

FINAL REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: CHR/H/DIK 480 SL

Product name(s): Macamba 480 SL/ Dikambin 480 SL

Chemical active substance(s):

Dicamba, 480 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Applicant: Innvigo Sp. z o.o.

Submission date: August 2022, March 2023

MS Finalisation date: 12/01/2024

Version history

When	What
01/2023	Dossier sent for evaluation
03/2023	Applicant update
04/2023	zRMS evaluation of dRR
06/2023	Final version prepared by zRMS after Commenting period
01/2024	zRMS update

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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:	Conclusions from the assessment were prepared using grey commenting boxes placed at the end of each chapter. The parts of the text amended or added by the zRMS evaluator are highlighted in grey and the parts struck off are visibly marked with the grey front.
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3.1 Summary and conclusions of zRMS on Section 3: Efficacy (KCP 6)

Abstract

zRMS

The submitted efficacy data (reports from field trials) fulfil requirements and conditions determined in the EPPO guidelines, the Commission Regulation (EU) No 545/2011 of 10 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the data requirements for plant protection products. The reports and data were submitted to support the evaluation for the authorization of CHR/H/DIK 480 SL in PL.

CHR/H/DIK 480 SL contains 480 g/L dicamba as active substance and is formulated as a soluble liquid (SL). It is used as herbicide in maize for the control of a wide range of dicot weeds at dose rates of 0,6 l/ha (spray volume applied on the crop 200 – 300 l/ha) as post – emergence one application at BBCH 12-16 of crop.

The applicant submitted 14 reports showing the results in research into product efficacy carried out PL from 2021 to 2022 on different cultivars of maize against dicots weeds to supports the registration of CHR/H/DIK 480 SL in PL.

The following target weed species were categorized as:

- susceptible (S): CHEAL, POLCO, POLPE, PLAMA, MATCH
- moderately susceptible (MS): ARTVU, AMARE, CIRAR, CONAR
- tolerant (T): ANTAR, VIOAR

To sum up, it might be concluded that the application of CHR/H/DIK 480 SL at dose rate 0,6 l/ha (spray volume 200 - 300 l/ha), post-emergence provides benefit against dicot weeds in maize comparable or better with standard product Dicash 480 SL. CHR/H/DIK 480 SL caused insufficient (tolerant) susceptibility for ANTAR, VIOAR. There is a need to make an appropriate label statement.

The applicant presented strategy of resistance management recommended by HRAC.

CHR/H/DIK 480 SL was safe to the crops on which it was applied as no phytotoxicity symptoms observed in 8 selectivity trials. The product did not cause a negative impact on the yield of protected crop.

The product CHR/H/DIK 480 SL is to be expected no negative effect on the quality of plants or plant products and transformation processes.

All crops can be sown in the spring as succeeding crop. In the case of a crop failure for any reason of maize on which CHR/H/DIK 480 SL has been applied, peas, wheat, carrots, onions, flax, tomato and maize may be sown as a replacement crop. Before sowing peas, wheat, carrots, onions, flax, wait about 30 days, in the case of tomato 50 days after the application of the product on maize and plough 10 cm.

The risk of adverse impact resulting from the post-emergence application of CHR/H/DIK 480 SL at the rate of 0,6 L product/ha was acceptably low when when a 20 m buffer zone was observed or with a buffer zone of 10 m when 50% drift reduction nozzles was used or with a buffer zone of 5 m when 75% drift reduction nozzles was used.

The rinse procedure of tank cleaning proposed by the Applicant was sufficient to ensure that residues of plant protection products do not remain in the pesticide application equipment (PAE) after cleaning and that there is no unacceptable risk to subsequently treated crops.

According to the above, the plant protection product CHR/H/DIK 480 SL is recommended to be approved to use according to the table of intended uses for CHR/H/DIK 480 SL (Table 3.1- 1). The evaluation was carried out in accordance with the Uniform Principles.

PPP (product name/code):		CHR/H/DIK 480 SL/ Macamba 480 SL/ Dikambin 480 SL	Formulation type:	SL ^(a, b)	GAP rev. _____, date: 2022-04-12
Active substance 1:		dicamba	Conc. of as 1:	480 g/L ^(c)	
Active substance 2:		-	Conc. of as 2:	- ^(c)	
Active substance 3:		-	Conc. of as 3:	- ^(c)	
Safener:		-	Conc. of safener:	- ^(c)	
Synergist:		-	Conc. of synergist:	- ^(c)	
Applicant:		Innvigo Sp. z o.o.	Professional use:	<input checked="" type="checkbox"/>	
Zone(s):		Central ^(d)	Non professional use:	<input type="checkbox"/>	
Verified by MS:		No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>			

Field of use: herbicide

[illegible]

Minor uses according to Article 51 (zonal uses)														
5														
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)	(d)	Select relevant
	(b)	Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008	(e)	Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
	(c)	g/kg or g/l	(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	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
	2	Use official codes/nomenclatures of EU Member States	8	The maximum number of application possible under practical conditions of use must be provided.
	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)	9	Minimum interval (in days) between applications of the same product
	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	10	For specific uses other specifications might be possible, e.g.: g/m³ in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.
	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.	11	The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).
	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.	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/DIK 480 SL containing active substance: dicamba 480 g/L.

CHR/H/DIK 480 SL applies in the Central Registration Zone for the registration of in maize at BBCH 12-15 16 applied once per season at the maximum rate of 288 g a.s./ha dicamba per application for the control of dicotyledonous weeds.

General information:

Description of the plant protection product

Marketing name:

product submitted to registration under two different marketing names: Macamba 480 SL, Dikambin 480 SL

Formulants content:

The information concerning ingredients of product CHR/H/DIK 480 SL are included in the confidential part of the registration dossier: Registration Report – Part C.

Formulation of use:

SL – Soluble (liquid) concentrate

General information on the plant protection product:

CHR/H/DIK 480 SL is to be applied in spring:
postemergence BBCH 12-15 16 in maize.

The suggested dose of the product:

Used solo:

0.6 L/ha – postemergence application once a season in maize, which are corresponding to 288 g a.s./ha (dicamba).

CHR/H/DIK 480 SL containing dicamba as the active substance is prepared for the use in agricultural practice as a herbicide in the form SL – Soluble (liquid) concentrate.

Information on the composition of product CHR/H/DIK 480 SL are included in the confidential part of the registration dossier: Registration Report – Part C.

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:

Dicamba 480 g/L

CAS no 1918-00-9

CIPAC No.: 85

IUPAC name: 3,6-dichloro-2-methoxybenzoic acid

Dicamba is a systemic herbicide for the control of annual and perennial broadleaf dicotyledonous weed species. Dicamba is a systemic herbicide belonging to HRAC group 4 (legacy HRAC group O) – Auxin Mimics. Dicamba was developed for agricultural use. Dicamba can be applied post-emergence to a range of monocotyledonous crops such as maize, barley and wheat. Timing of application and maximum dose vary between crops. Dicamba controls a wide range of annual and perennial broadleaved weeds. Key target of dicamba are broadleaf weeds belonging to the families: *Amaranthaceae*, *Chenopodiaceae*, *Asteraceae*, *Convolvulaceae*, *Solanaceae*, *Polygonaceae* and *Brassicaceae*.

Table 3.2-1: Details of the active substances

Active substance	dicamba
Concentration (Unit: g/kg or g/L...)	480 g/L
Chemical group	Benzoates
Mode of action	Auxin Mimics
Biological action	<p>Dicamba belongs to the benzoic acid chemical family. According to HRAC, dicamba is a Group 4 herbicide (Synthetic Auxins) whose action mimics indoleacetic acid (IAA). In susceptible weeds dicamba is translocated both acropetally and basipetally.</p> <p>The most typical injury symptoms of dicamba are epinasty or curled and twisted stems and leaves. These symptoms are caused by differences in growth on different sides of the leaves. When leaf edge meristems are inhibited by dicamba they often force the leaf to form a cup-shape and this is often associated with a darker green colour. In contrast to 2,4-D the upper surface usually forms the outside of 'the cup'. Monocot leaves can form tightly bunched shapes called 'onion-leaffing'.</p> <p>Due to its auxin-like activity dicamba can cause growth abnormalities. A variety of morphological malformations can occur including leaf malformations and increased branching. Maize can form fasciated or fused abnormal brace roots. Stems can become brittle and break and they can also become weakened and formed a curved, or 'goose-neck', shape. Dicamba can cause normally tolerant monocot species to lay flat for a time just after treatment but these symptoms often disappears within hours or days after treatment.</p>

Comments of zRMS:	<p>This report summarizes the information concerning the efficacy of the plant protection product CHR/H/DIK 480 SL. The product contains 480 g/L dicamba as active substance and is formulated as a soluble liquid (SL). It is used as herbicide in maize. The reports and data were submitted to support of the evaluation of the authorization CHR/H/DIK 480 SL in Central Zone: Poland.</p> <p>The active substance dicamba is included in the Annex to Commission Implementing Regulation (EU) No 540/2011 containing the active substances approved for use in plant protection products under Regulation (EC) No 1107/2009 with the expiration of approval on 31/12/2023.</p> <p>According to general provisions applying to all substances listed in the Annex to commission Implementing Regulation (EU) No 540/2011 of 25 May 2011 implementing Regulation (EC) No1107/2009 of the European Parliament and of the Council as regards the list of approved active substances. Specific provisions of Regulation (EU) No 540/2011 were as follows:</p> <p>PART A</p> <p>Only uses as herbicide may be authorised.</p> <p>PART B</p> <p>For the implementation of the uniform principles as referred to in Article 29(6) of Regulation (EC) No 1107/2009, the conclusions of the review report on dicamba, and in particular Appendices I and II thereof, as finalised in the Standing Committee on the Food Chain and Animal Health shall be taken into account.</p>
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	Appendix 5 of dRR contains the list of data considered in support of the evaluation. Table 3.1-1 of this document contains the table of intended uses for CHR/H/DIK 480 SL.
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Description of the plant protection product

Formulation of use:

SL – Soluble (liquid) concentrate

CHR/H/DIK 480 SL containing 480 g/L dicamba as the active substance is prepared for the use in agricultural practice as a herbicide in the form SL – Soluble (liquid) concentrate

CHR/H/DIK 480 SL is to be applied postemergence in spring: BBCH 12-15 16 in maize.

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	
maize	dicotyledones weeds	PL	-	-	0.6 L/ha	0.6 L/ha	Postemergence application

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.

Maize

EPPO code	Scientific name	Common name*
CHEAL	<i>Chenopodium album</i>	fat-hen
ARTVU	<i>Arthemis vulgaris</i>	common mugwort
POLCO	<i>Fallopia convolvulus</i>	black bindweed
ANTAR	<i>Anthemis arvensis</i>	Mayweed
POLPE	<i>Polygonum persicaria</i>	lady's thumb
VIOAR	<i>Viola arvensis</i>	Field violet
AMARE	<i>Amaranthus retroflexus</i>	redroot pigweed
PLAMA	<i>Plantago major</i>	greater plantain
CONAR	<i>Convolvulus arvensis</i>	small bindweed
CIRAR	<i>Cirsium arvense</i>	creeping thistle
MATCH	<i>Matricaria chamomilla</i>	scented mayweed

* 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
maize	PL	-	<i>Chenopodium album</i>	PL	-
			<i>Arthemis vulgaris</i>	PL	-

			<i>Fallopia convolvulus</i>	PL	-
			<i>Anthemis arvensis</i>	PL	-
			<i>Polygonum persicaria</i>	PL	-
			<i>Viola arvensis</i>	PL	-
			<i>Amaranthus retroflexus</i>	PL	-
			<i>Plantago major</i>	-	PL
			<i>Convolvulus arvensis</i>	PL	-
			<i>Cirsium arvense</i>	PL	-
			<i>Matricaria chamomilla</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 14 trials have been carried out in 2021 and 2022 in the North-East EPPO zone within the Central registration zone to evaluate the efficacy of applied at the proposed label rate of 288 g a.s./ha dicamba for the weed control in maize (Table 3.2 6). Trials were conducted in the main maize growing areas in the North-East EPPO zone in Poland.

