weeds (VERHE, VIOAR, BROMO and PAPRH) were observed differences in sensitivity classification between tested product and st. ref. product. Those 4 weeds were characterized by higher sensitivity against st. ref. product than tested product.

**Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD) can be recommended for use at recommended dose (0.5 L/ha) on winter wheat crops at BBCH 21-32 (in spring) for control weed species.**

**Minor uses claimed in the GAP table and label project can be accepted without any efficacy and selectivity trial in line to Article 51 for control spelt, Emmer wheat, Triticum dicoccum, Einkorn wheat, Durum wheat and Spring Rye against weeds.**

### 3.3 Information on the occurrence or possible occurrence of the development of resistance (KCP 6.3)

#### Resistance Risk Assessment (according to EPPO PP 1/213 (4) Resistance risk analysis)

##### 3.3.1 Mode of action

CHR/H/MEZO 30 OD is a herbicide containing active substance: mesosulfuron methyl 30 g/L, which belong to HRAC group 2 (legacy B) - ALS inhibitors.

Mesosulfuron-methyl acts as a selective systemic herbicide. It works on the target weed with phloem-xylemsystemic properties both via the foliage and the soil, with a clear predominance of foliar action. In grass species foliar uptake occurs mainly the day of application, with little further increase after. Foliar uptake is very significantly influenced by humidity. Of the amount taken up by a fully developed leaf, between 5 and 10% is subsequently translocated to the other parts of the plant. Translocation to the shoot base and the root is usually higher than the translocation to the shoot parts above the treated leaf.

### 3.3.2 Mechanism of resistance

CHR/H/MEZO 30 OD is a herbicide containing active substance: mesosulfuron methyl 30 g/L, which belong to HRAC group 2 (legacy B) - ALS inhibitors.

According to EPPO PP 1/213 (4) Resistance risk analysis weeds usually only produce one generation per year and development of resistance is usually a relatively slow process. It is difficult to class any weed species as inherently more or less likely to develop resistance to a particular herbicide.

### 3.3.3 Evidence of resistance

CHR/H/MEZO 30 OD is a herbicide containing active substance: mesosulfuron methyl 30 g/L, which belong to HRAC group 2 (legacy B) - ALS inhibitors. This group of herbicides is quite well known and has been applied commercially for decades.

According to Ian Heap's website (<http://www.weedscience.org>) there are twenty three species which have been reported as resistant to : mesosulfuron methyl (Table 1).

According to <https://weedscience.org/> :

Table 1. Herbicide resistance cases

| Year | Species                                | Country        | Actives  | Crops                          |
|------|--|----------------|--|--------------------------------|
| 1984 | <i>Alopecurus myosuroides</i>          | United Kingdom | imazamethabenz-methyl, chlorsulfuron, flupyr-sulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam, propoxycarbazone-Na                          | Wheat                          |
| 1993 | <i>Avena sterilis</i>                  | United Kingdom | fluazifop-butyl, fenoxaprop-ethyl, tralkoxydim, imazamethabenz-methyl, flamprop-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl                                    | Cereals, Wheat                 |
| 1994 | <i>Avena fatua</i>                     | United Kingdom | fluazifop-butyl, fenoxaprop-ethyl, tralkoxydim, imazamethabenz-methyl, flamprop-m, mesosulfuron-methyl, pinoxaden, pyroxsulam  | Cereals, Wheat, Canola         |
| 1999 | <i>Phalaris minor</i>                  | South Africa   | haloxyfop-methyl, clodinafop-propargyl, diclofop-methyl, propaquizafop, quizalofop-ethyl, fenoxaprop-ethyl, sulfosulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl | Pastures, Wheat                |
| 2001 | <i>Alopecurus myosuroides</i>          | Denmark        | clodinafop-propargyl, fenoxaprop-ethyl, cycloxydim, flupyr-sulfuron-methyl-Na, pendimethalin, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam      | Winter wheat                   |
| 2002 | <i>Papaver rhoeas</i>                  | Greece         | 2,4-D, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Wheat                          |
| 2002 | <i>Lolium perenne ssp. multiflorum</i> | Italy          | clodinafop-propargyl, diclofop-methyl, sethoxydim, tralkoxydim, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden                                     | Durum wheat                    |
| 2002 | <i>Limnophila erecta</i>               | Malaysia       | bensulfuron-methyl, cinosulfuron, pyrazosulfuron-ethyl, 2,4-D, mesosulfuron-methyl   | Rice                           |
| 2003 | <i>Alopecurus myosuroides</i>          | France         | clodinafop-propargyl, diclofop-methyl, fenoxaprop-ethyl, sethoxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Wheat                          |
| 2003 | <i>Lolium perenne ssp. multiflorum</i> | France         | haloxyfop-methyl, clodinafop-propargyl, diclofop-methyl, sethoxydim, flupyr-sulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, propoxycarbazone-Na       | Wheat                          |
| 2003 | <i>Lolium perenne ssp. multiflorum</i> | United States  | chlorsulfuron, sulfometuron-methyl, imazamox, mesosulfuron-methyl  | Wheat                          |
| 2004 | <i>Avena sterilis</i>                  | Italy          | clodinafop-propargyl, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden   | Durum wheat                    |
| 2005 | <i>Apera spica-venti</i>               | Czech Republic | sulfosulfuron, chlorsulfuron, isoproturon, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam   | Cereals, Winter wheat          |
| 2005 | <i>Apera spica-venti</i>               | Germany        | sulfosulfuron, chlorsulfuron, flupyr-sulfuron-methyl-Na, sulfometuron-methyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam                      | Wheat                          |
| 2005 | <i>Lolium perenne ssp. multiflorum</i> | Italy          | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Durum wheat                    |
| 2006 | <i>Avena fatua</i>                     | Australia      | clodinafop-propargyl, diclofop-methyl, flamprop-methyl, mesosulfuron-methyl  | Spring Barley, Wheat, Chickpea |
| 2006 | <i>Apera spica-venti</i>               | France         | iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Wheat                          |
| 2006 | <i>Avena sterilis</i>                  | France         | metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Wheat                          |
| 2006 | <i>Avena fatua</i>                     | France         | metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Wheat                          |

|      |   |               |  |                                  |
|------|---|---------------|--|----------------------------------|
|      |   |               | pyroxsulam   |                                  |
| 2006 | <i>Alopecurus myosuroides</i>                     | France        | imazamethabenz-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Wheat                            |
| 2006 | <i>Lolium rigidum</i>                             | France        | flupyr-sulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, propoxycarbazone-Na  | Wheat                            |
| 2006 | <i>Phalaris minor</i>                             | India         | clodinafop-propargyl, fenoxaprop-ethyl, sulfosulfuron, isoproturon, mesosulfuron-methyl, pinoxaden, pyroxsulam   | Wheat                            |
| 2007 | <i>Papaver rhoeas</i>                             | France        | metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat                            |
| 2007 | <i>Alopecurus myosuroides</i>                     | Germany       | fenoxaprop-ethyl, isoproturon, chlorotoluron, flufenacet, mesosulfuron-methyl, pinoxaden   | Wheat                            |
| 2007 | <i>Lolium rigidum</i>                             | Israel        | clodinafop-propargyl, imazapyr, chlorsulfuron, tribenuron-methyl, sulfometuron-methyl, flumetsulam, metosulam, glyphosate, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, propoxycarbazone-Na | Wheat                            |
| 2007 | <i>Avena sterilis</i>                             | Italy         | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Durum wheat                      |
| 2007 | <i>Lolium perenne ssp. multiflorum</i>            | United States | mesosulfuron-methyl  | Wheat                            |
| 2007 | <i>Lolium perenne ssp. multiflorum</i>            | United States | diclofop-methyl, imazamox, mesosulfuron-methyl, pinoxaden, pyroxsulam  | Wheat                            |
| 2008 | <i>Amaranthus palmeri</i>                         | Israel        | pyrithiobac-sodium, rimsulfuron, iodosulfuron-methyl-Na, foramsulfuron, trifloxysulfuron-Na, mesosulfuron-methyl   | Corn (maize), Cotton, Watermelon |
| 2008 | <i>Bifora radians</i>                             | Turkey        | thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, triasulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Winter wheat                     |
| 2008 | <i>Galium aparine</i>                             | Turkey        | thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, triasulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Winter wheat                     |
| 2009 | <i>Senecio vulgaris</i>                           | France        | tribenuron-methyl, prosulfuron, metsulfuron-methyl, flazasulfuron, imazamox, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, thiencarbazone-methyl  | Grapes, Wheat                    |
| 2009 | <i>Bromus sterilis</i>                            | France        | iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam, propoxycarbazone-Na   | Wheat                            |
| 2009 | <i>Alopecurus myosuroides</i>                     | Germany       | fenoxaprop-ethyl, cycloxydim, flupyr-sulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden  | Cereals                          |
| 2009 | <i>Avena fatua</i>                                | Germany       | fenoxaprop-ethyl, cycloxydim, flupyr-sulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden  | Sugar beets                      |
| 2009 | <i>Apera spica-venti</i>                          | Germany       | fenoxaprop-ethyl, sulfosulfuron, isoproturon, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, pyroxsulam   | Spring Barley, Winter wheat      |
| 2009 | <i>Avena sterilis ssp. ludoviciana</i>            | Iran          | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat                            |
| 2009 | <i>Avena sterilis</i>                             | Iran          | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat                            |
| 2009 | <i>Lolium perenne ssp. multiflorum</i>            | United States | diclofop-methyl, mesosulfuron-methyl   | Wheat                            |
| 2009 | <i>Stellaria media</i>                            | United States | thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, mesosulfuron-methyl   | Wheat                            |
| 2010 | <i>Anthemis arvensis</i>                          | Chile         | iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Wheat                            |
| 2010 | <i>Lolium perenne ssp. multiflorum</i>            | Denmark       | clodinafop-propargyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Winter wheat                     |
| 2010 | <i>Avena sterilis ssp. ludoviciana</i>            | Iran          | clodinafop-propargyl, iodosulfuron-methyl-Na, mesosulfuron-methyl  | Winter wheat                     |
| 2010 | <i>Alopecurus myosuroides</i>                     | Netherlands   | florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Winter wheat                     |
| 2010 | <i>Alopecurus myosuroides</i>                     | Poland        | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Winter wheat                     |
| 2010 | <i>Lolium perenne ssp. multiflorum</i>            | United States | diclofop-methyl, mesosulfuron-methyl, pyroxsulam   | Wheat                            |
| 2011 | <i>Bromus diandrus ssp. rigidus (=B. rigidus)</i> | Australia     | mesosulfuron-methyl, pyroxsulam  | Wheat                            |
| 2011 | <i>Bromus diandrus</i>                            | Australia     | mesosulfuron-methyl, pyroxsulam  | Wheat                            |
| 2011 | <i>Bromus diandrus ssp. rigidus (=B. rigidus)</i> | Australia     | mesosulfuron-methyl, pyroxsulam  | Wheat                            |

|      |  |                |  |  |
|------|--|----------------|--|--|
|      | <i>rigidus</i> )                       |                |  |  |
| 2011 | <i>Stellaria media</i>                 | Germany        | thifensulfuron-methyl, amidosulfuron, triflusulfuron-methyl, tribenuron-methyl, nicosulfuron, imazamox, florasulam, iodosulfuron-methyl-Na, tritosulfuron, mesosulfuron-methyl, pyroxsulam | Spring Barley, Wheat, Rapeseed                 |
| 2011 | <i>Avena fatua</i>                     | Poland         | sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, propoxycarbazone-Na  | Spring Barley, Spring wheat                    |
| 2011 | <i>Avena fatua</i>                     | United States  | mesosulfuron-methyl  | Cereals  |
| 2012 | <i>Phalaris paradoxa</i>               | Australia      | clodinafop-propargyl, mesosulfuron-methyl  | Spring Barley, Wheat                           |
| 2012 | <i>Stellaria media</i>                 | France         | thifensulfuron-methyl, metsulfuron-methyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Wheat  |
| 2012 | <i>Poa trivialis</i>                   | France         | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat  |
| 2012 | <i>Lolium perenne ssp. multiflorum</i> | Italy          | glyphosate, iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat  |
| 2012 | <i>Alopecurus myosuroides</i>          | Poland         | fenoxaprop-ethyl, sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden  | Winter wheat                                   |
| 2012 | <i>Lolium perenne ssp. multiflorum</i> | United Kingdom | mesosulfuron-methyl, pyroxsulam  | Cereals  |
| 2012 | <i>Lolium perenne ssp. multiflorum</i> | United States  | mesosulfuron-methyl  | Wheat  |
| 2012 | <i>Avena fatua</i>                     | United States  | fenoxaprop-ethyl, mesosulfuron-methyl  | Wheat  |
| 2013 | <i>Phalaris minor</i>                  | India          | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat  |
| 2013 | <i>Lolium rigidum</i>                  | Israel         | haloxyfop-methyl, clodinafop-propargyl, clethodim, cycloxydim, sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, propoxycarbazone-Na                            | Carrots, Wheat                                 |
| 2013 | <i>Lolium perenne ssp. multiflorum</i> | United States  | mesosulfuron-methyl, pyroxsulam  | Wheat  |
| 2013 | <i>Lolium perenne ssp. multiflorum</i> | United States  | mesosulfuron-methyl, pinoxaden   | Corn (maize), Soybean, Wheat                   |
| 2014 | <i>Alopecurus aequalis</i>             | China          | quizalofop-ethyl, fenoxaprop-ethyl, nicosulfuron, flucarbazone-Na, mesosulfuron-methyl, penoxsulam, pinoxaden  | Wheat  |
| 2014 | <i>Alopecurus japonicus</i>            | China          | fenoxaprop-ethyl, pyribenzoxim, sulfosulfuron, nicosulfuron, mesosulfuron-methyl, pyroxsulam   | Wheat  |
| 2014 | <i>Rumex dentatus</i>                  | India          | florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam  | Wheat  |
| 2014 | <i>Alopecurus myosuroides</i>          | Sweden         | fenoxaprop-ethyl, cycloxydim, flupyr-sulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam   | Spring wheat, Winter wheat, Winter barley      |
| 2015 | <i>Poa annua</i>                       | France         | iodosulfuron-methyl-Na, mesosulfuron-methyl  | Wheat  |
| 2015 | <i>Alopecurus myosuroides</i>          | Spain          | clodinafop-propargyl, cloransulam-methyl, isoproturon, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden   | Wheat, Canola, Peas, Winter barley, Faba beans |
| 2015 | <i>Arabidopsis thaliana</i>            | United States  | thifensulfuron-methyl, tribenuron-methyl, flucarbazone-Na, mesosulfuron-methyl, pyroxsulam   | Wheat  |
| 2016 | <i>Apera spica-venti</i>               | Denmark        | fenoxaprop-ethyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden   | Wheat  |
| 2016 | <i>Papaver rhoeas</i>                  | France         | metsulfuron-methyl, MCPA, 2,4-D, iodosulfuron-methyl-Na, mesosulfuron-methyl, aminopyralid   | Cereals  |
| 2016 | <i>Conyza sumatrensis</i>              | France         | flazasulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl, penoxsulam   | Grapes   |
| 2016 | <i>Conyza sumatrensis</i>              | France         | flazasulfuron, glyphosate, iodosulfuron-methyl-Na, mesosulfuron-methyl, penoxsulam   | Grapes   |
| 2016 | <i>Lolium perenne ssp. multiflorum</i> | United States  | cyhalofop-butyl, fluzafop-butyl, fenoxaprop-ethyl, sethoxydim, clethodim, paraquat, glyphosate, imazamox, mesosulfuron-methyl  | Alfalfa, Orchards                              |
| 2017 | <i>Galium aparine</i>                  | Iran           | sulfosulfuron, tribenuron-methyl, MCPA, 2,4-D, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Wheat  |
| 2018 | <i>Lolium perenne ssp. multiflorum</i> | Switzerland    | quizalofop-ethyl, iodosulfuron-methyl-Na, mesosulfuron-methyl  | Sugar beets, Triticale                         |
| 2018 | <i>Lolium perenne ssp. multiflorum</i> | Switzerland    | chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl   | Peas   |



|      |  |               |   |                              |
|------|--|---------------|---|------------------------------|
| 2019 | <i>Apera spica-venti</i>               | Belgium       | iodosulfuron-methyl-Na, foramsulfuron, mesosulfuron-methyl                        | Wheat                        |
| 2019 | <i>Alopecurus myosuroides</i>          | Switzerland   | quizalofop-ethyl, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl      | Wheat, Winter barley         |
| 2020 | <i>Lolium perenne ssp. multiflorum</i> | Switzerland   | quizalofop-ethyl, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl      | Sugar beets, Peas, Triticale |
| 2021 | <i>Alopecurus myosuroides</i>          | Ireland       | propaquizafop, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl            | Wheat                        |
| 2021 | <i>Lolium perenne ssp. multiflorum</i> | Ireland       | propaquizafop, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden | Wheat                        |
| 2022 | <i>Stellaria media</i>                 | United States | tribenuron-methyl, mesosulfuron-methyl, pyroxsulam                                | Wheat, Triticale             |

### 3.3.4 Cross-resistance

According to <https://hracglobal.com/files/Herbicide-Cross-Resistance-and-Multiple-Resistance-in-Plants.pdf>

Cross resistance is defined as the expression of a genetically-endowed mechanism conferring the ability to withstand herbicides from different chemical classes. There are two broad cross resistance categories; target site cross resistance and non-target site cross resistance. Cross resistance occurs mainly in the group of ALS inhibitors, including mesosulfuron methyl.

Target site cross resistance occurs when a change at the biochemical site of action of one herbicide also confers resistance to herbicides from a different chemical class that inhibit the same site of action in the plant. Target site cross resistance does not necessarily result in resistance to all herbicide classes with a similar mode of action or indeed all herbicides within a given herbicide class.

Target site cross resistance to acetolactate synthase (ALS)-inhibiting herbicides Over the past decade, the most important area of herbicide chemistry has been the discovery of herbicides inhibiting acetolactate synthase (ALS). There are 15 classes of chemistry which have been described as inhibitors of ALS (Saari et al., 1994). Of these, the chemically dissimilar sulfonylurea, imidazolinone and triazolopyrimidine herbicides have been commercialized and are in widespread use. The large scale adoption and often persistent use of these herbicides has led to the appearance of weed biotypes resistant to the ALS-inhibiting herbicides. As reviewed by Saari et al. (1994), there are now many biotypes within at least 15 weed species (especially *Kochia scoparia* and *Lolium rigidum*) which have developed resistance to ALS-inhibiting herbicides, mainly through selection with sulfonylurea herbicides (presumably because they have been in commercial use for the longest period). In the vast majority of cases of resistance following selection with sulfonylurea herbicides, the resistance mechanism is a change in the target site enzyme ALS (reviewed by Saari et al., 1994). In most cases, the sulfonylurea resistant biotypes with a resistant ALS enzyme exhibit varying levels of target site cross resistance to the chemically dissimilar, but ALS-inhibiting, imidazolinone and/or triazolopyrimidine herbicides (Table 3; Hall and Devine, 1990; Christopher et al., 1992; Saari et al., 1990; 1992; 1994). The considerable variation in the level of resistance across and within various ALS-inhibiting herbicide chemistries (Table 3) is likely to be due to subtly different binding by particular herbicides on the ALS enzyme and different mutations of ALS. Evidence from competitive binding studies show that the three classes of ALS-inhibiting herbicides bind to the same, or closely overlapping sites on ALS (Durner et al., 1991; Landstein et al., 1993). The wide variation in target site cross resistance amongst biotypes with resistant ALS enzyme (Table 3) implies that there are a number of different functional mutations of the ALS gene. Knowledge of specific mutations of ALS providing resistance is now emerging. ALS gene sequences from a number of resistant biotypes of higher plants which have been examined show a substitution at a proline residue (173) in a highly conserved region of the enzyme, known as domain A. However, the proline substitutions vary in that substitutions of threonine, alanine, serine, histidine and glutamine for this proline have all been observed. Guttieri et al. (1992) examined ALS from three resistant weed species and observed Thr substitution in *Kochia scoparia* and a His substi-

tution in *Lactuca serriola* at Pro 173. No alteration was observed in 3 domain A of ALS for a resistant biotype of *Salsola iberica*. Five other resistant biotypes of *K. scoparia* were examined and only three contained a substitution at Pro 173. In addition to changes at the Pro 173 of domain A, at least two other mutations have been observed to give sulfonylurea and/or imidazolinone resistance in higher plants; Ser 653 Asn in *Arabidopsis thaliana* (Sathasivan et al., 1991), and Trp 573 Leu in *Nicotiana tabacum* (Lee et al., 1988), and a number of other mutations providing resistance are known from yeast (Mazur and Falco, 1989). Significantly, in the only case so far published of resistance selected by an imidazolinone herbicide, a biotype of *Xanthium strumarium* resistant to imidazolinone herbicides at the whole plant and ALS enzyme level is not cross resistant to sulfonylurea or triazolopyrimidine herbicides and possesses an ALS enzyme susceptible to these herbicides (Schmitzer et al., 1993). Therefore, it is clear that there are several possible mutations of the ALS gene which will confer resistance to sulfonylurea and imidazolinone herbicides and yet retain enzyme function. It is likely, although not yet established, that these different mutations in the ALS gene provide different levels of target site cross resistance within and between ALS inhibiting herbicide chemistries. The variations in target site cross resistance among herbicide-resistant mutants indicates that the binding domains for the various classes of ALS-inhibiting herbicides do not fully overlap. It is also clear from these studies that a number of different mutations can endow resistance to various ALS-inhibiting herbicides without any significant impairment of enzyme function in vivo. As discussed below, this is also likely to be the case for herbicide-resistant ACCase, but is not the case for herbicide-resistant PS2 in which very few mutations confer resistance and yet retain full enzyme functionality. Competitive fitness studies with ALS enzyme-based resistant biotypes of *Kochia scoparia* and *Lactuca serriola* indicate there is no fitness penalty to plants carrying a resistant ALS enzyme (Mallory-Smith et al., 1992).

Non target site cross resistance is defined as cross resistance to dissimilar herbicide classes conferred by a mechanism(s) other than resistant enzyme target sites. Until recently documented for *L. rigidum* and *A. myosuroides*, non-target site cross resistance was largely unknown in herbicide-resistant weeds but is well known in the insecticide resistance literature (Brattsten et al., 1986; Georgiou, 1986).

Non target site cross resistance to ALS inhibiting herbicides The study of Heap and Knight (1986) and widespread farmer experience in Australia has been that many (but not all) *L. rigidum* populations that developed 6 resistance following selection with the ACCase inhibiting herbicide diclofop-methyl display resistance to cereal-selective ALS herbicides without any exposure to ALS herbicides (non-target site cross resistance). Similarly, a laboratory experiment Matthews and Powles (unpublished data) showed that an initially susceptible *L. rigidum* population when selected for three generations with diclofop-methyl developed resistance to diclofop-methyl and simultaneously exhibited resistance to the ALS inhibiting herbicide chlorsulfuron without any exposure to chlorsulfuron. This study and the field observations conclusively established that selection with an ACCase-inhibiting herbicide can lead to resistant populations that display non target site cross resistance to ALS-inhibiting herbicides without exposure to these herbicides. The mechanistic basis of non-target site cross resistance to ALS herbicides has been thoroughly investigated in *L. rigidum*. As expected, cross resistance to ALS herbicides from selection with ACCase herbicides is not due to resistance at the ALS target enzyme (Matthews et al., 1990). Instead these biotypes of *L. rigidum* are resistant as a result of an enhanced rate of herbicide metabolism, which endows resistance to certain ALS-inhibiting herbicides (Figures 1 and 2). It is likely that the increased metabolism in these *L. rigidum* biotypes is catalyzed by the same Cyt P450 enzyme-based mechanism operating in wheat (Christopher et al., 1991; 1992). Wheat is resistant to many ALS-inhibiting herbicides as a result of rapid metabolism of these herbicides by aryl-hydroxylation (Sweetser et al., 1992), catalyzed by a Cyt P450 mono-oxygenase. Some chlorsulfuron-resistant *L. rigidum* biotypes with sensitive ALS and a resistance profile to ALS-inhibiting herbicides similar to wheat can oxidatively metabolize chlorsulfuron more rapidly than the susceptible biotype (Figures 1 and 2; Christopher et al., 1991; Cotterman and Saari,

1992; Burnet et al., 1994a). The products of metabolism of chlorsulfuron in *L. rigidum* and wheat are also similar (Christopher et al., 1991; Cotterman and Saari, 1992), with the major metabolite identified as glucose-conjugated hydroxy-chlorsulfuron (Cotterman and Saari, 1992). Malathion which has been shown to inhibit the Cyt P450-dependent detoxification of primisulfuron, a sulfonylurea herbicide, in microsome preparations from maize (Kreuz and Fonné-Pfister, 1992) can inhibit chlorsulfuron metabolism and reduce chlorsulfuron resistance in the cross-resistant biotype SLR31 if applied in conjunction with chlorsulfuron (Christopher et al., 1994). This reversal of resistance in SLR31 by malathion confirms that detoxification plays a major role in chlorsulfuron resistance in this biotype. Taken together, these studies clearly establish that enhanced metabolism is the basis of non-target site cross resistance of *L. rigidum* to ALS herbicides. Cyt P450s are clearly implicated in enhanced metabolism of chlorsulfuron in resistant *L. rigidum*, however, the in vitro demonstration of Cyt P450-dependent chlorsulfuron metabolism in isolated microsomes has to date proved elusive (Preston and Powles, unpublished).

### **3.3.5 Sensitivity data**

Applicant didn't conduct separately trials for sensitivity data, this data was evaluated in efficacy trials. The 28 field trials postemergence use were established in order to determine the sensitivity of weeds in the winter wheat. The CHR/H/MEZO 30 OD was tested at doses: 0.2 to 0.5 L/ha (6–15 g of active substance) in winter wheat for the control of mono and dicot weeds. Detailed studies on the weeds sensitivity are submitted and summarised in 3.2 Efficacy data (KCP 6).

### **3.3.6 Use pattern**

Herbicide CHR/H/MEZO 30 OD has demonstrated good crop tolerance to winter wheat. Therefore concluded that CHR/H/MEZO 30 OD is safe usage at proposed rate and this support the label claim for the use in winter wheat.

Undesirable effects are not expected on succeeding crops, adjacent crop, part of plants used for propagating purposes and beneficial organisms.

Based on submitted data the following regulation on the label is proposed:

Winter wheat:

Recommended dose at:

CHR/H/MEZO 30 OD 0.5 L/ha

The product CHR/H/MEZO 30 OD should be use once per season at spring post – emergence. To avoid resistance, products contain active substance with the same group shouldn't be used year after year on the same field.

CHR/H/MEZO 30 OD is to be applied in spring:

BBCH 21-32 in winter wheat.

Recommended volume of water 200-300 L/ha (winter wheat)

Recommended medium droplet spraying

Use of CHR/H/MEZO 30 OD according to the proposed GAP does not represent a hazard to rotational crops and does not justify a specific labelling. CHR/H/MEZO 30 OD is not persistent in soil nor is it taken up by succeeding crops. Due to the increasing number of resistant weed biotypes to ALS inhibitors, the use of the product is not recommended if resistance is suspected.

### **3.3.7 Resistance risk assessment of unrestricted use pattern**

Not applicable

### 3.3.8 Test methods

Not applicable

### 3.3.9 Acceptability of the resistance risk

CHR/H/MEZO 30 OD is a herbicide containing active substance: mesosulfuron methyl 30 g/L, which belong to HRAC group 2 (legacy B) - ALS inhibitors. This group of herbicides is quite well known and has been applied commercially for decades.

There are many cases of weed resistance to mesosulfuron methyl and HRAC group 2 (ALS inhibitors).

According to EPPO PP 1/213 (4) Resistance risk analysis weeds usually only produce one generation per year and development of resistance is usually a relatively slow process.

In conclusion, in the applicant's opinion, this level of weeds resistance risk should be considered to be acceptable, provided always that the provisions on the label are followed. Due to the increasing number of resistant weed biotypes to ALS inhibitors, the use of the product is not recommended if resistance is suspected.

### 3.3.10 Management strategy

According to *Herbicide Resistance Action Committee (HRAC)* (<https://hracglobal.com/prevention-management/best-management-practices>)

Integrated Weed Management (IWM) refers to using chemical, cultural, mechanical and biological methods, in an integrated fashion, to control weeds. It does not rely excessively on any one method. When used in a integrated approach, the following tools help reduce selection pressure and survival of resistant weeds.

- Chemical - Applying herbicides to a crop.
- Mechanical - Includes measures such as hand-weeding using cultivation or ploughing to control emerged plants and bury non-germinated seed. It also includes harvest weed seed destruction such as stubble burning and cutting for hay or silage to prevent the weeds from setting seed.
- Cultural - Includes altering the crop planting date, row spacing and harvest timing to disrupt the weed cycle. It also includes planting crops that can out-compete weeds, buying certified seed that's free of weeds and using a diverse crop rotation. Growers should also sanitize farm equipment when moving between fields.
- Biological - Includes introducing insects and pathogens that control target weed species and introducing post-harvest grazing of growing weeds.

Using a diversified crop rotation allows farmers to use these different weed techniques. Avoid successive crops that use herbicides with the same mechanism of action to control the same weed species in the same field.

Guidelines for the sustainable use of herbicide site of action groups:

- Use mixtures or sequential treatments of herbicides having different sites of action. Each herbicide in the mixture should target the same weed species.
- Consider all chemical control options before planting, in-crop and after harvest.
- Avoid continued use of the same herbicides, or herbicides with the same site of action in the same field, unless integrated with other weed control practices.
- Limit the number of applications of a single herbicide or herbicides with the same site of action in a single growing season.
- Herbicide mixtures and herbicide rotations alone are not enough to prevent resistance. They must be used in a diversified plan than also incorporates mechanical, cultural and biological practices.

Growers should also do the following:

- Follow label use instructions, such as application rates, timing and equipment recommendations.
- Know the weeds in their fields and nearby non-crop areas and tailor their weed control program to weed densities and economic thresholds.
- Monitor herbicide results and be aware of any trends or changes in weed populations.
- Maintain detailed field records to confirm cropping and herbicide history.

### 3.3.11 Implementation of the management strategy

The herbicide label provides all the necessary information for preventing weed resistance to herbicides.

### 3.3.12 Monitoring, reporting and reaction to changes in performance

According to <https://hracglobal.com/files/Monitoring-and-Mitigation-of-Herbicide-Resistance.pdf>

Managing the risk of herbicide resistance (HR) is an area of strategic importance for leading herbicide technology providers and is the focus of the Global Herbicide Resistance Action Committee (HRAC), an organization comprised of 8 major companies working as a part of Crop Life International. Early detection of HR, understanding the scope of HR in a defined area, and potential mitigation of resistance through efforts to limit its spread are important aspects of managing the risk of HR. Monitoring for HR populations has been employed by public and private weed scientists for both early detection and defining the scope of resistance. The primary methods used to monitor for resistance include:

- 1) field surveys where seed from putative resistant plants are collected and tested in a controlled environment using bioassay procedures,
- 2) market research surveys of farmers and weed management experts, and
- 3) tracking farmer performance inquiries with appropriate follow up field evaluation and testing.

The most common monitoring method is the use of field surveys designed to either qualitatively (i.e., determine whether the level of resistance is high, medium, or low) or quantitatively (i.e., determine the area infested with HR populations) define existing HR. The primary method to detect resistance in new species and in new geographies is to track farmer performance inquiries. Once resistance is detected, steps may be taken to mitigate its impact. A critical aspect to mitigation is the implementation of best management practices (BMPs) which is facilitated by effective education and training programs. Education efforts can be enhanced with information obtained from monitoring studies and early detection of resistant populations using appropriate monitoring methods can improve the outcome of mitigation efforts.

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | <p>Mesosulfuron-methyl, like other herbicides, is subject to the risk of weeds developing resistance. This is a significant concern in cereal crop management, as resistance can severely limit the effectiveness of this herbicide and others in its class.</p> <p>Mechanism of resistance development: target site resistance and non-target site resistance. Several grass and broadleaf weed species have developed resistance to mesosulfuron-methyl and other ALS inhibitors.</p> <p>A resistance risk analysis conducted according to EPPO guideline PP 1/213 (4) “Resistance risk analysis” has been submitted.</p> <p>The plant protection product CHR/H/MEZO 30 OD contains the active substance – mesosulfuron-methyl. The Herbicide Resistance Action Committee (HRAC) classifies them in HRAC Group 2, site of action: Inhibition of acetolactate synthase ALS and Chemical Family: Sulfonylurea. Group 2 (Legacy B) herbicides are known as Inhibition of Acetolactate Synthase (Inhibition of Acetolactate Synthase). Research has shown that these particular biotypes are resistant to iodosulfuron-methyl-Na, mesosulfuron-methyl, and pyroxsulam and they may be cross-resistant to other Group 2 (Lega-</p> |
|-------------------------|---|

|  |   |
|--|---|
|  | <p>cy B) herbicides. The risk of cross resistance within and between HRAC group 2 chemicals is classified as high.</p> <p>Studies on the mechanism of resistance of Group 2 (Legacy B) resistant Poverty Brome from United Kingdom indicate that resistance is due to enhanced metabolism. There may be a note below or an article discussing the mechanism of resistance in the Fact Sheets and Other Literature.</p> <p>Currently (July, 2024), there are 533 unique cases (species x site of action) of herbicide resistant weeds globally, with 273 species (156 dicots and 117 monocots). Weeds have evolved resistance to 21 of the 31 known herbicide sites of action and to 168 different herbicides. Herbicide resistant weeds have been reported in 101 crops in 72 countries. There have been reported 89 cases against Mesosulfuron-methyl resistance. 5 of them were reported in Australia, 1 in Chile, 2 in China, 3 in India, 4 in Iran, 1 in South Africa, 14 in USA and 2 in Turkey, 1 in Malaysia, 3 in Israel and 53 cases in Europe (within 3 cases in Poland 6 in Germany and 1 case in Czech Republic).</p> <p>Resistance cases associated with the active ingredient: Mesosulfuron-methyl have been found in 28 weed species. For example, resistance was noted in <i>Alopecurus myosuroides</i> (2 cases) and <i>Avena fatua</i> (1 case) in Poland; <i>Apera spica-venti</i> (1 case) in Czech Republic and <i>Apera spica-venti</i> (2 case), <i>Alopecurus myosuroides</i> (2 cases), <i>Avena fatua</i> (1 case) and <i>Stellaria media</i> (1 case) in Germany.</p> <p>Considering the inherent factors of the herbicide, the target weeds and the agronomic risk, the resistance risk of CHR/H/MEZO 30 OD in the “unrestricted use pattern” is classified as medium, and therefore, the implementation of a special resistance management strategy is required.</p> <p>Resistance management strategy described by the applicant is considered suitable and in accordance with HRAC recommendations.</p> <p>The sensitivity monitoring is not necessary nevertheless; observations of field performance should be reported to reduce the resistance risk appearance.</p> <p>To manage and mitigate the development of resistance, the following strategies are recommended:</p> <ul style="list-style-type: none"> <li>✓ Herbicide rotation: rotate herbicides with different modes of action to prevent weeds from developing resistance to a single class of herbicides.</li> <li>✓ Tank mixes: use tank mixes of herbicides with different modes of action to target weeds through multiple biochemical pathways simultaneously.</li> <li>✓ Cultural practices: implement agronomic practices such as crop rotation, planting, competitive crop varieties, and using mechanical weed control methods to reduce weed pressure.</li> <li>✓ Integrated Weed Management (IWM): combine chemical, cultural and mechanical weed control methods to diversify the selection pressures on weed populations.</li> <li>✓ Use recommended rates: apply herbicides at the recommended label rates to ensure effective control and minimize the chances of weeds surviving sub-lethal doses.</li> </ul> <p>Weed resistance to Mesosulfuron-methyl in cereal crops is a growing concern, driven by both target-site and non-target site mechanisms. Effective management requires a comprehensive approach that includes rotating herbicides, using tank mixes, integrating cultural and mechanical control methods and ongoing monitoring. By implementing those strategies, the longevity and efficacy of Mesosulfuron-methyl herbicides can be preserved, ensuring sustainable weed management in cereal crops.</p> |
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### 3.4 Adverse effects on treated crops (KCP 6.4)

Information on trials submitted (3.4: Adverse effects on treated crops)

**Table 3.4-1: Presentation of trials selectivity trials.**

| Crop*        | Country | Type of trial** | Number of trials | Years            | GEP, non-GEP, official*** | Comments (any other relevant information) |
|--------------|---------|-----------------|------------------|------------------|---------------------------|---|
|              |         |                 | North-East Zone  |                  |                           |   |
| winter wheat | Poland  | S + Y + Q       | 2                | 2020             | GEP                       | -   |
|              |         | S + Y + Q       | 6                | 2021             | GEP                       |   |
|              |         | S + Y + Q       | 4                | 2022             | GEP                       | -   |
| <b>TOTAL</b> | -       | -               | <b>12</b>        | <b>2020-2022</b> | -                         | -   |

\* According to the GAP table

\*\* S = selectivity trial, Y = trial with yield assessment, Q = trial with quality assessment, T = trial on the basis of the study of impact on transformation process (TP: Physical transformation, TF: transformation involving microbial fermentation), P = trial with assessment of impact on propagation

\*\*\* Official: carried out by a national official organisation

**Table 3.4-2: Presentation of reference standards used in selectivity trials.**

| Crop(s)      | Reference standard                | Country(ies) where the product is registered (1) | Authorization number          | Active substance(s)          | Formulation         |                       | Registered application | Application                    | Remark(4) |
|--------------|-----------------------------------|--|-------------------------------|------------------------------|---------------------|-----------------------|------------------------|--------------------------------|-----------|
|              |                                   |  |                               |                              | Type(2)             | Concentration of a.s. |                        | rate in trials (per treatment) |           |
| Winter wheat | Atlantis Star + Biopower 276,5 SL | Poland   | R – 62/2020d;<br>R - 174/2017 | mesosulfuron-methyl          | OD – oil dispersion | 45 g/kg               | 0.15-0.333 kg/ha       | 0.333 kg/ha                    | -         |
|              |                                   |  |                               | thiencarbazone-methyl        |                     | 22,5 g/kg             |                        |                                |           |
|              |                                   |  |                               | iodosulfuron-methyl - sodium |                     | 9 g/kg                |                        |                                |           |

(1) only on use(s) applied for (with the test product)

(2) e.g.WP (wetable powder), EC (emulsifiable concentrate), etc.

(3) Dose / dose range authorized in the country

(4) Other relevant information (e.g. uses, number of applications, spray volume, method of application...)

#### 3.4.1 Phytotoxicity to host crop (KCP 6.4.1)

##### Materials and methods

The applicant submitted 12 reports (in total) showing the results in research into product selectivity carried out in 2020, 2021 and 2022 in winter wheat. List of these reports is contained in Appendix 1.

##### Site

Trials were conducted in different regions in Poland where winter wheat is grown commercially. The experiment was established on a set of complete randomized blocks in 4 replications. Details on trial sites, applications and data on selectivity are included in Appendix 4 and 5.

##### Testing units

Efficacy studies on herbicide CHR/H/MEZO 30 OD were performed in 2020, 2021 and 2022 by:

- SynTech Research Poland Sp. z o.o., ul. Jagiellońska 69/1, 85-027 Bydgoszcz, Poland
- A.T Sp. z o.o., ul. Przemysłowa 3, 88-300 Mogilno, Poland
- Poznań University of Life Sciences, Research and Education Center Gorzyń, ul. Wojska Polskiego 28,

60-637 Poznań; Poland

#### Experimental details

The efficacy trials were designed, conducted and reported according to the following EPPO guidelines:

- PP 1/135 (3) Phytotoxicity assessment
- PP 1/152 (3) Design and analysis of efficacy evaluation trials
- PP 1/181 (3) Conduct and reporting of efficacy evaluation trials including good experimental practice

They were carried out on the field in the conditions of natural agrofag infestation. The efficacy trials were concluded according to the EPPO standards:

- PP 1/93 (3) Weeds in cereals

#### Assessment methods

##### Statistical Analysis

Statistical analysis of the results were calculated out with the use of statistic pack of ARM 9.0. the trial results were statistically analyzed using Student & Newman & Kelus Test ( $p=0,05$ ).

The treatment means of the assessment dates were calculated and compared using Student-Newman-Keuls test ( $P=0.05$ ). The statistical procedures were applied using ARM 2020.1 software.

The test results were statistically evaluated using the ARM 2020.1 statistical program. All assessment data was analyzed by analysis of variance (two-way analysis of variance). The significance of differences between the combinations was assessed with the Student-Newman-Keuls test, at the significance level  $p = 0.05$  using the "ARM 10" (version 2020.1).