Table 3.2-5: Presentation of trials efficacy trials

	Target(s)*	Country	Years	Type of trial**	Number of trials (number of valid trials)		GEP, non-GEP, official***	Comments (any other relevant information)
					North-East zone	-		
Maize*	<i>Chenopodium album</i>	Poland	2021	E	10(10)	-	GEP	-
		Poland	2022	E	1(1)	-	GEP	-
	TOTAL	-	2021-2022	-	11(11)	-	-	-
	<i>Arthemis vulgaris</i>	Poland	2021	E	3(3)	-	GEP	-
		Poland	2022	E	4(4)	-	GEP	-
	TOTAL	-	2021-2022	-	7(7)	-	-	-
	<i>Fallopia convolvulus</i>	Poland	2021	E	7(7)	-	GEP	-
	TOTAL	-	2021	-	7(7)	-	-	-
	<i>Anthemis arvensis</i>	Poland	2021	E	6(6)	-	GEP	-
	TOTAL	-	2021	-	6(6)	-	-	-
	<i>Polygonum persicaria</i>	Poland	2021	E	5(5)	-	GEP	-
		Poland	2022	E	2(2)	-	GEP	-
	TOTAL	-	2021-2022	-	7(7)	-	-	-
	<i>Viola arvensis</i>	Poland	2021	E	5(5)	-	GEP	-
		Poland	2022	E	1(1)	-	GEP	-
	TOTAL	-	2021-2022	-	6(6)	-	-	-

	<i>Amaranthus retroflexus</i>	Poland	2021	E	6(6)	-	GEP	-
	TOTAL	-	2021	-	6(6)	-	-	-
	<i>Plantago major</i>	Poland	2021	E	3(3)	-	GEP	-
	TOTAL	-	2021	-	3(3)	-	-	-
	<i>Convolvulus arvensis</i>	Poland	2021	E	2(2)	-	GEP	-
		Poland	2022	E	4(4)	-	GEP	-
	TOTAL	-	2021-2022	-	6(6)	-	-	-
	<i>Cirsium arvense</i>	Poland	2021	E	4(4)	-	GEP	-
		Poland	2022	E	2(2)	-	GEP	-
	TOTAL	-	2021-2022	-	6(6)	-	-	-
	<i>Matricaria chamomilla</i>	Poland	2021	E	2(2)	-	GEP	-
		Poland	2022	E	4(4)	-	GEP	-
	TOTAL	-	2021-2022	-	6(6)	-	-	-
TOTAL	14	-	2021-2022	-	14(72)	-	-	-

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

** 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 ⁽¹⁾	Authorization number	Active substance(s)	Formulation		Registered application	Application rate in trials (per treatment)	Remark ⁽⁴⁾
					Type ⁽²⁾	Concentration of a.s.			
maize	Dicash 480 SL	Poland	R-155/2016	dicamba	SL – Soluble (liquid) concentrate	480 g/L	0.6 L/ha	0.6 L/ha	-

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

(2) e.g. WP (wetable 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.).

3.2.1 Preliminary tests (KCP 6.1)

Preliminary studies on product CHR/H/DIK 480 SL were not carried out because this herbicide contains dicamba which are 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.

Comments:3.2.2 dRR point: 3.2.2	Explanation is acceptable.
Preliminary range finding tests are not reported. The active substance dicamba has well been known and used in many authorised products with a known range of action.	

Table 3.2-7: Efficacy of active substance components in test product – not applicable

Not applicable

Table 3.2-8: Percentage of control of the different ratios at timing of assessment (e.g. 10 to 14 days after application).- not applicable

Not applicable

Summary and conclusions on the preliminary trials

Not applicable

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/DIK 480 SL in maize the minimum effective dose of product CHR/H/DIK 480 SL used is:

Used solo:

0.6 L/ha – postemergence application once a season in maize, which are corresponding to 288 g a.s./ha (dicamba).

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

Crop(s) 1 AND/OR Target(s) 1

Not applicable

Table 3.2-9: Minimum effective dose. Efficacy of product at proposed label rate, at X% and Y% dose rates on target 1 at assessment timing against “Crop(s) 1 AND/OR Target(s) 1”.

No specific studies were conducted to fill this data point.

Crop(s) 2 AND/OR Target(s) 2

Not applicable

Summary and conclusions on the minimum effective dose

Not applicable

Comments:3.2.2 dRR point: 3.2.2	Studies are acceptable.
The claimed dose rate is 0,6 l/ha. The dose justification of 10,6 l/ha of CHR/H/DIK 480 SL containing dicamba is supported by data from efficacy trials. In the 14 trials lower doses rates were also tested (0,4 and 0,5 l/ha). In the efficacy trials of CHR/H/DIK 480 SL showed in general a higher level of efficacy against dicots weeds in maize, when it was applied in the highest dose rate of 0,6 l/ha.	

3.2.3 Efficacy tests (KCP 6.2)

Materials and methods

The applicant submitted 14 reports (in total) showing the results in research into product efficacy carried out in 2021 and 2022 in maize. List of these reports is contained in Appendix 1.

Site

Trials were conducted in different regions in Poland where maize 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/DIK 480 SL were performed in 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, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań

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 1/50(4) Weeds in maize

Assessment methods

Statistical Analysis

All assessment data were analysed by ANOVA (Two-way Analysis of Variance) and Student-Newman-Keuls mean comparison test using 'ARM 21' (Version 2021.7) ($p=0.05$). All data were first tested for homogeneity using Bartlett's test for homogeneity. For any data columns that failed this test, automatic data transformations were conducted in ARM or problematic replicates/treatments were excluded from the analysis (see ARM action codes below each result table). Care should be taken when interpreting these data columns. Efficacy were analysed using Abbott test (% of untreated).

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 2021.2 software.

Assessment of efficacy

The effectiveness of the control of dicotyledonous weeds was assessed visually by comparing the condition of individual weeds on the herbicide-treated plots and on the untreated objects. 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 m².

An efficacy was evaluated through assessments of damage weeds on plots treated compared to untreated (check) plots. The results was presented in percentage of efficacy (%). On untreated plots estimated number of weeds on 1 square meter.

Assessment of phytotoxicity

Phytotoxicity assessments were conducted 7, 14, 28 and 56 DA-A. The effectiveness of weed control were evaluated visually by comparing the state of individual weed species on plots after application by herbicides and untreated plots. The results are shown as a percentage of destruction. The results are shown as a percentage of destruction. At each assessment also determined the number of weeds, also before application on the surface of 1m². Phytotoxicity assessments of tested preparations were done by a visual estimation of an intensity of chlorosis, necrosis, leave curling, reduction in turgor of plants etc. found on overall areas of treated plots and by comparison of each treated plot with untreated plot. Assessments were done directly on plantation. Results were shown using 0-100 scale, where: 0 – no phytotoxicity, 100 – total plant destruction.

Phytotoxicity were assessed by visual estimation of the intensity on an overall plot basis on a percentage scale 0-100 % (0=no damage).

Applications methods and rates

The applications were carried out by a BACCAI and SPRBIC.

Tested herbicide was applied at the growth stage in maize:

postemergence BBCH 12-15.

The product CHR/H/DIK 480 SL has been used in maize at the following rates of:
0.4, 0.5, and 0.6 L/ha – postemergence.

Dicash 480 SL was used as a reference product in maize.

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

Experiment pattern:

No.	Name	Rate (L/ha)	other rate (g a.s./ha)	Appl code	Growth Stage BBCH
1	Untreated Check				
2	CHR/H/DIK 480 SL	0.4 L/ha	192 g a.s./ha	A	BBCH 12-15
3	CHR/H/DIK 480 SL	0.5 L/ha	240 g a.s./ha	A	BBCH 12-15
4	CHR/H/DIK 480 SL	0.6 L/ha	288 g a.s./ha	A	BBCH 12-15
5	Dicash 480 SL	0.6 L/ha	288 g a.s./ha	A	BBCH 12-15

Details of experiments

Report code	A.T/2021/06 7/KK	A.T/2021/06 8/KK	A.T/2021/06 9/KK	A.T/2021/07 0/KK	A.T/2021/10 4/KK	SRPL21-445-336FE	SRPL21-446-336FE	SRPL21-447-336FE	SRPL21-448-336FE	SRPL21-449-336FE	AH/22/K/20 /Jab/02	AH/22/K/20 /Mai/03	AH/22/K/20 /NW/04	AH/22/K/20 /Mr/01
Location	Trzebaw/ Poland	Koninek/ Poland	Dąbrowka/ Poland	Trzemięto-wo/ Po-land	Borkowo Kościelne/ Poland	Rąblów/ Po-land	Jankowice Wielkie/ Po-land	Słabomierz/ Poland	Gietrzwałd/ Poland	Janowiec Wielkopolski/ Poland	Jabłowo Pa-luckie/ Po-land	Małujowice/ Poland	Nowa Wieś/ Poland	Przybroda/ Poland
Plant /cultivar	maize/ P7948	maize/ Dy-namite	maize/ Ba-obi	maize/ LG 32.16	maize/ Opoka	maize/ PIO-NEER P8307	maize/ SY Talisman	maize/ SY Talisman	maize/ Ce-dro (FAO 200)	maize/ Ro-somak-HR SMOLICE	maize/ DKC3595	maize/ Ułan	maize/ Su-bito	maize/ DKC 3350
Seeding date	19.04.2021	08.05.2021	30.04.2021	27.04.2021	14.06.2021	31.05.2021	15.04.2021	07.05.2021	15.05.2021	10.05.2021	30.05.2022	23.05.2022	16.06.2022	30.04.2022
Seeding rate	85000 S/ha	80000 S/ha	90000 S/ha	83000 S/ha	83000 S/ha	86000 S/ha	70000 S/ha	90000 S/ha	110000 S/ha	90000 S/ha	85 000 S/ha	90 000 S/ha	80 000 S/ha	80 000 S/ha
Fore-crop	maize	winter wheat	maize	winter rye	English rye-grass	maize	winter bar-ley	sugar beet	winter wheat	winter wheat	maize	winter wheat	winter triti-cale	maize
Type of sprayer	BACCAI	BACCAI	BACCAI	BACCAI	BACCAI	SPRBIC	BACCAI	BACCAI	BACCAI	SPRBIC	BACCAI	BACCAI	BACCAI	SPRBIC
Date of treat-ment	31.05.2021	31.05.2021	08.06.2021	07.06.2021	26.06.2021	15.06.2021	05.05.2021	02.06.2021	07.06.2021	04.06.2021	22.06.2022	21.06.2022	12.07.2022	23.05.2022
Plant deve-lopment phase	BBCH 12-14	BBCH 12-14	BBCH 13-14	BBCH 13-14	BBCH 13-15	BBCH 12-13	BBCH 12-13	BBCH 13-14	BBCH 13-14	BBCH 12-13	BBCH 11-13	BBCH 13-15	BBCH 12-14	BBCH 14-15
Soil type	loamy sand	loamy sand	loamy sand	slit	loamy sand	slit loam	sandy loam	loam	loamy sand	sandy loam	loamy sand	loamy sand	sandy loam	sandy loam
pH	7.0	5.3	5.8	5.0	6.0	5.9	6.3	6.8	5.8	5.9	6.5	6.9	5.8	6.1
Water (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	300 L/ha	300 L/ha	230 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 104 trials have been carried out in maize in 2021 and 2022 in Poland.

The product CHR/H/DIK 480 SL has been used in maize in spring at the following rates of:

0.4, 0.5 and 0.6 L/ha – postemergence.

Tested herbicide was applied at the growth stage:

postemergence BBCH 12-15.

Table 3.2-10: Details on trial methodology

Guidelines	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 1/50(4) Weeds in maize
Experimental design	Plot design	Randomized Complete Block (RCB) – (14)
	Plot size	Maize postemergence: 12.0 m ² – 30.0 m ²
	Number of replications	4 (14)
Crop	Trials per crop	Maize postemergence (14 trails)
	Varieties per crop	Maize postemergence: P7948, Dynamite, Baobi, LG 32.16, Opoka, PIONEER P8307, SY Talisman, Cedro (FAO 200), Rosomak-HR SMOLICE, DKC3595, Ułan, Subito, DKC 3350
	Sowing period	Maize postemergence: 19.04.2021-14.06.2021; 30.04.2022-30.25.2022
Application	Crop stage (BBCH)* at application	Maize postemergence: BBCH 12-15
	Timing Pest stage at application (1)	The data available in Appendix 4
	Number of applications Intervals between applications	1 (14 trials), interval – n/a
	Spray volumes	Maize postemergence: 200-300 L/ha
Assessment	Assessment types	Assessment of efficacy Assessment of phytotoxicity
	Assessment dates	Assessment dates deatalis is available in Appendix 4
Other re-levant infor-mation	e.g. Soil type, pH (in case of soil active substance ...)	Maize postemergence: pH: 5.0-7.0
	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...

Crop(s) 1 AND/OR Target(s) 1

A total of 14 trials were carried out to evaluate the efficacy of product CHR/H/DIK 480 SL for the control of dicotyledonous weeds in maize.

3.2.3-1 Efficacy tests of CHR/H/DIK 480 SL

The 14 trials were carried out in maize in 2021 and 2022. The herbicide CHR/H/DIK 480 SL was applied once per season at the following rates of 0.4, 0.5, and 0.6 L/ha.

According to EPPO Standard PP 1/226 (3) basic number of efficacy trials is 10 (range 6-15):

The full number of trials is needed, particularly for plant protection products or active substances which not have been on the market in the EPPO region in which authorization is sought, or for intended uses for which no extrapolation of any aspect of efficacy from other uses is possible. There should be a high degree of confidence in the efficacy of a plant protection product when it is used against a major pest on a major crop. As a general guide, a total of 10 trials with results that are fully supportive of the direct efficacy (effectiveness) of the product should be sufficient to demonstrate efficacy against a major target pest species.

In addition, the guidelines of the Ministry of Agriculture and Rural Development also indicate a minimum of 6 efficacy trials carried out in a crop and it is possible to reduce the number of required years of testing to 1 season - provided that more than the required minimum number of trials is submitted. According to the mentioned guidelines, there is accepted when the weed occurs in at least 2 studies or in 4 - species of high harmfulness to a given crop.

The following number of studies were presented for the weeds:

POLCO – 7 (highly harmful species),

ANTAR – 6 (highly harmful species),

PLAMA – 3 (species of low harmfulness),

AMARE – 6 (highly harmful species).

Due to the fact that more than the required minimum number of trials was submitted for each weed, and that the test results are consistent and comparable, in the Applicant's opinion, it is reasonable to reduce the number of years of research to 1 and data from a single year are considered as sufficient.

For CHEAL, ARTVU, POLPE, VIOAR, CONAR, CIRAR and MATCH we have additional trials conducted in 2022.

3.2.3-1.1 The efficacy of CHR/H/DIK 480 SL in control of CHEAL *Chenopodium album*

The efficiency of CHR/H/DIK 480 SL in control of CHEAL *Chenopodium album* were investigated in 11 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to high level of efficacy 24-56 DA-A. The effectiveness fluctuated from 59.27–85.02%.

The effectiveness fluctuated at rate 0.4 L/ha from 38.75% (56 DA-A) to 74.30% (28 DA-A), at rate 0.5 L/ha from 53.75% (56 DA-A) to 81.80% (28 DA-A) and at rate 0.6 L/ha from 70.00% (25 DA-A) to 96.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 80.53% for Dicash 480 SL during the assessment (Appendix 5 tab. 1).

3.2.3-1.2 The efficacy of CHR/H/DIK 480 SL in control of ARTVU *Arthemis vulgaris*

The efficiency of CHR/H/DIK 480 SL in control of ARTVU *Arthemis vulgaris* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to medium level of efficacy 24-63 DA-A. The effectiveness fluctuated from 53.94–76.63%.

The effectiveness fluctuated at rate 0.4 L/ha from 40.00% (49 DA-A) to 68.00% (28 DA-A), at rate 0.5 L/ha from 56.30% (49 DA-A) to 80.00% (28 DA-A) and at rate 0.6 L/ha from 70.00% (49 DA-A) to 85.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 75.29% for Dicash 480 SL during the assessment (Appendix 5 tab. 2).

3.2.3-1.3 The efficacy of CHR/H/DIK 480 SL in control of POLCO *Fallopia convolvulus*

The efficiency of CHR/H/DIK 480 SL in control of POLCO *Fallopia convolvulus* were investigated in 7 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to high level of efficacy 25-56 DA-A. The effectiveness fluctuated from 64.29–87.16%.

The effectiveness fluctuated at rate 0.4 L/ha from 52.50% (25 DA-A) to 80.00% (28 DA-A), at rate 0.5 L/ha from 67.50% (56 DA-A) to 82.50 % (28 DA-A) and at rate 0.6 L/ha from 80.00% (25 DA-A) to 91.30% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 84.30% for Dicash 480 SL during the assessment (Appendix 5 tab. 3).

3.2.3-1.4 The efficacy CHR/H/DIK 480 SL in control of ANTAR *Anthemisa arvensis*

The efficiency of CHR/H/DIK 480 SL in control of ANTAR *Anthemisa arvensis* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low level of efficacy 24-56 DA-A. The effectiveness fluctuated from 36.56–56.05%.

The effectiveness fluctuated at rate 0.4 L/ha from 11.30% (56 DA-A) to 61.80% (28 DA-A), at rate 0.5 L/ha from 16.30% (56 DA-A) to 71.30 % (28 DA-A) and at rate 0.6 L/ha from 30.00% (56 DA-A) to 78.80% (28 DA-A).

The efficacy of the tested herbicide was slightly lower than the standard product. In the trials efficacy amounted above 61.69% for Dicash 480 SL during the assessment (Appendix 5 tab. 4).

3.2.3-1.5 The efficacy of CHR/H/DIK 480 SL in control of POLPE *Polygonum persicaria*

The efficiency of CHR/H/DIK 480 SL in control of POLPE *Polygonum persicaria* were investigated in 7 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to high level of efficacy 25-63 DA-A. The effectiveness fluctuated from 64.86–86.16%.

The effectiveness fluctuated at rate 0.4 L/ha from 50.00% (25 DA-A) to 82.50% (28 DA-A), at rate 0.5 L/ha from 70.00% (25 DA-A) to 86.30% (28 DA-A) and at rate 0.6 L/ha from 79.50% (28 DA-A) to 90.00% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 84.31% for Dicash 480 SL during the assessment (Appendix 5 tab. 5).

3.2.3-1.6 The efficacy of CHR/H/DIK 480 SL in control of VIOAR *Viola arvensis*

The efficiency of CHR/H/DIK 480 SL in control of VIOAR *Viola arvensis* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low level of efficacy 24-56 DA-A. The effectiveness fluctuated from 19.10–34.77%.

The effectiveness fluctuated at rate 0.4 L/ha from 0.00% (25 DA-A) to 20.00% (28 DA-A), at rate 0.5 L/ha from 0.00% (28 DA-A) to 63.30% (28 DA-A) and at rate 0.6 L/ha from 21.30% (28 DA-A) to 73.50% (28 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 33.57% for Dicash 480 SL during the assessment (Appendix 5 tab. 6).

3.2.3-1.7 The efficacy of CHR/H/DIK 480 SL in control of AMARE *Amaranthus retroflexus*

The efficiency of CHR/H/DIK 480 SL in control of AMARE *Amaranthus retroflexus* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to medium level of efficacy 24-56 DA-A. The effectiveness fluctuated from 48.75–75.01%.

The effectiveness fluctuated at rate 0.4 L/ha from 32.50% (56 DA-A) to 57.50% (56 DA-A), at rate 0.5 L/ha from 58.80% (56 DA-A) to 66.30% (56 DA-A) and at rate 0.6 L/ha from 70.00% (24 DA-A) to 78.80% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 75.57% for Dicash 480 SL during the assessment (Appendix 5 tab. 7).

3.2.3-1.8 The efficacy of CHR/H/DIK 480 SL in control of PLAMA *Plantago major*

The efficiency of CHR/H/DIK 480 SL in control of PLAMA *Plantago major* were investigated in 3 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the medium to high level of efficacy 24-28 DA-A. The effectiveness fluctuated from 74.43–94.50%.

The effectiveness fluctuated at rate 0.4 L/ha from 70.00% (28 DA-A) to 78.30% (24 DA-A), at rate 0.5 L/ha from 82.50% (28 DA-A) to 87.80% (24 DA-A) and at rate 0.6 L/ha from 92.50% (28 DA-A) to 96.00% (24 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 93.67% for Dicash 480 SL during the assessment (Appendix 5 tab. 8).

3.2.3-1.9 The efficacy of CHR/H/DIK 480 SL in control of CONAR *Convolvulus arvensis*

The efficiency of CHR/H/DIK 480 SL in control of CONAR *Convolvulus arvensis* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to medium level of efficacy 28-63 DA-A. The effectiveness fluctuated from 61.92–80.90%.

The effectiveness fluctuated at rate 0.4 L/ha from 45.00% (56 DA-A) to 82.50% (63 DA-A), at rate 0.5 L/ha from 52.50% (56 DA-A) to 75.00% (56 DA-A) and at rate 0.6 L/ha from 68.80% (49 DA-A) to 90.00% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 74.70% for Dicash 480 SL during the assessment (Appendix 5 tab. 9).

3.2.3-1.10 The efficacy of CHR/H/DIK 480 SL in control of CIRAR *Cirsium arvense*

The efficiency of CHR/H/DIK 480 SL in control of CIRAR *Cirsium arvense* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the low to medium level of efficacy 25-56 DA-A. The effectiveness fluctuated from 58.13–79.63%.

The effectiveness fluctuated at rate 0.4 L/ha from 38.75% (28 DA-A) to 72.50% (56 DA-A), at rate 0.5 L/ha from 50.00% (28 DA-A) to 85.00% (25 DA-A) and at rate 0.6 L/ha from 57.50% (28 DA-A) to 92.30% (56 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 78.84% for Dicash 480 SL during the assessment (Appendix 5 tab. 10).

3.2.3-1.11 The efficacy of CHR/H/DIK 480 SL in control of MATCH *Matricaria chamomilla*

The efficiency of CHR/H/DIK 480 SL in control of MATCH *Matricaria chamomilla* were investigated in 6 trials. The tested product at rates: 0.4 L/ha, 0.5 L/ha and 0.6 L/ha controlled this species of weed at the medium to high level of efficacy 25-63 DA-A. The effectiveness fluctuated from 71.01–87.47%.

The effectiveness fluctuated at rate 0.4 L/ha from 41.25% (56 DA-A) to 88.00% (63 DA-A), at rate 0.5 L/ha from 58.75% (56 DA-A) to 97.30% (63 DA-A) and at rate 0.6 L/ha from 75.00% (56 DA-A) to 100% (63 DA-A).

The efficacy of the tested herbicide was comparable to the standard product. In the trials efficacy amounted above 86.27% for Dicash 480 SL during the assessment (Appendix 5 tab. 11).

Conclusions on the biological efficacy

The obtained data in performed trials show that CHR/H/DIK 480 SL provides benefits against the most important weeds in maize 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 maize:

Product code (L, kg/ha)	EPPO code	Scientific name	DA-A	Pest stage	Average	Efficacy
CHR/H/DIK 480 SL 0.4 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	59.27	T
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	53.94	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	64.29	MT
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	36.56	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	64.86	MT
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	19.10	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	48.75	T
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	74.43	MS
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	61.92	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	58.13	T
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	71.01	MS
CHR/H/DIK 480 SL 0.5 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	69.68	MT
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	67.27	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	72.93	MS
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	46.48	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	75.17	MS
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	24.52	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	62.53	MT
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	85.93	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	65.45	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	71.43	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	80.59	MS
CHR/H/DIK 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	85.02	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	76.63	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	87.16	S
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	56.05	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	86.16	S
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	34.77	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.01	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	94.50	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	80.90	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	79.63	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.85	S
Dicash 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	87.47	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	75.29	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	84.30	MS
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	61.69	MT
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	84.31	MS

	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	33.57	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.57	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	93.67	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	74.70	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	78.84	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.27	S

On the basis of submitted research, it is possible to state that CHR/H/DIK 480 SL used at dose controlled:

Dose CHR/H/DIK 480 SL 0.4 L/ha

Moderately Susceptible: *Plantago major* (PLAMA), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Convolvulus arvensis* (CONAR),

Tolerant: *Chenopodium album* (CHEAL), *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR), *Amaranthus retroflexus* (AMARE), *Cirsium arvense* (CIRAR),

Dose CHR/H/DIK 480 SL 0.5 L/ha

Susceptible: *Plantago major* (PLAMA)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Cirsium arvense* (CIRAR), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Chenopodium album* (CHEAL), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

Dose CHR/H/DIK 480 SL 0.6 L/ha

Susceptible: *Fallopia convolvulus* (POLCO), *Plantago major* (PLAMA), *Polygonum persicaria* (POLPE), *Chenopodium album* (CHEAL), *Matricaria chamomilla* (MATCH)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR), *Cirsium arvense* (CIRAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

Table 3.2-1: Efficacy of product CHR/H/DIK 480 SL at the timing of assessment

Target	CHR/H/DI K 480 SL at rate	Num- ber of trials	Infestation in the un- treated control (unit)		% control				No of trials where product is >, <, = com- pared to stand- ard(s)**
					CHR/H/DIK 480 SL at rate		Dicash 480 SL at rate 0.6 L/ha		
			Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	
<i>Chenopodium album</i>	0.4	11	16.8	8.0 & 28.5	59.27	38.75 & 74.30	80.53	70.00 & 91.30	-
	0.5				69.68	53.75 & 81.80			-
	0.5				85.02	70.00 & 96.00			-
<i>Arthemis vul- garis</i>	0.4	6	5.5	4.0 & 6.5	53.94	40.00 & 68.00	75.29	67.50 & 85.00	-
	0.5				67.27	56.30 & 80.00			-
	0.5				76.63	70.00 & 85.00			-
<i>Fallopia convolvulus</i>	0.4	7	6.6	5.0 & 9.0	64.29	52.50 & 80.00	84.30	73.80 & 91.30	-
	0.5				72.93	67.50 & 82.50			-
	0.5				87.16	80.00 & 91.30			-