Software for analysis of the results was ARM Revision 2017.4 from Gylling Data Management. Data were analysed using analysis of variance (ANOVA) on untransformed data and on transformed ones when the Bartlett's test indicated so. If transformation did not improve the distribution, original values were used and therefore significant differences reported should be interpreted with caution. The probability of no significant differences occurring between treatment means was calculated as the F probability value (Treatment Prob(F)). Student-Newman-Keuls (S-N-K) tests were applied when treatment differences were identified on the basis of the ANOVA test. Mean comparison performed only when AOV Treatment P(F) is significant at level selected. Results obtained were indicated by a letter-treatment means with no letters in common are significantly different in accordance with a S-N-K conducted at a 95% confidence level. Where data have been transformed, letters are included in the transformed data.

Statistical analysis of the results were calculated out with the use of statistic pack of ARM 9.0. the trial results were statistically analyzed using Student & Newman & Kelus Test ( $p=0,05$ ).

##### Assessment of phytotoxicity

Phytotoxicity of whole symptoms of injuries observed on the crop plants. Recording all the symptoms of possible phytotoxic effect of tested product, mainly: changes in the growth (plant height, tillering, dates of succeeding growth stages), thinning out of plants, discolorations (without destruction of plant tissue), necroses, deformations, yield quantity and quality. The occurrence and intensity of outside symptoms of crop damages were determined using 0-100 % scale (0 % = no damage; 100 % = total plant destruction).

Phytotoxicity (chlorosis and necrosis), stunting and thinning were assessed by visual estimation of the intensity on an overall plot basis on a percentage scale 0-100 % (0=no damage). The assessment date was determined by the speed of action and period of efficacy of the test substances.

The phytotoxicity assessment of the tested product was carried out by visually assessing the intensity of chlorosis, necrosis, leaf twisting, reduction of plant turgor, etc. on the surface of the entire plots and comparing each plot with the control plot. The assessment was made directly on the plantation.



The results are presented on a 0-100 scale, where 0 - no phytotoxicity, 100 - complete destruction of plants. Viability rating was done visually on a 0-100% scale where 0% = no crop and 100% = most viable plot in each replicate (at least one plot in each replication must be scored 100).

### Harvest

The crop was harvested with a combine harvester from the central part of each plot.  
Sample for each plots was analyzed on the grain analyzer: Aquamatic 5200 Perten; Inframatic 8800.

A plot combine for intermixing-free grain-harvest in field trials was used for harvesting the centre of the plot. The total yield is given in unit/ha adjusted to a fixed moisture content.

### Applications methods and rates

The applications were carried out by a T-BOOM – BACCAI, plot sprayer SPRBIC in cereals.

Tested herbicide was applied at the growth stage:  
BBCH 21-32 in winter wheat.

The product CHR/H/MEZO 30 OD has been used:  
in winter wheat at the following rates of 0.5 and 1.0 L/ha  
Atlantis Star + Biopower 276,5 SL was used as a reference product in winter wheat.

The experiment was established on a set of complete randomized blocks in 4 replications.

### **Experiment pattern:**

#### **Winter wheat**

| No. | Name                              | Rate (L/ha) | other rate (g a.s./ha) | Appl code | Growth Stage BBCH |
|-----|-----------------------------------|-------------|------------------------|-----------|-------------------|
| 1   | Untreated Check                   |             |                        |           |                   |
| 2   | CHR/H/MEZO 30 OD                  | 0.5 L/ha    | 15 g a.s./ha           | A         | BBCH 21-32        |
| 3   | CHR/H/MEZO 30 OD                  | 1.0 L/ha    | 30 g a.s./ha           | A         | BBCH 21-32        |
| 4   | Atlantis Star + Biopower 276,5 SL | 0.333 kg/ha | 25.47 g a.s./ha        | A         | BBCH 21-32        |
| 5   | Atlantis Star + Biopower 276,5 SL | 0.666 kg/ha | 50.94 g a.s./ha        | A         | BBCH 21-32        |

## Details of experiments





### Winter wheat

| Report code                     | A.T/2020/056/<br>PO     | A.T/2020/057/<br>PO    | A.T/2021/026/<br>PO    | A.T/2021/027/<br>PO        | A.T/2021/028/<br>PO         | SRPL21-410-<br>336HS    | SRPL21-411-<br>336HS    | SRPL21-412-<br>336HS            | A.T/2022/001/<br>PO        | AH/22/PO/22/<br>Br       | AH/22/PO/22/<br>Ma        | AH/22/PO/22/<br>JW        |
|---------------------------------|-------------------------|------------------------|------------------------|----------------------------|-----------------------------|-------------------------|-------------------------|---------------------------------|----------------------------|--------------------------|---------------------------|---------------------------|
| Location                        | Doregowice/<br>Poland   | Szapsk/ Po-<br>land    | Modrze/<br>Poland      | Nowa Wieś<br>Ujska/ Poland | Wilkowo/<br>Poland          | Tomaryny/<br>Poland     | Krasienin/<br>Poland    | Jankowice<br>Wielkie/<br>Poland | Nowa Wieś<br>Ujska/ Poland | Brody/ Poland            | Machary/<br>Poland        | Laskowo/<br>Poland        |
| Plant<br>/cultivar              | winter wheat/<br>Julius | winter wheat/<br>Rotax | winter wheat/<br>Linus | winter wheat/<br>Euforia   | winter wheat/<br>RGT Bilanz | winter wheat/<br>Findus | winter wheat/<br>Owacja | winter wheat/<br>Argument       | winter wheat/<br>Euforia   | winter wheat/<br>Tonacja | winter wheat/<br>Jantarka | winter wheat/<br>PRINCEPS |
| Seeding date                    | 20.09.2019              | 26.10.2019             | 01.10.2020             | 09.11.2020                 | 18.09.2020                  | 22.09.2020              | 19.10.2020              | 06.10.2020                      | 27.09.2021                 | 23.09.2021               | 21.09.2021                | 24.09.2022                |
| Seeding rate                    | 175 kg/ha               | 200 kg/ha              | 175 kg/ha              | 185 kg/ha                  | 150 kg/ha                   | 180 kg/ha               | 180 kg/ha               | 200 kg/ha                       | 185 kg/ha                  | 190 kg/ha                | 210 kg/ha                 | 200 kg/ha                 |
| Forecrop                        | winter rape             | sugar beet             | sugar beet             | spring barley              | spring barley               | winter rape             | winter rape             | winter rape                     | winter rape                | spring barley            | pea                       | winter oilseed<br>rape    |
| Type of<br>sprayer              | BACCAI                  | BACCAI                 | BACCAI                 | BACCAI                     | BACCAI                      | BACCAI                  | SPRBIC                  | BACCAI                          | BACCAI                     | BICCAI                   | BACCAI                    | BACCAI                    |
| Date of tre-<br>atment          | 08.04.2020              | 08.04.2020             | 31.03.2021             | 01.04.2021                 | 31.03.2021                  | 12.04.2021              | 19.04.2021              | 22.04.2021                      | 12.04.2022                 | 12.04.2022               | 13.04.2022                | 27.04.2022                |
| Plant devel-<br>opment<br>phase | BBCH 31-32              | BBCH 29-31             | BBCH 23-26             | BBCH 21-25                 | BBCH 22-24                  | BBCH 21-23              | BBCH 25-29              | BBCH 30-32                      | BBCH 25-29                 | BBCH 30                  | BBCH 30-31                | BBCH 31                   |
| Soil type                       | loamy sand              | loamy sand             | sandy loam             | loamy sand                 | loamy sand                  | slit loam               | slit loam               | sandy loam                      | loamy sand                 | sandy loam               | loamy sand                | sandy loam                |
| pH                              | 6.2                     | 5.2                    | 6.2                    | 5.2                        | 5.3                         | 5.1                     | 6.9                     | 6.5                             | 7.2                        | 7.0                      | 6.0                       | 5.9                       |
| Water (L/ha)                    | 200 L/ha                | 300 L/ha               | 200 L/ha               | 300 L/ha                   | 200 L/ha                    | 200 L/ha                | 200 L/ha                | 300 L/ha                        | 200 L/ha                   | 230 L/ha                 | 200 L/ha                  | 200 L/ha                  |

Details of agricultural measures, fertilization, and other plant protection products applied during the experiments are included in detailed field study reports listed above.

**Table 3.4-3: Phytotoxicity of product**

Winter wheat post emergence application 12 selectivity trials and 28 efficacy trials (with phytotoxicity assessment) were carried out on winter wheat in Poland in 2020, 2021 and 2022 on a wide range of commercially grown varieties. In six selectivity trials (reports no. A.T/2020/056/PO, A.T/2021/026/PO, A.T/2021/028/PO, SRPL21-410-336HS, SRPL21-411-336HS, A.T/2022/001/PO) and six efficacy trials (reports no. A.T/2020/055/PO, A.T/2021/015/PO, A.T/2021/017/PO, A.T/2021/020/PO, A.T/2021/023/PO, SRPL21-403-336HE) there were observed some phytotoxicity symptoms on tested product (and standard). Phytotoxicity have no impact on yield quality and quantity.

| Number of trials with                               |             | Selectivity trials (12)  |  |                                   |                           | Efficacy trials (28)   |  |
|---|-------------|--|--|-----------------------------------|---------------------------|--|--|
|   |             | CHR/H/MEZO 30 OD   |  | Atlantis Star + Biopower 276,5 SL |                           | CHR/H/MEZO 30 OD   | Atlantis Star + Biopower 276,5 SL  |
|   |             | N  | 2N (or other)  | N                                 | 2N (or other)             | N  | N  |
| Maximum of phytotoxicity recorded during the trials | 0% to 5%    | 5 with <5% and 7 with 0%   | 4 with <5% and 6 with 0%   | 2 with <5% and 5 with 0%          | 2 with <5% and 5 with 0%  | 6 with <5% and 22 with 0%  | 10 with <5% and 13 with 0%   |
|   | >5% to 10%  | n/a  | 2  | 5                                 | 3                         | n/a  | 3  |
|   | >10% to 15% | n/a  | n/a  | n/a                               | 1                         | n/a  | 2  |
|   | >15 %       | n/a  | n/a  | n/a                               | 1                         | n/a  | n/a  |
| Level of symptoms at the last assessments           | 0% to 5%    |  12 |  12 | 1 with <5% and 11 with 0%         | 1 with <5% and 11 with 0% |  28 |  28 |
|   | >5% to 10%  | n/a  | n/a  | n/a                               | n/a                       | n/a  | n/a  |
|   | >10% to 15% | n/a  | n/a  | n/a                               | n/a                       | n/a  | n/a  |
|   | >15 %       | n/a  | n/a  | n/a                               | n/a                       | n/a  | n/a  |

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | <p>Mesosulfuron-methyl is a sulfonylurea herbicide commonly used to control grass weeds in cereals crops, including winter wheat. While effective in weed management, it can have phytotoxic effects on the wheat itself under certain conditions. For example, cold or wet weather can stress the wheat plants, making them more susceptible to herbicide damage. Also, drought conditions can exacerbate phytotoxic effects. Soil pH can influence herbicide availability and persistence. Mesosulfuron-methyl is more persistent in high pH soils, increasing the risk of phytotoxicity. The use of certain adjuvants or mixing with other herbicides can enhance the phytotoxicity of mesosulfuron-methyl.</p> <p>The Applicant submitted in total 12 selectivity trials carried out on winter wheat in different growing seasons (2020, 2021 and 2022). Those trials were conducted in line to appropriate EPPO standards. Different varieties of winter wheat and provinces of Poland were studied during those trials. Appropriate plot area, crop stage and water volume was studied.</p> <p>The selectivity evaluation of the herbicide is to be performed according to listed below EPPO guidelines. The evaluation of herbicide selectivity was carried out 4-5 per season. Results were described in percent of destruction of plant for herbicides treatment compared to plant for untreated, where 0% means no phytotoxicity and 100% - complete destruction. Dose N and 2 N was studied in selectivity trials.</p> |
|-------------------------|---|

|  |   |
|--|---|
|  | <p>During 6 selectivity trials observed phytotoxicity effect against tested PPP – CHR/H/MEZO 30 OD used at 2 N dose (4 trials with 0-5% phytotoxicity effect and 2 trials with 5-10% phytotoxicity effect). Against CHR/H/MEZO 30 OD used at N dose – only in 5 selectivity trials some small phytotoxicity effects was observed (0-5%) in 5 trials. The higher phytotoxicity effect was observed against st. reference products used at N dose (5 trials with 5-10% phytotoxicity effect and 2 trials with 0-5% effect) and 2 N dose (2 trials with 0-5% phytotoxicity effect, 3 trials with 5-10% phytotoxicity effect; 1 trial -10-15% and 1 trials with phytotoxicity effect higher than 15%).</p> <p>Also phytotoxic effect was studied during efficacy trials. N dose was studied during those trials. During 28 efficacy trials – some small phytotoxicity effect (lower than 5%) was observed in 6 trials with tested product used at recommended dose. The higher phytotoxicity effects was observed for st. ref. product. In 3 trials – phytotoxicity effect was at level 5-10% and in 2 trials – 10-15% and during 10 trials – phytotoxicity effect was lower than 5%.</p> <p>Observed symptoms of damage during trials: brightening, discoloration of leaves, growth stunning. However, what is important during the last assessment – no symptoms of negative effect of the tested preparations on winter wheat were observed on any of the trial objects (in the exception of one trial for st. ref. product).</p> <p><b>In the opinion of ZRMs it can be concluded that Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD) is safe for winter wheat at recommended dose (0.5 L/ha). However, according to ZRM's opinion, the following information should be put in the label: “Transient symptoms of phytotoxicity not affected yield or its quality may occur after application of the product on some winter wheat varieties (ex. Arkadia, Euforia, Findus, Hondia, Julius, Linus, Medalistka, Owacja, RGT Bilanz, RGT Reform).”</b></p> |
|--|---|

### 3.4.2 Effect on the yield of treated plants or plant product (KCP 6.4.2)

Influence of CHR/H/MEZO 30 OD on the yield of grains was evaluated in selectivity research. The yield was evaluated on the basis of harvested grains quantity from one hectare (t/ha). The influence of the tested product on quantity of grain was evaluated in 12 field experiments in winter wheat in Poland in 2020, 2021 and 2022. There weren't difference between the treatment objects and standard.

In 6 trials there were phytotoxicity effects reports no. A.T/2020/056/PO, A.T/2021/026/PO, A.T/2021/028/PO, SRPL21-410-336HS, SRPL21-411-336HS, A.T/2022/001/PO. This effects didn't have any negative effect on the yield of winter wheat.

## Winter wheat

table 3.4.2.1-1 The influence of the CHR/H/MEZO 30 OD on yield quantity [t/ha]

| Crop code                     | Report code          | Applica-<br>tion date | Crop stage<br>in applica-<br>tion | Assessment<br>date | Days after<br>application<br>DA-A | Crop stage<br>majority | No.             | 1                  | 2                   | 3                   | 4                                       | 5                                       | LSD(P=0.05) |
|-------------------------------|----------------------|-----------------------|-----------------------------------|--------------------|-----------------------------------|------------------------|-----------------|--------------------|---------------------|---------------------|---|---|-------------|
|                               |                      |                       |                                   |                    |                                   |                        | Name            | Untreated<br>Check | CHR/H/MEZO<br>30 OD | CHR/H/MEZO<br>30 OD | Atlantis Star +<br>Biopower<br>276,5 SL | Atlantis Star +<br>Biopower<br>276,5 SL |             |
|                               |                      |                       |                                   |                    |                                   |                        | Rate (L, kg/ha) | -                  | 0.50                | 1.00                | 0.333 + 1.0                             | 0.666 + 2.0                             |             |
| winter<br>wheat<br>yield t/ha | A.T/2020/056/P<br>O  | 08.04.202<br>0        | BBCH 31-<br>32                    | 06.08.2020         | 120 DA-A                          | BBCH 99                |                 | 7.87               | 8.19                | 7.80                | 7.86                                    | 7.55                                    | 0.512       |
|                               | A.T/2020/057/P<br>O  | 08.04.202<br>0        | BBCH 29-<br>31                    | 07.08.2020         | 121 DA-A                          | BBCH 89                |                 | 5.92               | 6.07                | 6.49                | 5.94                                    | 5.95                                    | 0.708       |
|                               | A.T/2021/026/P<br>O  | 31.03.202<br>1        | BBCH 23-<br>26                    | 02.08.2021         | 124 DA-A                          | BBCH 97                |                 | 8.71               | 8.71                | 8.56                | 8.67                                    | 8.55                                    | 0.410       |
|                               | A.T/2021/027/P<br>O  | 01.04.202<br>1        | BBCH 21-<br>25                    | 27.07.2021         | 117 DA-A                          | BBCH 97                |                 | 7.23               | 6.95                | 7.08                | 6.70                                    | 6.66                                    | 0.878       |
|                               | A.T/2021/028/P<br>O  | 31.03.202<br>1        | BBCH 22-<br>24                    | 10.08.2021         | 132 DA-A                          | BBCH 99                |                 | 8.15               | 8.27                | 8.17                | 8.06                                    | 8.27                                    | 0.545       |
|                               | SRPL21-410-<br>336HS | 12.04.202<br>1        | BBCH 21-<br>23                    | 03.08.2021         | 113 DA-A                          | BBCH 89                |                 | 4.00               | 3.90                | 4.00                | 3.90                                    | 3.90                                    | 0.410       |
|                               | SRPL21-411-<br>336HS | 19.04.202<br>1        | BBCH 25-<br>29                    | 09.08.2021         | 112 DA-A                          | BBCH 99                |                 | 5.70               | 5.70                | 5.72                | 5.71                                    | 5.73                                    | 0.080       |
|                               | SRPL21-412-<br>336HS | 22.04.202<br>1        | BBCH 30-<br>32                    | 29.07.2021         | 98 DA-A                           | BBCH 98                |                 | 6.70               | 7.10                | 7.40                | 7.00                                    | 7.20                                    | 0.730       |
|                               | A.T/2022/001/P<br>O  | 12.04.202<br>2        | BBCH 25-<br>29                    | 28.07.2022         | 107 DA-A                          | BBCH 97                |                 | 8.70               | 8.70                | 8.69                | 8.63                                    | 8.51                                    | 0.178       |
|                               | AH/22/PO/22/B<br>r   | 12.04.202<br>2        | BBCH 30                           | 26.07.2022         | 105 DA-A                          | BBCH 99                |                 | 7.74               | 7.77                | 7.81                | 7.65                                    | 7.68                                    | 0.532       |
|                               | AH/22/PO/22/M<br>a   | 13.04.202<br>2        | BBCH 30-<br>31                    | 12.07.2022         | 90 DA-A                           | BBCH 99                |                 | 6.71               | 6.07                | 6.18                | 6.12                                    | 6.43                                    | 0.483       |
|                               | AH/22/PO/22/J<br>W   | 27.04.202<br>2        | BBCH 31                           | 14.07.2022         | 78 DA-A                           | BBCH 99                |                 | 5.26               | 5.24                | 5.26                | 2.21                                    | 2.27                                    | 0.419       |
| Average                       |                      |                       |                                   |                    |                                   |                        |                 | 6.89               | 6.89                | 6.93                | 6.54                                    | 6.56                                    |             |
| Min.                          |                      |                       |                                   |                    |                                   |                        |                 | 4.00               | 3.90                | 4.00                | 2.21                                    | 2.27                                    |             |
| Max.                          |                      |                       |                                   |                    |                                   |                        |                 | 8.71               | 8.71                | 8.69                | 8.67                                    | 8.55                                    |             |

**Table 3.4-4: Relationship between phytotoxicity and yield.**

In 6 trials there were phytotoxicity effects reports no. A.T/2020/056/PO, A.T/2021/026/PO, A.T/2021/028/PO, SRPL21-410-336HS, SRPL21-411-336HS, A.T/2022/001/PO. This effects didn't have any negative impact on the yield of winter wheat.

No significant differences in the grain yield were noted.

**Winter wheat**

| Test report      | Variety    | Maximum phyto. at 1N rate (%) (DAA) |                                   | Maximum phyto. at 2N (or other) rate (%) (DAA) |                                   | Yield in the untreated control<br>Absolute figures (%) | Yield at 1N as % of untreated |                                   | Yield at 2N (or other) rate as % of untreated |                                   |
|------------------|------------|-------------------------------------|-----------------------------------|--|-----------------------------------|--|-------------------------------|-----------------------------------|---|-----------------------------------|
|                  |            | CHR/H/M EZO 30 OD                   | Atlantis Star + Biopower 276,5 SL | CHR/H/M EZO 30 OD                              | Atlantis Star + Biopower 276,5 SL |  | CHR/H/M EZO 30 OD             | Atlantis Star + Biopower 276,5 SL | CHR/H/M EZO 30 OD                             | Atlantis Star + Biopower 276,5 SL |
| A.T/2020/056/PO  | Julius     | 1.0% (12 DA-A)                      | 2.0% (12-27 DA-A)                 | 2.0% (12-27 DA-A)                              | 5.0% (12-27 DA-A)                 | 7.87 (100%)  | 8.19 (104.1%)                 | 7.86 (99.9%)                      | 7.80 (99.1%)                                  | 7.55 (95.9%)                      |
| A.T/2021/026/PO  | Linus      | 2.0% (13 DA-A)                      | 9.0% (13 DA-A)                    | 7.3% (13 DA-A)                                 | 17.8% (13 DA-A)                   | 8.71 (100%)  | 8.71 (100%)                   | 8.67 (99.5%)                      | 8.56 (98.3%)                                  | 8.55 (98.2%)                      |
| A.T/2021/028/PO  | RGT Bilanz | 1.0% (14 DA-A)                      | 5.8% (26 DA-A)                    | 2.8% (14 DA-A)                                 | 15.0% (14 DA-A)                   | 8.15 (100%)  | 8.27 (106.7%)                 | 8.06 (98.9%)                      | 8.17 (100.2%)                                 | 8.27 (101.5%)                     |
| SRPL21-410-336HS | Findus     | 3.0% (7 DA-A)                       | -                                 | 8.0% (7 DA-A)                                  | -                                 | 4.00 (100%)  | 3.90 (97.5%)                  | 3.90 (97.5%)                      | 4.00 (100%)                                   | 3.90 (97.5%)                      |
| SRPL21-411-336HS | Owacja     | 1.3% (7 DA-A)                       | 1.3% (7 DA-A)                     | 5.0% (7 DA-A)                                  | 5.0% (7 DA-A)                     | 5.70 (100%)  | 5.70 (100%)                   | 5.71 (100.2%)                     | 5.72 (100.4%)                                 | 5.73 (100.5%)                     |
| A.T/2022/001/PO  | Euforia    | -                                   | 7.0% (14 DA-A)                    | 4.0% (14 DA-A)                                 | 10.0% (14 DA-A)                   | 8.70 (100%)  | 8.70 (100%)                   | 8.63 (99.2%)                      | 8.69 (99.9%)                                  | 8.51 (97.8%)                      |

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | <p>The effects of Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H / MEZO 30 OD) on the yield of winter wheat was evaluated in 12 selectivity trials. In these trials, yield was assessed after application of a single N dose (0.5 L/ha) and 2 N (1.0 L/ha). Statistical analysis of yield and its parameters was reported. All results were comparable with standard reference product (Atlantis Star + Biopower 276,5 SL) used at N dose (0.333 + 1.0) and 2 N dose (0.666 + 2.0). Yield from untreated plot – 6.89 t/ha and yield from field treated by CHR/H/MEZO 30 OD was at level 6.89 t/ha (dose N) and 6.93 t/ha (2N dose). Yield from field treated by st. ref. product was: 6.54 t/ha (N dose) and 6.56 t/ha (2N dose)</p> <p>In field trials with winter wheat, Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD) applied at single rate of 0.5 L/ha and a double rate of 1.0 L/ha had no significant adverse effect on the yield. Transient phytotoxic effects was observed in 6 selectivity trials. However, this did not have a negative effect on the winter wheat yield.</p> <p>No statistical differences in yield were observed between the plots treated with CHR/H/MEZO 30 OD and the control plots. It can be stated that CHR/H/MEZO 30 OD is safe for winter wheat yield.</p> |
|-------------------------|---|

### **3.4.3 Effects on the quality of plants or plant products (KCP 6.4.3)**

The influence of CHR/H/MEZO 30 OD on quality of grain was evaluated in 12 field experiments in winter wheat in Poland in 2020, 2021 and 2021. There weren't difference between the treatment objects and standard.

In 6 trials there were phytotoxicity effects report no. A.T/2020/056/PO, A.T/2021/026/PO, A.T/2021/028/PO, SRPL21-410-336HS, SRPL21-411-336HS, A.T/2022/001/PO. This effects didn't have any negative impact on the yield quality of winter wheat.

Details of the data shows tables below.

table 3.4.3.1-1 The influence of the CHR/H/MEZO 30 OD on quality of yield  
Winter wheat (HLW = weight 100 Ltr (hL))

| Crop code              | Report code      | Application date | Crop stage in application | Assessment date | Days after application DA-A | Crop stage majority | No.             | 1               | 2                 | 3                 | 4                                 | 5                                 | LSD(P=.05) |
|------------------------|------------------|------------------|---------------------------|-----------------|-----------------------------|---------------------|-----------------|-----------------|-------------------|-------------------|-----------------------------------|-----------------------------------|------------|
|                        |                  |                  |                           |                 |                             |                     | Name            | Untreated Check | CHR/H/ME ZO 30 OD | CHR/H/ME ZO 30 OD | Atlantis Star + Biopower 276,5 SL | Atlantis Star + Biopower 276,5 SL |            |
|                        |                  |                  |                           |                 |                             |                     | Rate (L, kg/ha) | -               | 0.50              | 1.00              | 0.333 + 1.0                       | 0.666 + 2.0                       |            |
| winter wheat HLW kg/Hl | A.T/2020/056/PO  | 08.04.2020       | BBCH 31-32                | 17.08.2020      | 131 DA-A                    | BBCH 99             |                 | 72.55           | 74.68             | 74.08             | 73.43                             | 71.83                             | 3.031      |
|                        | A.T/2020/057/PO  | 08.04.2020       | BBCH 29-31                | 29.09.2020      | 174 DA-A                    | BBCH 99             |                 | 66.35           | 68.51             | 66.95             | 69.43                             | 67.33                             | 3.372      |
|                        | A.T/2021/026/PO  | 31.03.2021       | BBCH 23-26                | 05.08.2021      | 127 DA-A                    | BBCH 99             |                 | 69.05           | 69.93             | 68.68             | 68.75                             | 69.65                             | 4.504      |
|                        | A.T/2021/027/PO  | 01.04.2021       | BBCH 21-25                | 28.09.2021      | 180 DA-A                    | BBCH 99             |                 | 68.70           | 69.00             | 68.48             | 67.53                             | 67.60                             | 3.416      |
|                        | A.T/2021/028/PO  | 31.03.2021       | BBCH 22-24                | 28.09.2021      | 181 DA-A                    | BBCH 99             |                 | 72.20           | 72.18             | 72.80             | 71.25                             | 71.85                             | 4.560      |
|                        | SRPL21-410-336HS | 12.04.2021       | BBCH 21-23                | 03.08.2021      | 113 DA-A                    | BBCH 89             |                 | 68.40           | 68.33             | 69.98             | 67.65                             | 69.30                             | 7.530      |
|                        | SRPL21-411-336HS | 19.04.2021       | BBCH 25-29                | 30.08.2021      | 133 DA-A                    | BBCH 99             |                 | 73.00           | 72.10             | 72.30             | 73.30                             | 72.80                             | 2.890      |
|                        | SRPL21-412-336HS | 22.04.2021       | BBCH 30-32                | 29.07.2021      | 98 DA-A                     | BBCH 98             |                 | 79.50           | 76.90             | 78.80             | 76.00                             | 81.10                             | 10.830     |
|                        | A.T/2022/001/PO  | 12.04.2022       | BBCH 25-29                | 12.08.2022      | 122 DA-A                    | BBCH 99             |                 | 76.03           | 74.73             | 74.85             | 74.50                             | 75.23                             | 1.431      |
|                        | AH/22/PO/22/Br   | 12.04.2022       | BBCH 30                   | 29.07.2022      | 108 DA-A                    | BBCH 99             |                 | 76.63           | 77.35             | 76.75             | 77.68                             | 76.03                             | 1.496      |
|                        | AH/22/PO/22/Ma   | 13.04.2022       | BBCH 30-31                | 18.07.2022      | 96 DA-A                     | BBCH 99             |                 | 76.38           | 76.23             | 75.58             | 76.18                             | 75.70                             | 1.601      |
|                        | AH/22/PO/22/JW   | 27.04.2022       | BBCH 31                   | 25.07.2022      | 89 DA-A                     | BBCH 99             |                 | 76.78           | 76.43             | 76.75             | 76.26                             | 76.03                             | 1.141      |
|                        | Average          |                  |                           |                 |                             |                     |                 | 72.96           | 73.03             | 73.00             | 72.66                             | 72.87                             |            |
|                        | Min.             |                  |                           |                 |                             |                     |                 | 66.35           | 68.33             | 66.95             | 67.53                             | 67.33                             |            |
|                        | Max.             |                  |                           |                 |                             |                     |                 | 79.50           | 77.35             | 78.80             | 77.68                             | 81.10                             |            |



table 3.4.3.1-2 The influence of the MEZO 30 OD on quality of yield  
Winter wheat thousand weight grain

| Crop code          | Report code      | Application date | Crop stage in application | Assessment date | Days after application DA-A | Crop stage majority | No.             | 1               | 2                 | 3                 | 4                                 | 5                                 | LSD(P=.05) |
|--------------------|------------------|------------------|---------------------------|-----------------|-----------------------------|---------------------|-----------------|-----------------|-------------------|-------------------|-----------------------------------|-----------------------------------|------------|
|                    |                  |                  |                           |                 |                             |                     | Name            | Untreated Check | CHR/H/ME ZO 30 OD | CHR/H/ME ZO 30 OD | Atlantis Star + Biopower 276,5 SL | Atlantis Star + Biopower 276,5 SL |            |
|                    |                  |                  |                           |                 |                             |                     | Rate (L, kg/ha) | -               | 0.50              | 1.00              | 0.333 + 1.0                       | 0.666 + 2.0                       |            |
| winter wheat TGW g | A.T/2020/056/PO  | 08.04.2020       | BBCH 31-32                | 17.08.2020      | 131 DA-A                    | BBCH 99             |                 | 37.43           | 39.55             | 37.05             | 37.67                             | 36.18                             | 3.734      |
|                    | A.T/2020/057/PO  | 08.04.2020       | BBCH 29-31                | 29.09.2020      | 174 DA-A                    | BBCH 99             |                 | 47.66           | 51.15             | 49.56             | 47.91                             | 47.64                             | 2.103      |
|                    | A.T/2021/026/PO  | 31.03.2021       | BBCH 23-26                | 05.08.2021      | 127 DA-A                    | BBCH 99             |                 | 34.51           | 36.03             | 31.83             | 34.73                             | 35.61                             | 4.261      |
|                    | A.T/2021/027/PO  | 01.04.2021       | BBCH 21-25                | 28.09.2021      | 180 DA-A                    | BBCH 99             |                 | 35.55           | 34.49             | 35.27             | 34.04                             | 32.94                             | 3.462      |
|                    | A.T/2021/028/PO  | 31.03.2021       | BBCH 22-24                | 28.09.2021      | 181 DA-A                    | BBCH 99             |                 | 36.78           | 36.08             | 38.01             | 36.60                             | 36.90                             | 5.524      |
|                    | SRPL21-410-336HS | 12.04.2021       | BBCH 21-23                | 03.08.2021      | 113 DA-A                    | BBCH 89             |                 | 32.33           | 33.70             | 34.40             | 31.98                             | 34.40                             | 5.365      |
|                    | SRPL21-411-336HS | 19.04.2021       | BBCH 25-29                | 30.08.2021      | 133 DA-A                    | BBCH 99             |                 | 44.53           | 44.56             | 44.56             | 44.53                             | 44.52                             | 0.090      |
|                    | SRPL21-412-336HS | 22.04.2021       | BBCH 30-32                | 29.07.2021      | 98 DA-A                     | BBCH 98             |                 | 37.90           | 37.50             | 37.60             | 39.50                             | 37.90                             | 4.630      |
|                    | A.T/2022/001/PO  | 12.04.2022       | BBCH 25-29                | 12.08.2022      | 122 DA-A                    | BBCH 99             |                 | 41.69           | 41.48             | 42.10             | 40.50                             | 41.53                             | 2.565      |
|                    | AH/22/PO/22/Br   | 12.04.2022       | BBCH 30                   | 29.07.2022      | 108 DA-A                    | BBCH 99             |                 | 45.76           | 45.90             | 45.28             | 45.78                             | 44.87                             | 0.139      |
|                    | AH/22/PO/22/Ma   | 13.04.2022       | BBCH 30-31                | 18.07.2022      | 96 DA-A                     | BBCH 99             |                 | 55.25           | 55.08             | 55.23             | 54.60                             | 55.75                             | 1.766      |
|                    | AH/22/PO/22/JW   | 27.04.2022       | BBCH 31                   | 25.07.2022      | 89 DA-A                     | BBCH 99             |                 | 50.98           | 50.36             | 50.01             | 50.60                             | 49.81                             | 1.052      |
| Average            |                  |                  |                           |                 |                             |                     |                 | 41.70           | 42.16             | 41.74             | 41.54                             | 41.50                             |            |
| Min.               |                  |                  |                           |                 |                             |                     |                 | 32.33           | 33.70             | 31.83             | 31.98                             | 32.94                             |            |
| Max.               |                  |                  |                           |                 |                             |                     |                 | 55.25           | 55.08             | 55.23             | 54.60                             | 55.75                             |            |

table 3.4.3.1-3 The influence of the CHR/H/MEZO 30 OD on quality of yield  
Winter wheat moisture content

| Crop code                       | Report code      | Application date | Crop stage in application | Assessment date | Days after application DA-A | Crop stage majority | No.             | 1               | 2                 | 3                 | 4                                 | 5                                 | LSD(P=.05) |
|---------------------------------|------------------|------------------|---------------------------|-----------------|-----------------------------|---------------------|-----------------|-----------------|-------------------|-------------------|-----------------------------------|-----------------------------------|------------|
|                                 |                  |                  |                           |                 |                             |                     | Name            | Untreated Check | CHR/H/ME ZO 30 OD | CHR/H/ME ZO 30 OD | Atlantis Star + Biopower 276,5 SL | Atlantis Star + Biopower 276,5 SL |            |
|                                 |                  |                  |                           |                 |                             |                     | Rate (L, kg/ha) | -               | 0.50              | 1.00              | 0.333 + 1.0                       | 0.666 + 2.0                       |            |
| winter wheat moisture content % | A.T/2020/056/PO  | 08.04.2020       | BBCH 31-32                | 06.08.2020      | 120 DA-A                    | BBCH 99             |                 | 12.70           | 13.18             | 13.08             | 12.95                             | 13.10                             | 0.379      |
|                                 | A.T/2020/057/PO  | 08.04.2020       | BBCH 29-31                | 07.08.2020      | 121 DA-A                    | BBCH 89             |                 | 12.75           | 12.80             | 12.78             | 12.65                             | 12.90                             | 0.259      |
|                                 | A.T/2021/026/PO  | 31.03.2021       | BBCH 23-26                | 02.08.2021      | 124 DA-A                    | BBCH 97             |                 | 16.45           | 16.30             | 16.43             | 16.43                             | 16.45                             | 0.237      |
|                                 | A.T/2021/027/PO  | 01.04.2021       | BBCH 21-25                | 27.07.2021      | 117 DA-A                    | BBCH 97             |                 | 13.33           | 13.10             | 13.20             | 13.23                             | 13.13                             | 0.252      |
|                                 | A.T/2021/028/PO  | 31.03.2021       | BBCH 22-24                | 10.08.2021      | 132 DA-A                    | BBCH 99             |                 | 14.05           | 14.05             | 14.05             | 14.00                             | 13.98                             | 0.116      |
|                                 | SRPL21-410-336HS | 12.04.2021       | BBCH 21-23                | 03.08.2021      | 113 DA-A                    | BBCH 89             |                 | 13.45           | 12.88             | 13.33             | 12.88                             | 13.55                             | 0.802      |
|                                 | SRPL21-411-336HS | 19.04.2021       | BBCH 25-29                | 09.08.2021      | 112 DA-A                    | BBCH 99             |                 | 12.80           | 12.70             | 12.70             | 12.60                             | 12.60                             | 0.480      |
|                                 | SRPL21-412-336HS | 22.04.2021       | BBCH 30-32                | 29.07.2021      | 98 DA-A                     | BBCH 98             |                 | 11.30           | 11.20             | 11.20             | 11.50                             | 11.30                             | 0.770      |
|                                 | A.T/2022/001/PO  | 12.04.2022       | BBCH 25-29                | 28.07.2022      | 107 DA-A                    | BBCH 97             |                 | 12.60           | 12.63             | 12.65             | 12.65                             | 12.63                             | 0.224      |
|                                 | AH/22/PO/22/Br   | 12.04.2022       | BBCH 30                   | 26.07.2022      | 105 DA-A                    | BBCH 99             |                 | 11.88           | 11.68             | 11.45             | 11.60                             | 11.60                             | 0.536      |
|                                 | AH/22/PO/22/Ma   | 13.04.2022       | BBCH 30-31                | 12.07.2022      | 90 DA-A                     | BBCH 99             |                 | 15.08           | 15.25             | 15.58             | 15.40                             | 15.55                             | 0.955      |
|                                 | AH/22/PO/22/JW   | 27.04.2022       | BBCH 31                   | 14.07.2022      | 78 DA-A                     | BBCH 99             |                 | 13.76           | 13.44             | 13.60             | 13.48                             | 13.43                             | 0.295      |
| Average                         |                  |                  |                           |                 |                             |                     |                 | 13.35           | 13.27             | 13.34             | 13.28                             | 13.35                             |            |
| Min.                            |                  |                  |                           |                 |                             |                     |                 | 11.30           | 11.20             | 11.20             | 11.50                             | 11.30                             |            |
| Max.                            |                  |                  |                           |                 |                             |                     |                 | 16.45           | 16.30             | 16.43             | 16.43                             | 16.45                             |            |

table 3.4.3.1-4 The influence of the CHR/H/MEZO 30 OD on quality of yield  
Winter wheat protein content

| Crop code                      | Report code      | Application date | Crop stage in application | Assessment date | Days after application DA-A | Crop stage majority | No.             | 1               | 2                 | 3                 | 4                                 | 5                                 | LSD(P=.05) |
|--------------------------------|------------------|------------------|---------------------------|-----------------|-----------------------------|---------------------|-----------------|-----------------|-------------------|-------------------|-----------------------------------|-----------------------------------|------------|
|                                |                  |                  |                           |                 |                             |                     | Name            | Untreated Check | CHR/H/ME ZO 30 OD | CHR/H/ME ZO 30 OD | Atlantis Star + Biopower 276,5 SL | Atlantis Star + Biopower 276,5 SL |            |
|                                |                  |                  |                           |                 |                             |                     | Rate (L, kg/ha) | -               | 0.50              | 1.00              | 0.333 + 1.0                       | 0.666 + 2.0                       |            |
| winter wheat protein content % | A.T/2020/056/PO  | 08.04.2020       | BBCH 31-32                | 17.08.2020      | 131 DA-A                    | BBCH 99             |                 | 12.33           | 11.80             | 11.38             | 11.58                             | 11.83                             | 0.933      |
|                                | A.T/2020/057/PO  | 08.04.2020       | BBCH 29-31                | 29.09.2020      | 174 DA-A                    | BBCH 99             |                 | 13.70           | 13.78             | 13.43             | 13.73                             | 13.55                             | 0.911      |
|                                | A.T/2021/026/PO  | 31.03.2021       | BBCH 23-26                | 05.08.2021      | 127 DA-A                    | BBCH 99             |                 | 13.88           | 13.44             | 14.07             | 13.85                             | 13.13                             | 2.259      |
|                                | A.T/2021/027/PO  | 01.04.2021       | BBCH 21-25                | 28.09.2021      | 180 DA-A                    | BBCH 99             |                 | 12.63           | 12.75             | 12.93             | 13.30                             | 13.38                             | 1.530      |
|                                | A.T/2021/028/PO  | 31.03.2021       | BBCH 22-24                | 28.09.2021      | 181 DA-A                    | BBCH 99             |                 | 13.28           | 13.20             | 12.40             | 13.08                             | 14.20                             | 1.741      |
|                                | SRPL21-410-336HS | 12.04.2021       | BBCH 21-23                | 03.08.2021      | 113 DA-A                    | BBCH 89             |                 | 16.23           | 16.18             | 15.88             | 16.18                             | 15.98                             | 0.656      |
|                                | SRPL21-411-336HS | 19.04.2021       | BBCH 25-29                | 08.09.2021      | 143 DA-A                    | BBCH 99             |                 | 13.80           | 13.80             | 13.80             | 13.80                             | 13.80                             | 0.460      |
|                                | SRPL21-412-336HS | 22.04.2021       | BBCH 30-32                | 15.09.2021      | 146 DA-A                    | BBCH 99             |                 | 17.00           | 16.90             | 16.80             | 16.80                             | 16.80                             | 0.260      |
|                                | A.T/2022/001/PO  | 12.04.2022       | BBCH 25-29                | 12.08.2022      | 122 DA-A                    | BBCH 99             |                 | 12.55           | 12.60             | 12.38             | 12.78                             | 12.68                             | 0.471      |
|                                | AH/22/PO/22/Br   | 12.04.2022       | BBCH 30                   | 26.09.2022      | 167 DA-A                    | BBCH 99             |                 | 13.10           | 12.90             | 12.80             | 13.20                             | 13.10                             | -          |
|                                | AH/22/PO/22/Ma   | 13.04.2022       | BBCH 30-31                | 12.09.2022      | 152 DA-A                    | BBCH 99             |                 | 11.70           | 11.10             | 10.90             | 10.80                             | 11.20                             | -          |
|                                | AH/22/PO/22/JW   | 27.04.2022       | BBCH 31                   | 12.09.2022      | 138 DA-A                    | BBCH 99             |                 | 12.40           | 12.00             | 11.85             | 12.00                             | 12.15                             | -          |
|                                | Average          |                  |                           |                 |                             |                     |                 | 13.55           | 13.37             | 13.22             | 13.43                             | 13.48                             |            |
|                                | Min.             |                  |                           |                 |                             |                     |                 | 11.70           | 11.10             | 10.90             | 10.80                             | 11.20                             |            |
|                                | Max.             |                  |                           |                 |                             |                     |                 | 17.00           | 16.90             | 16.80             | 16.80                             | 16.80                             |            |