<i>Anthemis arvensis</i>	0.4	6	8.5	5.0 & 16.0	36.56	11.30 & 61.80	61.69	45.00 & 78.80	-
	0.5				46.48	16.30 & 71.30			-
	0.5				56.05	30.00 & 78.80			-
<i>Polygonum persicaria</i>	0.4	7	6.1	5.0 & 9.5	64.86	50.00 & 82.50	84.31	78.80 & 90.00	-
	0.5				75.17	70.00 & 86.30			-
	0.5				86.16	79.50 & 90.00			-
<i>Viola arvensis</i>	0.4	6	12.2	5.0 & 32.0	19.10	0.00 & 63.30	33.57	21.30 & 68.80	-
	0.5				24.52	10.00 & 63.30			-
	0.5				34.77	21.30 & 73.50			-
<i>Amaranthus retroflexus</i>	0.4	6	8.2	5.0 & 13.0	48.75	32.50 & 57.50	75.57	70.80 & 80.00	-
	0.5				62.53	58.80 & 66.30			-
	0.5				75.01	70.00 & 78.80			-
<i>Plantago major</i>	0.4	3	5.0	5.0 & 5.0	74.43	70.00 & 78.30	93.67	90.00 & 96.00	-
	0.5				85.93	82.50 & 87.80			-
	0.5				94.50	92.50 & 96.00			-
<i>Convolvulus arvensis</i>	0.4	6	6.5	5.0 & 8.0	61.92	45.00 & 82.50	74.70	66.30 & 93.80	-
	0.5				65.45	52.50 & 75.00			-
	0.5				80.90	68.80 & 90.00			-
<i>Cirsium arvense</i>	0.4	6	6.2	5.0 & 8.0	58.13	38.75 & 60.00	78.84	62.50 & 88.50	-
	0.5				71.43	50.00 & 85.00			-
	0.5				79.63	57.50 & 92.30			-
<i>Matricaria chamomilla</i>	0.4	6	7.8	5.0 & 11.0	71.01	41.25 & 88.00	86.27	77.30 & 100	-
	0.5				80.59	58.75 & 97.30			-
	0.5				87.47	75.00 & 100			-

* 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

Crop(s) 2 / Target(s) 2

Not applicable

Minor use

Not applicable

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

Not applicable

Table 3.2-2: Yield (quality) effect of product in efficacy trials on crop * target 1

Not applicable

Summary and conclusion

Not applicable

Study Comments: 3.2.3	
dRR point 3.2.3	
EN: Evaluator conclusion:	

Control of weeds in the North-east EPPO climatic zone (Poland)

The applicant submitted 14 trials carried out in 2021, 2022 in maize (BBCH 11-15, varieties: P7948, Dynamite, Baobi, LG 32.16, Opoka, Pioneer, SY talisman, Cedro, Rosomak_HR Smolice, DK3595, Ułan, Subito, DKC 3350) in different regions of Poland.

For POLCO, ANTAR AMARE, PLAMA the trials were conducted during one season. The Applicant explained this decision by pointing to the consistency of the results and by supporting the single season trials with more than 2 or 4 trials (POLCO - 7, ANTAR - 6, PLAMA - 3, AMARE - 6). The explanation is acceptable.

Efficacy trials were carried out by organizations that are officially recognized as competent to carry out efficacy testing in accordance with Regulation (EC) 284/2013. All trials have been conducted according to GEP.

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

1. PP 1/181 (4) Conduct and reporting of efficacy evaluation trials including good experimental practice.

2. PP 1/135 (3/4) Phytotoxicity assessment

3. PP 1/50 (4) Weeds in maize

4. PP 1/152(4) Design and analysis of efficacy evaluation trials

Results of experiments (data on effectiveness) are contained in Appendix 5.

Trials were conducted in Poland (NE EPPO climatic zone). Trials were of randomized block design with a minimum of four replicates. Details on trial sites, applications are contained in Appendix 3 and 4 and in the table Details of experiments.

The susceptibility of weeds were evaluated according to the criteria presented below, established for PL.

Weed species are classified as:

susceptible (S) –	85%
moderately susceptible (MS) -	70-85%
moderately tolerant (MT)	60 -70%
tolerant (T)	< 60%

The tested herbicide was applied at the rates: 0,2 l/ha, 0,3 l/ha, 0,35 l/ha, 0,4 l/ha of CHR/H/DIK 480 SL (spray volume 200 – 300 l/ha) in maize as a single post-emergence application against dicots weeds. The most effective dose rate was 0,6 l/ha, as it ensured more consistent control of all targeted weeds in presented trials and gave similar results to reference product at three times of assessment (14 DAA and 21-28 DAA and 56 DAA).

In accordance with GAP table results are presented below for the dose rate 0,6 l/ha. The first assessment was conducted 14 DAA, the second one 21-28 DAA. For some weeds third assessment was done – 56 DAA giving valuable information concerning long activity of the product.

Species of weeds (no of trials)	Efficacy in maize [%]			
	21-28 DAA		56 DAA	
	0,6 l/ha	Ref.	0,6 l/ha	Ref.
CHEAL (11 +5)	81,7 (66,3 – 96,0)	76,7 (65,0 – 91,3)	89,9 (75,0 – 95,0)	81,0 (73,8 – 91,3)
ARTVU (7)	76,6 (70,0 – 85,0)	75,3 (67,5 – 85,0)	-	-
POLCO (7 + 3)	80,9 (60,0 – 91,3)	79,1 (56,3 – 91,3)	87,9 (85,0 – 90,0)	80,4 (73,8 – 87,5)
ANTAR (6 + 2)	55,3	58,6	52,5	68,8

		(30,0 – 78,8)	(45,0 – 78,8)	(30,0 – 75,0)	(58,5 – 78,8)
POLPE (4 + 1)		81,0 (65,0 – 90,0)	79,7 (60,0 – 90,0)	85,0	78,8
VIOAR (6)		34,8 (21,3 – 73,5)	33,6 (21,3 – 68,8)	-	-
AMARE (6 + 3)		71,7 (63,8 – 77,5)	71,4 (60,0 – 77,5)	77,5 (76,3 – 78,8)	78,3 (77,5 – 80,0)
PLAMA (3)		94,5 (92,5 – 96,0)	93,7 (90,0 – 96,0)	-	-
CONAR (6 + 2)		78,4 (68,8 – 88,8)	81,4 (66,3 – 100)	89,4 (88,8 – 90,0)	81,9 (70,0 – 93,8)
CIRAR (6 + 1)		75,9 (47,5 – 92,3)	75,3 (46,3 – 88,5)	61,3 (57,5 – 65,0)	63,1 (62,5 – 63,7)
MATCH (6 + 1)		87,1 (72,5 – 100)	85,6 (73,8 – 100)	75,0	77,5

In the bracket after the “+” sign, the number of trials in which the assessment was also 56 DAA

The product performed comparable or better to the reference product.

In a limited number of studies, the product showed long control (up to 56 DAA) against CONAR, CHEAL, POLCO, AMARE, MATCH, ANTAR and CIRAR, at similar level to 21-28 DAA.

At the dose rate 0,6 l/ha, the target weed species were categorized as:

- susceptible (S): CHEAL, POLCO, POLPE, PLAMA, MATCH
- moderately susceptible (MS): ARTVU, AMARE, CIRAR, CONAR
- tolerant (T): ANTAR, VIOAR

To sum up, it might be concluded that the application of CHR/H/DIK 480 SL at dose rate 0,6 l/ha (spray volume 200 - 300 l/ha), post-emergence, provided benefit against dicots weeds in maize comparable or better to the standard product Dicash 480 SL. CHR/H/DIK 480 SL caused insufficient (tolerant) susceptibility to ANTAR and VIOAR. There is a need to make an appropriate label statement.

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

3.3.1 Mode of action

CHR/H/DIK 480 SL is a herbicide containing active substance dicamba 480 g/L. Dicamba belongs to the benzoic acid chemical family. According to HRAC, dicamba is a Group 4 herbicide (Synthetic Auxins) whose action mimics indoleacetic acid (IAA). Synthetic Auxins and Auxin Transport Inhibitors are generally used for controlling broadleaf weeds in grass crops, pastures, and industry. These herbicides include some of the more effective chemicals for perennial broadleaf weed and brush control. These herbicides, also known as plant growth regulators, are readily absorbed through both roots and foliage and translocate by phloem or xylem to meristematic tissue interfering with cell formation that results in abnormal root and shoot growth. The killing action of synthetic auxins is not caused by any single factor but rather by the disruption of several growth processes in susceptible plants. It seems, however, that the primary action of these herbicides is likely to affect cell wall plasticity and nucleic acid metabolism. Synthetic auxins also affect protein synthesis, cell division and growth, and stimulate ethylene evolution, which may in some

cases produce the characteristic epinastic symptoms associated with exposure to these herbicides.

3.3.2 Mechanism of resistance

CHR/H/DIK 480 SL is a herbicide containing active substance dicamba 480 g/L, which belong to HRAC group 4 – Synthetic Auxins. According HRAC Resistance of weed biotypes to herbicides is a consequence of naturally occurring mutations and evolutionary processes. Individuals within a species that are best adapted and not susceptible to a particular practice, such as application of a specific herbicide, are selected for and will increase in the population. Mitigating or slowing the evolution of herbicide resistance relies on reducing selection pressure for resistance through application of a diversity of weed management practices. There are two general categories of resistance mechanisms, target-site resistance and non-target-site resistance. Target-site resistance inhibits herbicide action by: a change in structure of the target protein that decreases herbicide binding to its usual site of action; an increase in target protein expression; or an increase in copies of the gene containing the target site. Non-target-site resistance includes decreased translocation of an herbicide to its site of action, increased metabolic detoxification of an herbicide, and sequestration or immobilization of an herbicide in a part of the plant so it cannot reach its site of action. 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

Dicamba is grouped into the benzoic acid chemical group. The mode of action is based on the the regulation of plant growth (HRAC group: 4, legacy O). 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 nine species which have been reported as resistant to dicamba: *Sinapis arvensis*, *Kochia scoparia*, *Galeopsis tetrahit*, *Chenopodium album*, *Lactuca serriola*, *Centaurea cyanus*, *Amaranthus hybridus* (syn: *quitensis*), *Raphanus raphanistrum* and *Amaranthus palmeri* (Table 1). The most of cases reported have been in the North and South America. Only one resistance case have been reported in Europe: *Centaurea cyanus* in 2012 in Poland.

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

Table 1. Herbicide resistance cases to dicamba

Year	Species	Country	Actives	Situations
1990	<i>Sinapis arvensis</i>	Canada	dicamba, MCPA, 2,4-D, dichlorprop, mecoprop, picloram	Spring Barley, Cropland, Wheat
1994	<i>Kochia scoparia</i>	United States	dicamba, fluroxypyr	Cropland, Wheat
1995	<i>Kochia scoparia</i>	United States	dicamba	Wheat
1997	<i>Kochia scoparia</i>	United States	dicamba	Roadsides
1998	<i>Galeopsis tetrahit</i>	Canada	dicamba, MCPA, fluroxypyr	Spring Barley, Cereals, Cropland, Wheat
1999	<i>Kochia scoparia</i>	United States	dicamba	Corn (maize)
2005	<i>Chenopodium album</i>	New Zealand	dicamba, clopyralid, aminopyralid	Corn (maize)
2007	<i>Lactuca serriola</i>	United States	dicamba, MCPA, 2,4-D	Cereals
2008	<i>Sinapis arvensis</i>	Turkey	thifensulfuron-methyl, tribenuron-methyl, triasulfuron, dicamba, propoxycarbazone-Na	Wheat
2009	<i>Kochia scoparia</i>	United States	dicamba	Corn (maize)
2012	<i>Centaurea cyanus</i>	Poland	dicamba	Winter wheat
2013	<i>Kochia scoparia</i>	United States	chlorsulfuron, atrazine, glyphosate, dicamba	Corn (maize)
2013	<i>Kochia scoparia</i>	United States	glyphosate, dicamba, fluroxypyr	Corn (maize), Sorghum

2015	<i>Kochia scoparia</i>	Canada	thifensulfuron-methyl, tribenuron-methyl, dicamba, fluroxypyr	Spring wheat
2016	<i>Amaranthus hybridus</i> (syn: <i>quitensis</i>)	Argentina	glyphosate, dicamba, 2,4-D	Soybean
2016	<i>Amaranthus hybridus</i> (syn: <i>quitensis</i>)	Argentina	dicamba, 2,4-D	Soybean
2017	<i>Kochia scoparia</i>	Canada	thifensulfuron-methyl, tribenuron-methyl, glyphosate, dicamba	Corn (maize), Lentils, Wheat, Canola, Peas, Winter barley, Fallow
2020	<i>Raphanus raphanistrum</i>	Australia	metsulfuron-methyl, dicamba, 2,4-D, meso-trione, pyrasulfotole, topramezone	Wheat
2020	<i>Amaranthus palmeri</i>	United States	glyphosate, dicamba	Cotton, Soybean

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.

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.

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).

Cross resistance occurs mainly in the group of ALS inhibitors, acetyl-CoA carboxylase (ACCase)-inhibitors and photosystem two (PS2)-inhibitors. There is no evidence to cross resistance to Group 4 herbicide (Synthetic Auxins), including dicamba.

3.3.5 Sensitivity data

Applicant didn't conduct separately trials for sensitivity data, this data was evaluated in efficacy trials. The 14 field trials use were established in order to determine the sensitivity of weeds in maize. The CHR/H/DIK 480 SL was tested at doses: 0.4, 0.5 and 0.6 L/ha (postemergence application) in maize for the control of dicot weeds. Detailed studies on the weeds sensitivity are submitted and summarised in 3.2 Efficacy data (KCP 6.2).

3.3.6 Use pattern

Herbicide CHR/H/DIK 480 SL has demonstrated good crop tolerance to maize. Therefore concluded that CHR/H/DIK 480 SL is safe usage at proposed rate and this support the label claim for the use in maize. 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:

maize:

Recommended dose at:

CHR/H/DIK 480 SL 0.6 L/ha – postemergence application.

CHR/H/DIK 480 SL is to be applied in spring in maize: BBCH 12- 15 16.

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

Recommended medium droplet spraying

The product CHR/H/DIK 480 SL should be use once per season at spring postemergence. To avoid resistance, products contain active substance with the same group shouldn't be used year after year on the same field.

Use of CHR/H/DIK 480 SL according to the proposed GAP does not represent a hazard to rotational crops and does not justify a specific labelling. CHR/H/DIK 480 SL is not persistent in soil nor is it taken up by succeeding crops.

3.3.7 Resistance risk assessment of unrestricted usepattern

Not applicable

3.3.8 Test methods

Not applicable

3.3.9 Acceptability of the resistance risk

Dicamba is grouped into the benzoic acid chemical group. The mode of action is based on the the regulation of plant growth (HRAC group: 4, legacy O). 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 nine species which have been reported as resistant to dicamba: *Sinapis arvensis*, *Kochia scoparia*, *Galeopsis tetrahit*, *Chenopodium album*, *Lactuca serriola*, *Centaurea cyanus*, *Amaranthus hybridus* (syn: *quitensis*), *Raphanus raphanistrum* and *Amaranthus palmeri*. The most of cases reported have been in the North and South America. Only one resistance case have been reported in Europe: *Centaurea cyanus* in 2012 in Poland.

CHR/H/DIK 480 SL is a herbicide containing active substance dicamba 480 g/L, which belong to HRAC group 4 – Synthetic Auxins. Accroding 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.

3.3.10 Management strategy

Accroding 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.

Study Comments: 3.3 dRR point 3.3	EN: Strategy is acceptable.
<p>CHR/H/DIK 480 SL contains one active ingredient: dicamba 480 g/l, which belong to HRAC Group 4 (Legacy O) – synthetic auxins. It is included to the chemical family of benzoic acid and its mode of action is to mimic indoleacetic acid causing inhibition of auxins transport in plants.</p> <p>In accordance with International Herbicide-Resistant Weed Database, all resistant strains of weeds were found outside UE. <i>Centaurea cyanus</i> resistant strain was found in PL in winter wheat.</p> <p>A pattern of unrestricted use pattern of the product to prevent resistance development in weeds is unacceptable. Therefore, the risk of resistance to active substance contained in CHR/H/DIK 480 SL may be considered acceptable, if CHR/H/DIK 480 SL is applied in accordance with the principles established in the HRAC management strategy, which should be included in the label.</p>	

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			
Maize	Poland	S + Y + Q	8	2021	GEP	-
TOTAL	-	-	8	2021	-	-

* 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 rate ⁽³⁾	Application rate in trials (per treatment)	Remark ⁽⁴⁾
					Type ⁽²⁾	Concentration of a.s.			
maize	Dicash 480 SL	Poland	R-155/2016	dicamba	SL – Soluble (liquid) concentrate	480 g/L	0.6 L/ha	0.6 L/ha	-

(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 8 reports (in total) showing the results in research into product selectivity carried out in 2021 in maize. List of these reports is contained in Appendix 1.

Site

Trials were conducted in different regions in Poland where maize 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/DIK 480 SL were performed in 2021 by:

- 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 1/050 (4) Weeds in maize

Assessment methods

Statistical Analysis

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 phytotoxicity

The selectivity was assessed by a visual estimation of an intensity of chlorosis, necrosis, leave curling etc. found on overall areas of treated plots, with references to untreated plots. The results were described in percent destruction of herbicide-treated plants compared to untreated plants, where 0% means no phytotoxicity and 100% means complete destruction of crops.

Harvest

Maize were harvested by hand. Cobs were harvested from 60 plants from the two central rows of each plot. The samples for each plots were analyzed for moisture and thousand weight grain. Grain yield was converted to standard moisture (14%).

Applications methods and rates

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

Tested herbicide was applied at the growth stage:

postemergence BBCH 12-15 in maize.

The product CHR/H/DIK 480 SL has been used in maize at the following rates of:

0.6 and 1.2 L/ha – postemergence.

Dicash 480 SL was used as a reference product in maize.

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

Experiment pattern:

MAIZE PREEMERGENCE APPLICATION

No.	Name	Rate (L/ha)	other rate (g a.s./ha)	Appl code	Growth Stage BBCH
1	Untreated Check				

2	CHR/H/DIK 480 SL	0.6 L/ha	288 g a.s./ha	A	BBCH 12-15
3	CHR/H/DIK 480 SL	1.2 L/ha	576 g a.s./ha	A	BBCH 12-15
4	Dicash 480 SL	0.6 L/ha	288 g a.s./ha	A	BBCH 12-15
5	Dicash 480 SL	1.2 L/ha	576 g a.s./ha	A	BBCH 12-15

Details of experiments

Report code	A.T/2021/072/KK	A.T/2021/073/KK	A.T/2021/074/KK	A.T/2021/075/KK	A.T/2021/076/KK	AH/21/K/16/ZŁ/01	AH/21/K/16/BR/02	AH/21/K/16/GR/03
Location	Chludowo/ Poland	Orzelski Młyn/ Poland	Trzciany/ Poland	Szapsk/ Poland	Studzieniec/ Poland	Złotniki/ Poland	Brody/ Poland	Gorzyń/ Poland
Plant /cultivar	maize/ DKC 3595	maize/ Amavit	maize/ ES Perspective	maize/ Farmrock	maize/ Farnezzo	maize/ FARMO-DENA	maize/ FARM-FIIRE	maize/ DKC 3350
Seeding date	26.04.2021	29.04.2021	01.05.2021	05.05.2021	05.05.2021	30.04.2021	26.04.2021	10.05.2021
Seeding rate	78000 S/ha	80000 S/ha	75000 S/ha	83000 S/ha	83000 S/ha	80000 S/ha	80000 S/ha	80000 S/ha
Forecrop	maize	winter triticale	winter rye	English ryegrass	maize	soybean	winter wheat	winter wheat
Type of sprayer	BACCAI	BACCAI	BACCAI	BACCAI	BACCAI	BICSPR	BOSPHO	BOSPHO
Date of treatment	28.05.2021	07.06.2021	14.06.2021	31.05.2021	07.06.2021	25.05.2021	24.05.2021	07.06.2021
Plant development phase	BBCH 12-13	BBCH 13-14	BBCH 14-15	BBCH 12-14	BBCH 14-15	BBCH 13	BBCH 12	BBCH 13
Soil type	loamy sand	sandy loam	loamy sand	sand	sand	loamy sand	loamy sand	loamy sand
pH	6.1	5.9	5.8	5.9	5.9	6.1	6.8	6.0
Water (L/ha)	200 L/ha	200 L/ha	200 L/ha	200 L/ha	300 L/ha	200 L/ha	230 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.

Table 3.4-3: Phytotoxicity of product

The 8 selectivity trials and 14 efficacy trials in maize were carried out in Poland in 2021 and 2022 on a wide range of commercially grown varieties. There were not observed any phytotoxicity symptoms on tested product and standard in trials.

Number of trials with		Selectivity trials (8)				Efficacy trials (14)	
		CHR/H/DIK 480 SL		Dicash 480 SL		CHR/H/DIK 480 SL	Dicash 480 SL
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	n/a	n/a	n/a	n/a	n/a	n/a
	>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
Level of symptoms at the last assessments	0% to 5%	n/a	n/a	n/a	n/a	n/a	n/a
	>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

Study Comments: 3.4.1 dRR point 3.4.1	Studies are acceptable.
Phytotoxicity symptoms were checked in 8 selectivity trials (BBCH: 12-15, varieties: DKC 3595, Amavit, ES Perspective, Farmrock, Farnezzo, Farmodena, Farmfiire, DKC 3350). CHR/H/DIK 480 SL was applied at the dose rate of 0,6 l product/ha (1N) and 1,2 l/ha (2N) and compared to the reference product – Dicash 480 SL. The phytotoxicity symptoms were also checked in 14 efficacy trials (BBCH 11-15). No symptoms of negative product performance on crop were found. It can be concluded that crop safety of CHR/H/DIK 480 SL application in maize can be claimed.	

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

Influence of CHR/H/DIK 480 SL 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 8 field experiments in maize in 2021. There weren't difference between the treatment objects and standard.

table 3.4.2.1-1 The influence of the CHR/H/DIK 480 SL on yield quantity [t/ha]

Crop code			maize yield t/ha							AverageMin.Max.			
Report code			A.T/2021/072/ KK	A.T/2021/073/ KK	A.T/2021/074/ KK	A.T/2021/075/ KK	A.T/2021/076/ KK	AH/21/K/16/Z L/01	AH/21/K/16/B R/02				AH/21/K/16/G R/03
Application date			28.05.2021	07.06.2021	14.06.2021	31.05.2021	07.06.2021	25.05.2021	24.05.2021				07.06.2021
Crop stage in application			BBCH 12-13	BBCH 13-14	BBCH 14-15	BBCH 12-14	BBCH 14-15	BBCH 13	BBCH 12				BBCH 13
Assessment date			13.10.2021	01.10.2021	15.10.2021	07.10.2021	08.10.2021	04.11.2021	26.10.2021				28.10.2021
Days after application DA-A			138 DA-A	116 DA-A	123 DA-A	129 DA-A	123 DA-A	163 DA-A	155 DA-A				143 DA-A
Crop stage majority			BBCH 99	BBCH 99	BBCH 99	BBCH 89	BBCH 89	BBCH 99	BBCH 99				BBCH 99
N o.	Name	Rate (L, kg/ha)											
1	Untreated Check	-	11.66	10.93	11.88	11.22	8.59	7.30	8.40	9.10	9.89	7.30	11.88
2	CHR/H/DIK 480 SL	0.60	11.45	11.01	11.80	11.56	9.17	7.70	9.00	8.80	10.06	7.70	11.80
3	CHR/H/DIK 480 SL	1.20	11.49	10.97	12.05	11.53	9.29	7.80	9.20	10.10	10.30	7.80	12.05
4	Dicash 480 SL	0.60	11.57	11.04	12.10	11.69	9.12	7.50	8.10	9.40	10.07	7.50	12.10
5	Dicash 480 SL	1.20	11.34	10.77	11.50	11.48	8.68	7.80	8.70	9.70	10.00	7.80	11.50
LSD(P=.05)			1.805	0.409	1.168	0.955	1.522	0.390	1.090	0.990			

table 3.4.2.1-2 The influence of the CHR/H/DIK 480 SL on cob yield quantity [t/ha]

Crop code			maize cob yield t/ha							
Report code			A.T/2021/072/KK	A.T/2021/073/KK	A.T/2021/074/KK	A.T/2021/075/KK	A.T/2021/076/KK			
Application date			28.05.2021	07.06.2021	14.06.2021	31.05.2021	07.06.2021			
Crop stage in application			BBCH 12-13	BBCH 13-14	BBCH 14-15	BBCH 12-14	BBCH 14-15			
Assessment date			13.10.2021	01.10.2021	15.10.2021	07.10.2021	08.10.2021			
Days after application DA-A			138 DA-A	116 DA-A	123 DA-A	129 DA-A	123 DA-A			
Crop stage majority			BBCH 99	BBCH 99	BBCH 99	BBCH 89	BBCH 89	Average	Min.	Max.
No.	Name	Rate (L, kg/ha)								
1	Untreated Check	-	16.63	16.13	19.28	17.11	12.73	16.38	12.73	19.28
2	CHR/H/DIK 480 SL	0.60	16.65	16.46	19.29	17.46	13.12	16.60	13.12	19.29
3	CHR/H/DIK 480 SL	1.20	16.09	16.45	19.68	17.39	13.40	16.60	13.40	19.68
4	Dicash 480 SL	0.60	16.28	16.40	19.66	17.33	13.44	16.62	13.44	19.66
5	Dicash 480 SL	1.20	16.01	15.78	18.98	17.49	12.70	16.19	12.70	18.98
LSD(P=.05)			2.604	0.790	1.866	1.677	1.552			

Table 3.4-4: Relationship between phytotoxicity and yield.

Not applicable.

There were not observed any phytotoxicity symptoms on tested product and standard in trials. This effects didn't have any negative effect on the yield of maize.

Study Comments: 3.4.2 dRR point: 3.4.2	Studies are acceptable
The Applicant presented data obtained from 8 selectivity trials. CHR/H/DIK 480 SL at the rates 1N and 2N had no negative effect on the yield of maize.	

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

The influence of CHR/H/DIK 480 SL on quality of grain was evaluated in 8 field experiments in maize in 2021. There weren't difference between the treatment objects and standard.