table 3.4.3.1-5 The influence of the CHR/H/MEZO 30 OD on quality of yield  
Winter wheat gluten content

| Crop code                     | Report code      | Application date | Crop stage in application | Assessment date | Days after application DA-A | Crop stage majority | No.             | 1               | 2                 | 3                 | 4                                 | 5                                 | LSD(P=.05) |
|-------------------------------|------------------|------------------|---------------------------|-----------------|-----------------------------|---------------------|-----------------|-----------------|-------------------|-------------------|-----------------------------------|-----------------------------------|------------|
|                               |                  |                  |                           |                 |                             |                     | Name            | Untreated Check | CHR/H/MEZ O 30 OD | CHR/H/MEZ O 30 OD | Atlantis Star + Biopower 276,5 SL | Atlantis Star + Biopower 276,5 SL |            |
|                               |                  |                  |                           |                 |                             |                     | Rate (L, kg/ha) | -               | 0.50              | 1.00              | 0.333 + 1.0                       | 0.666 + 2.0                       |            |
| winter wheat gluten content % | A.T/2020/056/PO  | 08.04.2020       | BBCH 31-32                | 17.08.2020      | 131 DA-A                    | BBCH 99             |                 | 25.43           | 22.28             | 22.83             | 23.75                             | 24.08                             | 1.761      |
|                               | A.T/2020/057/PO  | 08.04.2020       | BBCH 29-31                | 29.09.2020      | 174 DA-A                    | BBCH 99             |                 | 30.53           | 30.38             | 29.25             | 30.38                             | 29.80                             | 4.012      |
|                               | A.T/2021/026/PO  | 31.03.2021       | BBCH 23-26                | 05.08.2021      | 127 DA-A                    | BBCH 99             |                 | 27.45           | 26.70             | 28.26             | 27.63                             | 25.78                             | 5.777      |
|                               | A.T/2021/027/PO  | 01.04.2021       | BBCH 21-25                | 28.09.2021      | 180 DA-A                    | BBCH 99             |                 | 26.35           | 26.38             | 26.90             | 27.65                             | 27.88                             | 3.362      |
|                               | A.T/2021/028/PO  | 31.03.2021       | BBCH 22-24                | 28.09.2021      | 181 DA-A                    | BBCH 99             |                 | 26.95           | 26.58             | 25.78             | 26.28                             | 29.33                             | 4.348      |
|                               | SRPL21-411-336HS | 19.04.2021       | BBCH 25-29                | 08.09.2021      | 143 DA-A                    | BBCH 99             |                 | 28.30           | 28.50             | 28.30             | 28.60                             | 28.60                             | 1.240      |
|                               | A.T/2022/001/PO  | 12.04.2022       | BBCH 25-29                | 12.08.2022      | 122 DA-A                    | BBCH 99             |                 | 24.78           | 24.78             | 24.38             | 25.20                             | 25.05                             | 1.011      |
|                               | AH/22/PO/22/Br   | 12.04.2022       | BBCH 30                   | 26.09.2022      | 167 DA-A                    | BBCH 99             |                 | 29.30           | 29.70             | 28.80             | 31.00                             | 23.80                             | -          |
|                               | AH/22/PO/22/Ma   | 13.04.2022       | BBCH 30-31                | 12.09.2022      | 152 DA-A                    | BBCH 99             |                 | 25.30           | 22.80             | 22.30             | 21.40                             | 23.80                             | -          |
|                               | AH/22/PO/22/JW   | 27.04.2022       | BBCH 31                   | 12.09.2022      | 138 DA-A                    | BBCH 99             |                 | 27.30           | 26.25             | 25.55             | 31.00                             | 26.85                             | -          |
| Average                       |                  |                  |                           |                 |                             |                     |                 | 27.17           | 26.44             | 26.24             | 27.29                             | 26.50                             |            |
| Min.                          |                  |                  |                           |                 |                             |                     |                 | 24.78           | 22.28             | 22.30             | 21.40                             | 23.80                             |            |
| Max.                          |                  |                  |                           |                 |                             |                     |                 | 30.53           | 30.38             | 29.25             | 31.00                             | 29.80                             |            |

table 3.4.3.1-6 The influence of the CHR/H/MEZO 30 OD on quality of yield  
Winter wheat starch content

| Crop code                   |                                      |                 | winter wheat starch content % |                |                |         |       |       |
|-----------------------------|--------------------------------------|-----------------|-------------------------------|----------------|----------------|---------|-------|-------|
| Report code                 |                                      |                 | AH/22/PO/22/Br                | AH/22/PO/22/Ma | AH/22/PO/22/JW |         |       |       |
| Application date            |                                      |                 | 12.04.2022                    | 13.04.2022     | 27.04.2022     |         |       |       |
| Crop stage in application   |                                      |                 | BBCH 30                       | BBCH 30-31     | BBCH 31        |         |       |       |
| Assessment date             |                                      |                 | 26.09.2022                    | 12.09.2022     | 12.09.2022     |         |       |       |
| Days after application DA-A |                                      |                 | 167 DA-A                      | 152 DA-A       | 138 DA-A       |         |       |       |
| Crop stage majority         |                                      |                 | BBCH 99                       | BBCH 99        | BBCH 99        | Average | Min.  | Max.  |
| No.                         | Name                                 | Rate (L, kg/ha) |                               |                |                |         |       |       |
| 1                           | Untreated Check                      | -               | 70.30                         | 69.70          | 70.00          | 70.00   | 69.70 | 70.30 |
| 2                           | CHR/H/MEZO 30 OD                     | 0.50            | 70.60                         | 69.60          | 70.10          | 70.10   | 69.60 | 70.60 |
| 3                           | CHR/H/MEZO 30 OD                     | 1.00            | 70.50                         | 69.90          | 70.20          | 70.20   | 69.90 | 70.50 |
| 4                           | Atlantis Star + Biopower<br>276,5 SL | 0.333 + 1.0     | 70.20                         | 70.00          | 70.20          | 70.13   | 70.00 | 70.20 |
| 5                           | Atlantis Star + Biopower<br>276,5 SL | 0.666 + 2.0     | 70.30                         | 69.30          | 69.80          | 69.80   | 69.30 | 70.30 |
| LSD(P=.05)                  |                                      |                 | -                             | -              | -              |         |       |       |

|                         |  |
|-------------------------|--|
| <b>Comments of ZRMs</b> | <p>The effects of Pacyfik 30 OD / Vidal 30 OD (product code: CHR/H/ MEZO 30 OD) on yield quality of winter wheat was studied in 12 selectivity trials carried out in Poland (N-E EPPO zone). In those trails, yield quality was assessed after application of a single N dose (0.5 L/ha) of the above product and 2N (1.0 L/ha). Statistical analysis of yield quality and its parameters were performed. All results were comparable with standard reference product (Atlantis Star + Biopower 276,5 SL) used at N and 2N dose. The following parameters were studied: HLW, TGW, moisture content, protein content, gluten content and starch content.</p> <p><b>HLW (kg/hL):</b> Data on HLW was presented in 12 trials carried out in PL on winter wheat. No negative effect on the hectolitre weight was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for hectolitre weight in the majority of trials.</p> <p><b>TGW (g):</b> Data on TGW was presented in 12 trials carried out in PL on winter wheat. No negative effect on the thousand grain weight was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for thousand grain weight in the majority of trials.</p> <p><b>Moisture content (%):</b> Data on moisture content was presented in 12 trials carried out in PL on winter wheat. No negative effect on the moisture content was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for moisture content in the majority of trials.</p> <p><b>Protein content (%):</b> Data on protein content was presented in 12 trials carried out in PL on winter wheat. No negative effect on the protein content was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for protein content in the majority of trials.</p> <p><b>Gluten content (%):</b> Data on gluten content was presented in 12 trials carried out in PL on winter wheat. No negative effect on the gluten content was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for gluten content in the majority of trials.</p> <p><b>Starch content (%):</b> Data on starch content was presented in 3 trials carried out in PL on winter wheat. No negative effect on the starch content was noted for any of tested dose rate of CHR/H/MEZO 30 OD in any of trials carried out. Comparing CHR/H/MEZO 30 OD with standard, no statistically significant differences were noted for starch content in the majority of trials.</p> <p>In field trials with winter wheat, CHR/H/MEZO 30 OD applied at single rate of 0.5 L/ha had no significant adverse effects on yield quality. Transient phytotoxic effect was noted in 6 selectivity trials. However, this did not have a negative effect on the yield quality of winter wheat.</p> <p><b>No statistical differences in yield quality were observed between the plots treated with CHR/H/MEZO 30 OD and the control plots. It can be stated that CHR/H/MEZO 30 OD is safe for winter wheat quality of yield.</b></p> |
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### 3.4.4 Effects on transformation processes (KCP 6.4.4)

Lack of additional tests in this range. Active substances comprising in this product has been applied for many years, not only in Poland but also in the other countries of Europe.

#### Mesosulfuron-methyl

According to magnitude of residues in plants provided in Section B7 in core dossier no significant residues, i.e. >0.1 mg/kg, were found in grain and therefore processing studies are not required. No further studies have been performed. Therefore, no impact for effects on yeasts or lactic bacteria are predicted.

According *EPPO 1/243 (2) Effects of plant protection products on transformation processes* and Section B7 additional study is not required.

|                         |  |
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| <b>Comments of ZRMs</b> | <p>Mesosulfuron-methyl is a sulfonylurea herbicide commonly used to control grasses and broadleaf weeds in cereal crops. Understanding its potential impact on the transformation processes such as baking and fermenting is important for food safety and its quality.</p> <p>Mesosulfuron-methyl can possible leave residues on cereal grains. The persistence of these residues through processing stages is crucial. Typically, residues might reduce during milling but could still be present in end products like flour. Enzyme activity is critical in dough formation and yeast fermentation. Mesosulfuron-methyl residues could potentially affect these enzymes. Fermentation relies heavily on yeast and bacteria. Pesticide residues might inhibit yeast activity, affecting the fermentation process and the final's product's quality. In cereal-based alcohol production (e.g., beer, brewing), residues could affect the efficiency of fermentation and the taste of the final product. Implementing good agricultural practices can minimize pesticide residues on harvested cereals. Certain processing methods, such as washing, peeling and thermal processing can help reduce residues.</p> <p>ZRMs accepted Applicant's statement for lack of trials against transformation processes for winter wheat. CHR/H/MEZO 30 OD is a containing mesosulfuron-methyl – active substance known and used in many herbicides for long ago, with no negative effects known on transformation processes on the target crop. Also, CHR/H/MEZO 30 OD will be applied early in the season (BBCH 21-32), before inflorescence emergence and heading, and it is not expected that mesosulfuron-methyl or its metabolites will be transferred to the grains. Additionally, no significant residues, i.e. &gt;0.1 mg/kg, were found in grain and therefore processing studies are not required. Therefore, in line to EPPO guideline PP 1/243 – no further data is deemed to be necessary. <b>A safe use of CHR/H/MEZO 30 OD can be considered for winter wheat involved on the transformation processes.</b></p> |
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### 3.4.5 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)

There is no information available pointing to presence of any limitations to using of CHR/H/MEZO 30 OD in seed crops of winter wheat.

In the course of studies carried out in Poland in the season of 2020, 2021 and 2022 on product CHR/H/MEZO 30 OD the herbicide has not been observed to have any significant influence on yield.

The product may be used in seed crops of winter wheat.

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | When considering its impact on the propagation of winter wheat, several factors must be taken into account, including seed germination, seedling development and overall plant health. Mesosulfuron-methyl can affect seed germination if residues are present in |
|-------------------------|---|

|  |   |
|--|---|
|  | <p>the soil at planting. Low levels of mesosulfuron-methyl may have minimal impact, but higher concentration could significantly reduce germination rates. Herbicides like mesosulfuron-methyl can affect root and shoot development. Impaired root growth can reduce the plant's ability to uptake water and nutrients, leading to weaker seedlings and lower overall vigor.</p> <p>Mesosulfuron-methyl herbicide can impact the propagation of winter wheat by affecting seed germination and seedling development, particularly if residues persist in the soil. The extent of these impacts depends on the application rates, soil conditions and environmental factors. Proper management practices, including appropriate application timing can help mitigate potential negative effects on winter wheat propagation.</p> <p>ZRMs accepted Applicant's statement for lack of trials against propagation. CHR/H/MEZO 30 OD has shown to be selective to winter wheat, showing negligible phytotoxicity symptoms and with no effect on the yield and its quality. Additionally, no residues were detected at harvest. Therefore, no further data is deemed to be necessary. <b>A safe use of CHR/H/MEZO 30 OD can be considered for plant products to be used for propagation.</b></p> |
|--|---|

### Summary and conclusion

Herbicide CHR/H/MEZO 30 OD has demonstrated good crop tolerance to winter wheat. Therefore concluded that CHR/H/MEZO 30 OD is safe usage at proposed rate and this support the label claim for the use in winter wheat.

Undesirable effects are not expected on succeeding crops, adjacent crop, part of plants used for propagating purposes and beneficial organisms.

According to the above, the plant protection product CHR/H/MEZO 30 OD can be approved to the market and use in Poland according to proposed range of use – GAP

Based on submitted data the following regulation on the label is proposed:

Recommended dose at:

CHR/H/MEZO 30 OD 0.5 L/ha

The product CHR/H/MEZO 30 OD should be use once per season at spring post – emergence. To avoid resistance, products contain active substance with the same group shouldn't be used year after year on the same field. Due to the increasing number of resistant weed biotypes to ALS inhibitors, the use of the product is not recommended if resistance is suspected.

## 3.5 Observations on other undesirable or unintended side-effects (KCP 6.5)

### 3.5.1 Impact on succeeding crops (KCP 6.5.1)

According to EPPO guidance PP 1/207 worst case NOER from Seedling Emergence study (A. Gierbuszewska, Study code: G-14-21):

Table 3.5-1: Recalculated NOER-value for test product

| Crop                     | Worst case NOER from seedling emergence study [ml/ha] | Recalculated NOER to g/ha using product's density = 0.9526 g/ml | Recalculated NOER from g/ha to mg/kg soil using factor 750 (5 cm depth and 1.5 g/cm soil's density) |
|--------------------------|---|---|---|
| Pea <i>Pisum sativum</i> | 125.0   | 119.08  | 0.1588  |



|   |       |        |        |
|---|-------|--------|--------|
| Flax <i>Linum usitatissimum</i>                       | 7.8   | 7.43   | 0.0099 |
| Cabbage <i>Brassica oleracea</i> var. <i>capitata</i> | 31.3  | 29.82  | 0.0398 |
| Carrot <i>Daucus carota</i>                           | 7.8   | 7.43   | 0.0099 |
| Onion <i>Allium cepa</i>                              | 31.3  | 29.82  | 0.0398 |
| Corn <i>Zea mays</i>                                  | 250.0 | 238.15 | 0.3175 |

Predicted Environmental Concentrations (PEC) for the individual actives are performed with equations (1) and (2) (cfr. EPPO guidance PP 1/207(2)):

$$(1) \text{PEC}_{\text{ini}} = \frac{A \cdot (1 - \text{fint})}{100 \cdot d \cdot b}$$

$$(2) \text{PEC}_{\text{act}}(t) = \text{PEC}_{\text{ini}} \cdot e^{-k \cdot t} = \text{PEC}_{\text{ini}} \cdot e^{-t \cdot \ln 2 / \text{DT50}}$$

Whereby A = application rate (g active/ha), fint = fraction intercepted by crop cover (50% for winter wheat at BBCH 21-32), d = depth of soil layer (cm) and bd = bulk density of soil.  
DT50 =155 days – as worst case scenario for product's DT50

Table 3.5-2: PEC-values and TER-calculation of test product (active substance) based on NOER-values.

| Succeeding crop(1)                            | Days after application(2) | NOER mg/kg soil (3) | PEC(4)               |                       |                       |                       | TER(5)              |                      |                      |                      |
|---|---------------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|----------------------|
|   |                           |                     | mg/kg soil e.g. 5 cm | mg/kg soil e.g. 10 cm | mg/kg soil e.g. 20 cm | mg/kg soil e.g. 30 cm | NOER/P EC e.g. 5 cm | NOER/P EC e.g. 10 cm | NOER/P EC e.g. 20 cm | NOER/P EC e.g. 30 cm |
| <i>Pisum sativum</i>                          | 1                         | 0.1588              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 0.50000             | 1.00000              | 2.00000              | 3.0000               |
|   | 150                       |                     | 0.1624               | 0.0812                | 0.0406                | 0.0271                | 0.97789             | -                    | -                    | -                    |
|   | 160                       |                     | 0.1553               | 0.0776                | 0.0388                | 0.0259                | 1.02261             | -                    | -                    | -                    |
| <i>Linum usitatissimum</i>                    | 1                         | 0.0099              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 0.3120              | 0.06240              | 0.12480              | 0.18720              |
|   | 370                       |                     | 0.0607               | 0.0304                | 0.0152                | 0.0101                | 0.16321             | 0.32542              | 0.65283              | 0.97925              |
|   | 380                       |                     | 0.0580               | 0.0290                | 0.0145                | 0.0097                | 0.17067             | 0.34135              | 0.68269              | 1.02404              |
|   | 460                       |                     | 0.0406               | 0.0203                | 0.0101                | 0.0068                | 0.24408             | 0.48816              | 0.97632              | -                    |
|   | 470                       |                     | 0.0388               | 0.0194                | 0.0097                | 0.0065                | 0.25524             | 0.51049              | 1.02098              | -                    |
|   | 620                       |                     | 0.0198               | 0.0099                | 0.0050                | 0.0033                | 0.49920             | 0.99840              | -                    | -                    |
|   | 630                       |                     | 0.0190               | 0.0095                | 0.0047                | 0.0032                | 0.52203             | 1.04406              | -                    | -                    |
|   | 770                       |                     | 0.0101               | 0.0051                | 0.0025                | 0.0017                | 0.97632             | -                    | -                    | -                    |
|   | 780                       |                     | 0.0097               | 0.0049                | 0.0024                | 0.0016                | 1.02098             | -                    | -                    | -                    |
| <i>Brassica oleracea</i> var. <i>capitata</i> | 1                         | 0.0398              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 0.12520             | 0.25040              | 0.50080              | 0.75120              |
|   | 60                        |                     | 0.2428               | 0.1214                | 0.0607                | 0.0405                | 0.16373             | 0.32746              | 0.65493              | 0.98239              |
|   | 70                        |                     | 0.2322               | 0.1161                | 0.0580                | 0.0387                | 0.17122             | 0.34244              | 0.68488              | 1.02732              |
|   | 150                       |                     | 0.1624               | 0.0812                | 0.0406                | 0.0271                | 0.24486             | 0.48973              | 0.97945              | -                    |
|   | 160                       |                     | 0.1553               | 0.0776                | 0.0388                | 0.0259                | 0.25606             | 0.51212              | 1.02425              | -                    |
|   | 300                       |                     | 0.0830               | 0.0415                | 0.0208                | 0.0138                | 0.47890             | 0.95780              | -                    | -                    |
|   | 310                       |                     | 0.0794               | 0.0397                | 0.0198                | 0.0132                | 0.50080             | 1.00160              | -                    | -                    |

| Succeeding crop(1)   | Days after applica-tion(2) | NOER mg/kg soil (3) | PEC(4)               |                       |                       |                       | TER(5)              |                      |                      |                      |
|----------------------|----------------------------|---------------------|----------------------|-----------------------|-----------------------|-----------------------|---------------------|----------------------|----------------------|----------------------|
|                      |                            |                     | mg/kg soil e.g. 5 cm | mg/kg soil e.g. 10 cm | mg/kg soil e.g. 20 cm | mg/kg soil e.g. 30 cm | NOER/P EC e.g. 5 cm | NOER/P EC e.g. 10 cm | NOER/P EC e.g. 20 cm | NOER/P EC e.g. 30 cm |
|                      | 460                        |                     | 0.0406               | 0.0203                | 0.0101                | 0.0068                | 0.97945             | -                    | -                    | -                    |
|                      | 470                        |                     | 0.0388               | 0.0194                | 0.0097                | 0.0065                | 1.02425             | -                    | -                    | -                    |
| <i>Daucus carota</i> | 1                          | 0.0099              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 0.3120              | 0.06240              | 0.12480              | 0.18720              |
|                      | 370                        |                     | 0.0607               | 0.0304                | 0.0152                | 0.0101                | 0.16321             | 0.32542              | 0.65283              | 0.97925              |
|                      | 380                        |                     | 0.0580               | 0.0290                | 0.0145                | 0.0097                | 0.17067             | 0.34135              | 0.68269              | 1.02404              |
|                      | 460                        |                     | 0.0406               | 0.0203                | 0.0101                | 0.0068                | 0.24408             | 0.48816              | 0.97632              | -                    |
|                      | 470                        |                     | 0.0388               | 0.0194                | 0.0097                | 0.0065                | 0.25524             | 0.51049              | 1.02098              | -                    |
|                      | 620                        |                     | 0.0198               | 0.0099                | 0.0050                | 0.0033                | 0.49920             | 0.99840              | -                    | -                    |
|                      | 630                        |                     | 0.0190               | 0.0095                | 0.0047                | 0.0032                | 0.52203             | 1.04406              | -                    | -                    |
|                      | 770                        |                     | 0.0101               | 0.0051                | 0.0025                | 0.0017                | 0.97632             | -                    | -                    | -                    |
|                      | 780                        |                     | 0.0097               | 0.0049                | 0.0024                | 0.0016                | 1.02098             | -                    | -                    | -                    |
| <i>Allium cepa</i>   | 1                          | 0.0398              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 0.12520             | 0.25040              | 0.50080              | 0.75120              |
|                      | 60                         |                     | 0.2428               | 0.1214                | 0.0607                | 0.0405                | 0.16373             | 0.32746              | 0.65493              | 0.98239              |
|                      | 70                         |                     | 0.2322               | 0.1161                | 0.0580                | 0.0387                | 0.17122             | 0.34244              | 0.68488              | 1.02732              |
|                      | 150                        |                     | 0.1624               | 0.0812                | 0.0406                | 0.0271                | 0.24486             | 0.48973              | 0.97945              | -                    |
|                      | 160                        |                     | 0.1553               | 0.0776                | 0.0388                | 0.0259                | 0.25606             | 0.51212              | 1.02425              | -                    |
|                      | 300                        |                     | 0.0830               | 0.0415                | 0.0208                | 0.0138                | 0.47890             | 0.95780              | -                    | -                    |
|                      | 310                        |                     | 0.0794               | 0.0397                | 0.0198                | 0.0132                | 0.50080             | 1.00160              | -                    | -                    |
|                      | 460                        |                     | 0.0406               | 0.0203                | 0.0101                | 0.0068                | 0.97945             | -                    | -                    | -                    |
|                      | 470                        |                     | 0.0388               | 0.0194                | 0.0097                | 0.0065                | 1.02425             | -                    | -                    | -                    |
| <i>Zea mays</i>      | 1                          | 0.3175              | 0.3175               | 0.1588                | 0.0794                | 0.0529                | 1.0000              | 2.00000              | 4.0000               | 6.00000              |

- (1) possible following crops in a regular crop rotation  
(2) adequate value for following crop in a regular crop rotation  
(3) NOER-values of succeeding crops  
(4) PEC (soil depth e.g. 5/20 cm)  
(5) TER (soil depth e.g. 5/20 cm)

The TER values of CHR/H/CFF 250 EC do exceed a trigger value 1 , then no further trials are required when:

| Crop                                   | Date of sow-ing | Crop rotation   |
|--|-----------------|---|
|  |                 | DT50= 155   |
| <i>Pisum sativum</i>                   | March-April     | Normal crop rotation without plowing                            |
| <i>Linum usitatissimum</i>             | April           | Normal crop rotation after plowing on 30 cm depth before sowing |
| <i>Brassica oleracea var. capitata</i> | March-April     | Normal crop rotation after plowing on 10 cm depth before sowing |
| <i>Daucus carota</i>                   | April           | Normal crop rotation after plowing on 30 cm depth before sowing |
| <i>Allium cepa</i>                     | April           | Normal crop rotation after plowing on 10 cm depth before sowing |
| <i>Zea mays</i>                        | April-May       | Normal crop rotation without plowing                            |

Labeling in Succeeding crop sections:

- in normal crop rotation after plowing on 10 cm, you can sow cabbage, bulbs (onions, etc.)
- in normal crop rotation after plowing on 30 cm, you can sow oilseeds (winter oilseed rape etc.)

- in normal crop rotation without plowing you can sow: winter and spring cereals (including maize) and legumes (peas, etc.).

In case of crop failure as a succeeding crop you can sow winter and spring cereals – without plowing before sowing and legumes (peas, etc.) after plowing on 10 cm.

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| <b>Comments of ZRMs</b> | <p>Mesosulfuron-methyl is a sulfonylurea herbicide used to control broadleaf and grassy weeds in crops such as winter wheat. While effective in weed management, its use can have implications for succeeding crops due to its persistence and activity in the soil.</p> <p>Mesosulfuron-methyl can persist in the soil for varying durations depending on soil pH, organic matter content, microbial activity and climatic conditions. In alkaline soils, its degradation is slower, leading to longer persistence. Residual mesosulfuron-methyl can affect sensitive crops planted in the same field in subsequent seasons. Crops like legumes (soybeans, peas), root crops (carrots, potatoes) and some vegetable (lettuce, tomatoes) are particularly sensitive to sulfonylurea herbicides. This sensitivity can result in poor germination, stunted growth, chlorosis and other phytotoxic symptoms. Some cereal crops and grasses have higher tolerance levels and are less affected by mesosulfuron-methyl residues. So, crop rotation should consider the tolerance of succeeding crops.</p> <p>The use of mesosulfuron-methyl herbicide on winter wheat can impact succeeding crops through soil residues that persist and affect sensitive species. The extent of these impacts depends on factors such as soil properties, environmental conditions and the specific crops planted. To mitigate potential negative effects, implement management practices like crop rotation, proper herbicide application and integrated weed management.</p> <p>The EU requirements on plant protection products requires, that sufficient data must be reported to permit an evaluation of possible adverse effects of a treatment with the plant protection product on succeeding crops if studies and evaluations presented in the other part of the dossier, show that significant residues of the active substance, its metabolites or degradation products, which have or may have biological activity on succeeding crops, remain in soil or in plant materials up to sowing or planting time of possible succeeding crops. Therefore, the Applicant should present the assessment of the possible effect of CHR/H/MEZO 30 OD on crops grown as rotational or replacement crops following crops treated with that product, prepared in line to the EPPO 1/207 (2). This standard is intended as a general standard on the methods used to examine whether the active substance of a plant protection product can cause negative effects on crops grown after a crop treated with that product. These crops can be grown as normal rotational crops as well as replacement crops in case of crop failure.</p> <p>PEC-values and TER-calculation of test product (active substance) based on NOER-values were presented for <i>Pisum sativum</i>, <i>Linum usitatissimum</i>, <i>Brassica oleracea</i> var. <i>capitata</i>, <i>Daucus carota</i> and <i>Allium cepa</i>. The TER values of CHR/H/MEZO 30 OD do exceed a trigger value 1. Therefore, the risk to succeeding crops are considered to be low following an application of CHR/H/MEZO 30 OD to winter wheat in accordance with the proposed GAP.</p> <p>Component of CHR/H/MEZO 30 OD is known authorized ingredient for long time ago. So, restrictions on rotational crops are well-known. According to the scientific data half dissipation time (DT<sub>50</sub>) of mesosulfuron-methyl in field tests ranges from 10 to 50 days, with an average of around 20-30 days. This degradation rate is influenced by soil pH, soil type, microbial activity and climatic conditions. So, mesosulfuron-methyl is degraded in the soil during the growing season to a level that does not pose a risk to succeeding crops. The information in label regarding effects on succeeding crops is sufficient.</p> |
|-------------------------|--|

|  |   |
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|  | <b>ZRMs accepted following entry in label project of CHR/H/MEZO 30 OD: “The product breaks down in the soil and poses no risk to subsequent crops. If a crop treated with Pacyfik 30 OD / Vidal 30 OD needs to be cleared earlier, faba beans can be grown in the same season after ploughing to a depth of 10 cm, while spring and winter cereals, including maize, can be grown without ploughing”.</b> |
|--|---|

### 3.5.2 Impact on other plants including adjacent crops (KCP 6.5.2)

According to A. Gierbuszewska, Study code: G-49-20 and A. Wróbel Study code G-50-20. please find results for seedling emergence and vegetative vigour below.

**Assessment of the risk for non-target plants due to the use of CHR/H/MEZO 30 OD in cereals.**

**Table 3.5.2-1: Assessment of the risk for non-target plants due to the use of CHR/H/MEZO 30 OD in Cereals (Winter cereals, Spring cereals), based on study: Terrestrial Plant Test: Vegetative vigour test**

| <b>Intended use</b>                            | cereals   |                   |   |                                   |
|--|---|-------------------|---|-----------------------------------|
| <b>Product</b>                                 | CHR/H/MEZO 30 OD                                    |                   |   |                                   |
| <b>Application rate (g/ha)</b>                 | 476.3 g/ha  |                   |   |                                   |
| <b>MAF</b>                                     | 1   |                   |   |                                   |
| <b>Test species</b>                            | <b>ER<sub>50</sub><br/>(ml test item/ha)</b>        | <b>Drift rate</b> | <b>PER<sub>off-field</sub><br/>(g/ha)</b> | <b>TER<br/>criterion: TER ≥ 5</b> |
| Pea <i>Pisum sativum</i>                       | 47.63 which is equivalent to 45.37 g test item/ha   | 0.0277            | 13.19                                     | 3.44                              |
| Flax <i>Linum usitatissimum</i>                | 500.0 which is equivalent to 476.3 g test item /ha  | 0.0277            | 13.19                                     | 36.11                             |
| Cabbage <i>Brassica oleracea var. capitata</i> | 68.17 which is equivalent to 64.94 g test item/ha   | 0.0277            | 13.19                                     | 4.92                              |
| Carrot <i>Daucus carota</i>                    | 169.99 which is equivalent to 161.93 g test item/ha | 0.0277            | 13.19                                     | 12.28                             |
| Onion <i>Allium cepa</i>                       | 500.0 which is equivalent to 476.3 g test item/ha   | 0.0277            | 13.19                                     | 36.11                             |
| Corn <i>Zea mays</i>                           | 261.09 which is equivalent to 248.71g test item/ha  | 0.0277            | 13.19                                     | 18.86                             |

MAF: Multiple application factor; PER: Predicted environmental rate; TER: toxicity to exposure ratio. TER values shown in bold fall below the relevant trigger.

**Table 3.5.2-1: Assessment of the risk for non-target plants due to the use of CHR/H/MEZO 30 OD in Winter cereals, Spring cereals, based on study: Terrestrial Plant Test: Seedling Emergence and Seedling Growth Test**

|                     |                  |
|---------------------|------------------|
| <b>Intended use</b> | cereals          |
| <b>Product</b>      | CHR/H/MEZO 30 OD |

|  |  |                   |   |                                   |
|--|--|-------------------|---|-----------------------------------|
| <b>Application rate (g/ha)</b>                 |  | 476.3 g/ha        |   |                                   |
| <b>MAF</b>                                     |  | 1                 |   |                                   |
| <b>Test species</b>                            | <b>ER<sub>50</sub><br/>(mLtest item /ha)</b>       | <b>Drift rate</b> | <b>PER<sub>off-field</sub><br/>(g/ha)</b> | <b>TER<br/>criterion: TER ≥ 5</b> |
| Pea <i>Pisum sativum</i>                       | 500.0 which is equivalent to 476.3 g test item/ha  | 0.0277            | 13.19                                     | 36.11                             |
| Flax <i>Linum usitatissimum</i>                | 500.0 which is equivalent to 476.3 g test item/ha  | 0.0277            | 13.19                                     | 36.11                             |
| Cabbage <i>Brassica oleracea var. capitata</i> | 461.31 which is equivalent to 439.44               | 0.0277            | 13.19                                     | 33.32                             |
| Carrot <i>Daucus carota</i>                    | 293.84 which is equivalent to 279.91g test item/ha | 0.0277            | 13.19                                     | 21.22                             |
| Onion <i>Allium cepa</i>                       | 500.0 which is equivalent to 476.3g test item /ha  | 0.0277            | 13.19                                     | 36.11                             |
| Corn <i>Zea mays</i>                           | 500.0 which is equivalent to 476.3g test item /ha  | 0.0277            | 13.19                                     | 36.11                             |

MAF: Multiple application factor; PER: Predicted environmental rate; TER: toxicity to exposure ratio. TER values shown in bold fall below the relevant trigger.

In order to reduce the off-field exposure, risk mitigation measures can be implemented. These correspond to unsprayed in-field buffer strips of a given width and/or the usage of drift reducing nozzles. The results of the risk assessment using typical mitigation measures (no-spray buffer zones of 5 or 10 m; drift-reducing nozzles with reduction by 50 %, 75 %, or 90 %) are summarised in the following table.

**Table 3.5.2-2: Risk assessment for non-target terrestrial plants due to the use of CHR/H/MEZO 30 OD in Cereals (Winter cereals, Spring cereals) considering risk mitigation (in-field no-spray buffer zones, and drift-reducing nozzles)**

|                                |                   |   |   |   |   |
|--------------------------------|-------------------|---|---|---|---|
| <b>Intended use</b>            |                   | Cereals                                   |   |   |   |
| <b>Product</b>                 |                   | CHR/H/MEZO 30 OD                          |   |   |   |
| <b>Application rate (g/ha)</b> |                   | 1x476.3 (g/ha)                            |   |   |   |
| <b>MAF</b>                     |                   | 1   |   |   |   |
| <b>Buffer strip (m)</b>        | <b>Drift rate</b> | <b>PER<sub>off-field</sub><br/>(g/ha)</b> | <b>PER<sub>off-field</sub><br/>50 % drift red.<br/>(g/ha)</b> | <b>PER<sub>off-field</sub><br/>75 % drift red.<br/>(g/ha)</b> | <b>PER<sub>off-field</sub><br/>90 % drift red.<br/>(g/ha)</b> |
| 1                              | 0.0277            | 13.19                                     | 6.595   | 3.2975  | 1.319   |
| 5                              | 0.0057            | 2.71                                      | 1.355   | 0.6775  | 0.271   |
| 10                             | 0.0029            | 1.38                                      | 0.69  | 0.345   | 0.138   |
| <b>Toxicity value</b>          |                   | TER=3.44                                  |   |   |   |
| <b>Test species</b>            |                   | Pea <i>Pisum sativum</i>                  |   |   |   |
| <b>ER<sub>50</sub></b>         |                   | 45.37 g test item/ha                      |   |   |   |
| <b>Criterion:</b>              |                   | TER ≥ 5                                   |   |   |   |
| <b>Buffer strip (m)</b>        | <b>Drift rate</b> | <b>TER</b>                                | <b>TER<br/>50 % drift red.</b>                                | <b>TER<br/>75% drift red.</b>                                 | <b>TER<br/>90 % drift red.</b>                                |
| 1                              | 0.0277            | 3.44                                      | 6.88  | 13.76   | 34.40   |
| 5                              | 0.0057            | 16.74                                     | 33.48   | 66.97   | 167.42  |

|  |                   |   |                            |                           |                            |
|--|-------------------|---|----------------------------|---------------------------|----------------------------|
| 10   | 0.0029            | 32.88   | 65.75                      | 131.5                     | 328.77                     |
| <b>Toxicity value</b><br><b>Test species</b> |                   | TER=4.92<br>Cabbage <i>Brassica oleracea</i> var. <i>capitata</i> |                            |                           |                            |
| <b>ER<sub>50</sub></b><br><b>Criterion:</b>  |                   | 476.3 g test item/ha<br>TER ≥ 5                                   |                            |                           |                            |
| <b>Buffer strip (m)</b>                      | <b>Drift rate</b> | <b>TER</b>  | <b>TER 50 % drift red.</b> | <b>TER 75% drift red.</b> | <b>TER 90 % drift red.</b> |
| 1  | 0.0277            | 4.92  | 72.22                      | 144.44                    | 361.10                     |
| 5  | 0.0057            | 175.76  | 351.5                      | 703.03                    | 1757.56                    |
| 10   | 0.0029            | 345.14  | 700.44                     | 1380.6                    | 3451.45                    |

MAF: Multiple application factor; PER: Predicted environmental rates; TER: toxicity to exposure ratio. Criteria values shown in bold breach the relevant trigger.

CHR/H/MEZO 30 OD pose a unacceptable risk for non-target terrestrial plants according to label. This product can be used on non-target terrestrial plants only with 5 m no-spray buffer zone or with 1 m no-spray buffer zone and 50% nozzle reduction.

|                         |   |
|-------------------------|---|
| <b>Comments of ZRMs</b> | <p>Using mesosulfuron-methyl herbicide on cereals at the BBCH 21-32 growth stages can have potential effects on adjacent crops. These effects depend on various factors, including herbicide drift, leaching, runoff and the sensitivity of the neighbouring crops.</p> <p>During application, mesosulfuron-methyl can drift onto adjacent fields, particularly if there are windy conditions. Drift can cause damage to neighbouring sensitive crops. Symptoms of drift damage may indicate leaf chlorosis, stunting and necrosis, particularly in broadleaf crops and other sensitive species.</p> <p>Mesosulfuron-methyl can move through the soil, especially in sandy or low organic matter soils, potentially reaching the root zones of adjacent crops. Heavy rainfall or irrigation can cause runoff, carrying the herbicide to neighbouring fields and affecting non-target crops.</p> <p>Application at the BBCH 21-32 of winter wheat is a critical period for controlling weeds but also a time when adjacent crops might be actively growing and highly susceptible to herbicide exposure. Apply mesosulfuron-methyl when wind speeds are low and away from sensitive adjacent crops to minimize drift. Establish buffer zones between treated fields and adjacent sensitive crops to reduce the risk of drift and runoff.</p> <p>To mitigate risk of negative impact on the adjacent crops, implement best application practices, use appropriate sprayer techniques, establish buffer zones and manage soil and water effectively.</p> <p><u>Summary:</u> In order to reduce the off-field exposure, risk mitigation measures can be implemented. These correspond to unsprayed in-field buffer strips of a given width and/or the usage of drift reducing nozzles. ZRMs agree with Applicant that <b>CHR/H/MEZO 30 OD pose a unacceptable risk for non-target terrestrial plants according to label. This product can be used on non-target terrestrial plants only with 5 m no-spray buffer zone or with 1 m no-spray buffer zone and 50% nozzle reduction.</b></p> <p>For more information's, please refer to Registration Report, Part B, Section 9.</p> |
|-------------------------|---|

### Tank cleaning

Cleaning of equipment should be conducted according to the flowing procedure:

- Immediately after spraying drain tank completely. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
- Rinse inside of tank with clean water and flush through boom and hoses using at least one tenth of the spray tank volume. Drain completely.
- Fill the tank with clean water and add one of the cleaning agents recommended for clean-up of spraying equipment. Agitate for a minimum of 10 min. and then flush the boom and hoses with the cleaning solution. Nozzles and filters should be removed and cleaned up separately with a recommended cleaning agent.
- Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume. Drain tank completely.
- CHR/H/MEZO 30 OD is non-corrosive to equipment, non-flammable and non-volatile.

According to Report I. Knapik, Study code: ICB/80/2022 the effectiveness of cleaning was done regards to Efficacy Guideline 305:

#### Course of experiment.

Each rinsing procedure was applied for 3 bottles with test item dispersions.