There weren't difference between the treatment objects and standard.

Details of the data shows tables below.

table 3.4.3.1-1 The influence of the CHR/H/DIK 480 SL on quality of yield
maize (HLW = weight 100 Ltr (hl))

Crop code			maize HLW kg/Hl					
Report code			AH/21/K/16/ZL/01	AH/21/K/16/BR/02	AH/21/K/16/GR/03			
Application date			25.05.2021	24.05.2021	07.06.2021			
Crop stage in application			BBCH 13	BBCH 12	BBCH 13			
Assessment date			04.11.2021	26.10.2021	28.10.2021			
Days after application DA-A			163 DA-A	155 DA-A	143 DA-A			
Crop stage majority			BBCH 99	BBCH 99	BBCH 99	Average	Min.	Max.
No.	Name	Rate (L, kg/ha)						
1	Untreated Check	-	85.18	65.05	66.08	72.10	65.05	85.18
2	CHR/H/DIK 480 SL	0.60	87.45	65.15	68.08	73.56	65.15	87.45
3	CHR/H/DIK 480 SL	1.20	85.45	66.13	66.75	72.78	66.13	85.45
4	Dicash 480 SL	0.60	85.60	65.03	67.65	72.76	65.03	85.60
5	Dicash 480 SL	1.20	87.80	65.55	68.30	73.88	65.55	87.80
LSD(P=.05)			2.662	1.635	2.563			

table 3.4.3.1-2 The influence of the CHR/H/DIK 480 SL on quality of yield
maize thousand weight grain

Crop code			maize TKW g										
Report code			A.T/2021/072/ KK	A.T/2021/073/ KK	A.T/2021/074/ KK	A.T/2021/075/ KK	A.T/2021/076/ KK	AH/21/K/16/ZL/ 01	AH/21/K/16/BR/ 02	AH/21/K/16/GR/ 03			
Application date			28.05.2021	07.06.2021	14.06.2021	31.05.2021	07.06.2021	25.05.2021	24.05.2021	07.06.2021			
Crop stage in applica- tion			BBCH 12-13	BBCH 13-14	BBCH 14-15	BBCH 12-14	BBCH 14-15	BBCH 13	BBCH 12	BBCH 13			
Assessment date			22.10.2021	22.10.2021	22.10.2021	22.10.2021	22.10.2021	04.11.2021	26.10.2021	28.10.2021			
Days after application DA-A			147 DA-A	137 DA-A	130 DA-A	144 DA-A	137 DA-A	163 DA-A	155 DA-A	143 DA-A			
Crop stage majority			BBCH 99	BBCH 99	BBCH 99	BBCH 89	BBCH 89	BBCH 99	BBCH 99	BBCH 99	Ave- rage	Min.	Max.
No .	Name	Rate (L, kg/ha)											
1	Untreated Check	-	417.00	369.13	363.05	236.56	215.00	349.60	321.10	361.80	329.1 6	215.0 0	417.0 0
2	CHR/H/DI K 480 SL	0.60	416.25	367.03	364.60	243.88	214.70	347.80	316.30	350.10	327.5 8	214.7 0	416.2 5
3	CHR/H/DI K 480 SL	1.20	409.25	369.65	361.93	239.69	215.81	357.50	325.50	357.10	329.5 5	215.8 1	409.2 5
4	Dicash 480 SL	0.60	426.13	369.05	349.73	242.44	219.81	361.20	315.00	342.10	328.1 8	219.8 1	426.1 3
5	Dicash 480 SL	1.20	417.00	369.23	349.25	230.00	214.50	351.00	316.90	371.40	327.4 1	214.5 0	417.0 0
LSD(P=.05)			35.327	11.890	20.259	9.605	11.063	10.560	17.890	37.540			

table 3.4.3.1-3 The influence of the CHR/H/DIK 480 SL on quality of yield
maize moisture content

Crop code			maize moisture content %									
Report code			A.T/2021/072/ KK	A.T/2021/073/ KK	A.T/2021/074/ KK	A.T/2021/075/ KK	A.T/2021/076/ KK	AH/21/K/16/ZL/ 01	AH/21/K/16/BR/ 02	AH/21/K/16/GR/ 03		
Application date			28.05.2021	07.06.2021	14.06.2021	31.05.2021	07.06.2021	25.05.2021	24.05.2021	07.06.2021		
Crop stage in application			BBCH 12-13	BBCH 13-14	BBCH 14-15	BBCH 12-14	BBCH 14-15	BBCH 13	BBCH 12	BBCH 13		
Assessment date			13.10.2021	01.10.2021	15.10.2021	07.10.2021	08.10.2021	04.11.2021	26.10.2021	28.10.2021		
Days after application DA-A			138 DA-A	116 DA-A	123 DA-A	129 DA-A	123 DA-A	163 DA-A	155 DA-A	143 DA-A		
Crop stage majority			BBCH 99	BBCH 99	BBCH 99	BBCH 89	BBCH 89	BBCH 99	BBCH 99	BBCH 99	Ave rage	Min.
No	Name	Rate (L, kg/ha)										Max
1	Untreated Check	-	20.05	22.78	28.95	22.35	22.80	22.60	30.10	20.20	23.7 3	20.0 5
2	CHR/H/DI K 480 SL	0.60	19.83	23.15	29.40	20.88	21.75	22.30	30.50	19.30	23.3 9	19.3 0
3	CHR/H/DI K 480 SL	1.20	18.56	23.65	29.25	21.15	23.13	22.30	60.00	20.10	27.2 7	18.5 6
4	Dicash 480 SL	0.60	18.87	23.18	29.20	20.23	24.43	22.50	31.80	19.70	23.7 4	18.8 7
5	Dicash 480 SL	1.20	19.35	22.10	29.43	22.05	22.53	22.90	30.80	20.00	23.6 5	19.3 5
LSD(P=.05)			2.308	1.747	0.981	3.228	4.263	0.540	1.760	2.750		

Study Comments: 3.4.3 dRR point: 3.4.3	Studies are acceptable
The Applicant presented data obtained from 8 selectivity trials. The following yield quality parameters were checked: HLW (3 trials), TKW (8 trials), moisture content (8 trials). It can be concluded that a single application of CHR/H/DIK 480 SL at the proposed range of 0,6 l product/ha has no adverse impact on the quality of plants or plant products in maize.	

3.4.4 Effects on transformation processes (KCP 6.4.4)

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

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 processed commodities has been predicted.

According to EPPO PP 1/243 (2) and information above, additional studies are not required.

Study Comments: 3.4.4 dRR point: 3.4.4	Explanations are acceptable
The Applicant presented no data on effects on transformation processes. The products containing dikamba as the sole active substance or together in co-formulations have been approved and extensively used as herbicides in maize across EU countries for many years and the residues impact on transformation processes are not predicted.	

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/DIK 480 SL in seed crops of maize.

In the course of studies carried out in Poland in the season of 2021 on product CHR/H/DIK 480 SL the herbicide has not been observed to have any significant influence on yield.

The product may be used in seed crops of maize.

Study Comments: 3.4.5 dRR point: 3.4.5	Explanations are acceptable
The Applicant presented no data on impact on treated plants or plant parts to be used for propagation. In accordance with the EPPO standard PP 1/135, data on plant parts for propagation are required if herbicide is applied after BBCH 30 of the crop. CHR/H/DIK 480 SL is going to be applied at BBCH 12-15 of maize, therefore data is not required.	
What is more, the products containing dicamba have been using for many years and are well proven to have no adverse effects on the viability of progeny seed.	

Summary and conclusion

The submitted efficacy data (reports from 14 field trials) and additional information fulfill requirements and conditions determined in 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 1/50(4) Weeds in maize

The studies fulfill also requirements of the Commission Regulation (EU) No 540/2011 of 25 May 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the data requirements for plant protection products.

The formulation of CHR/H/DIK 480 SL is Soluble (liquid) concentrate (SL) and it comprises active substance 480 g/L dicamba. The applicant submitted 14 reports in total showing the results in research into product efficacy carried out in 2021 and 2022 in maize.

The obtained data in performed trials show that CHR/H/DIK 480 SL provides benefits against the most important weeds in maize as shown in the table 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 maize:

Product code (L, kg/ha)	EPPO code	Scientific name	DA-A	Pest stage	Average	Efficacy
CHR/H/DIK 480 SL 0.4 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	59.27	T
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	53.94	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	64.29	MT
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	36.56	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	64.86	MT
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	19.10	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	48.75	T
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	74.43	MS
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	61.92	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	58.13	T
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	71.01	MS
CHR/H/DIK 480 SL 0.5 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	69.68	MT
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	67.27	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	72.93	MS
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	46.48	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	75.17	MS
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	24.52	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	62.53	MT
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	85.93	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	65.45	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	71.43	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	80.59	MS
CHR/H/DIK 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	85.02	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	76.63	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	87.16	S
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	56.05	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	86.16	S
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	34.77	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.01	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	94.50	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	80.90	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	79.63	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.85	S
Dicash 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	87.47	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	75.29	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	84.30	MS

	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	61.69	MT
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	84.31	MS
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	33.57	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.57	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	93.67	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	74.70	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	78.84	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.27	S

On the basis of submitted research, it is possible to state that CHR/H/DIK 480 SL used at dose controlled:

Dose CHR/H/DIK 480 SL 0.4 L/ha

Moderately Susceptible: *Plantago major* (PLAMA), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Convolvulus arvensis* (CONAR),

Tolerant: *Chenopodium album* (CHEAL), *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR), *Amaranthus retroflexus* (AMARE), *Cirsium arvense* (CIRAR),

Dose CHR/H/DIK 480 SL 0.5 L/ha

Susceptible: *Plantago major* (PLAMA)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Cirsium arvense* (CIRAR), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Chenopodium album* (CHEAL), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

Dose CHR/H/DIK 480 SL 0.6 L/ha

Susceptible: *Fallopia convolvulus* (POLCO), *Plantago major* (PLAMA), *Polygonum persicaria* (POLPE), *Chenopodium album* (CHEAL), *Matricaria chamomilla* (MATCH)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR), *Cirsium arvense* (CIRAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

Herbicide CHR/H/DIK 480 SL has demonstrated good crop tolerance to maize. Therefore concluded that CHR/H/DIK 480 SL is safe usage at proposed rate and this support the label claim for the use in maize.

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/DIK 480 SL 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:

Poland

Maize:

Recommended dose at:

0.6 L/ha of CHR/H/DIK 480 SL – postemergence application once a season in maize, which are corresponding to 288 g a.s./ha (dicamba).

The product CHR/H/DIK 480 SL should be use once per season at spring postemergence. To avoid resistance, products contain active substance with the same group shouldn't be used year after year on the same field.

CHR/H/DIK 480 SL is to be applied in spring:
BBCH 12-16 in maize.

Recommended volume of water 200-300 L/ha (maize)
Recommended medium droplet spraying

Use of CHR/H/DIK 480 SL according to the proposed GAP does not represent a hazard to rotational crops and does not justify a specific labelling. CHR/H/DIK 480 SL is not persistent in soil nor is it taken up by succeeding crops.

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 = 1.1572 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)
<i>Linum usitatissimum</i>	2.470	2.86	0.0038
<i>Solanum lycopersicon</i>	0.270	0.31	0.0004
<i>Pisum sativum</i>	2.470	2.86	0.0038
<i>Daucus carota</i>	2.470	2.86	0.0038
<i>Allium cepa</i>	0.820	0.95	0.0013
<i>Triticum aestivum</i>	22.22	25.71	0.0343

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

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

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

Whereby A = application rate (g active/ha), f_{int} = fraction intercepted by crop cover (25% for maize at BBCH 10-19), d = depth of soil layer (cm) and bd = bulk density of soil.

DT50 = 4.9 days – as worst case scenario for product's DT50

Table 3.5-2: PEC-values and TER-calculation of test product (active substance-formulation) 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/PEC e.g. 5 cm	NOER/PEC e.g. 10 cm	NOER/PEC e.g. 20 cm	NOER/PEC e.g. 30 cm
<i>Linum usitatissimum</i>	1	0.0038	0.6943	0.3472	0.1736	0.1157	0.00549	0.01098	0.02196	0.03293
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	0.55761
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	2.29444

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/ PEC e.g. 5 cm	NOER/ PEC e.g. 10 cm	NOER/ PEC e.g. 20 cm	NOER/ PEC e.g. 30 cm
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	3.14704	-	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	-	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	-	-	-
<i>Solanum lycopersicon</i>	1	0.0004	0.6943	0.3472	0.1736	0.1157	0.00060	0.00120	0.00240	0.00360
	30		0.0100	0.0050	0.0025	0.0017	0.04180	0.08360	0.16721	0.25081
	40		0.0024	0.0012	0.0006	0.0004	0.17200	0.34401	0.68802	1.03203
	40		0.0024	0.0012	0.0006	0.0004	0.17200	0.34401	0.68802	-
	50		0.0006	0.0003	0.0001	0.0001	0.70776	1.41552	2.83104	-
	40		0.0024	0.0012	0.0006	0.0004	0.17200	0.34401	-	-
	50		0.0006	0.0003	0.0001	0.0001	0.70776	1.41552	-	-
	50		0.0006	0.0003	0.0001	0.0001	0.70776	-	-	-
	60		0.0001	0.0001	0.0000	0.0000	2.91228	-	-	-
<i>Pisum sativum</i>	1	0.0038	0.6943	0.3472	0.1736	0.1157	0.00549	0.01098	0.02196	0.03293
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	0.55761
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	2.29444
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	3.14704	-	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	-	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	-	-	-
<i>Daucus carota</i>	1	0.0038	0.6943	0.3472	0.1736	0.1157	0.00549	0.01098	0.02196	0.03293
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	0.55761
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	2.29444
	20		0.0410	0.0205	0.0103	0.0068	0.09293	0.18587	0.37174	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	1.52963	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	0.76481	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	3.14704	-	-
	30		0.0100	0.0050	0.0025	0.0017	0.38241	-	-	-
	40		0.0024	0.0012	0.0006	0.0004	1.57352	-	-	-
	1	0.0013	0.6943	0.3472	0.1736	0.1157	0.00182	0.00364	0.00729	0.01093

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/PEC e.g. 5 cm	NOER/PEC e.g. 10 cm	NOER/PEC e.g. 20 cm	NOER/PEC e.g. 30 cm
<i>Allium cepa</i>	30		0.0100	0.0050	0.0025	0.0017	0.12695	0.25391	0.50781	0.76172
	40		0.0024	0.0012	0.0006	0.0004	0.52238	1.04477	2.08953	3.13430
	30		0.0100	0.0050	0.0025	0.0017	0.12695	0.25391	0.50781	-
	40		0.0024	0.0012	0.0006	0.0004	0.52238	1.04477	2.08953	-
	30		0.0100	0.0050	0.0025	0.0017	0.12695	0.25391	-	-
	40		0.0024	0.0012	0.0006	0.0004	0.52238	1.04477	-	-
	40		0.0024	0.0012	0.0006	0.0004	0.52238	-	-	-
	50		0.0006	0.0003	0.0001	0.0001	2.14949	-	-	-
<i>Triticum aestivum</i>	1	0.0343	0.6943	0.3472	0.1736	0.1157	0.04938	0.09876	0.19751	0.29627
	1		0.6943	0.3472	0.1736	0.1157	0.04938	0.09876	0.19751	0.29627
	10		0.1687	0.0844	0.0422	0.0281	0.20318	0.40636	0.81272	1.21907
	10		0.1687	0.0844	0.0422	0.0281	0.20318	0.40636	0.81272	-
	20		0.0410	0.0205	0.0103	0.0068	0.83604	1.67207	3.34415	-
	10		0.1687	0.0844	0.0422	0.0281	0.20318	0.40636	-	-
	20		0.0410	0.0205	0.0103	0.0068	0.83604	1.67207	-	-
	20		0.0410	0.0205	0.0103	0.0068	0.83604	-	-	-
	30		0.0100	0.0050	0.0025	0.0017	3.44011	-	-	-

- (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/DIK 480 SL do exceed a trigger value 1 , then no further trials are required when:

	Date of sowing	Crop rotation
		DT50= 4.9
Crop		
<i>Linum usitatissimum</i>	April	Normal crop rotation after plowing on 10 cm depth before sowing
<i>Solanum lycopersicon</i>	May	Normal crop rotation after plowing on 10 cm depth before sowing
<i>Pisum sativum</i>	April	Normal crop rotation after plowing on 10 cm depth before sowing
<i>Daucus carota</i>	April	Normal crop rotation after plowing on 10 cm depth before sowing
<i>Allium cepa</i>	April	Normal crop rotation after plowing on 10 cm depth before sowing
<i>Triticum aestivum</i>	March/April	Normal crop rotation after plowing on 10 cm depth before sowing

Labeling in Succeeding crop sections:

- after plowing 10 cm before sowing, you can sow oilseeds (flax, etc.), legumes (peas, etc.), tomato, bulbs (onions, etc.)
- without plowing: maize

In case of crop failure as a succeeding crop you can sow oilseeds (flax, etc.), legumes (peas, etc.), tomato, bulbs (onions, etc.), (with plowing 10 cm before sowing).

Study Comments: 3.5.1 dRR point: 3.5.1	Studies are acceptable																																																																																						
The Applicant presented data obtained from 2 greenhouse trials carried out in line with OECD Guideline 227 (Vegetative vigour test and Seedling emergence test) and EPPO guideline PP 1/207(2) Effects on succeeding crops. In the tables below, TER has been calculated using NOER and PEC for the active substance.																																																																																							
<table><tr><th>Crop</th><th>NOER [g a.s./ha]</th><th>NOER [mg/kg soil]</th></tr><tr><td><i>Linum usitatissimum</i></td><td>1,174</td><td>0,00157</td></tr><tr><td><i>Solanum lycopersicon</i></td><td>0.128</td><td>0,00017</td></tr><tr><td><i>Pisum sativum</i></td><td>1,174</td><td>0,00157</td></tr><tr><td><i>Daucus carota</i></td><td>1,174</td><td>0,00157</td></tr><tr><td><i>Allium cepa</i></td><td>0,39</td><td>0,00052</td></tr><tr><td><i>Triticum asetivum</i></td><td>10,56</td><td>0,01408</td></tr></table>				Crop	NOER [g a.s./ha]	NOER [mg/kg soil]	<i>Linum usitatissimum</i>	1,174	0,00157	<i>Solanum lycopersicon</i>	0.128	0,00017	<i>Pisum sativum</i>	1,174	0,00157	<i>Daucus carota</i>	1,174	0,00157	<i>Allium cepa</i>	0,39	0,00052	<i>Triticum asetivum</i>	10,56	0,01408																																																															
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<table><tr><th rowspan="2">Succeeding crop</th><th rowspan="2">Days after application</th><th>PEC</th><th>TER</th></tr><tr><th>mg a. s./kg soil (depth 10 cm)</th><th>NOER/PEC (depth 10 cm)</th></tr><tr><td rowspan="4"><i>Linum usitatis-simum</i></td><td>1</td><td>1,250</td><td>0,0125</td></tr><tr><td>20</td><td>0,0085</td><td>0,1834</td></tr><tr><td>30</td><td>0,0021</td><td>0,7547</td></tr><tr><td>35</td><td>0,0010</td><td>1,5310</td></tr><tr><td rowspan="6"><i>Solanum lyco-persicon</i></td><td>1</td><td>1,250</td><td>0,0014</td></tr><tr><td>20</td><td>0,0085</td><td>0,0200</td></tr><tr><td>30</td><td>0,0021</td><td>0,0822</td></tr><tr><td>35</td><td>0,0010</td><td>0,1668</td></tr><tr><td>40</td><td>0,0005</td><td>0,3384</td></tr><tr><td>50</td><td>0,0001</td><td>1,3926</td></tr><tr><td rowspan="4"><i>Pisum sativum</i></td><td>1</td><td>1,250</td><td>0,0125</td></tr><tr><td>20</td><td>0,0085</td><td>0,1834</td></tr><tr><td>30</td><td>0,0021</td><td>0,7547</td></tr><tr><td>35</td><td>0,0010</td><td>1,5310</td></tr><tr><td rowspan="4"><i>Daucus carota</i></td><td>1</td><td>1,250</td><td>0,0125</td></tr><tr><td>20</td><td>0,0085</td><td>0,1834</td></tr><tr><td>30</td><td>0,0021</td><td>0,7547</td></tr><tr><td>35</td><td>0,0010</td><td>1,5310</td></tr><tr><td rowspan="4"><i>Allium cepa</i></td><td>1</td><td>1,250</td><td>0,0042</td></tr><tr><td>20</td><td>0,0085</td><td>0,1834</td></tr><tr><td>30</td><td>0,0021</td><td>0,7547</td></tr><tr><td>35</td><td>0,0010</td><td>1,5310</td></tr><tr><td rowspan="2"><i>Triticum aset-ivum</i></td><td>1</td><td>1,250</td><td>0,1128</td></tr><tr><td>20</td><td>0,0085</td><td>1,6579</td></tr></table>				Succeeding crop	Days after application	PEC	TER	mg a. s./kg soil (depth 10 cm)	NOER/PEC (depth 10 cm)	<i>Linum usitatis-simum</i>	1	1,250	0,0125	20	0,0085	0,1834	30	0,0021	0,7547	35	0,0010	1,5310	<i>Solanum lyco-persicon</i>	1	1,250	0,0014	20	0,0085	0,0200	30	0,0021	0,0822	35	0,0010	0,1668	40	0,0005	0,3384	50	0,0001	1,3926	<i>Pisum sativum</i>	1	1,250	0,0125	20	0,0085	0,1834	30	0,0021	0,7547	35	0,0010	1,5310	<i>Daucus carota</i>	1	1,250	0,0125	20	0,0085	0,1834	30	0,0021	0,7547	35	0,0010	1,5310	<i>Allium cepa</i>	1	1,250	0,0042	20	0,0085	0,1834	30	0,0021	0,7547	35	0,0010	1,5310	<i>Triticum aset-ivum</i>	1	1,250	0,1128	20	0,0085	1,6579
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It can be concluded that in the spring all crops can be sown. In the case of a crop failure for any reason of maize on which CHR/H/DIK 480 SL has been applied, peas, wheat, carrots, onions, flax, tomato and maize may be sown as a replacement crop. Before sowing peas, wheat, carrots, onions, flax, wait about 30 days, in the case of tomato 50 days after the application of the product on maize and plough 10 cm.																																																																																							

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

No specific studies were conducted to fill this data point.

No phytotoxic effects were observed in the commissioned trials. Tested herbicides did not influence on yield, degree of plant lodging and tillering, weight of 1000 grains regardless of herbicide dose) it is expected the product is safe for plants of adjacent crops.

CHR/H/DIK 480 SL effectively controlled dicotyledons plants therefore users must exercise caution to avoid drift or vapors which may cause discoloration and damage to non-target foliage.

According to P. Pieczka, Study code: G-13-21 and A. Gierbuszewska, Study code: G-14-21 please find results for seedling emergence and vegetative vigour below. For details for those two studies please refer to Appendix 1.(rapoty zostaną dołączone do sekcji)

Assessment of the risk for non-target plants due to the use of CHR/H/DIK 480 SL in maize

Intended use		CHR/H/DIK 480 SL		
Active substance/product				
Application rate (g/ha)				
MAF				
		1 × 694.32		
		1		
Test species	ER ₅₀ (g/ha)	Drift rate	PER _{off-field} (g/ha)	TER criterion: TER ≥ 5
Flax	63.04	0.0277	19.23	3.27
Tomato	5.86	0.0277	19.23	0.3
Pea	38.85	0.0277	19.23	2.02
Carrot	105.28	0.0277	19.23	5.47
Onion	66.23	0.0277	19.23	3.44
Wheat	572.8	0.0277	19.23	29.79
Flax	25.5	0.0277	19.23	1.32
Tomato	17.68	0.0277	19.23	0.91
Pea	43.36	0.0277	19.23	2.24
Carrot	454.19	0.0277	19.23	23.61
Onion	301.43	0.0277	19.23	15.67

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.

Risk assessment for non-target terrestrial plants due to the use of CHR/H/DIK 480 SL in maize considering risk mitigation (in-field no-spray buffer zones, and drift-reducing nozzles)

Intended use		CHR/H/DIK 480 SL			
Active substance/product					
Application rate (g/ha)					
MAF					
		1 × 694.32			
		1			
Buffer strip (m)	Drift rate (%)	PER_{off-field} (g/ha)	PER_{off-field} 50 % drift red.	PER_{off-field} 75 % drift red.	PER_{off-field} 90 % drift red.

			(g/ha)	(g/ha)	(g/ha)
1	2.77	19.23	9.62	4.81	1.92
5	0.57	3.96	1.98	0.99	0.40
10	0.29	2.01	1.01	0.50	0.20
15	0.20	1.38	0.69	0.35	0.14
20	0.15	1.04	-	-	-
Toxicity value ER ₅₀ = 5.86 g/ha		TER criterion: TER ≥ 5			
1		0.3	0.61	1.22	3.05
5		1.50	2.96	5.92	14.65
10		2.91	5.80	11.72	29.3
15		4.25	8.49	16.74	41.86
20		5.63	-	-	-

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

Based on the predicted rates of CHR/H/DIK 480 SL in off-field areas, the TER values describing the risk for non-target plants following exposure to CHR/H/DIK 480 SL according to the GAP of the formulation CHR/H/DIK 480 SL achieve the acceptability criteria TER ≥, with applying:

- 20 m buffer zone
- 10 m and use of 50 % drift reducing nozzles
- 5 m and use of 75 % drift reducing nozzles

Study Comments: 3.5.2 dRR point: 3.5.2	Studies are acceptable
<p>The Applicant presented data obtained from 2 greenhouse trials carried out in line with OECD Guideline 227 (Vegetative vigour test and Seedling emergence test) and EPPO guideline PP 1/256(1) Effects on adjacent crops, on a representative range of monocotyledonous and dicotyledonous crop types.</p> <p>Assessment of adverse impact of CHR/H/DIK 480 SL on other plants including adjacent crops were obtained by calculation of TER (Toxicity Exposure Ratio) values. The risk of adverse impact resulting from the post-emergence application of CHR/H/DIK 480 SL at the rate of 0,6 l product/ha was acceptably low when a 20 m buffer zone was observed or with a buffer zone of 10 m when 50% drift reduction nozzles was used or with a buffer zone of 5 m when 75% drift reduction nozzles was used.</p>	

Tank cleaning

Cleaning of equipment should be conducted according to the following 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/DIK 480 SL is non-corrosive to equipment, non-flammable and non-volatile.