#### Single rinse procedure.

- The bottle was inverted twice, then the bottle was shaken once and the dispersion was poured out,
- 10 mL of tap water was added, the bottle was inverted twice, and the rinsing was poured out,
- 10 mL of acetonitrile was added and the bottle was shaken to coat all surfaces. The acetonitrile was analysed for the active substances content.

#### Double rinse procedure.

- The bottle was inverted twice, then the bottle was shaken once and the dispersion was poured out,
- 10 mL of tap water was added, the bottle was inverted twice, and the rinsing was poured out,
- point b) was repeated,
- 10 mL of acetonitrile was added and the bottle was shaken to coat all surfaces. The acetonitrile was analysed for the active substances content.

#### Triple rinse procedure.

- The bottle was inverted twice, then the bottle was shaken once and the dispersion was poured out,
- 10 mL of tap water was added, the bottle was inverted twice, and the rinsing was poured out, c) point b) was repeated twice,
- 10 mL of acetonitrile was added and the bottle was shaken to coat all surfaces. The acetonitrile was analysed for the active substances content.

|                         |  |
|-------------------------|--|
| <b>Comments of ZRMs</b> | <p>ZRMs accept the procedure for handling residual liquids and cleaning equipment included in the label design:</p> <p><i>“Spray residuals after treatment must be managed to reduce the risk of surface water and groundwater contamination under the Water Act and soil contamination, i.e:</i></p> <ul style="list-style-type: none"><li><i>– if possible, use the residues after dilution on the treated surface, or</i></li><li><i>– disposed of by technical solutions which ensure the biological degradation of the active substances of the plant protection products, or</i></li><li><i>– otherwise disposed of in accordance with waste legislation.</i></li></ul> <p><i>Wash equipment thoroughly after use.</i></p> <p><i>The water used to wash the equipment must be treated in the same way as the spray liquid residues.</i></p> <p><i>Due to the very high sensitivity of some crops to even negligible amounts of the product, it is very important to thoroughly rinse the sprayer after treatment, especially be-</i></p> |
|-------------------------|--|

|  |  |
|--|--|
|  | <p><i>fore use on crops other than those recommended, as described below:</i></p> <ul style="list-style-type: none"> <li>– <i>Empty the tank, then rinse all parts of the sprayer and empty again.</i></li> <li>– <i>Fill the tank with water, adding one of the recommended sprayer detergents, and rinse for at least 10 minutes with the agitator on.</i></li> <li>– <i>Dismantle, wash and rinse the sprayer components separately in the sprayer wash solution. Rinse the tank and all sprayer components again with clean water”.</i></li> </ul> |
|--|--|

### 3.5.3 Effects on beneficial and other non-target organisms (KCP 6.5.3)

Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in Part B, Section 9 (Ecotoxicology).

#### Compatibility with current management practices including IPM

Not applicable

|                         |  |
|-------------------------|--|
| <b>Comments of ZRMs</b> | <p>The use of mesosulfuron-methyl herbicide, like other chemical weed control agents, can have various effects on beneficial and non-target organisms.</p> <p>Mesosulfuron-methyl can affect the diversity and activity of soil microbial communities. Can inhibit certain soil enzymes involved in organic matter breakdown and nutrient release, potentially reducing soil fertility.</p> <p>Drift or runoff of mesosulfuron-methyl can cause phytotoxic effects on non-target plants, including crop and wild flora. Those symptoms may include chlorosis, stunted growth and necrosis.</p> <p>Mesosulfuron-methyl is not directly toxic to insects like bees and butterflies, its impact on flowering plants can reduce forage availability for these pollinators.</p> <p>Runoff containing mesosulfuron-methyl can reach water bodies, affecting aquatic plants, algae and microorganisms. Some studies indicate that sulfonylurea herbicides can be toxic to aquatic invertebrates and fish at high concentrations, although mesosulfuron-methyl typically show low acute toxicity.</p> <p>Mesosulfuron-methyl is generally considered to have low toxicity to birds and mammals. However, secondary effects through the food chain or habitat changes can still be significant.</p> <p><u>Possible mitigation strategies:</u></p> <ul style="list-style-type: none"> <li>✓ apply herbicide precisely to target areas using equipment that minimizes drift and runoff.</li> <li>✓ apply during appropriate weather conditions (low wind, no rain forecast) to reduce off-target movement.</li> <li>✓ create buffer zones with untreated vegetation around fields to protect non-target organisms and water bodies.</li> <li>✓ incorporate non-chemical weed control methods to reduce reliance on herbicide.</li> </ul> <p><b>Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarized in Ecotoxicology Section.</b> However, implementing best management practices such as targeted application, buffer zones and integrated pest management can help mitigate these risks, promoting more sustainable and environmentally friendly agricultural practices.</p> |
|-------------------------|--|



### Summary and conclusion

Herbicide CHR/H/MEZO 30 OD has demonstrated good crop tolerance to winter wheat. Therefore concluded that CHR/H/MEZO 30 OD is safe usage at proposed rate and this support the label claim for the use in winter wheat.

Undesirable effects are not expected on succeeding crops, adjacent crop and beneficial organisms.

Use of CHR/H/MEZO 30 OD according to the proposed GAP does not represent a hazard to rotational crops and does not justify a specific labelling. CHR/H/MEZO 30 OD is not persistent in soil nor is it taken up by succeeding crops.

### 3.6 Other/special studies

Not performed

|                  |                     |
|------------------|---------------------|
| Comments of ZRMs | Statement accepted. |
|------------------|---------------------|

### 3.7 List of test facilities including the corresponding certificates

Table 3.7-1: List of test facilities

| Test facility  | Address   | Certificate (Yes or No) |
|--|---|-------------------------|
| SynTech Research Poland Sp. z o.o.                                       | ul. Jagiellońska 69/1, 85-027 Bydgoszcz, Poland | Yes                     |
| A.T Sp. z o.o.   | ul. Przemysłowa 3, 88-300 Mogilno, Poland       | Yes                     |
| Poznań University of Life Sciences, Research and Education Center Gorzyń | ul. Wojska Polskiego 28, 60-637 Poznań, Poland  | Yes                     |

## Appendix 1 Lists of data considered in support of the evaluation

### List of data submitted by the applicant and relied on

| Data point | Author(s)       | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner                  |
|------------|-----------------|------|---|---|------------------------|
| KCP 6.2    | Mateusz Ćwik    | 2020 | The efficacy and selectivity of mesosulfuron methyl in winter wheat<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL20-230-336HE<br>GEP - yes<br>Unpublished                          | N                                       | Chemiroł<br>Sp. z o.o. |
| KCP 6.2    | Jacek Kozłowski | 2020 | The efficacy and selectivity of mesosulfuron methyl in winter wheat<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL20-231-336HE<br>GEP - yes<br>Unpublished                          | N                                       | Chemiroł<br>Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2020 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/051/PO<br>GEP - yes<br>Unpublished | N                                       | Chemiroł<br>Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2020 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/052/PO<br>GEP - yes<br>Unpublished | N                                       | Chemiroł<br>Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2020 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to   | N                                       | Chemiroł<br>Sp. z o.o. |

| Data point | Author(s)             | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner               |
|------------|-----------------------|------|---|---|---------------------|
|            |                       |      | control of weeds, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/053/PO<br>GEP - yes<br>Unpublished   |   |                     |
| KCP 6.2    | Joanna Guzińska       | 2020 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/054/PO<br>GEP - yes<br>Unpublished                                   | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska       | 2020 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/055/PO<br>GEP - yes<br>Unpublished                                   | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Dr hab. Robert Idziak | 2020 | Assessment of efficacy of herbicide CHR/H/MEZO applied in winter wheat<br><br>Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department;<br>ul. Wojska<br>Polskiego 28, 60-637 Poznań<br><br>Report no.: AH/20/PO/6/Pr/MEZO<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska       | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/011/PO<br>GEP - yes<br>Unpublished                                   | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska       | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.   | N                                       | Chemirol Sp. z o.o. |

| Data point | Author(s)       | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not  | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner               |
|------------|-----------------|------|--|---|---------------------|
|            |                 |      | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/012/PO<br>GEP - yes<br>Unpublished   |   |                     |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/014/PO<br>GEP - yes<br>Unpublished  | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/015/PO<br>GEP - yes<br>Unpublished  | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/016/PO<br>GEP - yes<br>Unpublished  | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/ MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/017/PO<br>GEP - yes<br>Unpublished | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/ MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.   | N                                       | Chemiroł Sp. z o.o. |

| Data point | Author(s)       | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner               |
|------------|-----------------|------|---|---|---------------------|
|            |                 |      | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/018/PO<br>GEP - yes<br>Unpublished  |   |                     |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/019/PO<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/020/PO<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/021/PO<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/022/PO<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Joanna Guzińska | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.   | N                                       | Chemirol Sp. z o.o. |

| Data point | Author(s)          | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner                  |
|------------|--------------------|------|---|---|------------------------|
|            |                    |      | ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/023/PO<br>GEP - yes<br>Unpublished  |   |                        |
| KCP 6.2    | Joanna Guzińska    | 2021 | Efficacy evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/024/PO<br>GEP - yes<br>Unpublished | N                                       | Chemirol<br>Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-403-336HE<br>GEP - yes<br>Unpublished   | N                                       | Chemirol<br>Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-404-336HE<br>GEP - yes<br>Unpublished   | N                                       | Chemirol<br>Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-405-336HE<br>GEP - yes<br>Unpublished   | N                                       | Chemirol<br>Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland   | N                                       | Chemirol<br>Sp. z o.o. |

| Data point | Author(s)          | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner               |
|------------|--------------------|------|---|---|---------------------|
|            |                    |      | Poland<br><br>Report no.: SRPL21-406-336HE<br>GEP - yes<br>Unpublished  |   |                     |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-407-336HE<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-408-336HE<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.2    | Zdzisław Jaskólski | 2021 | Efficacy and selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland<br><br>Report no.: SRPL21-409-336HE<br>GEP - yes<br>Unpublished | N                                       | Chemirol Sp. z o.o. |
| KCP 6.4    | Joanna Guzińska    | 2020 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2020/056/PO<br>GEP - yes<br>Unpublished                | N                                       | Chemirol Sp. z o.o. |
| KCP 6.4    | Joanna Guzińska    | 2020 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied at spring into winter wheat, Poland, 2020.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno   | N                                       | Chemirol Sp. z o.o. |

| Data point | Author(s)          | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not  | Data<br>Veri-<br>brate<br>study<br>Y/N | Owner                  |
|------------|--------------------|------|--|--|------------------------|
|            |                    |      | Report no.: A.T/2020/057/PO<br>GEP - yes<br>Unpublished  |  |                        |
| KCP 6.4    | Joanna Guzińska    | 2021 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/026/PO<br>GEP - yes<br>Unpublished | N                                      | Chemiroł<br>Sp. z o.o. |
| KCP 6.4    | Joanna Guzińska    | 2021 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/027/PO<br>GEP - yes<br>Unpublished | N                                      | Chemiroł<br>Sp. z o.o. |
| KCP 6.4    | Joanna Guzińska    | 2021 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied into winter wheat to control of weeds, Poland, 2021.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2021/028/PO<br>GEP - yes<br>Unpublished | N                                      | Chemiroł<br>Sp. z o.o. |
| KCP 6.4    | Zdzisław Jaskolski | 2021 | Selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o., Jagiellońska 69/1 85.027 Bydgoszcz<br><br>Report no.: SRPL21-410-336HS<br>GEP - yes<br>Unpublished                        | N                                      | Chemiroł<br>Sp. z o.o. |
| KCP 6.4    | Zdzisław Jaskolski | 2021 | Selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o., Jagiellońska 69/1 85.027 Bydgoszcz<br><br>Report no.: SRPL21-411-336HS<br>GEP - yes<br>Unpublished                        | N                                      | Chemiroł<br>Sp. z o.o. |



| Data point | Author(s)          | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not  | Data<br>Verte-<br>brate<br>study<br>Y/N | Owner               |
|------------|--------------------|------|--|---|---------------------|
| KCP 6.4    | Zdzisław Jaskolski | 2021 | Selectivity of CHR/H/MEZO 30 OD (mesosulfuron-methyl 30 g/L) in winter wheat.<br><br>SynTech Research Poland Sp. z o.o., Jagiellońska 69/1 85.027 Bydgoszcz<br><br>Report no.: SRPL21-412-336HS<br>GEP - yes<br>Unpublished  | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.4    | Joanna Guzińska    | 2022 | Selectivity evaluation of herbicide CHR/H/MEZO 30 OD when applied into winter wheat to control of weeds, Poland, 2022.<br><br>A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno<br><br>Report no.: A.T/2022/001/PO<br>GEP - yes<br>Unpublished   | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.4    | Beata Szymańska    | 2022 | Assessment of the selectivity of the herbicide CHR/H/MEZO 30 OD in winter wheat cultivation<br><br>Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department;<br>ul. Wojska<br>Polskiego 28, 60-637 Poznań<br><br>Report no.: AH/22/PO/22/Br<br>GEP - yes<br>Unpublished | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.4    | Beata Szymańska    | 2022 | Assessment of the selectivity of the herbicide CHR/H/MEZO 30 OD in winter wheat cultivation<br><br>Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department;<br>ul. Wojska<br>Polskiego 28, 60-637 Poznań<br><br>Report no.: AH/22/PO/22/Ma<br>GEP - yes<br>Unpublished | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.4    | Beata Szymańska    | 2022 | Assessment of the selectivity of the herbicide CHR/H/MEZO 30 OD in winter wheat cultivation<br><br>Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department;<br>ul. Wojska<br>Polskiego 28, 60-637 Poznań<br><br>Report no.: AH/22/PO/22/JW<br>GEP - yes<br>Unpublished | N                                       | Chemiroł Sp. z o.o. |
| KCP 6.5.1  | Anna Gierbuszewska | 2023 | Mesosulfuron 30 OD (CHR/H/MEZO 30 OD)<br>Terrestrial Plant Test: Vegetative Vigour Test  | N                                       | Chemiroł Sp. z o.o. |

| Data point | Author(s)   | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not   | Data<br>Vertebrate<br>study<br>Y/N | Owner             |
|------------|-------------|------|---|------------------------------------|-------------------|
|            |             |      | Łukasiewicz Research Network – Institute of Industrial Organic Chemistry Branch Pszczyna<br>Ecotoxicology Research Group<br><br>Study code: G-49-20<br>GLP:yes<br>Unpublished   |                                    |                   |
| KCP 6.5.1  | Anna Wróbel | 2023 | Mesosulfuron 30 OD (CHR/H/MEZO 30 OD)<br>Terrestrial Plant Test: Seedling Emergence and Seedling Growth Test<br><br>Łukasiewicz Research Network – Institute of Industrial Organic Chemistry Branch Pszczyna<br>Ecotoxicology Research Group<br><br>Study code: G-50-20<br>GLP:yes<br>Unpublished | N                                  | Chemrol Sp. z o.o |

**List of data submitted or referred to by the applicant and relied on, but already evaluated at EU peer review**

Not applicable

| Data point | Author(s) | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not | Vertebrate<br>study<br>Y/N | Owner |
|------------|-----------|------|---|----------------------------|-------|
| n/a        | n/a       | n/a  | n/a   | n/a                        | n/a   |
| n/a        | n/a       | n/a  | n/a   | n/a                        | n/a   |

**List of data submitted by the applicant and not relied on**

Not applicable

| Data point | Author(s) | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not | Vertebrate<br>study<br>Y/N | Owner |
|------------|-----------|------|---|----------------------------|-------|
| n/a        | n/a       | n/a  | n/a   | n/a                        | n/a   |
| n/a        | n/a       | n/a  | n/a   | n/a                        | n/a   |

**List of data relied on not submitted by the applicant but necessary for evaluation**

Not applicable

| <b>Data point</b> | <b>Author(s)</b> | <b>Year</b> | <b>Title<br/>Company Report No.<br/>Source (where different from company)<br/>GLP or GEP status<br/>Published or not</b> | <b>Vertebrate study<br/>Y/N</b> | <b>Owner</b> |
|-------------------|------------------|-------------|--|---------------------------------|--------------|
| n/a               | n/a              | n/a         | n/a  | n/a                             | n/a          |
| n/a               | n/a              | n/a         | n/a  | n/a                             | n/a          |

## **Appendix 2 Additional information provided by the applicant**

Not applicable

### Appendix 3 Summary of data on trials site and application details per use

| Test report/ re-search number (1) | Trial location (2); Crop cultivar; F/G (3); N/A (4)        | Testing Unit (5)   | Test method (6); Plot size; Sample size (7)                          | Treatment        |          |              |                     |
|-----------------------------------|--|--|--|------------------|----------|--------------|---------------------|
|                                   |  |  |  | Growth stage (8) | Interval | Total number | Spray volume (L/ha) |
| <b>SRPL20-230-336HE</b>           | Baborówko/<br>Poland<br>winter wheat/<br>Arkadia<br>F<br>N | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland   | EPPO PP<br>1/93(3)<br><br>3.0 m x 5.0<br>m = 15.0 m <sup>2</sup>     | BBCH 30-32       | n/a      | 1            | 200<br>L/ha         |
| <b>SRPL20-231-336HE</b>           | Bychowo/<br>Poland<br>winter wheat/<br>Patras<br>F<br>N    | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland   | EPPO PP<br>1/93(3)<br><br>3.0 m x 5.0<br>m = 15.0 m <sup>2</sup>     | BBCH 30-32       | n/a      | 1            | 300<br>L/ha         |
| <b>A.T/2020/051/PO</b>            | Kocanowo/<br>Poland<br>winter wheat/<br>Apostel<br>F<br>N  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.0<br>m = 12.5 m <sup>2</sup>     | BBCH 30-32       | n/a      | 1            | 300<br>L/ha         |
| <b>A.T/2020/052/PO</b>            | Angowice/<br>Poland<br>winter wheat/<br>Etana<br>F<br>N    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.7<br>m = 16.75<br>m <sup>2</sup> | BBCH 30-31       | n/a      | 1            | 200<br>L/ha         |
| <b>A.T/2020/053/PO</b>            | Świerki/ Poland<br>winter wheat/<br>Arkadia<br>F<br>N      | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.0<br>m = 12.5 m <sup>2</sup>     | BBCH 31-32       | n/a      | 1            | 200<br>L/ha         |
| <b>A.T/2020/054/PO</b>            | Wilcze/ Poland<br>winter wheat/<br>Arkadia<br>F<br>N       | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0<br>m = 15.0 m <sup>2</sup>     | BBCH 30-31       | n/a      | 1            | 200<br>L/ha         |
| <b>A.T/2020/055/PO</b>            | Rogowo/ Poland<br>winter wheat/<br>Medalistka<br>F<br>N    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.5<br>m = 13.75<br>m <sup>2</sup> | BBCH 30-32       | n/a      | 1            | 200<br>L/ha         |
| <b>AH/20/PO/6/Pr/MEZO</b>         | Przybroda/<br>Poland<br>winter wheat/<br>Succes<br>F<br>N  | Poznań University of<br>Life Sciences, Research and Education<br>Center Gorzyń,<br>Agronomy Department; ul. Wojska<br>Polskiego 28, 60-637<br>Poznań | EPPO PP<br>1/93(3)<br><br>1.5 m x 12.0<br>m = 18.0 m <sup>2</sup>    | BBCH 31          | n/a      | 1            | 200<br>L/ha         |
| <b>A.T/2021/011/PO</b>            | Kopaszyn/<br>Poland<br>winter wheat/<br>Arkadia<br>F<br>N  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.5<br>m = 13.75<br>m <sup>2</sup> | BBCH 25-29       | n/a      | 1            | 300<br>L/ha         |
| <b>A.T/2021/012/PO</b>            | Parkowo/ Poland<br>winter wheat/<br>Julius                 | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0                                | BCH 26-30        | n/a      | 1            | 200<br>L/ha         |

|                        |   |   |  |                |     |   |             |
|------------------------|---|---|--|----------------|-----|---|-------------|
|                        | F<br>N  |   | m = 15.0 m <sup>2</sup>  |                |     |   |             |
| <b>A.T/2021/014/PO</b> | Gaj Mały/ Poland<br>winter wheat/<br>Tonacja<br>F<br>N                | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0<br>m = 15.0 m <sup>2</sup>     | BBCH 23-<br>27 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2021/015/PO</b> | Marzęcino/ Poland<br>winter wheat/<br>Hondia<br>F<br>N                | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 8.0<br>m = 20.0 m <sup>2</sup>     | BBCH 21-<br>23 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/016/PO</b> | Nowa Wieś<br>Ujska/ Poland<br>winter wheat/<br>Euforia<br>F<br>N      | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0<br>m = 15.0 m <sup>2</sup>     | BBCH 29-<br>32 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2021/017/PO</b> | Zamarte/ Poland<br>winter wheat/<br>Arkadia<br>F<br>N                 | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0<br>m = 15.0 m <sup>2</sup>     | BBCH 30-<br>31 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/018/PO</b> | Lubomin/ Po-<br>land<br>winter wheat/<br>RGT Metronom<br>F<br>N       | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 4.0<br>m = 15.0 m <sup>2</sup>     | BBCH 21-<br>23 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2021/019/PO</b> | Wronczyn<br>(Zaparcin)/<br>Poland<br>winter wheat/<br>Linus<br>F<br>N | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 7.0<br>m = 17.5 m <sup>2</sup>     | BBCH 20-<br>22 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/020/PO</b> | Zamarte/ Poland<br>winter wheat/<br>Arkadia<br>F<br>N                 | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.5<br>m = 13.75<br>m <sup>2</sup> | BBCH 22-<br>24 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/021/PO</b> | Karsy/ Poland<br>winter wheat/<br>Keramik<br>F<br>N                   | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 4.0<br>m = 10.0 m <sup>2</sup>     | BBCH 21-<br>23 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/022/PO</b> | Glinka Szla-<br>checka/ Poland<br>winter wheat/<br>Rotax<br>F<br>N    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 6.0<br>m = 15.0 m <sup>2</sup>     | BBCH 25-<br>30 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/023/PO</b> | Trzemiętowo/<br>Poland<br>winter wheat/<br>RGT Reform<br>F<br>N       | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.0<br>m = 12.5 m <sup>2</sup>     | BBCH 24-<br>26 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/024/PO</b> | Lubomin/ Po-<br>land<br>winter wheat/<br>RGT Metronom<br>F            | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno | EPPO PP<br>1/93(3)<br><br>2.5 m x 4.0<br>m = 10.0 m <sup>2</sup>     | BBCH 21-<br>23 | n/a | 1 | 200<br>L/ha |

|                         |   |  |  |                |     |   |             |
|-------------------------|---|--|--|----------------|-----|---|-------------|
|                         | N   |  |  |                |     |   |             |
| <b>SRPL21-403-336HE</b> | Leonów/ Poland<br>winter wheat/<br>Hondia<br>F<br>N                 | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.0<br>m = 12.5 m <sup>2</sup>     | BBCH 21-<br>22 | n/a | 1 | 300<br>L/ha |
| <b>SRPL21-404-336HE</b> | Żnin/ Poland<br>winter wheat/<br>Solehio<br>F<br>N                  | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>3.0 m x 5.0<br>m = 15.0 m <sup>2</sup>     | BBCH 21-<br>22 | n/a | 1 | 300<br>L/ha |
| <b>SRPL21-405-336HE</b> | Owczary/ Po-<br>land<br>winter wheat/<br>Linus<br>F<br>N            | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>3.0 m x 5.0<br>m = 15.0 m <sup>2</sup>     | BBCH 21-<br>23 | n/a | 1 | 300<br>L/ha |
| <b>SRPL21-406-336HE</b> | Turze/ Poland<br>winter wheat/<br>Apostel<br>F<br>N                 | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>3.0 m x 4.0<br>m = 12.0 m <sup>2</sup>     | BBCH 23-<br>25 | n/a | 1 | 200<br>L/ha |
| <b>SRPL21-407-336HE</b> | Baborówko/<br>Poland<br>winter wheat/<br>Arkadia<br>F<br>N          | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>3.0 m x 4.0<br>m = 12.0 m <sup>2</sup>     | BBCH 24-<br>26 | n/a | 1 | 200<br>L/ha |
| <b>SRPL21-408-336HE</b> | Krasienin Kolo-<br>nia/ Poland<br>winter wheat/<br>Owacja<br>F<br>N | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>2.5 m x 5.0<br>m = 12.5 m <sup>2</sup>     | BBCH 26-<br>27 | n/a | 1 | 300<br>L/ha |
| <b>SRPL21-409-336HE</b> | Gudniki/ Poland<br>winter wheat/<br>Patras<br>F<br>N                | SynTech Research<br>Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | EPPO PP<br>1/93(3)<br><br>3.0 m x 4.0<br>m = 12.0 m <sup>2</sup>     | BBCH 21-<br>22 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2020/056/PO</b>  | Doręgowice/<br>Poland<br>winter<br>wheat/Julius<br>F<br>N           | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                    | EPPO PP<br>1/93(3)<br><br>2.5 m x 8.0<br>m = 20.0 m <sup>2</sup>     | BBCH 31-<br>32 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2020/057/PO</b>  | Szapsk/ Poland<br>winter wheat/<br>Rotax<br>F<br>N                  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                    | EPPO PP<br>1/93(3)<br><br>2.5 m x 9.5<br>m = 23.75<br>m <sup>2</sup> | BBCH 29-<br>31 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2021/026/PO</b>  | Modrze/ Poland<br>winter wheat/<br>Linus<br>F<br>N                  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                    | EPPO PP<br>1/93(3)<br><br>2.5 m x 7.0<br>m = 17.5 m <sup>2</sup>     | BBCH 23-<br>26 | n/a | 1 | 200<br>L/ha |
| <b>A.T/2021/027/PO</b>  | Nowa Wieś<br>Ujska/ Poland<br>winter wheat/<br>Euforia<br>F<br>N    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                    | EPPO PP<br>1/93(3)<br><br>2.5 m x 7.0<br>m = 17.5 m <sup>2</sup>     | BBCH 21-<br>25 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2021/028/PO</b>  | Wilkowo/ Po-<br>land<br>winter wheat/                               | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                    | EPPO PP<br>1/93(3)   | BBCH 22-<br>24 | n/a | 1 | 200<br>L/ha |

|                         |   |  |   |                |     |   |             |
|-------------------------|---|--|---|----------------|-----|---|-------------|
|                         | RGT Bilanz<br>F<br>N  |  | 2.5 m x 10.0<br>m = 25.0 m <sup>2</sup>                           |                |     |   |             |
| <b>SRPL21-410-336HS</b> | Tomaryny/<br>Poland<br>winter wheat/<br>Findus<br>F<br>N            | SynTech Research<br>Poland Sp. z o.o.,<br>Jagiellońska 69/1<br>85.027 Bydgoszcz  | EPPO PP<br>1/93(3)<br><br>3.0 m x 7.0<br>m = 21.0 m <sup>2</sup>  | BBCH 21-<br>23 | n/a | 1 | 200<br>L/ha |
| <b>SRPL21-411-336HS</b> | Krasienin/<br>Poland<br>winter wheat/<br>Owacja<br>F<br>N           | SynTech Research<br>Poland Sp. z o.o.,<br>Jagiellońska 69/1<br>85.027 Bydgoszcz  | EPPO PP<br>1/93(3)<br><br>2.0 m x 10.0<br>m = 20.0 m <sup>2</sup> | BBCH 25-<br>29 | n/a | 1 | 200<br>L/ha |
| <b>SRPL21-412-336HS</b> | Jankowice<br>Wielkie/ Poland<br>winter wheat/<br>Argument<br>F<br>N | SynTech Research<br>Poland Sp. z o.o.,<br>Jagiellońska 69/1<br>85.027 Bydgoszcz  | EPPO PP<br>1/93(3)<br><br>3.0 m x 8.0<br>m = 24.0 m <sup>2</sup>  | BBCH 30-<br>32 | n/a | 1 | 300<br>L/ha |
| <b>A.T/2022/001/PO</b>  | Nowa Wieś<br>Ujska/ Poland<br>winter wheat/<br>Euforia<br>F<br>N    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | EPPO PP<br>1/93(3)<br><br>2.5 m x 10.0<br>m = 25.0 m <sup>2</sup> | BBCH 25-<br>29 | n/a | 1 | 200<br>L/ha |
| <b>AH/22/PO/22/Br</b>   | Brody/ Poland<br>winter wheat/<br>Tonacja<br>F<br>N                 | Poznań University of<br>Life Sciences, Re-<br>search and Education<br>Center Gorzyń,<br>Agronomy Depart-<br>ment; ul. Wojska<br>Polskiego 28, 60-637<br>Poznań | EPPO PP<br>1/93(3)<br><br>2.5 m x 10.0<br>m = 25.0 m <sup>2</sup> | BBCH 30        | n/a | 1 | 230<br>L/ha |
| <b>AH/22/PO/22/Ma</b>   | Machary/ Po-<br>land<br>winter wheat/<br>Jantarka<br>F<br>N         | Poznań University of<br>Life Sciences, Re-<br>search and Education<br>Center Gorzyń,<br>Agronomy Depart-<br>ment; ul. Wojska<br>Polskiego 28, 60-637<br>Poznań | EPPO PP<br>1/93(3)<br><br>1.5 m x 12.0<br>m = 18.0 m <sup>2</sup> | BBCH 30-<br>31 | n/a | 1 | 200<br>L/ha |
| <b>AH/22/PO/22/JW</b>   | Laskowo/ Po-<br>land<br>winter wheat/<br>PRINCEPS<br>F<br>N         | Poznań University of<br>Life Sciences, Re-<br>search and Education<br>Center Gorzyń,<br>Agronomy Depart-<br>ment; ul. Wojska<br>Polskiego 28, 60-637<br>Poznań | EPPO PP<br>1/93(3)<br><br>2.0 m x 12.0<br>m = 24.0 m <sup>2</sup> | BBCH 31        | n/a | 1 | 200<br>L/ha |

**Notes:**

- (1): test report number including the year of establishing the trial
- (2): precise place of the trial followed by the country
- (3): F= field trial, G=protected crop, specify
- (4): N=Natural infestation, A= Artificial inoculation
- (5): Trial responsible entity/ officially recognized organization
- (6): Test guideline used
- (7): Sample size per plot
- (8): Crop growth stage at application timing



#### Appendix 4 Summary of data on effectiveness trials per use

| Test report (1)  | Crop/ cultivar<br>Harmful organism/<br>weed species or<br>intended use | Assessed part<br>and variable (2)<br><br>no / m²               | Untreated<br><br>BBCH (during applica-<br>tion)  | Efficacy treatments (3)  |  |                                      |                              | Remarks (4)   |
|------------------|--|--|--|--|--|--------------------------------------|------------------------------|---|
|                  |  |  |  | Product  |  | Standard (s)                         |                              |   |
|                  |  |  |  | name   | dose<br>[L,kg//ha]                           | name                                 | dose<br>[L/ha]               |   |
| SRPL20-230-336HE | winter wheat/ Arkadia<br><br>BROMO<br>STEME<br>PAPRH<br>CAPBP<br>GERPU | BROMO 83.0<br>STEME 7.0<br>PAPRH 8.0<br>CAPBP 6.0<br>GERPU 9.0 | BROMO BBCH 13-31<br>STEME BBCH 52-63<br>PAPRH BBCH 31-35<br>CAPBP BBCH 51-65<br>GERPU BBCH 39-49 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>08.04.2020<br>Assessment date:<br>08.04.2020<br>15.04.2020<br>22.04.2020<br>06.05.2020<br>25.05.2020 |
| SRPL20-231-336HE | winter wheat/ Patras<br><br>BROMO<br>STEME<br>VIOAR                    | BROMO 9.75<br>STEME 5.5<br>VIOAR 6.25                          | BROMO BBCH 12-16<br>STEME BBCH 16-21<br>VIOAR BBCH 14-18   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>23.04.2020<br>Assessment date:<br>23.04.2020<br>30.04.2020<br>07.05.2020<br>21.05.2020<br>18.06.2020 |
| A.T/2020/051/PO  | winter wheat/ Apostel<br><br>VIOAR<br>BRSNW<br>CENCY                   | VIOAR 18.0<br>BRSNW 5.0<br>CENCY 5.0                           | VIOAR BBCH 21-30<br>BRSNW BBCH 30-35<br>CENCY BBCH 25-28   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>07.04.2020<br>Assessment date:<br>07.04.2020<br>21.04.2020<br>04.05.2020<br>18.05.2020<br>24.06.2021 |
| A.T/2020/052/PO  | winter wheat/ Etana<br><br>VERHE<br>CENCY<br>GALAP<br>BRSNW            | VERHE 6.0<br>CENCY 6.0<br>GALAP 5.0<br>BRSNW 5.0               | VERHE BBCH 51-61<br>CENCY BBCH 19-31<br>GALAP BBCH 33-35<br>BRSNW BBCH 16-21                     | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>06.04.2020<br>Assessment date:<br>06.04.2020<br>20.04.2020<br>04.05.2020<br>27.05.2020               |
| A.T/2020/053/PO  | winter wheat/ Arkadia<br><br>ALOMY<br>ANTAR<br>SINAR                   | ALOMY 50.0<br>ANTAR 5.0<br>SINAR 6.0<br>GALAP 5.0<br>VERHE 7.0 | ALOMY BBCH 30-33<br>ANTAR BBCH 29-33<br>SINAR BBCH 31-35<br>GALAP BBCH 31-35<br>VERHE BBCH 55-65 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>05.04.2020<br>Assessment date:<br>05.04.2020<br>17.04.2020   |

|                                |  |  |  |  |  |                                      |                              |   |
|--------------------------------|--|--|--|--|--|--------------------------------------|------------------------------|---|
|                                | GALAP<br>VERHE   |  |  |  |  |                                      |                              | 02.05.2020<br>10.06.2020  |
| <b>A.T/2020/054/PO</b>         | winter wheat/ Arkadia<br><br>POAAN<br>BRSNW<br>VIOAR                                     | POAAN 12.0<br>BRSNW 5.0<br>VIOAR 9.0   | POAAN BBCH 23-26<br>BRSNW BBCH 30-35<br>VIOAR BBCH 30-40   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>06.04.2020<br>Assessment date:<br>06.04.2020<br>20.04.2020<br>04.05.2020<br>29.05.2020               |
| <b>A.T/2020/055/PO</b>         | winter wheat/ Medal-<br>istka<br><br>ALOMY<br>CAPBP<br>VIOAR<br>BRSNW<br>STEME           | ALOMY 11.0<br>CAPBP 7.0<br>VIOAR 5.0<br>BRSNW 5.0<br>STEME 5.0                               | ALOMY BBCH 25-32<br>CAPBP BBCH 28-35<br>VIOAR BBCH 30-55<br>BRSNW BBCH 28-35<br>STEME BBCH 35-50   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>07.04.2020<br>Assessment date:<br>07.04.2020<br>21.04.2020<br>05.05.2020<br>04.06.2020               |
| <b>AH/20/PO/6/Pr/ME<br/>ZO</b> | winter wheat/ Succes<br><br>LOLPE<br>LAMPU<br>VERHE<br>THLAR<br>PAPRH<br>VIOAR<br>MATIN  | LOLPE 35.0<br>LAMPU 20.0<br>VERHE 15.0<br>THLAR 12.0<br>PAPRH 5.0<br>VIOAR 18.0<br>MATIN 5.0 | LOLPE BBCH 22-27<br>LAMPU BBCH 27-55<br>VERHE BBCH 28-55<br>THLAR BBCH 28-55<br>PAPRH BBCH 12-15<br>VIOAR BBCH 14-51<br>MATIN BBCH 14-18 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>07.04.2020<br>Assessment date:<br>21.04.2020<br>04.05.2020   |
| <b>A.T/2021/011/PO</b>         | winter wheat/ Arkadia<br><br>APESV<br>CAPBP<br>GALAP<br>VERPE<br>VIOAR<br>ANTAR<br>AVEFA | APESV 100.0<br>CAPBP 8.0<br>GALAP 6.0<br>VERPE 10.0<br>VIOAR 5.0<br>ANTAR 5.0<br>AVEFA 5.0   | APESV BBCH 23-27<br>CAPBP BBCH 23-27<br>GALAP BBCH 25-32<br>VERPE BBCH 21-59<br>VIOAR BBCH 21-25<br>ANTAR BBCH 21-25<br>AVEFA BBCH 22-25 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>30.03.2021<br>Assessment date:<br>30.03.2021<br>13.04.2021<br>20.04.2021<br>18.05.2021<br>25.06.2021 |
| <b>A.T/2021/012/PO</b>         | winter wheat/ Julius<br><br>APESV<br>BRSNW<br>VIOAR<br>PAPRH                             | APESV 36.0<br>BRSNW 6.0<br>VIOAR 30.0<br>PAPRH 5.0   | APESV BBCH 21-25<br>BRSNW BBCH 21-28<br>VIOAR BBCH 14-21<br>PAPRH BBCH 16-25   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>30.03.2021<br>Assessment date:<br>30.03.2021<br>13.04.2021<br>27.04.2021<br>19.05.2021               |

|                        |   |  |  |  |  |                                      |                              |   |
|------------------------|---|--|--|--|--|--------------------------------------|------------------------------|---|
|                        |   |  |  |  |  |                                      |                              | 29.06.2021  |
| <b>A.T/2021/014/PO</b> | winter wheat/ Tonacja<br><br>ALOMY<br>APESV<br>VERPE<br>PAPRH<br>VIOAR<br>ANTAR | ALOMY 54.0<br>APESV 15.0<br>VERPE 14.0<br>PAPRH 7.0<br>VIOAR 30.0<br>ANTAR 6.0 | ALOMY BBCH 21-27<br>APESV BBCH 21-25<br>VERPE BBCH 25-61<br>PAPRH BBCH 21-25<br>VIOAR BBCH 21-25<br>ANTAR BBCH 21-25 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>31.03.2021<br>Assessment date:<br>31.03.2021<br>14.04.2021<br>28.04.2021<br>24.05.2021<br>09.07.2021 |
| <b>A.T/2021/015/PO</b> | winter wheat/ Hondia<br><br>ALOMY<br>LAMPU<br>STEME                             | ALOMY 75.0<br>LAMPU 5.0<br>STEME 5.0   | ALOMY BBCH 11-23<br>LAMPU BBCH 31-39<br>STEME BBCH 33-39   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>19.04.2021<br>Assessment date:<br>19.04.2021<br>04.05.2021<br>17.05.2021<br>28.05.2021<br>11.06.2021 |
| <b>A.T/2021/016/PO</b> | winter wheat/ Euforia<br><br>POAAN<br>SINAR<br>BRSNW<br>PAPRH                   | POAAN 5.0<br>SINAR 7.0<br>BRSNW 5.0<br>PAPRH 6.0                               | POAAN BBCH 37-39<br>SINAR BBCH 39-49<br>BRSNW BBCH 37-49<br>PAPRH BBCH 33-37   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>07.05.2021<br>Assessment date:<br>07.05.2021<br>20.05.2021<br>04.06.2021<br>25.06.2021               |
| <b>A.T/2021/017/PO</b> | winter wheat/ Arkadia<br><br>POAAN<br>CENCY<br>ANTAR                            | POAAN 5.0<br>CENCY 5.0<br>ANTAR 5.0  | POAAN BBCH 31-32<br>CENCY BBCH 30-31<br>ANTAR BBCH 30-31   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>17.04.2021<br>Assessment date:<br>17.04.2021<br>30.04.2021<br>14.05.2021<br>31.05.2021<br>28.06.2021 |
| <b>A.T/2021/018/PO</b> | winter wheat/ RGT<br>Metronom<br><br>POAAN<br>APESV<br>VIOAR                    | POAAN 10.0<br>APESV 25.0<br>VIOAR 6.0  | POAAN BBCH 21-23<br>APESV BBCH 12-23<br>VIOAR BBCH 12-16   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>31.03.2021<br>Assessment date:<br>21.03.2021<br>14.04.2021<br>22.04.2021<br>28.05.2021<br>15.06.2021 |
| <b>A.T/2021/019/PO</b> | winter wheat/ Linus   | LOLPE 28.0<br>ANTAR 5.0  | LOLPE BBCH 10-12<br>ANTAR BBCH 11-12   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD   | 0.2 L/ha<br>0.3 L/ha                         | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +             | Application date:<br>28.04.2021   |

|                        |  |  |  |  |  |                                      |                              |   |
|------------------------|--|--|--|--|--|--------------------------------------|------------------------------|---|
|                        | LOLPE<br>ANTAR<br>BRSNW<br>SINAR   | BRSNW 5.0<br>SINAR 6.0   | BRSNW BBCH 10-12<br>SINAR BBCH 12-14   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD   | 0.4 L/ha<br>0.5 L/ha                         |                                      | 1.0 L/ha                     | Assessment date:<br>28.04.2021<br>10.05.2021<br>25.05.2021<br>07.06.2021<br>21.06.2021                                    |
| <b>A.T/2021/020/PO</b> | winter wheat/ Arkadia<br><br>APESV<br>LOLPE<br>CENCY<br>ANTAR<br>VERHE<br>VIOAR<br>MYOAR<br>ARBTH<br>CAPBP | APESV 5.0<br>LOLPE 25.0<br>CENCY 5.0<br>ANTAR 5.0<br>VERHE 5.0<br>VIOAR 5.0<br>MYOAR 5.0<br>ARBTH 5.0<br>CAPBP 6.0 | APESV BBCH 21-23<br>LOLPE BBCH 21-23<br>CENCY BBCH 17-19<br>ANTAR BBCH 17-19<br>VERHE BBCH 39-51<br>VIOAR BBCH 17-30<br>MYOAR BBCH 17-30<br>ARBTH BBCH 17-30<br>CAPBP BBCH 17-30 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>31.03.2021<br>Assessment date:<br>31.03.2021<br>14.04.2021<br>28.04.2021<br>31.05.2021<br>29.06.2021 |
| <b>A.T/2021/021/PO</b> | winter wheat/<br>Keramik<br><br>LOLPE<br>APESV<br>VIOAR<br>ANTAR   | LOLPE 81.0<br>APESV 10.0<br>VIOAR 15.0<br>ANTAR 5.0  | LOLPE BBCH 14-21<br>APESV BBCH 11-21<br>VIOAR BBCH 14-21<br>ANTAR BBCH 16-31   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>31.03.2021<br>Assessment date:<br>31.03.2021<br>13.04.2021<br>28.04.2021<br>28.05.2021<br>15.06.2021 |
| <b>A.T/2021/022/PO</b> | winter wheat/ Rotax<br><br>APESV<br>BROMO<br>VIOAR<br>SINAR<br>ANTAR<br>VERHE                              | APESV 45.0<br>BROMO 5.0<br>VIOAR 120.0<br>SINAR 10.0<br>ANTAR 6.0<br>VERHE 5.0                                     | APESV BBCH 21-23<br>BROMO BBCH 21-23<br>VIOAR BBCH 25-30<br>SINAR BBCH 31-33<br>ANTAR BBCH 25-28<br>VERHE BBCH 51-59   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>31.03.2021<br>Assessment date:<br>31.03.2021<br>14.04.2021<br>28.04.2021<br>18.05.2021<br>24.06.2021 |
| <b>A.T/2021/023/PO</b> | winter wheat/ RGT<br>Reform<br><br>BROMO<br>CAPBP<br>VIOAR<br>SINAR<br>BRSNW                               | BROMO 5.0<br>CAPBP 6.0<br>VIOAR 5.0<br>SINAR 5.0<br>BRSNW 5.0  | BROMO BBCH 22-23<br>CAPBP BBCH 19-30<br>VIOAR BBCH 19-30<br>SINAR BBCH 19-30<br>BRSNW BBCH 19-30   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>01.04.2021<br>Assessment date:<br>01.04.2021<br>15.04.2021<br>29.04.2021<br>31.05.2021<br>16.06.2021 |
| <b>A.T/2021/024/PO</b> | winter wheat/ RGT  | BROMO 6.0  | BROMO BBCH 21-23   | CHR/H/MEZO 30 OD   | 0.2 L/ha                                     | Atlantis Star +                      | 0.333                        | Application date:   |

|                         |   |  |  |  |  |                                      |                              |   |
|-------------------------|---|--|--|--|--|--------------------------------------|------------------------------|---|
|                         | Metronom<br><br>BROMO<br>APESV<br>VIOAR<br>STEME  | APESV 20.0<br>VIOAR 5.0<br>STEME 5.0   | APESV BBCH 12-23<br>VIOAR BBCH 12-16<br>STEME BBCH 12-21   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD                     | 0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha             | Biopower 276,5 SL                    | kg/ha +<br>1.0 L/ha          | 31.03.2021<br>Assessment date:<br>31.03.2021<br>14.04.2021<br>22.04.2021<br>28.05.2021<br>15.06.2021                      |
| <b>SRPL21-403-336HE</b> | winter wheat/ Hondia<br><br>APESV<br>POAAN  | APESV 7.25<br>POAAN 6.75   | APESV BBCH 12-13<br>POAAN BBCH 12-13   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>02.04.2021<br>Assessment date:<br>02.04.2021<br>09.04.2021<br>16.04.2021<br>30.04.2021<br>28.05.2021 |
| <b>SRPL21-404-336HE</b> | winter wheat/ Solehio<br><br>APESV<br>POAAN<br>GALAP<br>PAPRH<br>CAPBP<br>VERH<br>STEME | APESV 80.0<br>POAAN 7.0<br>GALAP 10.0<br>PAPRH 14.0<br>CAPBP 5.0<br>VERHE 12.0<br>STEME 11.0 | APESV BBCH 13-21<br>POAAN BBCH 13-15<br>GALAP BBCH 15-17<br>PAPRH BBCH 14-16<br>CAPBP BBCH 13-15<br>VERHE BBCH 15-21<br>STEME BBCH 14-21 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>09.04.2021<br>Assessment date:<br>09.04.2021<br>16.04.2021<br>23.04.2021<br>07.05.2021<br>04.06.2021 |
| <b>SRPL21-405-336HE</b> | winter wheat/ Linus<br><br>ALOMY<br>BRSNW<br>SINAR                                      | ALOMY 68.8<br>BRSNW 6.8<br>SINAR 6.5   | ALOMY BBCH 12-14<br>BRSNW BBCH 12-16<br>SINAR BBCH 14-16   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>22.04.2021<br>Assessment date:<br>22.04.2021<br>29.04.2021<br>06.05.2021<br>20.05.2021<br>17.06.2021 |
| <b>SRPL21-406-336HE</b> | winter wheat/ Apostel<br><br>ALOMY<br>PAPRH<br>STEME<br>VERPE                           | ALOMY 56.0<br>PAPRH 7.0<br>STEME 8.0<br>VERPE 10.0   | ALOMY BBCH 11-13<br>PAPRH BBCH 13-21<br>STEME BBCH 21-25<br>VERPE BBCH 21-25   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>16.04.2021<br>Assessment date:<br>16.04.2021<br>23.04.2021<br>30.04.2021<br>14.05.2021<br>31.05.2021 |
| <b>SRPL21-407-336HE</b> | winter wheat/ Arkadia   | BROMO 30.0<br>GERPU 12.0   | BROMO BBCH 11-13<br>GERPU BBCH 11-12   | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD   | 0.2 L/ha<br>0.3 L/ha                         | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +             | Application date:<br>16.04.2021   |

|                         |  |                           |                                      |  |  |                                      |                              |   |
|-------------------------|--|---------------------------|--------------------------------------|--|--|--------------------------------------|------------------------------|---|
|                         | BROMO<br>GERPU<br>CAPBP<br>VIOAR           | CAPBP 8.0<br>VIOAR 7.0    | CAPBP BBCH 11-13<br>VIOAR BBCH 12-13 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD   | 0.4 L/ha<br>0.5 L/ha                         |                                      | 1.0 L/ha                     | Assessment date:<br>16.04.2021<br>23.04.2021<br>30.04.2021<br>14.05.2021<br>04.06.2021                                    |
| <b>SRPL21-408-336HE</b> | winter wheat/ Owacja<br><br>LOLPE<br>APESV | LOLPE 6.25<br>APESV 2.75  | LOLPE BBCH 12-21<br>APESV BBCH 12-23 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>12.04.2021<br>Assessment date:<br>12.04.2021<br>19.04.2021<br>26.04.2021<br>10.05.2021<br>07.06.2021 |
| <b>SRPL21-409-336HE</b> | winter wheat/ Patras<br><br>POAAN<br>LOLPE | POAAN 5.75<br>LOLPE 10.75 | POAAN BBCH 11-14<br>LOLPE BBCH 10-16 | CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD<br>CHR/H/MEZO 30 OD | 0.2 L/ha<br>0.3 L/ha<br>0.4 L/ha<br>0.5 L/ha | Atlantis Star +<br>Biopower 276,5 SL | 0.333<br>kg/ha +<br>1.0 L/ha | Application date:<br>14.04.2021<br>Assessment date:<br>14.04.2021<br>21.04.2021<br>28.04.2021<br>12.05.2021<br>08.06.2021 |

**Notes:**

- 1): Test report number including the year of establishing the trial
- (2): Plant part assessed and criteria for assessment
- (3): efficacy or intended effect
- (4): Relevant conclusions on effectiveness

Appendix 5 Summary of detailed data on herbicide effectiveness trials

Table 1. The efficacy of CHR/H/MEZO 30 OD in control of APESV Apera spica-venti 14 DA-A

| Pest code                      |   |   | APESV               |                     |                     |                     |                     |                     |                     |                     |                      |                      |            |              |           |                      |
|--------------------------------|---|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|------------|--------------|-----------|----------------------|
| Report code                    |   |   | A.T/2021/01<br>1/PO | A.T/2021/01<br>2/PO | A.T/2021/01<br>4/PO | A.T/2021/01<br>8/PO | A.T/2021/02<br>0/PO | A.T/2021/02<br>1/PO | A.T/2021/02<br>2/PO | A.T/2021/02<br>4/PO | SRPL21-<br>403-336HE | SRPL21-<br>404-336HE |            |              |           | SRPL21-<br>408-336HE |
| Application date               |   |   | 30.03.2021          | 30.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           |            |              |           | 12.04.2021           |
| Crop stage in application      |   |   | BBCH 25-29          | BCH 26-30           | BBCH 23-27          | BBCH 21-23          | BBCH 22-24          | BBCH 21-23          | BBCH 25-30          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           |            |              |           | BBCH 26-27           |
| Pest stage                     |   |   | BBCH 23-27          | BBCH 21-25          | BBCH 21-25          | BBCH 12-23          | BBCH 21-23          | BBCH 11-21          | BBCH 21-23          | BBCH 12-23          | BBCH 21-13           | BBCH 13-21           |            |              |           | BBCH 12-23           |
| Assessment date                |   |   | 13.04.2021          | 13.04.2021          | 14.04.2021          | 14.04.2021          | 14.04.2021          | 13.04.2021          | 14.04.2021          | 14.04.2021          | 16.04.2021           | 23.04.2021           | 26.04.2021 |              |           |                      |
| Days after application<br>DA-A |   |   | 14 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A             | 13 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A              | 14 DA-A              | 14 DA-A    | Ave-<br>rage | Min<br>.  | Ma<br>x.             |
| weeds density pcs/m²           |   |   | 100.0               | 35.0                | 15.0                | 25.0                | 5.0                 | 10.0                | 46.0                | 20.0                | 8.0                  | 80.0                 | 5.0        | 31.7         | 5.0       | 100.<br>0            |
| No<br>.                        | Name                                    | Rate<br>(L.<br>kg/h<br>a)               |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |            |              |           |                      |
| 1                              | Untreated<br>Check                      | -                                       | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00       | 0.00         | 0.00      | 0.00                 |
| 2                              | CHR/H/ME<br>ZO 30 OD                    | 0.2                                     | 52.50               | 64.00               | 50.00               | 50.00               | 50.00               | 20.00               | 50.30               | 51.30               | 18.80                | 31.25                | 0.00       | 39.83        | 0.00      | 64.0<br>0            |
| 3                              | CHR/H/ME<br>ZO 30 OD                    | 0.30                                    | 57.50               | 72.00               | 50.00               | 62.50               | 56.30               | 37.50               | 59.00               | 61.30               | 25.00                | 37.50                | 5.00       | 47.60        | 5.00      | 72.0<br>0            |
| 4                              | CHR/H/ME<br>ZO 30 OD                    | 0.40                                    | 61.30               | 79.50               | 50.00               | 81.30               | 62.50               | 41.30               | 68.00               | 78.80               | 31.30                | 51.25                | 10.00      | 55.93        | 10.0<br>0 | 81.3<br>0            |
| 5                              | CHR/H/ME<br>ZO 30 OD                    | 0.50                                    | 68.80               | 81.50               | 50.00               | 84.50               | 62.50               | 48.80               | 77.80               | 82.80               | 48.80                | 52.50                | 20.00      | 61.64        | 20.0<br>0 | 84.5<br>0            |
| 6                              | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.33<br>3<br>kg/h<br>a +<br>1.0<br>L/ha | 75.00               | 88.00               | 65.00               | 80.00               | 76.30               | 42.50               | 80.80               | 80.00               | 46.30                | 55.00                | 30.00      | 65.35        | 30.0<br>0 | 88.0<br>0            |
| LSD(P=.05)                     |   |   | 3.650               | 6.210               | 2.810               | 4.610               | 4.040               | 5.020               | 3.760               | 6.210               | 5.250                | 6.850                | -          |              |           |                      |

Table 2. The efficacy of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti* 21-28 DA-A

| Pest code                      |   |   | APESV               |                     |                     |                     |                     |                     |                     |                     |                      |                      |                      |              |          |          |
|--------------------------------|---|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|--------------|----------|----------|
| Report code                    |   |   | A.T/2021/01<br>1/PO | A.T/2021/01<br>2/PO | A.T/2021/01<br>4/PO | A.T/2021/01<br>8/PO | A.T/2021/02<br>0/PO | A.T/2021/02<br>1/PO | A.T/2021/02<br>2/PO | A.T/2021/02<br>4/PO | SRPL21-<br>403-336HE | SRPL21-<br>404-336HE | SRPL21-<br>408-336HE |              |          |          |
| Application date               |   |   | 30.03.2021          | 30.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           | 12.04.2021           |              |          |          |
| Crop stage in application      |   |   | BBCH 25-29          | BCH 26-30           | BBCH 23-27          | BBCH 21-23          | BBCH 22-24          | BBCH 21-23          | BBCH 25-30          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           | BBCH 26-27           |              |          |          |
| Pest stage                     |   |   | BBCH 23-27          | BBCH 21-25          | BBCH 21-25          | BBCH 12-23          | BBCH 21-23          | BBCH 11-21          | BBCH 21-23          | BBCH 12-23          | BBCH 21-13           | BBCH 13-21           | BBCH 12-23           |              |          |          |
| Assessment date                |   |   | 20.04.2021          | 27.04.2021          | 28.04.2021          | 22.04.2021          | 28.04.2021          | 28.04.2021          | 28.04.2021          | 22.04.2021          | 30.04.2021           | 07.05.2021           | 10.05.2021           |              |          |          |
| Days after application<br>DA-A |   |   | 21 DA-A             | 28 DA-A             | 28 DA-A             | 22 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A             | 22 DA-A             | 28 DA-A              | 28 DA-A              | 28 DA-A              | Ave-<br>rage | Min<br>. | Ma<br>x. |
| weeds density pcs/m²           |   |   | 100.0               | 35.0                | 15.0                | 25.0                | 5.0                 | 10.0                | 46.0                | 20.0                | 9.0                  | 50.0                 | 6.5                  | 29.2         | 5.0      | 100.0    |
| No<br>.                        | Name                                    | Rate<br>(L.<br>kg/h<br>a)               |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |                      |              |          |          |
| 1                              | Untreated<br>Check                      | -                                       | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00                 | 0.00         | 0.00     | 0.00     |
| 2                              | CHR/H/ME<br>ZO 30 OD                    | 0.2                                     | 41.30               | 71.50               | 78.80               | 81.30               | 45.00               | 55.00               | 54.50               | 81.30               | 26.30                | 42.50                | 21.30                | 54.44        | 21.30    | 81.30    |
| 3                              | CHR/H/ME<br>ZO 30 OD                    | 0.30                                    | 66.30               | 81.80               | 85.00               | 85.00               | 50.00               | 82.50               | 60.80               | 87.50               | 32.50                | 52.50                | 33.80                | 65.25        | 32.50    | 87.50    |
| 4                              | CHR/H/ME<br>ZO 30 OD                    | 0.40                                    | 66.30               | 84.00               | 85.00               | 93.00               | 70.00               | 90.00               | 68.50               | 93.00               | 50.00                | 65.00                | 47.50                | 73.85        | 47.50    | 93.00    |
| 5                              | CHR/H/ME<br>ZO 30 OD                    | 0.50                                    | 72.50               | 87.30               | 85.00               | 95.80               | 76.30               | 92.50               | 76.50               | 92.50               | 62.30                | 77.50                | 62.50                | 80.06        | 62.30    | 95.80    |
| 6                              | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.33<br>3<br>kg/h<br>a +<br>1.0<br>L/ha | 72.50               | 93.80               | 85.00               | 87.50               | 83.80               | 88.80               | 81.50               | 88.80               | 75.00                | 80.00                | 75.00                | 82.88        | 72.50    | 93.80    |
| LSD(P=.05)                     |   |   | 4.040               | 2.500               | 1.720               | 4.750               | 4.160               | 5.170               | 2.680               | 3.560               | 4.720                | 6.521                | 5.350                |              |          |          |



Table 3. The efficacy of CHR/H/MEZO 30 OD in control of APESV *Apera spica-venti* LAST ASSESSMENT

| Pest code                      |   |   | APESV               |                     |                     |                     |                     |                     |                     |                     |                      |                      |                      |              |           |            |
|--------------------------------|---|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|--------------|-----------|------------|
| Report code                    |   |   | A.T/2021/01<br>1/PO | A.T/2021/01<br>2/PO | A.T/2021/01<br>4/PO | A.T/2021/01<br>8/PO | A.T/2021/02<br>0/PO | A.T/2021/02<br>1/PO | A.T/2021/02<br>2/PO | A.T/2021/02<br>4/PO | SRPL21-<br>403-336HE | SRPL21-<br>404-336HE | SRPL21-<br>408-336HE |              |           |            |
| Application date               |   |   | 30.03.2021          | 30.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           | 12.04.2021           |              |           |            |
| Crop stage in application      |   |   | BBCH 25-29          | BCH 26-30           | BBCH 23-27          | BBCH 21-23          | BBCH 22-24          | BBCH 21-23          | BBCH 25-30          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           | BBCH 26-27           |              |           |            |
| Pest stage                     |   |   | BBCH 23-27          | BBCH 21-25          | BBCH 21-25          | BBCH 12-23          | BBCH 21-23          | BBCH 11-21          | BBCH 21-23          | BBCH 12-23          | BBCH 21-13           | BBCH 13-21           | BBCH 12-23           |              |           |            |
| Assessment date                |   |   | 25.06.2021          | 29.06.2021          | 09.06.2021          | 15.06.2021          | 28.06.2021          | 15.06.2021          | 24.06.2021          | 15.06.2021          | 28.05.2021           | 17.06.2021           | 07.06.2021           |              |           |            |
| Days after application<br>DA-A |   |   | 87 DA-A             | 91 DA-A             | 100 DA-A            | 76 DA-A             | 89 DA-A             | 76 DA-A             | 85 DA-A             | 76 DA-A             | 56 DA-A              | 69 DA-A              | 56 DA-A              | Ave-<br>rage | Min<br>.  | Max.       |
| weeds density pcs/m²           |   |   | 450.0               | 110.0               | 35.0                | 40.0                | 30.0                | 35.0                | 180.0               | 40.0                | 15.0                 | 80.0                 | 7.5                  | 93.0         | 7.5       | 450.0      |
| No<br>.                        | Name                                    | Rate<br>(L.<br>kg/h<br>a)               |                     |                     |                     |                     |                     |                     |                     |                     |                      |                      |                      |              |           |            |
| 1                              | Untreated<br>Check                      | -                                       | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00                 | 0.00         | 0.00      | 0.00       |
| 2                              | CHR/H/ME<br>ZO 30 OD                    | 0.2                                     | 77.50               | 82.50               | 78.80               | 76.30               | 88.30               | 80.00               | 62.00               | 76.30               | 81.24                | 66.00                | 39.18                | 73.47        | 39.1<br>8 | 88.30      |
| 3                              | CHR/H/ME<br>ZO 30 OD                    | 0.30                                    | 83.80               | 90.00               | 85.00               | 87.00               | 95.00               | 91.30               | 65.50               | 82.50               | 90.45                | 75.00                | 54.95                | 81.86        | 54.9<br>5 | 95.00      |
| 4                              | CHR/H/ME<br>ZO 30 OD                    | 0.40                                    | 88.80               | 93.30               | 85.00               | 87.50               | 97.50               | 98.30               | 70.80               | 85.80               | 94.22                | 81.00                | 70.90                | 86.65        | 70.8<br>0 | 98.30      |
| 5                              | CHR/H/ME<br>ZO 30 OD                    | 0.50                                    | 95.00               | 98.80               | 90.00               | 91.50               | 98.80               | 99.50               | 76.80               | 87.80               | 97.42                | 88.00                | 89.69                | 92.12        | 76.8<br>0 | 99.50      |
| 6                              | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.33<br>3<br>kg/h<br>a +<br>1.0<br>L/ha | 92.50               | 97.50               | 90.00               | 90.00               | 100.00              | 97.50               | 79.30               | 68.80               | 100.00               | 89.00                | 100.00               | 91.33        | 68.8<br>0 | 100.0<br>0 |
| LSD(P=.05)                     |   |   | 2.540               | 3.690               | 2.790               | 4.950               | 3.440               | 2.730               | 4.670               | 9.950               | 5.730                | 6.300                | 10.122               |              |           |            |

Table 4. The efficacy of CHR/H/MEZO 30 OD in control of ALOMY Alopecurus myosuroides 14 DA-A

| Pest code                        |   |                                 | ALOMY               |                     |                     |                     |                      |                      |         |       |       |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------|-------|-------|
| Report code                      |   |                                 | A.T/2020/053/P<br>O | A.T/2020/055/P<br>O | A.T/2021/014/P<br>O | A.T/2021/015/P<br>O | SRPL21-405-<br>336HE | SRPL21-406-<br>336HE |         |       |       |
| Application date                 |   |                                 | 05.04.2020          | 07.04.2020          | 31.03.2021          | 19.04.2021          | 22.04.2021           | 16.04.2021           |         |       |       |
| Crop stage in application        |   |                                 | BBCH 31-32          | BBCH 30-32          | BBCH 23-27          | BBCH 21-23          | BBCH 21-23           | BBCH 23-25           |         |       |       |
| Pest stage                       |   |                                 | BBCH 30-33          | BBCH 25-32          | BBCH 21-27          | BBCH 11-23          | BBCH 12-14           | BBCH 11-13           |         |       |       |
| Assessment date                  |   |                                 | 17.04.2020          | 21.04.2020          | 14.04.2021          | 04.05.2021          | 06.05.2021           | 30.04.2021           |         |       |       |
| Days after application DA-A      |   |                                 | 12 DA-A             | 14 DA-A             | 14 DA-A             | 15 DA-A             | 14 DA-A              | 14 DA-A              | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |   |                                 | 50.0                | 11.0                | 55.0                | 75.0                | 72.5                 | 56.0                 | 53.3    | 11.0  | 75.0  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |         |       |       |
| 1                                | Untreated Check                         | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   | -                   | 50.00               | 40.00               | 50.00                | 52.50                | 48.13   | 40.00 | 52.50 |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 30.00               | 18.30               | 50.00               | 47.50               | 77.50                | 65.00                | 48.05   | 18.30 | 77.50 |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 30.00               | 31.30               | 50.00               | 55.00               | 93.80                | 70.00                | 55.02   | 30.00 | 93.80 |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 35.00               | 48.80               | 50.00               | 60.00               | 99.50                | 75.00                | 61.38   | 35.00 | 99.50 |
| 6                                | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 40.00               | 43.80               | 65.00               | 61.30               | 99.80                | 75.00                | 64.15   | 40.00 | 99.80 |
| LSD(P=.05)                       |   |                                 | 4.620               | 7.610               | 2.810               | 5.630               | 5.900                | 10.760               |         |       |       |

Table 5. The efficacy of CHR/H/MEZO 30 OD in control of ALOMY Alopecurus myosuroides 21-28 DA-A

| Pest code                        |   |                                 | ALOMY               |                     |                     |                     |                      |                      |         |       |        |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|---------|-------|--------|
| Report code                      |   |                                 | A.T/2020/053/P<br>O | A.T/2020/055/P<br>O | A.T/2021/014/P<br>O | A.T/2021/015/P<br>O | SRPL21-405-<br>336HE | SRPL21-406-<br>336HE |         |       |        |
| Application date                 |   |                                 | 05.04.2020          | 07.04.2020          | 31.03.2021          | 19.04.2021          | 22.04.2021           | 16.04.2021           |         |       |        |
| Crop stage in application        |   |                                 | BBCH 31-32          | BBCH 30-32          | BBCH 23-27          | BBCH 21-23          | BBCH 21-23           | BBCH 23-25           |         |       |        |
| Pest stage                       |   |                                 | BBCH 30-33          | BBCH 25-32          | BBCH 21-27          | BBCH 11-23          | BBCH 12-14           | BBCH 11-13           |         |       |        |
| Assessment date                  |   |                                 | 02.05.2020          | 05.05.2020          | 28.04.2021          | 17.05.2021          | 20.05.2021           | 14.05.2021           |         |       |        |
| Days after application DA-A      |   |                                 | 27 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A              | 28 DA-A              | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |   |                                 | 100.0               | 11.0                | 55.0                | 75.0                | 72.5                 | 56.0                 | 61.6    | 11.0  | 100.0  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |         |       |        |
| 1                                | Untreated Check                         | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   | -                   | 81.30               | 60.00               | 68.80                | 75.00                | 71.28   | 60.00 | 81.30  |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 62.50               | 81.50               | 85.00               | 75.00               | 93.80                | 95.80                | 82.27   | 62.50 | 95.80  |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 73.80               | 86.50               | 85.00               | 82.50               | 100.00               | 99.00                | 87.80   | 73.80 | 100.00 |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 77.50               | 93.50               | 85.00               | 91.30               | 100.00               | 99.00                | 91.05   | 77.50 | 100.00 |
| 6                                | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 88.80               | 95.00               | 87.50               | 91.30               | 100.00               | 98.00                | 93.43   | 87.50 | 100.00 |
| LSD(P=.05)                       |   |                                 | 5.500               | 2.150               | 2.440               | 4.040               | 3.710                | 4.450                |         |       |        |

Table 6. The efficacy of CHR/H/MEZO 30 OD in control of ALOMY Alopecurus myosuroides LAST ASSESSMENT

| Pest code                        |   |                                 | ALOMY               |                     |                     |                     |                      |                      |              |       |        |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|--------------|-------|--------|
| Report code                      |   |                                 | A.T/2020/053/P<br>O | A.T/2020/055/P<br>O | A.T/2021/014/P<br>O | A.T/2021/015/P<br>O | SRPL21-405-<br>336HE | SRPL21-406-<br>336HE |              |       |        |
| Application date                 |   |                                 | 05.04.2020          | 07.04.2020          | 31.03.2021          | 19.04.2021          | 22.04.2021           | 16.04.2021           |              |       |        |
| Crop stage in application        |   |                                 | BBCH 31-32          | BBCH 30-32          | BBCH 23-27          | BBCH 21-23          | BBCH 21-23           | BBCH 23-25           |              |       |        |
| Pest stage                       |   |                                 | BBCH 30-33          | BBCH 25-32          | BBCH 21-27          | BBCH 11-23          | BBCH 12-14           | BBCH 11-13           |              |       |        |
| Assessment date                  |   |                                 | 10.06.2020          | 04.06.2020          | 09.06.2021          | 11.06.2021          | 17.06.2021           | 31.05.2021           |              |       |        |
| Days after application DA-A      |   |                                 | 66 DA-A             | 58 DA-A             | 100 DA-A            | 53 DA-A             | 56 DA-A              | 45 DA-A              | Avera-<br>ge | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |   |                                 | 500.0               | 150.0               | 60.0                | 150.0               | 72.5                 | 56.0                 | 164.8        | 56.0  | 500.0  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |              |       |        |
| 1                                | Untreated Check                         | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00         | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   | -                   | 80.00               | 66.30               | 83.27                | 81.42                | 77.75        | 66.30 | 83.27  |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 68.80               | 81.30               | 90.00               | 77.00               | 100.00               | 97.34                | 85.74        | 68.80 | 100.00 |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 75.00               | 87.00               | 92.50               | 83.80               | 100.00               | 99.78                | 89.68        | 75.00 | 100.00 |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 85.00               | 96.00               | 95.80               | 92.00               | 100.00               | 99.80                | 94.77        | 85.00 | 100.00 |
| 6                                | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 89.80               | 99.80               | 95.00               | 93.30               | 100.00               | 99.41                | 96.22        | 89.80 | 100.00 |
| LSD(P=.05)                       |   |                                 | 5.920               | 3.150               | 2.100               | 5.400               | 4.830                | 2.100                |              |       |        |

Table 7. The efficacy of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* 14 DA-A

| Pest code                        |   |                                 | POAAN               |                     |                     |                     |                      |                      |                      |         |       |       |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|---------|-------|-------|
| Report code                      |   |                                 | A.T/2020/054/<br>PO | A.T/2021/016/<br>PO | A.T/2021/017/<br>PO | A.T/2021/018/<br>PO | SRPL21-403-<br>336HE | SRPL21-404-<br>336HE | SRPL21-409-<br>336HE |         |       |       |
| Application date                 |   |                                 | 06.04.2020          | 07.05.2021          | 17.04.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           | 14.04.2021           |         |       |       |
| Crop stage in application        |   |                                 | BBCH 30-31          | BBCH 29-32          | BBCH 30-31          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           | BBCH 21-22           |         |       |       |
| Pest stage                       |   |                                 | BBCH 23-26          | BBCH 37-39          | BBCH 31-32          | BBCH 21-23          | BBCH 21-13           | BBCH 13-15           | BBCH 11-14           |         |       |       |
| Assessment date                  |   |                                 | 20.04.2020          | 20.05.2021          | 30.04.2021          | 14.04.2021          | 16.04.2021           | 23.04.2021           | 28.04.2021           |         |       |       |
| Days after application DA-A      |   |                                 | 14 DA-A             | 13 DA-A             | 13 DA-A             | 14 DA-A             | 14 DA-A              | 14 DA-A              | 14 DA-A              | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |   |                                 | 12.0                | 5.0                 | 6.0                 | 10.0                | 7.8                  | 7.0                  | 6.0                  | 7.7     | 5.0   | 12.0  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |                      |         |       |       |
| 1                                | Untreated<br>Check                      | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00                 | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   | 10.00               | 37.50               | 27.50               | 10.00                | 36.25                | 0.00                 | 20.21   | 0.00  | 37.50 |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 31.30               | 20.00               | 40.00               | 48.80               | 16.30                | 37.50                | 0.00                 | 27.70   | 0.00  | 48.80 |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 31.30               | 30.00               | 47.50               | 52.50               | 31.30                | 50.00                | 6.30                 | 35.56   | 6.30  | 52.50 |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 33.80               | 60.00               | 52.50               | 61.30               | 40.00                | 52.25                | 22.50                | 46.05   | 22.50 | 61.30 |
| 6                                | Atlantis Star +<br>Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 36.30               | 78.80               | 68.80               | 72.50               | 36.30                | 56.25                | 32.50                | 54.49   | 32.50 | 78.80 |
| LSD(P=.05)                       |   |                                 | 4.420               | 1.720               | 5.450               | 12.790              | 4.720                | 7.730                | 6.140                |         |       |       |

Table 8. The efficacy of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* 21-28 DA-A

| Pest code                        |   |                                 | POAAN               |                     |                     |                     |                      |                      |                      |         |       |        |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|---------|-------|--------|
| Report code                      |   |                                 | A.T/2020/054/<br>PO | A.T/2021/016/<br>PO | A.T/2021/017/<br>PO | A.T/2021/018/<br>PO | SRPL21-403-<br>336HE | SRPL21-404-<br>336HE | SRPL21-409-<br>336HE |         |       |        |
| Application date                 |   |                                 | 06.04.2020          | 07.05.2021          | 17.04.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           | 14.04.2021           |         |       |        |
| Crop stage in application        |   |                                 | BBCH 30-31          | BBCH 29-32          | BBCH 30-31          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           | BBCH 21-22           |         |       |        |
| Pest stage                       |   |                                 | BBCH 23-26          | BBCH 37-39          | BBCH 31-32          | BBCH 21-23          | BBCH 21-13           | BBCH 13-15           | BBCH 11-14           |         |       |        |
| Assessment date                  |   |                                 | 04.05.2020          | 04.06.2021          | 14.05.2021          | 22.04.2021          | 30.04.2021           | 07.05.2021           | 12.05.2021           |         |       |        |
| Days after application DA-A      |   |                                 | 28 DA-A             | 28 DA-A             | 27 DA-A             | 22 DA-A             | 28 DA-A              | 28 DA-A              | 28 DA-A              | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |   |                                 | 12.0                | 6.0                 | 6.0                 | 10.0                | 9.8                  | 7.0                  | 6.0                  | 8.1     | 6.0   | 12.0   |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |                      |         |       |        |
| 1                                | Untreated<br>Check                      | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00                 | 0.00                 | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   | 10.00               | 61.30               | 41.30               | 41.30                | 50.00                | 0.00                 | 33.98   | 0.00  | 61.30  |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 63.80               | 20.00               | 71.30               | 63.80               | 50.00                | 55.00                | 0.00                 | 46.27   | 0.00  | 71.30  |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 67.50               | 30.00               | 81.30               | 72.50               | 61.30                | 62.50                | 12.50                | 55.37   | 12.50 | 81.30  |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 71.30               | 60.00               | 87.50               | 78.80               | 90.00                | 75.00                | 37.50                | 71.44   | 37.50 | 90.00  |
| 6                                | Atlantis Star +<br>Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 92.50               | 78.80               | 95.00               | 81.30               | 100.00               | 81.25                | 75.00                | 86.26   | 75.00 | 100.00 |
| LSD(P=.05)                       |   |                                 | 4.620               | 1.720               | 3.370               | 5.170               | 3.710                | 7.635                | 4.190                |         |       |        |

Table 9a. The efficacy of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* LAST ASSESSMENT

| Pest code                        |   |                                 | POAAN               |                     |                     |                     |                      |                      |                      |         |       |        |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|---------|-------|--------|
| Report code                      |   |                                 | A.T/2020/054/P<br>O | A.T/2021/016/P<br>O | A.T/2021/017/P<br>O | A.T/2021/018/P<br>O | SRPL21-403-<br>336HE | SRPL21-404-<br>336HE | SRPL21-409-<br>336HE |         |       |        |
| Application date                 |   |                                 | 06.04.2020          |                     | 17.04.2021          | 31.03.2021          | 02.04.2021           | 09.04.2021           |                      |         |       |        |
| Crop stage in application        |   |                                 | BBCH 30-31          |                     | BBCH 30-31          | BBCH 21-23          | BBCH 21-22           | BBCH 21-22           |                      |         |       |        |
| Pest stage                       |   |                                 | BBCH 23-26          |                     | BBCH 31-32          | BBCH 21-23          | BBCH 21-13           | BBCH 13-15           |                      |         |       |        |
| Assessment date                  |   |                                 | 29.05.2020          |                     | 28.06.2021          | 15.06.2021          | 28.05.2021           | 11.06.2021           |                      |         |       |        |
| Days after application DA-A      |   |                                 | 53 DA-A             |                     | 72 DA-A             | 76 DA-A             | 56 DA-A              | 63 DA-A              |                      | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |   |                                 | 130.0               |                     | 20.0                | 20.0                | 14.3                 | 7.0                  |                      | 38.3    | 7.0   | 130.0  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                      |                      |                      |         |       |        |
| 1                                | Untreated Check                         | -                               | 0.00                |                     | 0.00                | 0.00                | 0.00                 | 0.00                 |                      | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                   |                     | 61.30               | 52.50               | 56.30                | 58.98                |                      | 57.27   | 52.50 | 61.30  |
| 3                                | CHR/H/MEZO<br>30 OD                     | 0.30                            | 58.80               |                     | 71.30               | 77.50               | 66.30                | 67.98                |                      | 68.38   | 58.80 | 77.50  |
| 4                                | CHR/H/MEZO<br>30 OD                     | 0.40                            | 61.30               |                     | 81.30               | 81.30               | 76.30                | 81.20                |                      | 76.28   | 61.30 | 81.30  |
| 5                                | CHR/H/MEZO<br>30 OD                     | 0.50                            | 75.00               |                     | 87.50               | 82.50               | 100.00               | 82.61                |                      | 85.52   | 75.00 | 100.00 |
| 6                                | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 96.00               |                     | 95.00               | 86.30               | 100.00               | 86.32                |                      | 92.72   | 86.30 | 100.00 |
| LSD(P=.05)                       |   |                                 | 7.460               |                     | 3.370               | 6.330               | 4.240                | 14.236               |                      |         |       |        |

Table 9b. The efficacy of CHR/H/MEZO 30 OD in control of POAAN *Poa annua* LAST ASSESSMENT

| Pest code                        |                                   |                        | POAAN           |                  |         |       |       |
|----------------------------------|-----------------------------------|------------------------|-----------------|------------------|---------|-------|-------|
| Report code                      |                                   |                        | A.T/2021/016/PO | SRPL21-409-336HE |         |       |       |
| Application date                 |                                   |                        | 07.05.2021      | 14.04.2021       |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 29-32      | BBCH 21-22       |         |       |       |
| Pest stage                       |                                   |                        | BBCH 37-39      | BBCH 11-14       |         |       |       |
| Assessment date                  |                                   |                        | 25.06.2021      | 08.06.2021       |         |       |       |
| Days after application DA-A      |                                   |                        | 49 DA-A         | 85 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 25.0            | 6.0              | 15.5    | 6.0   | 25.0  |
| No.                              | Name                              | Rate (L. kg/ha)        |                 |                  |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00            | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | 10.00           | 0.00             | 5.00    | 0.00  | 10.00 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 30.00           | 0.00             | 15.00   | 0.00  | 30.00 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 50.00           | 13.80            | 31.90   | 13.80 | 50.00 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 70.00           | 41.30            | 55.65   | 41.30 | 70.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 78.80           | 76.30            | 77.55   | 76.30 | 78.80 |
| LSD(P=.05)                       |                                   |                        | 9.490           | 3.970            |         |       |       |



Table 10. The efficacy of CHR/H/MEZO 30 OD in control of BROMO Bromus hordeaceus 14 DA-A

| Pest code                        |                                   |                        | BROMO Bromus hordeaceus |                  |                  |                     |                     |                     |         |       |       |
|----------------------------------|-----------------------------------|------------------------|-------------------------|------------------|------------------|---------------------|---------------------|---------------------|---------|-------|-------|
| Report code                      |                                   |                        | SRPL20-230-336HE        | SRPL20-231-336HE | SRPL21-407-336HE | A.T/2021/022/P<br>O | A.T/2021/024/P<br>O | A.T/2021/023/P<br>O |         |       |       |
| Application date                 |                                   |                        | 08.04.2020              | 23.04.2020       | 16.04.2021       | 31.03.2021          | 31.03.2021          | 01.04.2021          |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 30-32              | BBCH 30-32       | BBCH 24-26       | BBCH 25-30          | BBCH 21-23          | BBCH 24-26          |         |       |       |
| Pest stage                       |                                   |                        | BBCH 13-31              | BBCH 12-16       | BBCH 11-13       | BBCH 21-23          | BBCH 21-23          | BBCH 22-23          |         |       |       |
| Assessment date                  |                                   |                        | 22.04.2020              | 07.05.2020       | 30.04.2021       | 14.04.2021          | 14.04.2021          | 15.04.2021          |         |       |       |
| Days after application DA-A      |                                   |                        | 14 DA-A                 | 14 DA-A          | 14 DA-A          | 14 DA-A             | 14 DA-A             | 14 DA-A             | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 83.0                    | 9.8              | 30.0             | 6.0                 | 6.0                 | 5.0                 | 23.3    | 5.0   | 83.0  |
| No.                              | Name                              | Rate<br>(L.<br>kg/ha)  |                         |                  |                  |                     |                     |                     |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00                    | 0.00             | 0.00             | 0.00                | 0.00                | 0.00                | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                       | -                | 55.00            | 0.00                | 0.00                | 30.00               | 21.25   | 0.00  | 55.00 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 25.00                   | 10.00            | 72.50            | 7.00                | 0.00                | 35.00               | 24.92   | 0.00  | 72.50 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 47.50                   | 25.00            | 72.50            | 6.30                | 7.50                | 37.50               | 32.72   | 6.30  | 72.50 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 55.00                   | 37.50            | 77.50            | 41.30               | 43.80               | 40.00               | 49.18   | 37.50 | 77.50 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 50.00                   | 47.50            | 77.50            | 56.30               | 51.30               | 55.00               | 56.27   | 47.50 | 77.50 |
| LSD(P=.05)                       |                                   |                        | 8.670                   | 6.445            | 11.620           | 12.110              | 6.850               | 6.600               |         |       |       |

Table 11. The efficacy of CHR/H/MEZO 30 OD in control of BROMO Bromus hordeaceus 21-28 DA-A

| Pest code                   |                                      |                                 | BROMO Bromus hordeaceus |                  |                  |                     |                     |                     |         |       |       |
|-----------------------------|--------------------------------------|---------------------------------|-------------------------|------------------|------------------|---------------------|---------------------|---------------------|---------|-------|-------|
| Report code                 |                                      |                                 | SRPL20-230-336HE        | SRPL20-231-336HE | SRPL21-407-336HE | A.T/2021/022/P<br>O | A.T/2021/024/P<br>O | A.T/2021/023/P<br>O |         |       |       |
| Application date            |                                      |                                 | 08.04.2020              | 23.04.2020       | 16.04.2021       | 31.03.2021          | 31.03.2021          | 01.04.2021          |         |       |       |
| Crop stage in application   |                                      |                                 | BBCH 30-32              | BBCH 30-32       | BBCH 24-26       | BBCH 25-30          | BBCH 21-23          | BBCH 24-26          |         |       |       |
| Pest stage                  |                                      |                                 | BBCH 13-31              | BBCH 12-16       | BBCH 11-13       | BBCH 21-23          | BBCH 21-23          | BBCH 22-23          |         |       |       |
| Assessment date             |                                      |                                 | 06.05.2020              | 21.05.2020       | 14.05.2021       | 28.04.2021          | 22.04.2021          | 29.04.2021          |         |       |       |
| Days after application DA-A |                                      |                                 | 28 DA-A                 | 28 DA-A          | 28 DA-A          | 28 DA-A             | 22 DA-A             | 28 DA-A             | Average | Min.  | Max.  |
| weeds density pcs/m²        |                                      |                                 | 83.0                    | 12.8             | 30.0             | 7.0                 | 7.0                 | 5.0                 | 24.1    | 5.0   | 83.0  |
| No.                         | Name                                 | Rate<br>(L.<br>kg/ha)           |                         |                  |                  |                     |                     |                     |         |       |       |
| 1                           | Untreated Check                      | -                               | 0.00                    | 0.00             | 0.00             | 0.00                | 0.00                | 0.00                | 0.00    | 0.00  | 0.00  |
| 2                           | CHR/H/MEZO 30<br>OD                  | 0.2                             | -                       | -                | 70.00            | 5.00                | 0.00                | 32.50               | 26.88   | 0.00  | 70.00 |
| 3                           | CHR/H/MEZO 30<br>OD                  | 0.30                            | 52.50                   | 22.50            | 86.30            | 6.30                | 16.30               | 40.00               | 37.32   | 6.30  | 86.30 |
| 4                           | CHR/H/MEZO 30<br>OD                  | 0.40                            | 78.80                   | 45.00            | 92.50            | 10.00               | 36.30               | 47.50               | 51.68   | 10.00 | 92.50 |
| 5                           | CHR/H/MEZO 30<br>OD                  | 0.50                            | 85.00                   | 65.00            | 99.00            | 52.50               | 71.30               | 52.50               | 70.88   | 52.50 | 99.00 |
| 6                           | Atlantis Star +<br>Biopower 276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 80.00                   | 67.50            | 91.30            | 56.30               | 78.80               | 67.50               | 73.57   | 56.30 | 91.30 |
| LSD(P=.05)                  |                                      |                                 | 4.87                    | 7.831            | 6.050            | 14.150              | 5.070               | 6.600               |         |       |       |

Table 12. The efficacy of CHR/H/MEZO 30 OD in control of BROMO Bromus hordeaceus LAST ASSESSMENT

| Pest code                        |                                    |                           | BROMO Bromus hordeaceus |                  |                  |                     |                     |                     |              |       |       |
|----------------------------------|------------------------------------|---------------------------|-------------------------|------------------|------------------|---------------------|---------------------|---------------------|--------------|-------|-------|
| Report code                      |                                    |                           | SRPL20-230-336HE        | SRPL20-231-336HE | SRPL21-407-336HE | A.T/2021/022/P<br>O | A.T/2021/024/P<br>O | A.T/2021/023/P<br>O |              |       |       |
| Application date                 |                                    |                           | 08.04.2020              | 23.04.2020       | 16.04.2021       | 31.03.2021          | 31.03.2021          | 01.04.2021          |              |       |       |
| Crop stage in application        |                                    |                           | BBCH 30-32              | BBCH 30-32       | BBCH 24-26       | BBCH 25-30          | BBCH 21-23          | BBCH 24-26          |              |       |       |
| Pest stage                       |                                    |                           | BBCH 13-31              | BBCH 12-16       | BBCH 11-13       | BBCH 21-23          | BBCH 21-23          | BBCH 22-23          |              |       |       |
| Assessment date                  |                                    |                           | 25.05.2020              | 18.06.2020       | 04.06.2021       | 24.06.2021          | 15.06.2021          | 16.06.2021          |              |       |       |
| Days after application DA-A      |                                    |                           | 47 DA-A                 | 56 DA-A          | 49 DA-A          | 85 DA-A             | 76 DA-A             | 76 DA-A             | Avera-<br>ge | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                    |                           | 83.0                    | 15.8             | 30.0             | 20.0                | 10.0                | 15.0                | 29.0         | 10.0  | 83.0  |
| No.                              | Name                               | Rate<br>(L.<br>kg/ha<br>) |                         |                  |                  |                     |                     |                     |              |       |       |
| 1                                | Untreated Check                    | -                         | 0.00                    | 0.00             | 0.00             | 0.00                | 0.00                | 0.00                | 0.00         | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                   | 0.2                       | -                       | -                | 75.00            | 23.80               | 61.30               | 35.00               | 48.78        | 23.80 | 75.00 |
| 3                                | CHR/H/MEZO 30 OD                   | 0.30                      | 47.37                   | 32.50            | 87.50            | 31.30               | 65.00               | 45.00               | 51.45        | 31.30 | 87.50 |
| 4                                | CHR/H/MEZO 30 OD                   | 0.40                      | 88.85                   | 55.00            | 96.80            | 32.50               | 66.30               | 50.00               | 64.91        | 32.50 | 96.80 |
| 5                                | CHR/H/MEZO 30 OD                   | 0.50                      | 98.63                   | 86.25            | 99.00            | 55.00               | 67.50               | 60.00               | 77.73        | 55.00 | 99.00 |
| 6                                | Atlantis Star + Bio-power 276.5 SL | 0.333 kg/ha + 1.0 L/ha    | 94.06                   | 92.50            | 97.00            | 63.80               | 77.50               | 98.80               | 87.28        | 63.80 | 98.80 |
| LSD(P=.05)                       |                                    |                           | 7.172                   | 6.671            | 7.730            | 6.560               | 6.780               | 8.380               |              |       |       |

Table 13. The efficacy of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* 14 DA-A

| Pest code                        |                                   |                        | LOLPE              |                 |                 |                 |                  |                  |         |       |       |
|----------------------------------|-----------------------------------|------------------------|--------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------|-------|
| Report code                      |                                   |                        | AH/20/PO/6/Pr/MEZO | A.T/2021/019/PO | A.T/2021/020/PO | A.T/2021/021/PO | SRPL21-408-336HE | SRPL21-409-336HE |         |       |       |
| Application date                 |                                   |                        | 07.04.2020         | 28.04.2021      | 31.03.2021      | 31.03.2021      | 12.04.2021       | 14.04.2021       |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 31            | BBCH 20-22      | BBCH 22-24      | BBCH 21-23      | BBCH 26-27       | BBCH 21-22       |         |       |       |
| Pest stage                       |                                   |                        | BBCH 22-27         | BBCH 10-12      | BBCH 21-23      | BBCH 14-21      | BBCH 12-21       | BBCH 10-16       |         |       |       |
| Assessment date                  |                                   |                        | 21.04.2020         | 10.05.2021      | 14.04.2021      | 13.04.2021      | 26.04.2021       | 28.04.2021       |         |       |       |
| Days after application DA-A      |                                   |                        | 14 DA-A            | 12 DA-A         | 14 DA-A         | 13 DA-A         | 14 DA-A          | 14 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 30.3               | 27.0            | 25.0            | 90.0            | 8.3              | 10.5             | 31.8    | 8.3   | 90.0  |
| No.                              | Name                              | Rate (L. kg/ha)        |                    |                 |                 |                 |                  |                  |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00               | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                  | 20.00           | 41.30           | 12.50           | 5.00             | 0.00             | 15.76   | 0.00  | 41.30 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 51.00              | 32.00           | 55.00           | 20.00           | 10.00            | 0.00             | 28.00   | 0.00  | 55.00 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 49.50              | 40.00           | 68.80           | 36.30           | 20.00            | 0.00             | 35.77   | 0.00  | 68.80 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 50.80              | 48.80           | 71.30           | 46.30           | 41.30            | 16.30            | 45.80   | 16.30 | 71.30 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 52.80              | 59.50           | 82.50           | 45.00           | 50.00            | 23.80            | 52.27   | 23.80 | 82.50 |
| LSD(P=.05)                       |                                   |                        | 4.230              | 2.780           | 4.160           | 4.500           | 2.520            | 3.200            |         |       |       |

Table 14. The efficacy of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* 21-28 DA-A

| Pest code                        |                                   |                        | LOLPE              |                 |                 |                 |                  |                  |         |       |       |
|----------------------------------|-----------------------------------|------------------------|--------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------|-------|
| Report code                      |                                   |                        | AH/20/PO/6/Pr/MEZO | A.T/2021/019/PO | A.T/2021/020/PO | A.T/2021/021/PO | SRPL21-408-336HE | SRPL21-409-336HE |         |       |       |
| Application date                 |                                   |                        | 07.04.2020         | 28.04.2021      | 31.03.2021      | 31.03.2021      | 12.04.2021       | 14.04.2021       |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 31            | BBCH 20-22      | BBCH 22-24      | BBCH 21-23      | BBCH 26-27       | BBCH 21-22       |         |       |       |
| Pest stage                       |                                   |                        | BBCH 22-27         | BBCH 10-12      | BBCH 21-23      | BBCH 14-21      | BBCH 12-21       | BBCH 10-16       |         |       |       |
| Assessment date                  |                                   |                        | 04.05.2020         | 25.05.2021      | 28.04.2021      | 28.04.2021      | 10.05.2021       | 12.05.2021       |         |       |       |
| Days after application DA-A      |                                   |                        | 27 DA-A            | 27 DA-A         | 28 DA-A         | 28 DA-A         | 28 DA-A          | 28 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 27.3               | 27.0            | 25.0            | 85.0            | 9.3              | 10.5             | 30.7    | 9.3   | 85.0  |
| No.                              | Name                              | Rate (L. kg/ha)        |                    |                 |                 |                 |                  |                  |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00               | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                  | 33.80           | 40.00           | 30.00           | 10.00            | 0.00             | 22.76   | 0.00  | 40.00 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 54.30              | 54.50           | 52.50           | 68.80           | 20.00            | 0.00             | 41.68   | 0.00  | 68.80 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 54.50              | 66.30           | 70.00           | 80.00           | 31.30            | 11.30            | 52.23   | 11.30 | 80.00 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 53.30              | 79.50           | 80.00           | 82.50           | 52.50            | 32.50            | 63.38   | 32.50 | 82.50 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 56.80              | 95.30           | 85.00           | 85.00           | 60.00            | 75.00            | 76.18   | 56.80 | 95.30 |
| LSD(P=.05)                       |                                   |                        | 4.260              | 4.040           | 3.450           | 6.450           | 4.120            | 5.380            |         |       |       |

Table 15. The efficacy of CHR/H/MEZO 30 OD in control of LOLPE *Lolium perennium* LAST ASSESSMENT

| Pest code                        |                                   |                        | LOLPE              |                 |                 |                 |                  |                  |         |       |        |
|----------------------------------|-----------------------------------|------------------------|--------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------|--------|
| Report code                      |                                   |                        | AH/20/PO/6/Pr/MEZO | A.T/2021/019/PO | A.T/2021/020/PO | A.T/2021/021/PO | SRPL21-408-336HE | SRPL21-409-336HE |         |       |        |
| Application date                 |                                   |                        | 07.04.2020         | 28.04.2021      | 31.03.2021      | 31.03.2021      | 12.04.2021       | 14.04.2021       |         |       |        |
| Crop stage in application        |                                   |                        | BBCH 31            | BBCH 20-22      | BBCH 22-24      | BBCH 21-23      | BBCH 26-27       | BBCH 21-22       |         |       |        |
| Pest stage                       |                                   |                        | BBCH 22-27         | BBCH 10-12      | BBCH 21-23      | BBCH 14-21      | BBCH 12-21       | BBCH 10-16       |         |       |        |
| Assessment date                  |                                   |                        | 02.06.2020         | 21.06.2021      | 28.06.2021      | 15.06.2021      | 07.06.2021       | 08.06.2021       |         |       |        |
| Days after application DA-A      |                                   |                        | 56 DA-A            | 54 DA-A         | 89 DA-A         | 76 DA-A         | 56 DA-A          | 85 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 9.0                | 40.0            | 75.0            | 180.0           | 9.3              | 11.3             | 54.1    | 9.0   | 180.0  |
| No.                              | Name                              | Rate (L. kg/ha )       |                    |                 |                 |                 |                  |                  |         |       |        |
| 1                                | Untreated Check                   | -                      | 0.00               | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                  | 47.50           | 77.50           | 50.00           | 42.87            | 14.40            | 46.45   | 14.40 | 77.50  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 81.80              | 61.80           | 87.50           | 73.80           | 71.79            | 18.60            | 65.88   | 18.60 | 87.50  |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 82.80              | 72.80           | 91.00           | 87.00           | 81.90            | 54.10            | 78.27   | 54.10 | 91.00  |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 88.50              | 86.30           | 100.00          | 92.50           | 97.95            | 72.70            | 89.66   | 72.70 | 100.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 85.50              | 96.50           | 100.00          | 89.30           | 98.81            | 93.10            | 93.87   | 85.50 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 3.140              | 3.490           | 8.320           | 7.620           | 12.195           | 23.470           |         |       |        |

Table 16. The efficacy of CHR/H/MEZO 30 OD in control of VIOAR Viola arvensis 14 DA-A

| Pest code | Report code        | Application date | Crop stage in application | Pest stage | Assessment date | Days after application DA-A | weeds density pcs/m <sup>2</sup> | No.             | 1               | 2                | 3                | 4                | 5                | 6                                 | LSD(P=.05) |
|-----------|--------------------|------------------|---------------------------|------------|-----------------|-----------------------------|----------------------------------|-----------------|-----------------|------------------|------------------|------------------|------------------|-----------------------------------|------------|
|           |                    |                  |                           |            |                 |                             |                                  | Name            | Untreated Check | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | Atlantis Star + Biopower 276.5 SL |            |
|           |                    |                  |                           |            |                 |                             |                                  | Rate (L. kg/ha) | -               | 0.2              | 0.30             | 0.40             | 0.50             | 0.333 kg/ha + 1.0 L/ha            |            |
| VIOAR     | SRPL20-231-336HE   | 23.04.2020       | BBCH 30-32                | BBCH 14-18 | 07.05.2020      | 14 DA-A                     | 6.3                              |                 | 0.00            | -                | 5.00             | 10.00            | 11.25            | 12.50                             | 2.436      |
|           | A.T/2020/051/PO    | 07.04.2020       | BBCH 30-32                | BBCH 21-30 | 21.04.2020      | 14 DA-A                     | 18.0                             |                 | 0.00            | -                | 0.00             | 10.00            | 22.50            | 35.80                             | 7.450      |
|           | A.T/2020/054/PO    | 06.04.2020       | BBCH 30-31                | BBCH 30-40 | 20.04.2020      | 14 DA-A                     | 9.0                              |                 | 0.00            | -                | 15.00            | 22.50            | 30.00            | 42.50                             | 10.660     |
|           | A.T/2020/055/PO    | 07.04.2020       | BBCH 30-32                | BBCH 30-55 | 21.04.2020      | 14 DA-A                     | 5.0                              |                 | 0.00            | -                | 5.00             | 10.00            | 12.50            | 30.80                             | 10.010     |
|           | AH/20/PO/6/Pr/MEZO | 07.04.2020       | BBCH 31                   | BBCH 14-51 | 21.04.2020      | 14 DA-A                     | 20.0                             |                 | 0.00            | -                | 58.30            | 56.80            | 56.30            | 54.50                             | 3.970      |
|           | A.T/2021/011/PO    | 30.03.2021       | BBCH 25-29                | BBCH 21-25 | 13.04.2021      | 14 DA-A                     | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 0.00             | 30.00                             | -          |
|           | A.T/2021/012/PO    | 30.03.2021       | BCH 26-30                 | BBCH 14-21 | 13.04.2021      | 14 DA-A                     | 31.0                             |                 | 0.00            | 0.00             | 3.80             | 15.80            | 27.50            | 71.20                             | 9.420      |
|           | A.T/2021/014/PO    | 31.03.2021       | BBCH 23-27                | BBCH 21-25 | 14.04.2021      | 14 DA-A                     | 30.0                             |                 | 0.00            | 10.00            | 10.00            | 10.00            | 57.50            | 67.50                             | 4.220      |
|           | A.T/2021/018/PO    | 31.03.2021       | BBCH 21-23                | BBCH 12-16 | 14.04.2021      | 14 DA-A                     | 5.0                              |                 | 0.00            | 31.30            | 31.30            | 47.50            | 46.30            | 61.30                             | 3.300      |
|           | A.T/2021/020/PO    | 31.03.2021       | BBCH 22-24                | BBCH 17-30 | 14.04.2021      | 14 DA-A                     | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 20.00            | 50.00                             | 2.810      |
|           | A.T/2021/021/PO    | 31.03.2021       | BBCH 21-23                | BBCH 14-21 | 13.04.2021      | 13 DA-A                     | 15.0                             |                 | 0.00            | 10.00            | 10.00            | 10.00            | 11.80            | 15.00                             | 1.630      |
|           | A.T/2021/022/PO    | 31.03.2021       | BBCH 25-30                | BBCH 25-30 | 14.04.2021      | 14 DA-A                     | 115.0                            |                 | 0.00            | 5.00             | 15.00            | 23.80            | 46.30            | 75.30                             | 8.640      |
|           | A.T/2021/023/PO    | 01.04.2021       | BBCH 24-26                | BBCH 19-30 | 15.04.2021      | 14 DA-A                     | 5.0                              |                 | 0.00            | 20.00            | 20.00            | 20.00            | 20.00            | 30.00                             | -          |
|           | A.T/2021/024/PO    | 31.03.2021       | BBCH 21-23                | BBCH 12-16 | 14.04.2021      | 14 DA-A                     | 5.0                              |                 | 0.00            | 31.30            | 31.30            | 47.50            | 47.50            | 57.50                             | 5.310      |
|           | SRPL21-407-336HE   | 16.04.2021       | BBCH 24-26                | BBCH 12-13 | 30.04.2021      | 14 DA-A                     | 7.0                              |                 | 0.00            | 0.00             | 0.00             | 22.50            | 30.00            | 40.00                             | 8.980      |
| Average   |                    |                  |                           |            |                 |                             | 18.8                             |                 | 0.00            | 10.76            | 13.65            | 20.43            | 29.30            | 44.93                             |            |
| Min.      |                    |                  |                           |            |                 |                             | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 0.00             | 12.50                             |            |
| Max.      |                    |                  |                           |            |                 |                             | 115.0                            |                 | 0.00            | 31.30            | 58.30            | 56.80            | 57.50            | 75.30                             |            |

Table 17. The efficacy of CHR/H/MEZO 30 OD in control of VIOAR Viola arvensis 21-28 DA-A

| Pest code | Report code        | Application date | Crop stage in application | Pest stage | Assessment date | Days after application DA-A | weeds density pcs/m <sup>2</sup> | No.             | 1               | 2                | 3                | 4                | 5                | 6                                 | LSD(P=.05) |
|-----------|--------------------|------------------|---------------------------|------------|-----------------|-----------------------------|----------------------------------|-----------------|-----------------|------------------|------------------|------------------|------------------|-----------------------------------|------------|
|           |                    |                  |                           |            |                 |                             |                                  | Name            | Untreated Check | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | CHR/H/MEZO 30 OD | Atlantis Star + Biopower 276.5 SL |            |
|           |                    |                  |                           |            |                 |                             |                                  | Rate (L. kg/ha) | -               | 0.2              | 0.30             | 0.40             | 0.50             | 0.333 kg/ha + 1.0 L/ha            |            |
| VIOAR     | SRPL20-231-336HE   | 23.04.2020       | BBCH 30-32                | BBCH 14-18 | 21.05.2020      | 28 DA-A                     | 8.8                              |                 | 0.00            | -                | 10.00            | 15.00            | 25.00            | 23.75                             | 3.298      |
|           | A.T/2020/051/PO    | 07.04.2020       | BBCH 30-32                | BBCH 21-30 | 04.05.2020      | 27 DA-A                     | 18.0                             |                 | 0.00            | -                | 32.50            | 33.80            | 43.80            | 78.50                             | 5.910      |
|           | A.T/2020/054/PO    | 06.04.2020       | BBCH 30-31                | BBCH 30-40 | 04.05.2020      | 28 DA-A                     | 9.0                              |                 | 0.00            | -                | 30.00            | 30.00            | 31.30            | 75.00                             | 2.000      |
|           | A.T/2020/055/PO    | 07.04.2020       | BBCH 30-32                | BBCH 30-55 | 05.05.2020      | 28 DA-A                     | 5.0                              |                 | 0.00            | -                | 15.00            | 22.50            | 30.00            | 87.00                             | 8.590      |
|           | AH/20/PO/6/Pr/MEZO | 07.04.2020       | BBCH 31                   | BBCH 14-51 | 04.05.2020      | 27 DA-A                     | 22.5                             |                 | 0.00            | -                | 57.80            | 58.80            | 58.00            | 57.50                             | 3.370      |
|           | A.T/2021/011/PO    | 30.03.2021       | BBCH 25-29                | BBCH 21-25 | 20.04.2021      | 21 DA-A                     | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 20.00            | 50.00                             | -          |
|           | A.T/2021/012/PO    | 30.03.2021       | BCH 26-30                 | BBCH 14-21 | 27.04.2021      | 28 DA-A                     | 31.0                             |                 | 0.00            | 2.50             | 6.30             | 20.00            | 28.80            | 81.50                             | 6.300      |
|           | A.T/2021/014/PO    | 31.03.2021       | BBCH 23-27                | BBCH 21-25 | 28.04.2021      | 28 DA-A                     | 30.0                             |                 | 0.00            | 0.00             | 0.00             | 0.00             | 35.00            | 90.00                             | 3.980      |
|           | A.T/2021/018/PO    | 31.03.2021       | BBCH 21-23                | BBCH 12-16 | 22.04.2021      | 22 DA-A                     | 5.0                              |                 | 0.00            | 31.30            | 31.30            | 47.50            | 47.50            | 62.50                             | 3.520      |
|           | A.T/2021/020/PO    | 31.03.2021       | BBCH 22-24                | BBCH 17-30 | 28.04.2021      | 28 DA-A                     | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 20.00            | 50.00                             | 2.810      |
|           | A.T/2021/021/PO    | 31.03.2021       | BBCH 21-23                | BBCH 14-21 | 28.04.2021      | 28 DA-A                     | 17.0                             |                 | 0.00            | 25.00            | 30.00            | 30.00            | 30.00            | 52.50                             | 4.450      |
|           | A.T/2021/022/PO    | 31.03.2021       | BBCH 25-30                | BBCH 25-30 | 28.04.2021      | 28 DA-A                     | 115.0                            |                 | 0.00            | 25.00            | 35.00            | 43.80            | 63.80            | 85.80                             | 5.780      |
|           | A.T/2021/023/PO    | 01.04.2021       | BBCH 24-26                | BBCH 19-30 | 29.04.2021      | 28 DA-A                     | 5.0                              |                 | 0.00            | 47.50            | 52.50            | 55.00            | 62.50            | 81.30                             | 5.970      |
|           | A.T/2021/024/PO    | 31.03.2021       | BBCH 21-23                | BBCH 12-16 | 22.04.2021      | 22 DA-A                     | 5.0                              |                 | 0.00            | 31.30            | 31.30            | 47.50            | 47.50            | 62.50                             | 3.520      |
|           | SRPL21-407-336HE   | 16.04.2021       | BBCH 24-26                | BBCH 12-13 | 14.05.2021      | 28 DA-A                     | 7.0                              |                 | 0.00            | 0.00             | 0.00             | 20.00            | 32.50            | 82.50                             | 5.680      |
| Average   |                    |                  |                           |            |                 |                             | 19.2                             |                 | 0.00            | 16.26            | 22.11            | 28.26            | 38.38            | 68.02                             |            |
| Min.      |                    |                  |                           |            |                 |                             | 5.0                              |                 | 0.00            | 0.00             | 0.00             | 0.00             | 20.00            | 23.75                             |            |
| Max.      |                    |                  |                           |            |                 |                             | 115.0                            |                 | 0.00            | 47.50            | 57.80            | 58.80            | 63.80            | 90.00                             |            |



Table 18. The efficacy of CHR/H/MEZO 30 OD in control of VIOAR Viola arvensis LAST ASSESSMENT

| Pest code                   |                                   |                        | VIOAR            |                 |                 |                 |                     |                 |                 |                 |                  |         |       |       |
|-----------------------------|-----------------------------------|------------------------|------------------|-----------------|-----------------|-----------------|---------------------|-----------------|-----------------|-----------------|------------------|---------|-------|-------|
| Report code                 |                                   |                        | SRPL20-231-336HE | A.T/2020/051/PO | A.T/2020/054/PO | A.T/2020/055/PO | AH/20/PO/6/P r/MEZO | A.T/2021/018/PO | A.T/2021/021/PO | A.T/2021/024/PO | SRPL21-407-336HE |         |       |       |
| Application date            |                                   |                        | 23.04.2020       | 07.04.2020      | 06.04.2020      | 07.04.2020      | 07.04.2020          | 31.03.2021      | 31.03.2021      | 31.03.2021      | 16.04.2021       |         |       |       |
| Crop stage in application   |                                   |                        | BBCH 30-32       | BBCH 30-32      | BBCH 30-31      | BBCH 30-32      | BBCH 31             | BBCH 21-23      | BBCH 21-23      | BBCH 21-23      | BBCH 24-26       |         |       |       |
| Pest stage                  |                                   |                        | BBCH 14-18       | BBCH 21-30      | BBCH 30-40      | BBCH 30-55      | BBCH 14-51          | BBCH 12-16      | BBCH 14-21      | BBCH 12-16      | BBCH 12-13       |         |       |       |
| Assessment date             |                                   |                        | 18.06.2020       | 24.06.2020      | 29.05.2020      | 04.06.2020      | 02.06.2020          | 15.06.2021      | 15.06.2021      | 15.06.2021      | 04.06.2021       |         |       |       |
| Days after application DA-A |                                   |                        | 56 DA-A          | 78 DA-A         | 53 DA-A         | 58 DA-A         | 56 DA-A             | 76 DA-A         | 76 DA-A         | 76 DA-A         | 49 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m²        |                                   |                        | 15.0             | 18.0            | 8.0             | 5.0             | 22.3                | 5.0             | 18.0            | 5.0             | 7.0              | 11.5    | 5.0   | 22.3  |
| No                          | Name                              | Rate (L. kg/ha)        |                  |                 |                 |                 |                     |                 |                 |                 |                  |         |       |       |
| 1                           | Untreated Check                   | -                      | 0.00             | 0.00            | 0.00            | 0.00            | 0.00                | 0.00            | 0.00            | 0.00            | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                           | CHR/H/MEZ O 30 OD                 | 0.2                    | -                | -               | -               | -               | -                   | 0.00            | 0.00            | 0.00            | 0.00             | 0.00    | 0.00  | 0.00  |
| 3                           | CHR/H/MEZ O 30 OD                 | 0.30                   | 25.00            | 12.50           | 30.00           | 10.00           | 85.50               | 0.00            | 2.50            | 0.00            | 0.00             | 18.39   | 0.00  | 85.50 |
| 4                           | CHR/H/MEZ O 30 OD                 | 0.40                   | 30.00            | 23.30           | 30.00           | 15.00           | 85.00               | 11.30           | 2.50            | 11.30           | 15.00            | 24.82   | 2.50  | 85.00 |
| 5                           | CHR/H/MEZ O 30 OD                 | 0.50                   | 45.00            | 39.50           | 31.30           | 23.80           | 85.50               | 21.30           | 2.50            | 21.30           | 35.00            | 33.91   | 2.50  | 85.50 |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 50.00            | 82.00           | 75.00           | 87.00           | 85.80               | 68.80           | 86.30           | 61.30           | 81.30            | 75.28   | 50.00 | 87.00 |
| LSD(P=.05)                  |                                   |                        | 3.978            | 16.370          | 2.000           | 4.800           | 2.500               | 3.220           | 3.450           | 2.900           | 8.370            |         |       |       |

Table 19. The efficacy of CHR/H/MEZO 30 OD in control of BRSNW Brassica napus 14 DA-A

| Pest code                   |   |                                 | BRSNW               |                     |                     |                     |                     |                     |                     |                     |                  |         |       |        |
|-----------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------------------|---------|-------|--------|
| Report code                 |   |                                 | A.T/2020/051/P<br>O | A.T/2020/052/P<br>O | A.T/2020/054/P<br>O | A.T/2020/055/P<br>O | A.T/2021/012/P<br>O | A.T/2021/016/P<br>O | A.T/2021/019/P<br>O | A.T/2021/023/P<br>O | SRPL21-405-336HE |         |       |        |
| Application date            |   |                                 | 07.04.2020          | 06.04.2020          | 06.04.2020          | 07.04.2020          | 30.03.2021          | 07.05.2021          | 28.04.2021          | 01.04.2021          | 22.04.2021       |         |       |        |
| Crop stage in application   |   |                                 | BBCH 30-32          | BBCH 30-31          | BBCH 30-31          | BBCH 30-32          | BCH 26-30           | BBCH 29-32          | BBCH 20-22          | BBCH 24-26          | BBCH 21-23       |         |       |        |
| Pest stage                  |   |                                 | BBCH 30-35          | BBCH 16-21          | BBCH 30-35          | BBCH 25-32          | BBCH 21-28          | BBCH 37-49          | BBCH 10-12          | BBCH 19-30          | BBCH 12-16       |         |       |        |
| Assessment date             |   |                                 | 21.04.2020          | 20.04.2020          | 20.04.2020          | 21.04.2020          | 13.04.2021          | 20.05.2021          | 10.05.2021          | 15.04.2021          | 06.05.2021       |         |       |        |
| Days after application DA-A |   |                                 | 14 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A             | 13 DA-A             | 12 DA-A             | 14 DA-A             | 14 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m²        |   |                                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 6.0                 | 5.0                 | 5.0                 | 5.0                 | 10.3             | 5.7     | 5.0   | 10.3   |
| No.                         | Name                                    | Rate (L. kg/ha)                 |                     |                     |                     |                     |                     |                     |                     |                     |                  |         |       |        |
| 1                           | Untreated Check                         | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                           | CHR/H/MEZ<br>O 30 OD                    | 0.2                             | -                   | -                   | -                   | -                   | 88.30               | 50.00               | 80.30               | 31.30               | 46.30            | 59.24   | 31.30 | 88.30  |
| 3                           | CHR/H/MEZ<br>O 30 OD                    | 0.30                            | 83.50               | 67.50               | 70.00               | 78.80               | 94.50               | 55.00               | 87.00               | 32.50               | 70.00            | 70.98   | 32.50 | 94.50  |
| 4                           | CHR/H/MEZ<br>O 30 OD                    | 0.40                            | 85.30               | 70.00               | 73.80               | 85.30               | 99.00               | 57.50               | 89.80               | 37.50               | 92.50            | 76.74   | 37.50 | 99.00  |
| 5                           | CHR/H/MEZ<br>O 30 OD                    | 0.50                            | 86.30               | 77.50               | 75.00               | 85.80               | 99.50               | 62.50               | 92.00               | 45.00               | 97.30            | 80.10   | 45.00 | 99.50  |
| 6                           | Atlantis Star +<br>Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 86.50               | 76.30               | 75.00               | 87.30               | 100.00              | 67.50               | 98.00               | 50.00               | 99.30            | 82.21   | 50.00 | 100.00 |
| LSD(P=.05)                  |   |                                 | 2.630               | 4.670               | 2.000               | 5.130               | 1.880               | 5.450               | 3.290               | 3.590               | 6.220            |         |       |        |

Table 20. The efficacy of CHR/H/MEZO 30 OD in control of BRSNW Brassica napus 21-28 DA-A

| Pest code                   |   |                                 | BRSNW               |                     |                     |                     |                     |                     |                     |                     |                      |              |           |            |
|-----------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|--------------|-----------|------------|
| Report code                 |   |                                 | A.T/2020/051/P<br>O | A.T/2020/052/P<br>O | A.T/2020/054/P<br>O | A.T/2020/055/P<br>O | A.T/2021/012/P<br>O | A.T/2021/016/P<br>O | A.T/2021/019/P<br>O | A.T/2021/023/P<br>O | SRPL21-405-<br>336HE |              |           |            |
| Application date            |   |                                 | 07.04.2020          | 06.04.2020          | 06.04.2020          | 07.04.2020          | 30.03.2021          | 07.05.2021          | 28.04.2021          | 01.04.2021          | 22.04.2021           |              |           |            |
| Crop stage in application   |   |                                 | BBCH 30-32          | BBCH 30-31          | BBCH 30-31          | BBCH 30-32          | BCH 26-30           | BBCH 29-32          | BBCH 20-22          | BBCH 24-26          | BBCH 21-23           |              |           |            |
| Pest stage                  |   |                                 | BBCH 30-35          | BBCH 16-21          | BBCH 30-35          | BBCH 25-32          | BBCH 21-28          | BBCH 37-49          | BBCH 10-12          | BBCH 19-30          | BBCH 12-16           |              |           |            |
| Assessment date             |   |                                 | 04.05.2020          | 04.05.2020          | 04.05.2020          | 05.05.2020          | 27.04.2021          | 04.06.2021          | 25.05.2021          | 29.04.2021          | 20.05.2021           |              |           |            |
| Days after application DA-A |   |                                 | 27 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A             | 27 DA-A             | 28 DA-A             | 28 DA-A              | Avera-<br>ge | Min.      | Max.       |
| weeds density pcs/m²        |   |                                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 6.0                 | 5.0                 | 5.0                 | 5.0                 | 10.3                 | 5.7          | 5.0       | 10.3       |
| No<br>.                     | Name                                    | Rate<br>(L.<br>kg/ha<br>)       |                     |                     |                     |                     |                     |                     |                     |                     |                      |              |           |            |
| 1                           | Untreated<br>Check                      | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00         | 0.00      | 0.00       |
| 2                           | CHR/H/MEZ<br>O 30 OD                    | 0.2                             | -                   | -                   | -                   | -                   | 94.00               | 90.00               | 92.00               | 92.50               | 65.00                | 86.70        | 65.0<br>0 | 94.00      |
| 3                           | CHR/H/MEZ<br>O 30 OD                    | 0.30                            | 83.00               | 95.00               | 95.00               | 87.80               | 98.50               | 98.80               | 99.00               | 98.00               | 95.00                | 94.46        | 83.0<br>0 | 99.00      |
| 4                           | CHR/H/MEZ<br>O 30 OD                    | 0.40                            | 86.50               | 95.00               | 95.00               | 94.00               | 100.00              | 100.00              | 100.00              | 100.00              | 100.00               | 96.72        | 86.5<br>0 | 100.0<br>0 |
| 5                           | CHR/H/MEZ<br>O 30 OD                    | 0.50                            | 91.00               | 95.00               | 95.00               | 95.80               | 100.00              | 100.00              | 100.00              | 100.00              | 100.00               | 97.42        | 91.0<br>0 | 100.0<br>0 |
| 6                           | Atlantis Star +<br>Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 94.50               | 95.00               | 95.00               | 96.50               | 100.00              | 100.00              | 100.00              | 100.00              | 100.00               | 97.89        | 94.5<br>0 | 100.0<br>0 |
| LSD(P=.05)                  |   |                                 | 2.610               | -                   | -                   | 3.110               | 0.970               | 1.720               | 1.690               | 2.550               | 4.120                |              |           |            |

Table 21. The efficacy of CHR/H/MEZO 30 OD in control of BRSNW Brassica napus LAST ASSESSMENT

| Pest code                   |   |                                 | BRSNW               |                     |                     |                     |                     |                     |                     |                      |              |       |        |
|-----------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|--------------|-------|--------|
| Report code                 |   |                                 | A.T/2020/051/<br>PO | A.T/2020/052/<br>PO | A.T/2020/054/P<br>O | A.T/2020/055/<br>PO | A.T/2021/016/<br>PO | A.T/2021/019/P<br>O | A.T/2021/023/<br>PO | SRPL21-405-<br>336HE |              |       |        |
| Application date            |   |                                 | 07.04.2020          | 06.04.2020          | 06.04.2020          | 07.04.2020          | 07.05.2021          | 28.04.2021          | 01.04.2021          | 22.04.2021           |              |       |        |
| Crop stage in application   |   |                                 | BBCH 30-32          | BBCH 30-31          | BBCH 30-31          | BBCH 30-32          | BBCH 29-32          | BBCH 20-22          | BBCH 24-26          | BBCH 21-23           |              |       |        |
| Pest stage                  |   |                                 | BBCH 30-35          | BBCH 16-21          | BBCH 30-35          | BBCH 25-32          | BBCH 37-49          | BBCH 10-12          | BBCH 19-30          | BBCH 12-16           |              |       |        |
| Assessment date             |   |                                 | 24.06.2020          | 27.05.2020          | 29.05.2020          | 04.06.2020          | 25.06.2021          | 21.06.2021          | 16.06.2021          | 17.06.2021           |              |       |        |
| Days after application DA-A |   |                                 | 78 DA-A             | 51 DA-A             | 53 DA-A             | 58 DA-A             | 49 DA-A             | 54 DA-A             | 76 DA-A             | 56 DA-A              | Avera-<br>ge | Min.  | Max.   |
| weeds density pcs/m²        |   |                                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 10.3                 | 5.7          | 5.0   | 10.3   |
| No<br>.                     | Name                                    | Rate<br>(L.<br>kg/ha<br>)       |                     |                     |                     |                     |                     |                     |                     |                      |              |       |        |
| 1                           | Untreated<br>Check                      | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00         | 0.00  | 0.00   |
| 2                           | CHR/H/MEZ<br>O 30 OD                    | 0.2                             | -                   | -                   | -                   | -                   | 91.30               | 90.50               | 92.50               | 77.50                | 87.95        | 77.50 | 92.50  |
| 3                           | CHR/H/MEZ<br>O 30 OD                    | 0.30                            | 83.50               | 99.00               | 92.50               | 86.00               | 100.00              | 99.30               | 98.00               | 100.00               | 94.79        | 83.50 | 100.00 |
| 4                           | CHR/H/MEZ<br>O 30 OD                    | 0.40                            | 86.80               | 99.00               | 100.00              | 89.50               | 100.00              | 100.00              | 100.00              | 100.00               | 96.91        | 86.80 | 100.00 |
| 5                           | CHR/H/MEZ<br>O 30 OD                    | 0.50                            | 92.00               | 99.00               | 100.00              | 93.00               | 100.00              | 100.00              | 100.00              | 100.00               | 98.00        | 92.00 | 100.00 |
| 6                           | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 100.00              | 99.00               | 100.00              | 100.00              | 100.00              | 100.00              | 100.00              | 100.00               | 99.88        | 99.00 | 100.00 |
| LSD(P=.05)                  |   |                                 | 2.100               | -                   | 2.310               | 2.810               | 1.720               | 1.190               | 2.550               | 2.910                |              |       |        |

Table 22. The efficacy of CHR/H/MEZO 30 OD in control of ANTAR Anthemis arvensis 14 DA-A

| Pest code                        |   |                                 | ANTAR               |                     |                     |                     |                     |                     |                     |                     |         |           |            |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------|-----------|------------|
| Report code                      |   |                                 | A.T/2020/053/P<br>O | A.T/2021/011/P<br>O | A.T/2021/014/P<br>O | A.T/2021/017/P<br>O | A.T/2021/019/P<br>O | A.T/2021/020/P<br>O | A.T/2021/021/P<br>O | A.T/2021/022/P<br>O |         |           |            |
| Application date                 |   |                                 | 05.04.2020          | 30.03.2021          | 31.03.2021          | 17.04.2021          | 28.04.2021          | 31.03.2021          | 31.03.2021          | 31.03.2021          |         |           |            |
| Crop stage in application        |   |                                 | BBCH 31-32          | BBCH 25-29          | BBCH 23-27          | BBCH 30-31          | BBCH 20-22          | BBCH 22-24          | BBCH 21-23          | BBCH 25-30          |         |           |            |
| Pest stage                       |   |                                 | BBCH 29-33          | BBCH 21-25          | BBCH 21-25          | BBCH 30-31          | BBCH 11-12          | BBCH 17-19          | BBCH 16-31          | BBCH 25-28          |         |           |            |
| Assessment date                  |   |                                 | 17.04.2020          | 13.04.2021          | 14.04.2021          | 30.04.2021          | 10.05.2021          | 14.04.2021          | 13.04.2021          | 14.04.2021          |         |           |            |
| Days after application<br>DA-A   |   |                                 | 12 DA-A             | 14 DA-A             | 14 DA-A             | 13 DA-A             | 12 DA-A             | 14 DA-A             | 13 DA-A             | 14 DA-A             | Average | Min.      | Max.       |
| weeds density pcs/m <sup>2</sup> |   |                                 | 5.0                 | 5.0                 | 6.0                 | 5.0                 | 5.0                 | 5.0                 | 5.0                 | 6.0                 | 5.3     | 5.0       | 6.0        |
| No                               | Name                                    | Rate<br>(L.<br>kg/ha<br>)       |                     |                     |                     |                     |                     |                     |                     |                     |         |           |            |
| 1                                | Untreated<br>Check                      | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00    | 0.00      | 0.00       |
| 2                                | CHR/H/MEZ<br>O 30 OD                    | 0.2                             | -                   | 52.50               | 50.00               | 30.00               | 60.00               | 30.00               | 25.00               | 68.30               | 45.11   | 25.0<br>0 | 68.30      |
| 3                                | CHR/H/MEZ<br>O 30 OD                    | 0.30                            | 22.50               | 70.00               | 50.00               | 35.00               | 67.50               | 35.00               | 27.50               | 73.80               | 47.66   | 22.5<br>0 | 73.80      |
| 4                                | CHR/H/MEZ<br>O 30 OD                    | 0.40                            | 27.50               | 70.00               | 50.00               | 40.00               | 72.80               | 40.00               | 30.00               | 84.50               | 51.85   | 27.5<br>0 | 84.50      |
| 5                                | CHR/H/MEZ<br>O 30 OD                    | 0.50                            | 30.00               | 75.00               | 50.00               | 50.00               | 85.00               | 50.00               | 35.00               | 91.50               | 58.31   | 30.0<br>0 | 91.50      |
| 6                                | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 30.00               | 90.00               | 50.00               | 75.00               | 92.50               | 75.00               | 56.30               | 100.00              | 71.10   | 30.0<br>0 | 100.0<br>0 |
| LSD(P=.05)                       |   |                                 | 5.330               | 3.450               | -                   | 3.980               | 4.580               | 3.980               | 9.430               | 5.590               |         |           |            |

Table 23a. The efficacy of CHR/H/MEZO 30 OD in control of ANTAR Anthemis arvensis 21-28 DA-A

| Pest code                        |   |   | ANTAR               |                     |                     |                     |                     |                     |                     |                     |              |           |            |
|----------------------------------|---|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------|-----------|------------|
| Report code                      |   |   | A.T/2020/053/<br>PO | A.T/2021/011/<br>PO | A.T/2021/014/<br>PO | A.T/2021/017/<br>PO | A.T/2021/019/<br>PO | A.T/2021/020/<br>PO | A.T/2021/021/<br>PO | A.T/2021/022/<br>PO |              |           |            |
| Application date                 |   |   | 05.04.2020          | 30.03.2021          | 31.03.2021          |                     | 28.04.2021          |                     |                     | 31.03.2021          |              |           |            |
| Crop stage in applica-<br>tion   |   |   | BBCH 31-32          | BBCH 25-29          | BBCH 23-27          |                     | BBCH 20-22          |                     |                     | BBCH 25-30          |              |           |            |
| Pest stage                       |   |   | BBCH 29-33          | BBCH 21-25          | BBCH 21-25          |                     | BBCH 11-12          |                     |                     | BBCH 25-28          |              |           |            |
| Assessment date                  |   |   | 02.05.2020          | 20.04.2021          | 28.04.2021          |                     | 25.05.2021          |                     |                     | 28.04.2021          |              |           |            |
| Days after application<br>DA-A   |   |   | 27 DA-A             | 21 DA-A             | 28 DA-A             |                     | 27 DA-A             |                     |                     | 28 DA-A             | Ave-<br>rage | Min<br>.  | Max.       |
| weeds density pcs/m <sup>2</sup> |   |   | 5.0                 | 5.0                 | 6.0                 |                     | 5.0                 |                     |                     | 6.0                 | 5.4          | 5.0       | 6.0        |
| N<br>o.                          | Name                                    | Rate<br>(L.<br>kg/h<br>a)               |                     |                     |                     |                     |                     |                     |                     |                     |              |           |            |
| 1                                | Untreated<br>Check                      | -                                       | 0.00                | 0.00                | 0.00                |                     | 0.00                |                     |                     | 0.00                | 0.00         | 0.00      | 0.00       |
| 2                                | CHR/H/ME<br>ZO 30 OD                    | 0.2                                     | -                   | 73.80               | 73.80               |                     | 47.50               |                     |                     | 73.30               | 67.10        | 47.5<br>0 | 73.8<br>0  |
| 3                                | CHR/H/ME<br>ZO 30 OD                    | 0.30                                    | 68.80               | 78.80               | 80.00               |                     | 70.00               |                     |                     | 77.00               | 74.92        | 68.8<br>0 | 80.0<br>0  |
| 4                                | CHR/H/ME<br>ZO 30 OD                    | 0.40                                    | 75.00               | 80.00               | 85.00               |                     | 75.00               |                     |                     | 88.50               | 80.70        | 75.0<br>0 | 88.5<br>0  |
| 5                                | CHR/H/ME<br>ZO 30 OD                    | 0.50                                    | 78.80               | 83.80               | 91.30               |                     | 84.00               |                     |                     | 95.30               | 86.64        | 78.8<br>0 | 95.3<br>0  |
| 6                                | Atlantis Star<br>+ Biopower<br>276.5 SL | 0.33<br>3<br>kg/h<br>a +<br>1.0<br>L/ha | 87.50               | 85.00               | 97.80               |                     | 100.00              |                     |                     | 99.50               | 93.96        | 85.0<br>0 | 100.<br>00 |
| LSD(P=.05)                       |   |   | 4.620               | 3.520               | 4.160               |                     | 1.950               |                     |                     | 5.100               |              |           |            |

Table 23b. The efficacy of CHR/H/MEZO 30 OD in control of ANTAR Anthemis arvensis 21-28 DA-A

|                                  |                                   |                        |                 |                 |                 |         |       |       |
|----------------------------------|-----------------------------------|------------------------|-----------------|-----------------|-----------------|---------|-------|-------|
| Pest code                        |                                   |                        |                 |                 |                 |         |       |       |
| Report code                      |                                   |                        | A.T/2021/017/PO | A.T/2021/020/PO | A.T/2021/021/PO |         |       |       |
| Application date                 |                                   |                        | 17.04.2021      | 31.03.2021      | 31.03.2021      |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 30-31      | BBCH 22-24      | BBCH 21-23      |         |       |       |
| Pest stage                       |                                   |                        | BBCH 30-31      | BBCH 17-19      | BBCH 16-31      |         |       |       |
| Assessment date                  |                                   |                        | 14.05.2021      | 28.04.2021      | 28.04.2021      |         |       |       |
| Days after application DA-A      |                                   |                        | 27 DA-A         | 28 DA-A         | 28 DA-A         | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 5.0             | 5.0             | 5.0             | 5.0     | 5.0   | 5.0   |
| No.                              | Name                              | Rate (L. kg/ha)        |                 |                 |                 |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00            | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | 27.50           | 25.00           | 20.00           | 24.17   | 20.00 | 27.50 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 30.00           | 30.00           | 30.00           | 30.00   | 30.00 | 30.00 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 45.00           | 40.00           | 35.00           | 40.00   | 35.00 | 45.00 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 70.00           | 65.00           | 43.80           | 59.60   | 43.80 | 70.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 90.00           | 90.00           | 78.80           | 86.27   | 78.80 | 90.00 |
| LSD(P=.05)                       |                                   |                        | 6.600           | 6.290           | 10.550          |         |       |       |

Table 24. The efficacy of CHR/H/MEZO 30 OD in control of ANTAR Anthemis arvensis LAST ASSESSMENT

| Pest code                   |                                   |                        | ANTAR           |                 |                 |                 |                 |                 |         |       |        |
|-----------------------------|-----------------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------|-------|--------|
| Report code                 |                                   |                        | A.T/2020/053/PO | A.T/2021/017/PO | A.T/2021/019/PO | A.T/2021/020/PO | A.T/2021/021/PO | A.T/2021/022/PO |         |       |        |
| Application date            |                                   |                        | 05.04.2020      | 17.04.2021      | 28.04.2021      | 31.03.2021      | 31.03.2021      | 31.03.2021      |         |       |        |
| Crop stage in application   |                                   |                        | BBCH 31-32      | BBCH 30-31      | BBCH 20-22      | BBCH 22-24      | BBCH 21-23      | BBCH 25-30      |         |       |        |
| Pest stage                  |                                   |                        | BBCH 29-33      | BBCH 30-31      | BBCH 11-12      | BBCH 17-19      | BBCH 16-31      | BBCH 25-28      |         |       |        |
| Assessment date             |                                   |                        | 10.06.2020      | 28.06.2021      | 21.06.2021      | 28.06.2021      | 15.06.2021      | 24.06.2021      |         |       |        |
| Days after application DA-A |                                   |                        | 66 DA-A         | 72 DA-A         | 54 DA-A         | 89 DA-A         | 76 DA-A         | 85 DA-A         | Average | Min.  | Max.   |
| weeds density pcs/m²        |                                   |                        | 5.0             | 5.0             | 5.0             | 5.0             | 6.0             | 6.0             | 5.3     | 5.0   | 6.0    |
| No.                         | Name                              | Rate (L. kg/ha)        |                 |                 |                 |                 |                 |                 |         |       |        |
| 1                           | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00            | 0.00            | 0.00            | 0.00            | 0.00    | 0.00  | 0.00   |
| 2                           | CHR/H/MEZO 30 OD                  | 0.2                    | -               | 55.00           | 62.50           | 45.00           | 75.00           | 71.80           | 61.86   | 45.00 | 75.00  |
| 3                           | CHR/H/MEZO 30 OD                  | 0.30                   | 71.30           | 65.00           | 70.00           | 55.00           | 82.50           | 73.30           | 69.52   | 55.00 | 82.50  |
| 4                           | CHR/H/MEZO 30 OD                  | 0.40                   | 72.50           | 81.30           | 76.00           | 68.80           | 86.30           | 83.80           | 78.12   | 68.80 | 86.30  |
| 5                           | CHR/H/MEZO 30 OD                  | 0.50                   | 77.50           | 90.00           | 85.00           | 90.00           | 90.00           | 100.00          | 88.75   | 77.50 | 100.00 |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 100.00          | 100.00          | 100.00          | 100.00          | 91.30           | 100.00          | 98.55   | 91.30 | 100.00 |
| LSD(P=,05)                  |                                   |                        | 7.570           | 8.380           | 5.130           | 6.820           | 4.720           | 6.800           |         |       |        |



Table 25. The efficacy of CHR/H/MEZO 30 OD in control of PAPRH *Papaver rhoeas* 14 DA-A

| Pest code                        |                                   |                        | PAPRH            |                    |                 |                 |                 |                  |         |         |       |                  |
|----------------------------------|-----------------------------------|------------------------|------------------|--------------------|-----------------|-----------------|-----------------|------------------|---------|---------|-------|------------------|
| Report code                      |                                   |                        | SRPL20-230-336HE | AH/20/PO/6/Pr/MEZO | A.T/2021/012/PO | A.T/2021/014/PO | A.T/2021/016/PO | SRPL21-404-336HE |         |         |       | SRPL21-406-336HE |
| Application date                 |                                   |                        | 08.04.2020       | 07.04.2020         | 30.03.2021      | 31.03.2021      | 07.05.2021      | 09.04.2021       |         |         |       | 16.04.2021       |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 31            | BCH 26-30       | BBCH 23-27      | BBCH 29-32      | BBCH 21-22       |         |         |       | BBCH 23-25       |
| Pest stage                       |                                   |                        | BBCH 31-35       | BBCH 12-15         | BBCH 16-25      | BBCH 21-25      | BBCH 33-37      | BBCH 14-16       |         |         |       | BBCH 13-21       |
| Assessment date                  |                                   |                        | 22.04.2020       | 21.04.2020         | 13.04.2021      | 14.04.2021      | 20.05.2021      | 23.04.2021       |         |         |       | 30.04.2021       |
| Days after application DA-A      |                                   |                        | 14 DA-A          | 14 DA-A            | 14 DA-A         | 14 DA-A         | 13 DA-A         | 14 DA-A          | 14 DA-A | Average | Min.  | Max.             |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 8.0              | 5.3                | 5.0             | 8.0             | 5.0             | 14.0             | 7.0     | 7.5     | 5.0   | 14.0             |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                    |                 |                 |                 |                  |         |         |       |                  |
| 1                                | Untreated Check                   | -                      | 0.00             | 0.00               | 0.00            | 0.00            | 0.00            | 0.00             | 0.00    | 0.00    | 0.00  | 0.00             |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                  | 70.00           | 30.00           | 37.50           | 31.25            | 35.00   | 40.75   | 30.00 | 70.00            |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 31.30            | 52.50              | 75.00           | 30.00           | 42.50           | 35.00            | 47.50   | 44.83   | 30.00 | 75.00            |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 53.80            | 53.80              | 81.00           | 30.00           | 51.30           | 37.50            | 55.00   | 51.77   | 30.00 | 81.00            |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 62.50            | 53.80              | 85.00           | 40.00           | 55.00           | 41.25            | 58.80   | 56.62   | 40.00 | 85.00            |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 62.50            | 51.30              | 93.80           | 60.00           | 61.30           | 52.50            | 77.50   | 65.56   | 51.30 | 93.80            |
| LSD(P=.05)                       |                                   |                        | 5.760            | 3.790              | 3.650           | 4.450           | 5.670           | 7.659            | 9.520   |         |       |                  |

Table 26. The efficacy of CHR/H/MEZO 30 OD in control of PAPRH *Papaver rhoeas* 21-28 DA-A

| Pest code                        |                                   |                        | PAPRH            |                    |                 |                 |                 |                  |                  |         |             |
|----------------------------------|-----------------------------------|------------------------|------------------|--------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------------|
| Report code                      |                                   |                        | SRPL20-230-336HE | AH/20/PO/6/Pr/MEZO | A.T/2021/012/PO | A.T/2021/014/PO | A.T/2021/016/PO | SRPL21-404-336HE | SRPL21-406-336HE |         |             |
| Application date                 |                                   |                        | 08.04.2020       | 07.04.2020         | 30.03.2021      | 31.03.2021      | 07.05.2021      | 09.04.2021       | 16.04.2021       |         |             |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 31            | BCH 26-30       | BBCH 23-27      | BBCH 29-32      | BBCH 21-22       | BBCH 23-25       |         |             |
| Pest stage                       |                                   |                        | BBCH 31-35       | BBCH 12-15         | BBCH 16-25      | BBCH 21-25      | BBCH 33-37      | BBCH 14-16       | BBCH 13-21       |         |             |
| Assessment date                  |                                   |                        | 06.05.2020       | 04.05.2020         | 27.04.2021      | 28.04.2021      | 04.06.2021      | 07.05.2021       | 14.05.2021       |         |             |
| Days after application DA-A      |                                   |                        | 28 DA-A          | 27 DA-A            | 28 DA-A         | 28 DA-A         | 28 DA-A         | 28 DA-A          | 28 DA-A          | Average | Min. Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 8.0              | 5.5                | 5.0             | 7.0             | 6.0             | 14.0             | 7.0              | 7.5     | 5.0 14.0    |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                    |                 |                 |                 |                  |                  |         |             |
| 1                                | Untreated Check                   | -                      | 0                | 0.00               | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                  | 71.50           | 75.00           | 68.80           | 52.50            | 65.00            | 66.56   | 52.50 75.00 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 68.80            | 55.80              | 82.80           | 80.00           | 81.30           | 56.25            | 76.30            | 71.61   | 55.80 82.80 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 83.80            | 55.80              | 85.80           | 90.00           | 85.00           | 73.75            | 78.80            | 78.99   | 55.80 90.00 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 87.50            | 57.30              | 91.50           | 91.30           | 88.80           | 82.50            | 81.30            | 82.89   | 57.30 91.50 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 88.80            | 57.50              | 95.80           | 95.00           | 95.00           | 81.25            | 99.00            | 87.48   | 57.50 99.00 |
| LSD(P=.05)                       |                                   |                        | 7.41             | 3.830              | 2.790           | 1.720           | 3.220           | 9.744            | 6.930            |         |             |

Table 27. The efficacy of CHR/H/MEZO 30 OD in control of PAPRH Papaver rhoeas LAST ASSESSMENT

| Pest code                        |                                   |                        | PAPRH            |                    |                 |                 |                  |                  |         |       |        |
|----------------------------------|-----------------------------------|------------------------|------------------|--------------------|-----------------|-----------------|------------------|------------------|---------|-------|--------|
| Report code                      |                                   |                        | SRPL20-230-336HE | AH/20/PO/6/Pr/MEZO | A.T/2021/014/PO | A.T/2021/016/PO | SRPL21-404-336HE | SRPL21-406-336HE |         |       |        |
| Application date                 |                                   |                        | 08.04.2020       | 07.04.2020         | 31.03.2021      | 07.05.2021      | 09.04.2021       | 16.04.2021       |         |       |        |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 31            | BBCH 23-27      | BBCH 29-32      | BBCH 21-22       | BBCH 23-25       |         |       |        |
| Pest stage                       |                                   |                        | BBCH 31-35       | BBCH 12-15         | BBCH 21-25      | BBCH 33-37      | BBCH 14-16       | BBCH 13-21       |         |       |        |
| Assessment date                  |                                   |                        | 25.05.2020       | 02.06.2020         | 09.06.2021      | 25.06.2021      | 04.06.2021       | 31.05.2021       |         |       |        |
| Days after application DA-A      |                                   |                        | 47 DA-A          | 56 DA-A            | 100 DA-A        | 49 DA-A         | 56 DA-A          | 45 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 8.0              | 6.0                | 7.0             | 6.0             | 14.0             | 7.0              | 8.0     | 6.0   | 14.0   |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                    |                 |                 |                  |                  |         |       |        |
| 1                                | Untreated Check                   | -                      | 0                | 0.00               | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                  | 75.00           | 70.00           | 55.00            | 61.30            | 65.33   | 55.00 | 75.00  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 71.30            | 88.80              | 80.00           | 81.30           | 57.50            | 75.00            | 75.65   | 57.50 | 88.80  |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 86.30            | 90.00              | 90.00           | 86.30           | 75.00            | 78.80            | 84.40   | 75.00 | 90.00  |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 100.00           | 91.30              | 91.30           | 88.80           | 83.75            | 82.50            | 89.61   | 82.50 | 100.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 100.00           | 92.00              | 95.00           | 96.80           | 85.00            | 99.00            | 94.63   | 85.00 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 3.52             | 3.530              | 1.720           | 2.860           | 8.541            | 4.530            |         |       |        |

Table 28. The efficacy of CHR/H/MEZO 30 OD in control of SINAR Sinapsis arvensis 14 DA-A

| Pest code                        |   |                                 | SINAR               |                     |                     |                     |                     |                      |         |       |       |
|----------------------------------|---|---------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------|-------|-------|
| Report code                      |   |                                 | A.T/2020/053/P<br>O | A.T/2021/016/P<br>O | A.T/2021/019/P<br>O | A.T/2021/022/P<br>O | A.T/2021/023/P<br>O | SRPL21-405-<br>336HE |         |       |       |
| Application date                 |   |                                 | 05.04.2020          | 07.05.2021          | 28.04.2021          | 31.03.2021          | 01.04.2021          | 22.04.2021           |         |       |       |
| Crop stage in application        |   |                                 | BBCH 31-32          | BBCH 29-32          | BBCH 20-22          | BBCH 25-30          | BBCH 24-26          | BBCH 21-23           |         |       |       |
| Pest stage                       |   |                                 | BBCH 30-35          | BBCH 39-49          | BBCH 12-14          | BBCH 31-33          | BBCH 19-30          | BBCH 14-16           |         |       |       |
| Assessment date                  |   |                                 | 17.04.2020          | 20.05.2021          | 10.05.2021          | 14.04.2021          | 15.04.2021          | 06.05.2021           |         |       |       |
| Days after application DA-A      |   |                                 | 12 DA-A             | 13 DA-A             | 12 DA-A             | 14 DA-A             | 14 DA-A             | 14 DA-A              | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |   |                                 | 6.0                 | 7.0                 | 6.0                 | 10.0                | 5.0                 | 11.3                 | 7.6     | 5.0   | 11.3  |
| No.                              | Name                                    | Rate<br>(L.<br>kg/ha)           |                     |                     |                     |                     |                     |                      |         |       |       |
| 1                                | Untreated Check                         | -                               | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00                 | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30<br>OD                     | 0.2                             | -                   | 42.50               | 72.50               | 85.80               | 30.00               | 51.30                | 56.42   | 30.00 | 85.80 |
| 3                                | CHR/H/MEZO 30<br>OD                     | 0.30                            | 48.80               | 52.50               | 77.50               | 89.80               | 37.50               | 65.00                | 61.85   | 37.50 | 89.80 |
| 4                                | CHR/H/MEZO 30<br>OD                     | 0.40                            | 50.00               | 60.00               | 82.50               | 93.80               | 40.00               | 92.50                | 69.80   | 40.00 | 93.80 |
| 5                                | CHR/H/MEZO 30<br>OD                     | 0.50                            | 52.50               | 63.80               | 83.80               | 95.30               | 51.30               | 97.50                | 74.03   | 51.30 | 97.50 |
| 6                                | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha +<br>1.0<br>L/ha | 60.00               | 62.50               | 83.80               | 97.80               | 58.80               | 98.80                | 76.95   | 58.80 | 98.80 |
| LSD(P=.05)                       |   |                                 | 5.030               | 7.030               | 6.010               | 2.850               | 2.720               | 9.370                |         |       |       |

Table 29. The efficacy of CHR/H/MEZO 30 OD in control of SINAR Sinapsis arvensis 21-28 DA-A

| Pest code                   |                                   |                        | SINAR           |                 |                 |                 |                 |                  |         |       |        |
|-----------------------------|-----------------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|---------|-------|--------|
| Report code                 |                                   |                        | A.T/2020/053/PO | A.T/2021/016/PO | A.T/2021/019/PO | A.T/2021/022/PO | A.T/2021/023/PO | SRPL21-405-336HE |         |       |        |
| Application date            |                                   |                        | 05.04.2020      | 07.05.2021      | 28.04.2021      | 31.03.2021      | 01.04.2021      | 22.04.2021       |         |       |        |
| Crop stage in application   |                                   |                        | BBCH 31-32      | BBCH 29-32      | BBCH 20-22      | BBCH 25-30      | BBCH 24-26      | BBCH 21-23       |         |       |        |
| Pest stage                  |                                   |                        | BBCH 30-35      | BBCH 39-49      | BBCH 12-14      | BBCH 31-33      | BBCH 19-30      | BBCH 14-16       |         |       |        |
| Assessment date             |                                   |                        | 02.05.2020      | 04.06.2021      | 25.05.2021      | 28.04.2021      | 29.04.2021      | 20.05.2021       |         |       |        |
| Days after application DA-A |                                   |                        | 27 DA-A         | 28 DA-A         | 27 DA-A         | 28 DA-A         | 28 DA-A         | 28 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m²        |                                   |                        | 6.0             | 8.0             | 5.0             | 10.0            | 5.0             | 11.3             | 7.6     | 5.0   | 11.3   |
| No.                         | Name                              | Rate (L. kg/ha)        |                 |                 |                 |                 |                 |                  |         |       |        |
| 1                           | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00            | 0.00            | 0.00            | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                           | CHR/H/MEZO 30 OD                  | 0.2                    | -               | 81.30           | 86.30           | 87.80           | 85.00           | 62.50            | 80.58   | 62.50 | 87.80  |
| 3                           | CHR/H/MEZO 30 OD                  | 0.30                   | 81.30           | 91.30           | 95.00           | 93.50           | 95.00           | 94.80            | 91.82   | 81.30 | 95.00  |
| 4                           | CHR/H/MEZO 30 OD                  | 0.40                   | 90.00           | 97.50           | 100.00          | 98.00           | 100.00          | 100.00           | 97.58   | 90.00 | 100.00 |
| 5                           | CHR/H/MEZO 30 OD                  | 0.50                   | 90.00           | 100.00          | 100.00          | 98.00           | 100.00          | 100.00           | 98.00   | 90.00 | 100.00 |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 90.00           | 100.00          | 100.00          | 100.00          | 100.00          | 100.00           | 98.33   | 90.00 | 100.00 |
| LSD(P=.05)                  |                                   |                        | 3.830           | 2.540           | 1.720           | 1.460           | 2.810           | 4.670            |         |       |        |

Table 30. The efficacy of CHR/H/MEZO 30 OD in control of SINAR Sinapsis arvensis LAST ASSESSMENT

| Pest code                        |                                   |                        | SINAR           |                 |                 |                 |                  |         |        |        |
|----------------------------------|-----------------------------------|------------------------|-----------------|-----------------|-----------------|-----------------|------------------|---------|--------|--------|
| Report code                      |                                   |                        | A.T/2020/053/PO | A.T/2021/016/PO | A.T/2021/019/PO | A.T/2021/023/PO | SRPL21-405-336HE |         |        |        |
| Application date                 |                                   |                        | 05.04.2020      | 07.05.2021      | 28.04.2021      | 01.04.2021      | 22.04.2021       |         |        |        |
| Crop stage in application        |                                   |                        | BBCH 31-32      | BBCH 29-32      | BBCH 20-22      | BBCH 24-26      | BBCH 21-23       |         |        |        |
| Pest stage                       |                                   |                        | BBCH 30-35      | BBCH 39-49      | BBCH 12-14      | BBCH 19-30      | BBCH 14-16       |         |        |        |
| Assessment date                  |                                   |                        | 10.06.2020      | 25.06.2021      | 21.06.2021      | 16.06.2021      | 17.06.2021       |         |        |        |
| Days after application DA-A      |                                   |                        | 66 DA-A         | 49 DA-A         | 54 DA-A         | 76 DA-A         | 56 DA-A          | Average | Min.   | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 6.0             | 7.0             | 5.0             | 5.0             | 11.3             | 6.9     | 5.0    | 11.3   |
| No.                              | Name                              | Rate (L. kg/ha)        |                 |                 |                 |                 |                  |         |        |        |
| 1                                | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00            | 0.00            | 0.00             | 0.00    | 0.00   | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -               | 80.00           | 87.50           | 85.00           | 78.80            | 82.83   | 78.80  | 87.50  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 88.00           | 92.50           | 95.00           | 95.00           | 100.00           | 94.10   | 88.00  | 100.00 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 95.00           | 97.30           | 100.00          | 100.00          | 100.00           | 98.46   | 95.00  | 100.00 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 100.00          | 100.00          | 100.00          | 100.00          | 100.00           | 100.00  | 100.00 | 100.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 100.00          | 100.00          | 100.00          | 100.00          | 100.00           | 100.00  | 100.00 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 0.920           | 2.340           | 3.140           | 2.810           | 4.830            |         |        |        |

Table 31. The efficacy of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* 14 DA-A

| Pest code                   |                                   |                        | CAPBP            |                 |                 |                 |                 |                  |       |       |       |                  |
|-----------------------------|-----------------------------------|------------------------|------------------|-----------------|-----------------|-----------------|-----------------|------------------|-------|-------|-------|------------------|
| Report code                 |                                   |                        | SRPL20-230-336HE | A.T/2020/055/PO | A.T/2021/011/PO | A.T/2021/020/PO | A.T/2021/023/PO | SRPL21-404-336HE |       |       |       | SRPL21-407-336HE |
| Application date            |                                   |                        | 08.04.2020       | 07.04.2020      | 30.03.2021      | 31.03.2021      | 01.04.2021      | 09.04.2021       |       |       |       | 16.04.2021       |
| Crop stage in application   |                                   |                        | BBCH 30-32       | BBCH 30-32      | BBCH 25-29      | BBCH 22-24      | BBCH 24-26      | BBCH 21-22       |       |       |       | BBCH 24-26       |
| Pest stage                  |                                   |                        | BBCH 51-65       | BBCH 28-35      | BBCH 23-27      | BBCH 17-30      | BBCH 19-30      | BBCH 13-15       |       |       |       | BBCH 11-13       |
| Assessment date             |                                   |                        | 22.04.2020       | 21.04.2020      | 13.04.2021      | 14.04.2021      | 15.04.2021      | 23.04.2021       |       |       |       | 30.04.2021       |
| Days after application DA-A |                                   |                        | 14 DA-A          | 14 DA-A         | 14 DA-A         | 14 DA-A         | 14 DA-A         | 14 DA-A          |       |       |       | 14 DA-A          |
| weeds density pcs/m²        |                                   |                        | 6.0              | 7.0             | 8.0             | 5.0             | 6.0             | 5.0              | 8.0   | 6.4   | 5.0   | 8.0              |
| No.                         | Name                              | Rate (L. kg/ha)        |                  |                 |                 |                 |                 |                  |       |       |       |                  |
| 1                           | Untreated Check                   | -                      | 0.00             | 0.00            | 0.00            | 0.00            | 0.00            | 0.00             | 0.00  | 0.00  | 0.00  | 0.00             |
| 2                           | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -               | 67.50           | 50.00           | 33.80           | 36.25            | 42.50 | 46.01 | 33.80 | 67.50            |
| 3                           | CHR/H/MEZO 30 OD                  | 0.30                   | 31.30            | 62.80           | 73.80           | 60.00           | 35.00           | 42.50            | 75.00 | 54.34 | 31.30 | 75.00            |
| 4                           | CHR/H/MEZO 30 OD                  | 0.40                   | 50.00            | 75.80           | 76.30           | 72.50           | 40.00           | 50.00            | 72.50 | 62.44 | 40.00 | 76.30            |
| 5                           | CHR/H/MEZO 30 OD                  | 0.50                   | 62.50            | 78.30           | 82.50           | 77.50           | 50.00           | 51.25            | 80.00 | 68.86 | 50.00 | 82.50            |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 65.00            | 85.30           | 93.80           | 92.50           | 57.50           | 55.00            | 80.00 | 75.59 | 55.00 | 93.80            |
| LSD(P=.05)                  |                                   |                        | 7.310            | 7.640           | 5.310           | 3.720           | 5.070           | 9.763            | 7.270 |       |       |                  |

Table 32. The efficacy of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* 21-28 DA-A

| Pest code                   |   |                                 | CAPBP            |                     |                     |                     |                     |                  |         |         |       |                  |
|-----------------------------|---|---------------------------------|------------------|---------------------|---------------------|---------------------|---------------------|------------------|---------|---------|-------|------------------|
| Report code                 |   |                                 | SRPL20-230-336HE | A.T/2020/055/P<br>O | A.T/2021/011/P<br>O | A.T/2021/020/P<br>O | A.T/2021/023/P<br>O | SRPL21-404-336HE |         |         |       | SRPL21-407-336HE |
| Application date            |   |                                 | 08.04.2020       | 07.04.2020          | 30.03.2021          | 31.03.2021          | 01.04.2021          | 09.04.2021       |         |         |       | 16.04.2021       |
| Crop stage in application   |   |                                 | BBCH 30-32       | BBCH 30-32          | BBCH 25-29          | BBCH 22-24          | BBCH 24-26          | BBCH 21-22       |         |         |       | BBCH 24-26       |
| Pest stage                  |   |                                 | BBCH 51-65       | BBCH 28-35          | BBCH 23-27          | BBCH 17-30          | BBCH 19-30          | BBCH 13-15       |         |         |       | BBCH 11-13       |
| Assessment date             |   |                                 | 06.05.2020       | 05.05.2020          | 20.04.2021          | 28.04.2021          | 29.04.2021          | 07.05.2021       |         |         |       | 14.05.2021       |
| Days after application DA-A |   |                                 | 28 DA-A          | 28 DA-A             | 21 DA-A             | 28 DA-A             | 28 DA-A             | 28 DA-A          | 28 DA-A | Average | Min.  | Max.             |
| weeds density pcs/m²        |   |                                 | 6.0              | 7.0                 | 8.0                 | 5.0                 | 5.0                 | 5.0              | 8.0     | 6.3     | 5.0   | 8.0              |
| No.                         | Name                                    | Rate<br>(L.<br>kg/ha)           |                  |                     |                     |                     |                     |                  |         |         |       |                  |
| 1                           | Untreated Check                         | -                               | 0                | 0.00                | 0.00                | 0.00                | 0.00                | 0.00             | 0.00    | 0.00    | 0.00  | 0.00             |
| 2                           | CHR/H/MEZO<br>30 OD                     | 0.2                             | -                | -                   | 61.30               | 50.00               | 65.00               | 57.50            | 55.00   | 57.76   | 50.00 | 65.00            |
| 3                           | CHR/H/MEZO<br>30 OD                     | 0.30                            | 57.50            | 78.80               | 77.50               | 71.30               | 78.30               | 63.75            | 80.00   | 72.45   | 57.50 | 80.00            |
| 4                           | CHR/H/MEZO<br>30 OD                     | 0.40                            | 81.30            | 85.30               | 80.00               | 80.00               | 85.00               | 73.75            | 85.00   | 81.48   | 73.75 | 85.30            |
| 5                           | CHR/H/MEZO<br>30 OD                     | 0.50                            | 87.50            | 89.00               | 87.50               | 85.00               | 88.30               | 83.75            | 87.50   | 86.94   | 83.75 | 89.00            |
| 6                           | Atlantis Star +<br>Biopower 276.5<br>SL | 0.333<br>kg/ha<br>+ 1.0<br>L/ha | 88.80            | 94.50               | 100.00              | 100.00              | 100.00              | 85.00            | 91.30   | 94.23   | 85.00 | 100.00           |
| LSD(P=.05)                  |   |                                 | 5.93             | 3.980               | 2.630               | 1.720               | 3.780               | 6.024            | 6.380   |         |       |                  |



Table 33. The efficacy of CHR/H/MEZO 30 OD in control of CAPBP *Capsella brusa-pastoris* LAST ASSESSMENT

| Pest code                        |                                   |                        | CAPBP            |                 |                  |                  |         |       |        |
|----------------------------------|-----------------------------------|------------------------|------------------|-----------------|------------------|------------------|---------|-------|--------|
| Report code                      |                                   |                        | SRPL20-230-336HE | A.T/2020/055/PO | SRPL21-404-336HE | SRPL21-407-336HE |         |       |        |
| Application date                 |                                   |                        | 08.04.2020       | 07.04.2020      | 09.04.2021       | 16.04.2021       |         |       |        |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 30-32      | BBCH 21-22       | BBCH 24-26       |         |       |        |
| Pest stage                       |                                   |                        | BBCH 51-65       | BBCH 28-35      | BBCH 13-15       | BBCH 11-13       |         |       |        |
| Assessment date                  |                                   |                        | 25.05.2020       | 04.06.2020      | 04.06.2021       | 04.06.2021       |         |       |        |
| Days after application DA-A      |                                   |                        | 47 DA-A          | 58 DA-A         | 56 DA-A          | 49 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 6.0              | 7.0             | 5.0              | 8.0              | 6.5     | 5.0   | 8.0    |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                 |                  |                  |         |       |        |
| 1                                | Untreated Check                   | -                      | 0                | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -               | 58.75            | 62.50            | 60.63   | 58.75 | 62.50  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 62.50            | 75.30           | 65.00            | 81.30            | 71.03   | 62.50 | 81.30  |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 82.50            | 85.30           | 76.25            | 86.30            | 82.59   | 76.25 | 86.30  |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 100.00           | 89.50           | 86.25            | 88.80            | 91.14   | 86.25 | 100.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 100.00           | 99.00           | 87.50            | 99.00            | 96.38   | 87.50 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 3.72             | 5.440           | 6.493            | 6.490            |         |       |        |

Table 34. The efficacy of CHR/H/MEZO 30 OD in control of STEME Stellaria media 14 DA-A

| Pest code                   |                                   |                        | STEME            |                  |                 |                 |                 |                  |                  |         |       |       |
|-----------------------------|-----------------------------------|------------------------|------------------|------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------|-------|
| Report code                 |                                   |                        | SRPL20-230-336HE | SRPL20-231-336HE | A.T/2020/055/PO | A.T/2021/015/PO | A.T/2021/024/PO | SRPL21-404-336HE | SRPL21-406-336HE |         |       |       |
| Application date            |                                   |                        | 08.04.2020       | 23.04.2020       | 07.04.2020      | 19.04.2021      | 31.03.2021      | 09.04.2021       | 16.04.2021       |         |       |       |
| Crop stage in application   |                                   |                        | BBCH 30-32       | BBCH 30-32       | BBCH 30-32      | BBCH 21-23      | BBCH 21-23      | BBCH 21-22       | BBCH 23-25       |         |       |       |
| Pest stage                  |                                   |                        | BBCH 52-63       | BBCH 16-21       | BBCH 25-32      | BBCH 33-39      | BBCH 12-21      | BBCH 14-21       | BBCH 21-25       |         |       |       |
| Assessment date             |                                   |                        | 22.04.2020       | 07.05.2020       | 21.04.2020      | 04.05.2021      | 14.04.2021      | 23.04.2021       | 30.04.2021       |         |       |       |
| Days after application DA-A |                                   |                        | 14 DA-A          | 14 DA-A          | 14 DA-A         | 15 DA-A         | 14 DA-A         | 14 DA-A          | 14 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m²        |                                   |                        | 7.0              | 5.5              | 5.0             | 5.0             | 5.0             | 11.0             | 8.0              | 6.6     | 5.0   | 11.0  |
| No.                         | Name                              | Rate (L. kg/ha)        |                  |                  |                 |                 |                 |                  |                  |         |       |       |
| 1                           | Untreated Check                   | -                      | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                           | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                | -               | 37.50           | 27.50           | 45.00            | 42.50            | 38.13   | 27.50 | 45.00 |
| 3                           | CHR/H/MEZO 30 OD                  | 0.30                   | 32.50            | 5.00             | 25.00           | 37.50           | 31.30           | 51.25            | 60.00            | 34.65   | 5.00  | 60.00 |
| 4                           | CHR/H/MEZO 30 OD                  | 0.40                   | 52.50            | 17.50            | 30.00           | 42.50           | 41.30           | 52.50            | 67.50            | 43.40   | 17.50 | 67.50 |
| 5                           | CHR/H/MEZO 30 OD                  | 0.50                   | 62.50            | 27.50            | 50.00           | 50.00           | 42.50           | 56.25            | 76.30            | 52.15   | 27.50 | 76.30 |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 65.00            | 27.50            | 83.30           | 60.00           | 83.80           | 60.00            | 78.80            | 65.49   | 27.50 | 83.80 |
| LSD(P=.05)                  |                                   |                        | 6.450            | 6.445            | 5.760           | 6.450           | 5.120           | 9.142            | 7.560            |         |       |       |

Table 35. The efficacy of CHR/H/MEZO 30 OD in control of STEME Stellaria media 21-28 DA-A

| Pest code                        |                                   |                        | STEME            |                  |                 |                 |                 |                  |                  |         |       |        |
|----------------------------------|-----------------------------------|------------------------|------------------|------------------|-----------------|-----------------|-----------------|------------------|------------------|---------|-------|--------|
| Report code                      |                                   |                        | SRPL20-230-336HE | SRPL20-231-336HE | A.T/2020/055/PO | A.T/2021/015/PO | A.T/2021/024/PO | SRPL21-404-336HE | SRPL21-406-336HE |         |       |        |
| Application date                 |                                   |                        | 08.04.2020       | 23.04.2020       | 07.04.2020      | 19.04.2021      | 31.03.2021      | 09.04.2021       | 16.04.2021       |         |       |        |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 30-32       | BBCH 30-32      | BBCH 21-23      | BBCH 21-23      | BBCH 21-22       | BBCH 23-25       |         |       |        |
| Pest stage                       |                                   |                        | BBCH 52-63       | BBCH 16-21       | BBCH 25-32      | BBCH 33-39      | BBCH 12-21      | BBCH 14-21       | BBCH 21-25       |         |       |        |
| Assessment date                  |                                   |                        | 06.05.2020       | 21.05.2020       | 05.05.2020      | 17.05.2021      | 22.04.2021      | 07.05.2021       | 14.05.2021       |         |       |        |
| Days after application DA-A      |                                   |                        | 28 DA-A          | 28 DA-A          | 28 DA-A         | 28 DA-A         | 22 DA-A         | 28 DA-A          | 28 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 7.0              | 7.0              | 5.0             | 5.0             | 5.0             | 11.0             | 8.0              | 6.9     | 5.0   | 11.0   |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                  |                 |                 |                 |                  |                  |         |       |        |
| 1                                | Untreated Check                   | -                      | 0.00             | 0.00             | 0.00            | 0.00            | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                | -               | 70.00           | 67.50           | 65.00            | 67.50            | 67.50   | 65.00 | 70.00  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 70.00            | 15.00            | 38.80           | 71.30           | 70.00           | 72.50            | 88.80            | 60.91   | 15.00 | 88.80  |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 86.30            | 37.50            | 58.80           | 73.80           | 81.30           | 86.25            | 99.00            | 74.71   | 37.50 | 99.00  |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 88.80            | 37.50            | 80.30           | 82.00           | 82.50           | 87.50            | 99.00            | 79.66   | 37.50 | 99.00  |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 91.30            | 37.50            | 85.00           | 86.30           | 100.00          | 91.25            | 99.00            | 84.34   | 37.50 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 7.61             | 7.831            | 8.630           | 2.540           | 4.100           | 6.850            | 5.380            |         |       |        |

Table 36. The efficacy of CHR/H/MEZO 30 OD in control of STEME Stellaria media LAST ASSESSMENT

| Pest code                        |                                   |                        | STEME            |                  |                 |                  |                  |         |       |        |
|----------------------------------|-----------------------------------|------------------------|------------------|------------------|-----------------|------------------|------------------|---------|-------|--------|
| Report code                      |                                   |                        | SRPL20-230-336HE | SRPL20-231-336HE | A.T/2020/055/PO | SRPL21-404-336HE | SRPL21-406-336HE |         |       |        |
| Application date                 |                                   |                        | 08.04.2020       | 23.04.2020       | 07.04.2020      | 09.04.2021       | 16.04.2021       |         |       |        |
| Crop stage in application        |                                   |                        | BBCH 30-32       | BBCH 30-32       | BBCH 30-32      | BBCH 21-22       | BBCH 23-25       |         |       |        |
| Pest stage                       |                                   |                        | BBCH 52-63       | BBCH 16-21       | BBCH 25-32      | BBCH 14-21       | BBCH 21-25       |         |       |        |
| Assessment date                  |                                   |                        | 25.05.2020       | 18.06.2020       | 04.06.2020      | 04.06.2021       | 31.05.2021       |         |       |        |
| Days after application DA-A      |                                   |                        | 47 DA-A          | 56 DA-A          | 58 DA-A         | 56 DA-A          | 45 DA-A          | Average | Min.  | Max.   |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 7.0              | 8.0              | 5.0             | 11.0             | 8.0              | 7.8     | 5.0   | 11.00  |
| No.                              | Name                              | Rate (L. kg/ha)        |                  |                  |                 |                  |                  |         |       |        |
| 1                                | Untreated Check                   | -                      | 0.00             | 0.00             | 0.00            | 0.00             | 0.00             | 0.00    | 0.00  | 0.00   |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -                | -                | -               | 66.25            | 71.30            | 68.78   | 66.25 | 71.30  |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 72.50            | 30.00            | 32.50           | 80.00            | 87.50            | 60.50   | 30.00 | 87.50  |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 88.80            | 40.00            | 58.80           | 87.50            | 99.00            | 74.82   | 40.00 | 99.00  |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 100.00           | 70.00            | 78.30           | 92.50            | 99.00            | 87.96   | 70.00 | 100.00 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 100.00           | 70.00            | 100.00          | 93.50            | 99.00            | 92.50   | 70.00 | 100.00 |
| LSD(P=.05)                       |                                   |                        | 6.450            | -                | 5.900           | 7.321            | 5.100            |         |       |        |

Table 37. The efficacy of CHR/H/MEZO 30 OD in control of VERHE Veronica herderifolia 14 DA-A

| Pest code                   |                                   |                        | VERHE           |                 |                    |                 |                 |                  |         |       |       |
|-----------------------------|-----------------------------------|------------------------|-----------------|-----------------|--------------------|-----------------|-----------------|------------------|---------|-------|-------|
| Report code                 |                                   |                        | A.T/2020/052/PO | A.T/2020/053/PO | AH/20/PO/6/Pr/MEZO | A.T/2021/020/PO | A.T/2021/022/PO | SRPL21-404-336HE |         |       |       |
| Application date            |                                   |                        | 06.04.2020      | 05.04.2020      | 07.04.2020         | 31.03.2021      | 31.03.2021      | 09.04.2021       |         |       |       |
| Crop stage in application   |                                   |                        | BBCH 30-31      | BBCH 31-32      | BBCH 31            | BBCH 22-24      | BBCH 25-30      | BBCH 21-22       |         |       |       |
| Pest stage                  |                                   |                        | BBCH 50-61      | BBCH 30-35      | BBCH 28-55         | BBCH 39-51      | BBCH 51-59      | BBCH 15-21       |         |       |       |
| Assessment date             |                                   |                        | 20.04.2020      | 17.04.2020      | 21.04.2020         | 14.04.2021      | 14.04.2021      | 23.04.2021       |         |       |       |
| Days after application DA-A |                                   |                        | 14 DA-A         | 12 DA-A         | 14 DA-A            | 14 DA-A         | 14 DA-A         | 14 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m²        |                                   |                        | 6.0             | 7.0             | 11.8               | 5.0             | 5.0             | 12.0             | 7.8     | 5.0   | 12.0  |
| No.                         | Name                              | Rate (L. kg/ha)        |                 |                 |                    |                 |                 |                  |         |       |       |
| 1                           | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00               | 0.00            | 0.00            | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                           | CHR/H/MEZO 30 OD                  | 0.2                    | -               | -               | -                  | 0.00            | 6.30            | 26.25            | 10.85   | 0.00  | 26.25 |
| 3                           | CHR/H/MEZO 30 OD                  | 0.30                   | 20.00           | 0.00            | 51.30              | 0.00            | 16.30           | 32.50            | 20.02   | 0.00  | 51.30 |
| 4                           | CHR/H/MEZO 30 OD                  | 0.40                   | 25.00           | 0.00            | 51.80              | 0.00            | 23.80           | 40.00            | 23.43   | 0.00  | 51.80 |
| 5                           | CHR/H/MEZO 30 OD                  | 0.50                   | 27.50           | 0.00            | 51.30              | 20.00           | 43.80           | 43.75            | 31.06   | 0.00  | 51.30 |
| 6                           | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 50.00           | 20.00           | 51.80              | 50.00           | 81.50           | 50.00            | 50.55   | 20.00 | 81.50 |
| LSD(P=.05)                  |                                   |                        | 6.660           | -               | 4.290              | 2.810           | 5.360           | 7.848            |         |       |       |

Table 38. The efficacy of CHR/H/MEZO 30 OD in control of VERHE Veronica herderifolia 21-28 DA-A

| Pest code                        |                                   |                        | VERHE           |                 |                    |                 |                 |                  |         |       |       |
|----------------------------------|-----------------------------------|------------------------|-----------------|-----------------|--------------------|-----------------|-----------------|------------------|---------|-------|-------|
| Report code                      |                                   |                        | A.T/2020/052/PO | A.T/2020/053/PO | AH/20/PO/6/Pr/MEZO | A.T/2021/020/PO | A.T/2021/022/PO | SRPL21-404-336HE |         |       |       |
| Application date                 |                                   |                        | 06.04.2020      | 05.04.2020      | 07.04.2020         | 31.03.2021      | 31.03.2021      | 09.04.2021       |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 30-31      | BBCH 31-32      | BBCH 31            | BBCH 22-24      | BBCH 25-30      | BBCH 21-22       |         |       |       |
| Pest stage                       |                                   |                        | BBCH 50-61      | BBCH 30-35      | BBCH 28-55         | BBCH 39-51      | BBCH 51-59      | BBCH 15-21       |         |       |       |
| Assessment date                  |                                   |                        | 04.05.2020      | 02.05.2020      | 04.05.2020         | 28.04.2021      | 28.04.2021      | 07.05.2021       |         |       |       |
| Days after application DA-A      |                                   |                        | 28 DA-A         | 27 DA-A         | 27 DA-A            | 28 DA-A         | 28 DA-A         | 28 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 6.0             | 7.0             | 12.0               | 5.0             | 5.0             | 12.0             | 7.8     | 5.0   | 12.0  |
| No.                              | Name                              | Rate (L. kg/ha)        |                 |                 |                    |                 |                 |                  |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00               | 0.00            | 0.00            | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -               | -               | -                  | 0.00            | 38.30           | 51.25            | 29.85   | 0.00  | 51.25 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00            | 30.00           | 54.50              | 0.00            | 48.30           | 58.75            | 31.93   | 0.00  | 58.75 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00            | 30.00           | 56.30              | 0.00            | 53.30           | 63.75            | 33.89   | 0.00  | 63.75 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00            | 30.00           | 58.00              | 20.00           | 65.00           | 71.25            | 40.71   | 0.00  | 71.25 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 41.30           | 72.50           | 57.50              | 52.50           | 94.30           | 76.25            | 65.73   | 41.30 | 94.30 |
| LSD(P=.05)                       |                                   |                        | 5.030           | 2.310           | 3.500              | 3.450           | 4.710           | 7.440            |         |       |       |

Table 39. The efficacy of CHR/H/MEZO 30 OD in control of VERHE Veronica herderifolia LAST ASSESSMENT

| Pest code                        |                                   |                        | VERHE           |                 |                    |                  |         |       |       |
|----------------------------------|-----------------------------------|------------------------|-----------------|-----------------|--------------------|------------------|---------|-------|-------|
| Report code                      |                                   |                        | A.T/2020/052/PO | A.T/2020/053/PO | AH/20/PO/6/Pr/MEZO | SRPL21-404-336HE |         |       |       |
| Application date                 |                                   |                        | 06.04.2020      | 05.04.2020      | 07.04.2020         | 09.04.2021       |         |       |       |
| Crop stage in application        |                                   |                        | BBCH 30-31      | BBCH 31-32      | BBCH 31            | BBCH 21-22       |         |       |       |
| Pest stage                       |                                   |                        | BBCH 50-61      | BBCH 30-35      | BBCH 28-55         | BBCH 15-21       |         |       |       |
| Assessment date                  |                                   |                        | 27.05.2020      | 10.06.2020      | 02.06.2020         | 04.06.2021       |         |       |       |
| Days after application DA-A      |                                   |                        | 51 DA-A         | 66 DA-A         | 56 DA-A            | 56 DA-A          | Average | Min.  | Max.  |
| weeds density pcs/m <sup>2</sup> |                                   |                        | 6.0             | 7.0             | 18.5               | 12.0             | 10.9    | 6.0   | 18.5  |
| No.                              | Name                              | Rate (L. kg/ha)        |                 |                 |                    |                  |         |       |       |
| 1                                | Untreated Check                   | -                      | 0.00            | 0.00            | 0.00               | 0.00             | 0.00    | 0.00  | 0.00  |
| 2                                | CHR/H/MEZO 30 OD                  | 0.2                    | -               | -               | -                  | 51.25            | 51.25   | 51.25 | 51.25 |
| 3                                | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00            | 10.00           | 81.30              | 60.00            | 37.83   | 0.00  | 81.30 |
| 4                                | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00            | 10.00           | 82.50              | 65.00            | 39.38   | 0.00  | 82.50 |
| 5                                | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00            | 27.50           | 82.30              | 75.00            | 46.20   | 0.00  | 82.30 |
| 6                                | Atlantis Star + Biopower 276.5 SL | 0.333 kg/ha + 1.0 L/ha | 45.00           | 68.00           | 86.00              | 80.00            | 69.75   | 45.00 | 86.00 |
| LSD(P=.05)                       |                                   |                        | 4.620           | 11.430          | 2.550              | 9.669            |         |       |       |

## Appendix 6 Summary of phytotoxicity trials data in summary form

Table 1 – data from phytotoxicity trials – winter wheat (selectivity trials)

| Report code     | Treatment                         | Dose [L/ha] | Phytotoxicity in % |            |            |   |   |
|-----------------|-----------------------------------|-------------|--------------------|------------|------------|---|---|
| A.T/2020/056/PO | Timing of assessment date         | DA-A        | 12 DA-A            | 27 DA-A    | 41 DA-A    | - | - |
|                 |                                   |             | 20.04.2020         | 05.05.2020 | 19.05.2020 | - | - |
|                 | Untreated Check                   | -           | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 0.50        | 1.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 1.00        | 2.00               | 2.00       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 2.00               | 2.00       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 5.00               | 5.00       | 0.00       | - | - |
|                 | LSD (P=0.05)                      |             | -                  | -          | -          | - | - |
| A.T/2020/057/PO | Timing of assessment date         | DA-A        | 12 DA-A            | 21 DA-A    | 44 DA-A    | - | - |
|                 |                                   |             | 20.04.2020         | 29.04.2020 | 22.05.2020 | - | - |
|                 | Untreated Check                   | -           | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 0.50        | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 1.00        | 0.00               | 0.00       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 0.00               | 0.00       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 0.00               | 0.00       | 0.00       | - | - |
|                 | LSD (P=0.05)                      |             | -                  | -          | -          | - | - |
| A.T/2021/026/PO | Timing of assessment date         | DA-A        | 13 DA-A            | 23 DA-A    | 47 DA-A    | - | - |
|                 |                                   |             | 13.04.2021         | 23.04.2021 | 17.05.2021 | - | - |
|                 | Untreated Check                   | -           | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 0.50        | 2.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 1.00        | 7.30               | 4.50       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 9.00               | 6.50       | 2.30       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 17.80              | 14.80      | 5.50       | - | - |
|                 | LSD (P=0.05)                      |             | 1.77               | 1.90       | 1.46       | - | - |
| A.T/2021/027/PO | Timing of assessment date         | DA-A        | 13 DA-A            | 27 DA-A    | 49 DA-A    | - | - |
|                 |                                   |             | 14.04.2021         | 28.04.2021 | 20.05.2021 | - | - |
|                 | Untreated Check                   | -           | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 0.50        | 0.00               | 0.00       | 0.00       | - | - |
|                 | CHR/H/MEZO 30 OD                  | 1.00        | 0.00               | 0.00       | 0.00       | - | - |
|                 | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 10.00              | 8.80       | 0.00       | - | - |



|                         |                                   |             |            |            |            |            |            |
|-------------------------|-----------------------------------|-------------|------------|------------|------------|------------|------------|
|                         | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 10.00      | 10.00      | 0.00       | -          | -          |
|                         | LSD (P=0.05)                      |             | -          | -          | -          | -          | -          |
| <b>A.T/2021/028/PO</b>  | Timing of assessment date         | DA-A        | 14 DA-A    | 26 DA-A    | 61 DA-A    | -          | -          |
|                         |                                   |             | 14.04.2021 | 26.04.2021 | 31.05.2021 | -          | -          |
|                         | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | -          | -          |
|                         | CHR/H/MEZO 30 OD                  | 0.50        | 1.00       | 0.00       | 0.00       | -          | -          |
|                         | CHR/H/MEZO 30 OD                  | 1.00        | 2.80       | 1.50       | 0.00       | -          | -          |
|                         | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 3.00       | 5.80       | 0.00       | -          | -          |
|                         | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 15.00      | 10.00      | 2.00       | -          | -          |
|                         | LSD (P=0.05)                      |             | 0.34       | 0.74       | -          | -          | -          |
| <b>SRPL21-410-336HS</b> | Timing of assessment date         | DA-A        | 7 DA-A     | 14 DA-A    | 21 DA-A    | 28 DA-A    | 56 DA-A    |
|                         |                                   |             | 19.04.2021 | 26.04.2021 | 04.05.2021 | 10.05.2021 | 07.06.2021 |
|                         | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 0.50        | 3.00       | 2.30       | 2.00       | 0.00       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 1.00        | 8.00       | 8.00       | 4.50       | 1.50       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | LSD (P=0.05)                      |             | -          | 1.51       | 1.43       | 1.01       | -          |
| <b>SRPL21-411-336HS</b> | Timing of assessment date         | DA-A        | 7 DA-A     | 14 DA-A    | 21 DA-A    | 28 DA-A    | 56 DA-A    |
|                         |                                   |             | 26.04.2021 | 04.05.2021 | 10.05.2021 | 17.05.2021 | 14.06.2021 |
|                         | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.50       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 0.50        | 1.30       | 1.30       | 1.00       | 0.00       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 1.00        | 5.00       | 5.00       | 2.00       | 0.80       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 1.30       | 1.30       | 1.00       | 0.50       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 5.00       | 5.00       | 2.00       | 0.30       | 0.00       |
|                         | LSD (P=0.05)                      |             | 0.62       | 0.50       | -          | 1.15       | -          |
| <b>SRPL21-412-336HS</b> | Timing of assessment date         | DA-A        | 7 DA-A     | 14 DA-A    | 21 DA-A    | 28 DA-A    | 56 DA-A    |
|                         |                                   |             | 29.04.2021 | 06.05.2021 | 13.05.2021 | 20.05.2021 | 17.06.2021 |
|                         | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 0.50        | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | CHR/H/MEZO 30 OD                  | 1.00        | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                         | LSD (P=0.05)                      |             | -          | -          | -          | -          | -          |
| <b>A.T/2022/001/PO</b>  | Timing of assessment date         | DA-A        | 14 DA-A    | 28 DA-A    | 37 DA-A    | -          | -          |
|                         |                                   |             | 26.04.2022 | 10.05.2022 | 19.05.2022 | -          | -          |

|                |                                   |             |            |            |            |            |            |
|----------------|-----------------------------------|-------------|------------|------------|------------|------------|------------|
|                | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | -          | -          |
|                | CHR/H/MEZO 30 OD                  | 0.50        | 0.00       | 0.00       | 0.00       | -          | -          |
|                | CHR/H/MEZO 30 OD                  | 1.00        | 4.00       | 0.00       | 0.00       | -          | -          |
|                | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 7.00       | 0.00       | 0.00       | -          | -          |
|                | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 10.00      | 5.00       | 0.00       | -          | -          |
|                | LSD (P=0.05)                      |             | 0.80       | -          | -          | -          | -          |
| AH/22/PO/22/Br | Timing of assessment date         | DA-A        | 3 DA-A     | 7 DA-A     | 10 DA-A    | 17 DA-A    | -          |
|                |                                   |             | 15.04.2022 | 19.04.2022 | 22.04.2022 | 29.04.2022 | -          |
|                | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.00       | -          |
|                | CHR/H/MEZO 30 OD                  | 0.50        | 0.00       | 0.00       | 0.00       | 0.00       | -          |
|                | CHR/H/MEZO 30 OD                  | 1.00        | 0.00       | 0.00       | 0.00       | 0.00       | -          |
|                | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 10.00      | 5.00       | 0.00       | 0.00       | -          |
|                | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 10.00      | 5.00       | 0.00       | 0.00       | -          |
|                | LSD (P=0.05)                      |             | -          | -          | -          | -          | -          |
| AH/22/PO/22/Ma | Timing of assessment date         | DA-A        | 2 DA-A     | 6 DA-A     | 9 DA-A     | 16 DA-A    |            |
|                |                                   |             | 15.04.2022 | 19.04.2022 | 22.04.2022 | 29.04.2022 |            |
|                | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.00       |            |
|                | CHR/H/MEZO 30 OD                  | 0.50        | 0.00       | 0.00       | 0.00       | 0.00       |            |
|                | CHR/H/MEZO 30 OD                  | 1.00        | 0.00       | 0.00       | 0.00       | 0.00       |            |
|                | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 0.00       | 0.00       | 0.00       | 0.00       |            |
|                | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 0.00       | 0.00       | 0.00       | 0.00       |            |
|                | LSD (P=0.05)                      |             | -          | -          | -          | -          | -          |
| AH/22/PO/22/JW | Timing of assessment date         | DA-A        | 3 DA-A     | 5 DA-A     | 7 DA-A     | 14 DA-A    | 21 DA-A    |
|                |                                   |             | 30.04.2022 | 02.05.2022 | 04.05.2022 | 11.05.2022 | 18.05.2022 |
|                | Untreated Check                   | -           | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                | CHR/H/MEZO 30 OD                  | 0.50        | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                | CHR/H/MEZO 30 OD                  | 1.00        | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                | Atlantis Star + Biopower 276,5 SL | 0.333 + 1.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                | Atlantis Star + Biopower 276,5 SL | 0.666 + 2.0 | 0.00       | 0.00       | 0.00       | 0.00       | 0.00       |
|                | LSD (P=0.05)                      |             | -          | -          | -          | -          | -          |

Table 2 – data from phytotoxicity trials – winter wheat (efficacy trials)

| Report code     | Treatment                         | Dose [L/ha]            | Phytotoxicity in % |            |            |            |
|-----------------|-----------------------------------|------------------------|--------------------|------------|------------|------------|
| A.T/2020/051/PO | Timing of assessment date         | DA-A                   | 14 DA-A            | 27 DA-A    | 41 DA-A    | 78 DA-A    |
|                 |                                   |                        | 21.04.2020         | 04.05.2020 | 18.05.2020 | 24.06.2020 |
|                 | Untreated Check                   | -                      | 0.00               | 0.00       | 0.00       | 0.00       |
|                 | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00               | 0.00       | 0.00       | 0.00       |
|                 | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00               | 0.00       | 0.00       | 0.00       |
|                 | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00               | 0.00       | 0.00       | 0.00       |
|                 | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00               | 2.30       | 0.00       | 0.00       |
|                 | LSD (P=0.05)                      |                        | -                  | 1.98       | -          | -          |
| A.T/2020/052/PO | Timing of assessment date         | DA-A                   | 14 DA-A            | 28 DA-A    | 51 DA-A    | -          |
|                 |                                   |                        | 20.04.2020         | 04.05.2020 | 27.05.2020 | -          |
|                 | Untreated Check                   | -                      | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00               | 0.00       | 0.00       | -          |
|                 | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 5.00               | 0.00       | 0.00       | -          |
|                 | LSD (P=0.05)                      |                        | -                  | -          | -          | -          |
| A.T/2020/053/PO | Timing of assessment date         | DA-A                   | 12 DA-A            | 27 DA-A    | 66 DA-A    | -          |
|                 |                                   |                        | 17.04.2020         | 02.05.2020 | 10.06.2020 | -          |
|                 | Untreated Check                   | -                      | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00               | 0.00       | 0.00       | -          |
|                 | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 3.00               | 0.00       | 0.00       | -          |
|                 | LSD (P=0.05)                      |                        | -                  | -          | -          | -          |
| A.T/2020/054/PO | Timing of assessment date         | DA-A                   | 14 DA-A            | 28 DA-A    | 53 DA-A    | -          |
|                 |                                   |                        | 20.04.2020         | 04.05.2020 | 29.05.2020 | -          |
|                 | Untreated Check                   | -                      | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00               | 0.00       | 0.00       | -          |
|                 | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00               | 0.00       | 0.00       | -          |
|                 | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00               | 0.00       | 0.00       | -          |
|                 | LSD (P=0.05)                      |                        | -                  | -          | -          | -          |
| A.T/2020/055/PO | Timing of assessment date         | DA-A                   | 14 DA-A            | 28 DA-A    | 58 DA-A    | -          |

|                           |                                   |                        |            |            |            |            |
|---------------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                           | date                              |                        | 21.04.2020 | 05.05.2020 | 04.06.2020 | -          |
|                           | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.50                   | 1.00       | 0.00       | 0.00       | -          |
|                           | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 5.30       | 0.00       | 0.00       | -          |
|                           | LSD (P=0.05)                      |                        | 2.33       | -          | -          | -          |
| <b>AH/20/PO/6/Pr/MEZO</b> | Timing of assessment date         | DA-A                   | 14 DA-A    | 27 DA-A    |            | -          |
|                           |                                   |                        | 21.04.2020 | 04.05.2020 |            | -          |
|                           | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | -          |
|                           | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | -          |
|                           | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | -          |
|                           | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
|                           | Timing of assessment date         | DA-A                   | 14 DA-A    | 21 DA-A    | 49 DA-A    | 87 DA-A    |
|                           |                                   |                        | 13.04.2021 | 20.04.2021 | 18.05.2021 | 25.06.2021 |
|                           | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                           |                                   |                        | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
| <b>A.T/2021/011/PO</b>    | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 15.00      | 0.00       | 0.00       | 0.00       |
|                           | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
|                           | Timing of assessment date         | DA-A                   | 14 DA-A    | 28 DA-A    | 50 DA-A    | 91 DA-A    |
|                           |                                   |                        | 13.04.2021 | 27.04.2021 | 19.05.2021 | 29.06.2021 |
|                           | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                           |                                   |                        | 0.00       | 0.00       | 0.00       | 0.00       |
| <b>A.T/2021/012/PO</b>    | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                           | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 4.30       | 0.00       | 0.00       | 0.00       |
|                           | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
|                           | Timing of assessment date         | DA-A                   | 14 DA-A    | 28 DA-A    | 54 DA-A    | 100 DA-A   |
|                           |                                   |                        | 14.04.2021 | 28.04.2021 | 24.05.2021 | 09.07.2021 |
| <b>A.T/2021/014/PO</b>    | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |

|                        |                                   |                        |            |            |            |            |
|------------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                        |                                   |                        | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 5.00       | 0.00       | 0.00       | 0.00       |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/015/PO</b> | Timing of assessment date         | DA-A                   | 15 DA-A    | 28 DA-A    | 39 DA-A    | -          |
|                        |                                   |                        | 04.05.2021 | 17.05.2021 | 28.05.2021 | -          |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 1.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 1.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 1.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 1.00       | 0.00       | 0.00       | -          |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 5.00       | 0.00       | 0.00       | -          |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/016/PO</b> | Timing of assessment date         | DA-A                   | 13 DA-A    | 28 DA-A    | 49 DA-A    | -          |
|                        |                                   |                        | 20.05.2021 | 04.06.2021 | 25.06.2021 | -          |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | -          |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 10.00      | 0.00       | 0.00       | -          |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/017/PO</b> | Timing of assessment date         | DA-A                   | 13 DA-A    | 27 DA-A    | 44 DA-A    | -          |
|                        |                                   |                        | 30.04.2021 | 14.05.2021 | 31.05.2021 | -          |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 0.80       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.80       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 1.00       | 0.00       | 0.00       | -          |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 1.00       | 0.00       | 0.00       | -          |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 5.00       | 0.00       | 0.00       | -          |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/018/PO</b> | Timing of assessment date         | DA-A                   | 14 DA-A    | 22 DA-A    | 58 DA-A    | 76 DA-A    |
|                        |                                   |                        | 14.04.2021 | 22.04.2021 | 28.05.2021 | 15.06.2021 |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |

|                        |                                   |                        |            |            |            |            |
|------------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/019/PO</b> | Timing of assessment date         | DA-A                   | 12 DA-A    | 27 DA-A    | 40 DA-A    | 54 DA-A    |
|                        |                                   |                        | 10.05.2021 | 25.05.2021 | 07.06.2021 | 21.06.2021 |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 6.30       | 12.80      | 0.00       | 0.00       |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/020/PO</b> | Timing of assessment date         | DA-A                   | 14 DA-A    | 28 DA-A    | 61 DA-A    | 89 DA-A    |
|                        |                                   |                        | 14.04.2021 | 28.04.2021 | 31.05.2021 | 29.06.2021 |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 7.00       | 0.00       | 0.00       | 0.00       |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/021/PO</b> | Timing of assessment date         | DA-A                   | 13 DA-A    | 28 DA-A    | 58 DA-A    | 76 DA-A    |
|                        |                                   |                        | 13.04.2021 | 28.04.2021 | 28.05.2021 | 15.06.2021 |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                        | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| <b>A.T/2021/022/PO</b> | Timing of assessment date         | DA-A                   | 14 DA-A    | 28 DA-A    | 48 DA-A    | 85 DA-A    |
|                        |                                   |                        | 14.04.2021 | 28.04.2021 | 18.05.2021 | 24.06.2021 |
|                        | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |

|                  |                                   |                        |            |            |            |            |
|------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 3.30       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| A.T/2021/023/PO  | Timing of assessment date         | DA-A                   | 14 DA-A    | 28 DA-A    | 60 DA-A    | 76 DA-A    |
|                  |                                   |                        | 15.04.2021 | 29.04.2021 | 31.05.2021 | 16.06.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 1.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 3.00       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| A.T/2021/024/PO  | Timing of assessment date         | DA-A                   | 14 DA-A    | 22 DA-A    | 58 DA-A    | 76 DA-A    |
|                  |                                   |                        | 14.04.2021 | 22.04.2021 | 28.05.2021 | 15.06.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-403-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 56 DA-A    |
|                  |                                   |                        | 09.04.2021 | 16.04.2021 | 30.04.2021 | 28.05.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 1.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 2.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 4.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 5.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 1.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-404-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 56 DA-A    |
|                  |                                   |                        | 16.04.2021 | 23.04.2021 | 07.05.2021 | 04.06.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |

|                  |                                   |                        |            |            |            |            |
|------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-405-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | -          |
|                  |                                   |                        | 29.04.2021 | 06.05.2021 | 20.05.2021 | -          |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | -          |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | -          |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | -          |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | -          |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | -          |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | -          |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-406-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 45 DA-A    |
|                  |                                   |                        | 23.04.2021 | 30.04.2021 | 14.05.2021 | 31.05.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-407-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 49 DA-A    |
|                  |                                   |                        | 23.04.2021 | 30.04.2021 | 14.05.2021 | 04.06.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                  | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-408-336HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 56 DA-A    |
|                  |                                   |                        | 19.04.2021 | 26.04.2021 | 10.05.2021 | 07.06.2021 |
|                  | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |



|                   |                                   |                        |            |            |            |            |
|-------------------|-----------------------------------|------------------------|------------|------------|------------|------------|
|                   | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL21-409-336HE  | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 55 DA-A    |
|                   |                                   |                        | 21.04.2021 | 28.04.2021 | 12.05.2021 | 08.06.2021 |
|                   | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL20-230-336 HE | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 47 DA-A    |
|                   |                                   |                        | 15.04.2020 | 22.04.2020 | 06.05.2020 | 25.05.2020 |
|                   | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | LSD (P=0.05)                      |                        | -          | -          | -          | -          |
| SRPL20-231-336HE  | Timing of assessment date         | DA-A                   | 7 DA-A     | 14 DA-A    | 28 DA-A    | 56 DA-A    |
|                   |                                   |                        | 30.04.2020 | 07.05.2020 | 21.05.2020 | 18.06.2020 |
|                   | Untreated Check                   | -                      | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.20                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.30                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.40                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | CHR/H/MEZO 30 OD                  | 0.50                   | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | Atlantis Star + Biopower 276,5 SL | 0,333 kg/ha + 1,0 L/ha | 0.00       | 0.00       | 0.00       | 0.00       |
|                   | LSD (P=0.05)                      |                        | -          | -          | -          | -          |

Table 3 – data from phytotoxicity trials

| Test report (1)    | Testing Unit<br>GEP (2)  | Country Region<br>(3) | Dates of trials<br>and GS (4) | Cultivar<br>F/G (5)<br>N/A (6)     | Experimental design<br>Test method (7)<br>Replicates | Remarks                         |
|--------------------|--|-----------------------|-------------------------------|------------------------------------|--|---------------------------------|
| SRPL20-230-336HE   | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland  | Baborówko/ Poland     | 08.04.2020<br>BBCH 30-32      | winter wheat/ Arkadia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: loamy sand<br>pH 6.8 |
| SRPL20-231-336HE   | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland  | Bychowo/ Poland       | 23.04.2020<br>BBCH 30-32      | winter wheat/ Patras<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: sandy loam<br>pH 6.1 |
| A.T/2020/051/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Kocanowo/ Poland      | 07.04.2020<br>BBCH 30-32      | winter wheat/ Apostel<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: loamy sand<br>pH 5.5 |
| A.T/2020/052/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Angowice/ Poland      | 06.04.2020<br>BBCH 30-31      | winter wheat/ Etana<br>F<br>N      | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: sandy loam<br>pH 5.2 |
| A.T/2020/053/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Świerki/ Poland       | 05.04.2020<br>BBCH 31-32      | winter wheat/ Arkadia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: silt loam<br>pH 5.3  |
| A.T/2020/054/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Wilcze/ Poland        | 06.04.2020<br>BBCH 30-31      | winter wheat/ Arkadia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: loamy sand<br>pH 7.0 |
| A.T/2020/055/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Rogowo/ Poland        | 07.04.2020<br>BBCH 30-32      | winter wheat/ Medalistka<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: loamy sand<br>pH 6.0 |
| AH/20/PO/6/Pr/MEZO | Poznań University of Life Sciences,<br>Research and Education Center Gorzyń,<br>Agronomy Department; ul. Wojska<br>Polskiego 28, 60-637 Poznań | Przybroda/ Poland     | 07.04.2020<br>BBCH 31         | winter wheat/ Succes<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: sandy loam<br>pH 5.8 |
| A.T/2021/011/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Kopaszyn/ Poland      | 30.03.2021<br>BBCH 25-29      | winter wheat/ Arkadia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: sandy loam<br>pH 7.4 |
| A.T/2021/012/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Parkowo/ Poland       | 30.03.2021<br>BCH 26-30       | winter wheat/ Julius<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4          | Soil type: loamy sand<br>pH 5.6 |
| A.T/2021/014/PO    | A.T Sp. z o.o.<br>ul. Przemysłowa 3  | Gaj Mały/ Poland      | 31.03.2021<br>BBCH 23-27      | winter wheat/ Tonacja<br>F         | Randomized blocks<br>EPPO PP 1/135 (4)               | Soil type: sandy loam<br>pH 6.9 |

|                         |   |                                  |                          |   |   |                                  |
|-------------------------|---|----------------------------------|--------------------------|---|---|----------------------------------|
|                         | 88-300 Mogilno  |                                  |                          | N   | 4   |                                  |
| <b>A.T/2021/015/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Marzęcino/ Poland                | 19.04.2021<br>BBCH 21-23 | winter wheat/ Hondia<br>F<br>N            | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: silt<br>pH 5.3        |
| <b>A.T/2021/016/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Nowa Wieś Ujska/<br>Poland       | 07.05.2021<br>BBCH 29-32 | winter wheat/ Euforia<br>F<br>N           | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.2  |
| <b>A.T/2021/017/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Zamarte/ Poland                  | 17.04.2021<br>BBCH 30-31 | winter wheat/ Arkadia<br>F<br>N           | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.2  |
| <b>A.T/2021/018/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Lubomin/ Poland                  | 31.03.2021<br>BBCH 21-23 | winter wheat/ RGT Metro-<br>nom<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.8  |
| <b>A.T/2021/019/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Wronczyn (Za-<br>parcin)/ Poland | 28.04.2021<br>BBCH 20-22 | winter wheat/ Linus<br>F<br>N             | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 5.9  |
| <b>A.T/2021/020/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Zamarte/ Poland                  | 31.03.2021<br>BBCH 22-24 | winter wheat/ Arkadia<br>F<br>N           | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.2  |
| <b>A.T/2021/021/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Karsy/ Poland                    | 31.03.2021<br>BBCH 21-23 | winter wheat/ Keramik<br>F<br>N           | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.6  |
| <b>A.T/2021/022/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Glinka Szlachecka/<br>Poland     | 31.03.2021<br>BBCH 25-30 | winter wheat/ Rotax<br>F<br>N             | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sand<br>pH 6.1        |
| <b>A.T/2021/023/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Trzemiętowo/ Po-<br>land         | 01.04.2021<br>BBCH 24-26 | winter wheat/ RGT Reform<br>F<br>N        | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 5.9  |
| <b>A.T/2021/024/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Lubomin/ Poland                  | 31.03.2021<br>BBCH 21-23 | winter wheat/ RGT Metro-<br>nom<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.8  |
| <b>SRPL21-403-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Leonów/ Poland                   | 02.04.2021<br>BBCH 21-22 | winter wheat/ Hondia<br>F<br>N            | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.6  |
| <b>SRPL21-404-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz           | Żnin/ Poland                     | 09.04.2021<br>BBCH 21-22 | winter wheat/ Solehio<br>F<br>N           | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: clayey sand<br>pH 6.8 |

|                         |   |                              |                          |                                    |   |                                 |
|-------------------------|---|------------------------------|--------------------------|------------------------------------|---|---------------------------------|
|                         | Poland  |                              |                          |                                    |   |                                 |
| <b>SRPL21-405-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Owczary/ Poland              | 22.04.2021<br>BBCH 21-23 | winter wheat/ Linus<br>F<br>N      | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.5 |
| <b>SRPL21-406-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Turze/ Poland                | 16.04.2021<br>BBCH 23-25 | winter wheat/ Apostel<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: clay loam<br>pH 7.1  |
| <b>SRPL21-407-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Baborówko/ Poland            | 16.04.2021<br>BBCH 24-26 | winter wheat/ Arkadia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 6.5 |
| <b>SRPL21-408-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Krasienin Kolonia/<br>Poland | 12.04.2021<br>BBCH 26-27 | winter wheat/ Owacja<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: silt loam<br>pH 6.5  |
| <b>SRPL21-409-336HE</b> | SynTech Research Poland Sp. z o.o.<br>69/1 Jagiellonska<br>85-027 Bydgoszcz<br>Poland | Gudniki/ Poland              | 14.04.2021<br>BBCH 21-22 | winter wheat/ Patras<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 4.2 |
| <b>A.T/2020/056/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Doręgowice/ Poland           | 08.04.2020<br>BBCH 31-32 | winter wheat/ Julius<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 6.2 |
| <b>A.T/2020/057/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Szapsk/ Poland               | 08.04.2020<br>BBCH 29-31 | winter wheat/ Rotax<br>F<br>N      | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.2 |
| <b>A.T/2021/026/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Modrze/ Poland               | 31.03.2021<br>BBCH 23-26 | winter wheat/ Linus<br>F<br>N      | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.2 |
| <b>A.T/2021/027/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Nowa Wieś Ujska/<br>Poland   | 01.04.2021<br>BBCH 21-25 | winter wheat/ Euforia<br>F<br>N    | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.2 |
| <b>A.T/2021/028/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno                                 | Wilkowo/ Poland              | 31.03.2021<br>BBCH 22-24 | winter wheat/ RGT Bilanz<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 5.3 |
| <b>SRPL21-410-336HS</b> | SynTech Research Poland Sp. z o.o.,<br>Jagiellońska 69/1 85.027 Bydgoszcz             | Tomaryny/ Poland             | 12.04.2021<br>BBCH 21-23 | winter wheat/ Findus<br>F<br>N     | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: slit loam<br>pH 5.1  |
| <b>SRPL21-411-336HS</b> | SynTech Research Poland Sp. z o.o.,   | Krasienin/ Poland            | 19.04.2021               | winter wheat/ Owacja               | Randomized blocks                           | Soil type: slit loam            |

|                         |  |                              |                          |                                  |   |                                 |
|-------------------------|--|------------------------------|--------------------------|----------------------------------|---|---------------------------------|
|                         | Jagiellońska 69/1 85.027 Bydgoszcz   |                              | BBCH 25-29               | F<br>N                           | EPPO PP 1/135 (4)<br>4                      | pH 6.9                          |
| <b>SRPL21-412-336HS</b> | SynTech Research Poland Sp. z o.o.,<br>Jagiellońska 69/1 85.027 Bydgoszcz  | Jankowice Wielkie/<br>Poland | 22.04.2021<br>BBCH 30-32 | winter wheat/ Argument<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 6.5 |
| <b>A.T/2022/001/PO</b>  | A.T Sp. z o.o.<br>ul. Przemysłowa 3<br>88-300 Mogilno  | Nowa Wieś Ujska/<br>Poland   | 12.04.2022<br>BBCH 25-29 | winter wheat/ Euforia<br>F<br>N  | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 7.2 |
| <b>AH/22/PO/22/Br</b>   | Poznań University of Life Sciences,<br>Research and Education Center Gorzyń,<br>Agronomy Department; ul. Wojska<br>Polskiego 28, 60-637 Poznań | Brody/ Poland                | 12.04.2022<br>BBCH 30    | winter wheat/ Tonacja<br>F<br>N  | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 7.0 |
| <b>AH/22/PO/22/Ma</b>   | Poznań University of Life Sciences,<br>Research and Education Center Gorzyń,<br>Agronomy Department; ul. Wojska<br>Polskiego 28, 60-637 Poznań | Machary/ Poland              | 13.04.2022<br>BBCH 30-31 | winter wheat/ Jantarka<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: loamy sand<br>pH 6.0 |
| <b>AH/22/PO/22/JW</b>   | Poznań University of Life Sciences,<br>Research and Education Center Gorzyń,<br>Agronomy Department; ul. Wojska<br>Polskiego 28, 60-637 Poznań | Laskowo/ Poland              | 27.04.2022<br>BBCH 31    | winter wheat/ PRINCEPS<br>F<br>N | Randomized blocks<br>EPPO PP 1/135 (4)<br>4 | Soil type: sandy loam<br>pH 5.9 |

Notes:

- (1): test report number
- (2): Trial responsible entity/ officially recognized organization
- (3): precise place of the trial followed by the country
- (4): Crop growth stage at application timing
- (5): F= field trial, G=protected crop, specify
- (6): N=Natural infestation, A= Artificial inoculation
- (7): Test guideline used

**Appendix 7 Summary of available studies: Adverse effects on beneficial organisms**

None

**Appendix 8 Summary of data on succeeding crop**

None