According to Report I. Knapik, Study code: ICB/76/2021 the effectiveness of cleaning was done regards to Efficacy Guideline 305:

Effectiveness of cleaning.

The study was conducted according to Efficacy Guideline 305. The mixture of test item was prepared at a concentration of 0.30% (v/v), then was poured into 3 polyethylene bottles and allowed to stand at temperature (18-28°C) to next day, but not longer than 24 h. After that, the bottles were rinsed by the tap water. Then the bottles were rinsed with acetonitrile which was analysed for active ingredient content. Three different rinsing procedures were used.

Single rinse procedure.

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

Double rinse procedure.

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

Triple rinse procedure.

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

Effectiveness of cleaning	Efficacy Guideline 305	Single rinse procedure: 99.97 [%] dicamba removed from the bottle Double rinse procedure: >99.99 [%] dicamba removed from the bottle Triple rinse procedure: >99.99 [%] dicamba removed from the bottle
---------------------------	------------------------	--

Study Comments: Tank cleaning procedure	Studies are acceptable
The Applicant presented data obtained from the study conducted according to Efficacy Guideline 305 and the Report I. Knapik, Study code: ICB/76/2021. The rinse procedure of tank cleaning proposed by the Applicant was sufficient to ensure that residues of plant protection products do not remain in the pesticide application equipment (PAE) after cleaning and that there is no unacceptable risk to subsequently treated crops.	

3.5.3 Impact 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

Summary and conclusion

Not applicable

3.6 Other/special studies

Not performed

3.7 List of test facilities including the corresponding certificates

Table 3.5-1: 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 Company Report No. Source (where different from company) GLP or GEP status Published or not	Data Verte- brate study Y/N	Owner
KCP 6.2	Joanna Guzińska	2021	Efficacy evaluation of herbicide CHR/H/DIK 480 SL when applied into maize to control of weeds, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/067/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.2	Joanna Guzińska	2021	Efficacy evaluation of herbicide CHR/H/DIK 480 SL when applied into maize to control of weeds, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/068/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.2	Joanna Guzińska	2021	Efficacy evaluation of herbicide CHR/H/DIK 480 SL when applied into maize to control of weeds, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/069/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.2	Joanna Guzińska	2021	Efficacy evaluation of herbicide CHR/H/DIK 480 SL when applied into maize to control of weeds, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/070/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.2	Joanna Guzińska	2021	Efficacy evaluation of herbicide CHR/H/DIK 480 SL when applied into maize to control of weeds, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	N	Chemiroł Sp. z o.o.

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Data Verte- brate study Y/N	Owner
			Report no.: A.T/2021/104/KK GEP - yes Unpublished		
KCP 6.2	Zdzisław Jaskólski	2021	Efficacy and selectivity of CHR/H/DIK (dicamba 480 g/L) post-emergence in maize. SynTech Research Poland Sp. z o.o. Jagiellońska 69/1 Bydgoszcz Report no.: SRPL21-445-336FE GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Zdzisław Jaskólski	2021	Efficacy and selectivity of CHR/H/DIK (dicamba 480 g/L) post-emergence in maize. SynTech Research Poland Sp. z o.o. Jagiellońska 69/1 Bydgoszcz Report no.: SRPL21-446-336FE GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Zdzisław Jaskólski	2021	The efficacy and selectivity of CHR/H/DIK applied post-emergence in maize SynTech Research Poland Sp. z o.o. Jagiellońska 69/1 Bydgoszcz Report no.: SRPL21-447-336FE GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Zdzisław Jaskólski	2021	Efficacy and selectivity of CHR/H/DIK (dicamba 480 g/L) post-emergence in maize. SynTech Research Poland Sp. z o.o. Jagiellońska 69/1 Bydgoszcz Report no.: SRPL21-448-336FE GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Zdzisław Jaskólski	2021	The efficacy and selectivity of CHR/H/DIK applied post-emergence in maize SynTech Research Poland Sp. z o.o. Jagiellońska 69/1 Bydgoszcz Report no.: SRPL21-449-336FE GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Robert Idziak	2022	Assessment of efficacy of herbicide CHR/H/DIK 480 SL applied postemergence in maize Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań	N	Chemirol Sp. z o.o.

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Data Verte- brate study Y/N	Owner
			Report no.: AH/22/K/20/Jab/02 GEP - yes Unpublished		
KCP 6.2	Robert Idziak	2022	Assessment of efficacy of herbicide CHR/H/DIK 480 SL applied postemergence in maize Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/22/K/20/Ma/03 GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Robert Idziak	2022	Assessment of efficacy of herbicide CHR/H/DIK 480 SL applied postemergence in maize Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/22/K/20/NW/04 GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.2	Robert Idziak	2022	Assessment of efficacy of herbicide CHR/H/DIK 480 SL applied in maize Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/22/K/20/Mr/01 GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.4	Joanna Guzińska	2021	Selectivity evaluation of herbicide CHR/H/DIK 480 SL when applied post emergence to maize, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/072/KK GEP - yes Unpublished	N	Chemirol Sp. z o.o.
KCP 6.4	Joanna Guzińska	2021	Selectivity evaluation of herbicide CHR/H/DIK 480 SL when applied post emergence to maize, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/073/KK GEP - yes Unpublished	N	Chemirol Sp. z o.o.

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Data Verte- brate study Y/N	Owner
KCP 6.4	Joanna Guzińska	2021	Selectivity evaluation of herbicide CHR/H/DIK 480 SL when applied post emergence to maize, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/074/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.4	Joanna Guzińska	2021	Selectivity evaluation of herbicide CHR/H/DIK 480 SL when applied post emergence to maize, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/075/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.4	Joanna Guzińska	2021	Selectivity evaluation of herbicide CHR/H/DIK 480 SL when applied post emergence to maize, Poland, 2021. A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno Report no.: A.T/2021/076/KK GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.4	Angelika Sobczak	2021	Assessment of selectivity of product CHR/H/DIK on weeds control in the cultivation of corn Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/21/K/16/ZŁ/01 GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.4	Angelika Sobczak	2021	Assessment of selectivity of product CHR/H/DIK on weeds control in the cultivation of corn Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/21/K/16/BR/02 GEP - yes Unpublished	N	Chemiroł Sp. z o.o.
KCP 6.4	Angelika Sobczak	2021	Assessment of selectivity of product CHR/H/DIK on weeds control in the cultivation of corn	N	Chemiroł Sp. z o.o.

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Data Verte- brate study Y/N	Owner
			Poznań University of Life Sciences, Research and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań Report no.: AH/21/K/16/GR/03 GEP - yes Unpublished		
KCP 10.6/01	A. Gierbuszewska	2021	CHR/H/DIK 480 SL Terrestrial Plant Test: Seedling Emergence and Seedling Growth Test G-14-21 Łukasiewicz Research Network – Institute of Industrial Organic Chemistry Branch Pszczyna Ecotoxicology Research Group Doświadczalna 27, 43-200 Pszczyna, Poland GLP Unpublished	N	Chemirol Sp. z o.o.
KCP 10.6/02	P. Pieczka	2021	CHR/H/DIK 480 SL Terrestrial Plant Test: Vegetative Vigour Test G-13-21 Łukasiewicz Research Network – Institute of Industrial Organic Chemistry Branch Pszczyna Ecotoxicology Research Group Doświadczalna 27, 43-200 Pszczyna, Poland GLP Unpublished	N	Chemirol Sp. z o.o.

Appendix 2 Additional information provided by the applicant

COMPARISON OF CLIMATIC AND AGRICULTURAL CONDITIONS IN POLAND AND THE CZECH REPUBLIC IN REFERENCE TO REGISTRATION OF PLANT PROTECTION PRODUCT CHR/H/DIK 480 SL

1. Introduction

The purpose of the following document is to compare climatic and agricultural conditions of Poland and the Czech Republic in order to enable data from efficacy and phytotoxicity trials conducted in Poland to be used for registration purposes of spring, foliar applied, herbicide CHR/H/DIK 480 SL in the Czech Republic.

2. Plant protection products under consideration

2.1. General

The efficacy and phytotoxicity studies were conducted in Poland in 2021 and 2022 in maize on the plant protection product CHR/H/DIK 480 SL containing the active substance dicamba 480 g/L and a standard herbicide Dicash 480 SL containing the active substance dicamba 480 g/L. Total of 14 efficacy and 8 phytotoxicity GEP trials were carried out to assess the product's efficacy and phytotoxic potential.

2.2. Products' characteristics:

Table 1. Products' characteristics

PRODUCT	CHR/H/DIK 480 SL	Dicash 480 SL
active substance content	Dicamba 480 g/L	Dicamba 480 g/L
formulation	SL – Soluble (liquid) concentrate	SL – Soluble (liquid) concentrate

The following information originates from Conclusion on the peer review of the pesticide risk assessment of the active substance *Dicamba_DRAR_01_Volume_1_2021-03-02.pdf* for the active substance dicamba.

Table 2. Properties of active substances

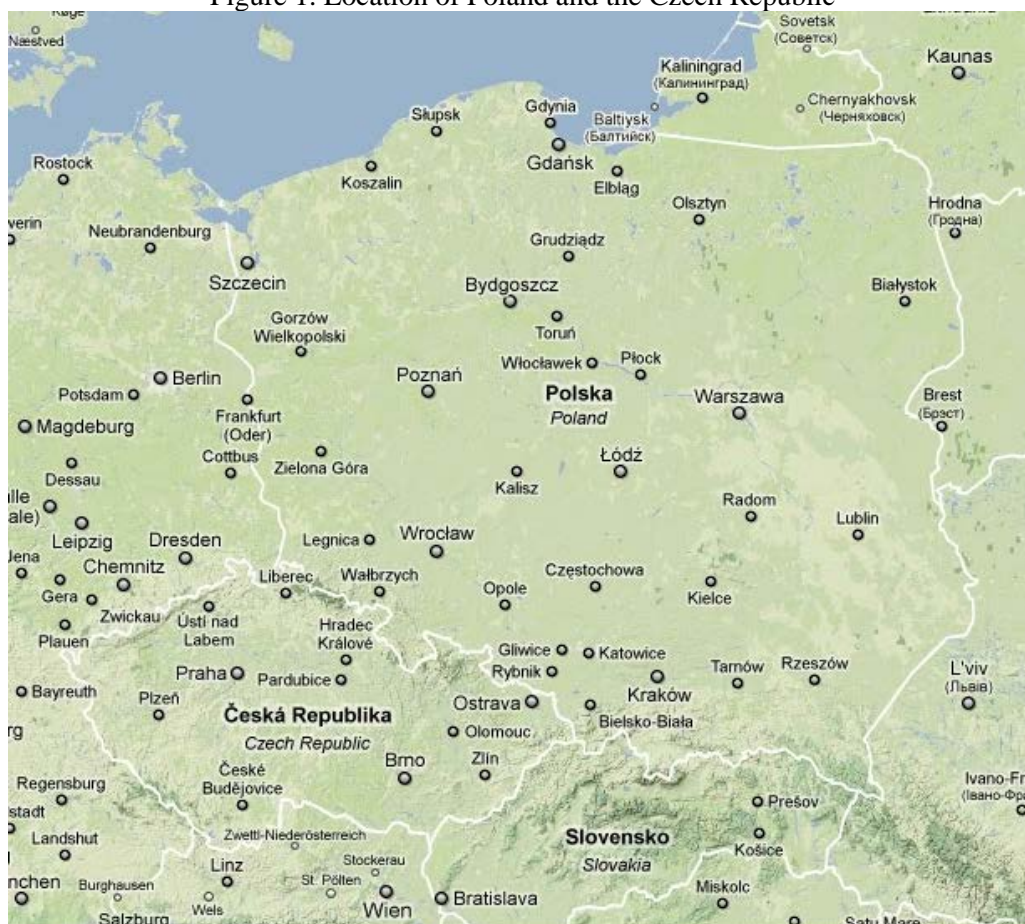
active substance common name	dicamba
active substance chemical name	3,6-dichloro-2-methoxybenzoic acid
function	<p>Dicamba belongs to the benzoic acid chemical family. According to HRAC, dicamba is a Group 4 herbicide (Synthetic Auxins) whose action mimics indoleacetic acid (IAA). In susceptible weeds dicamba is translocated both acropetally and basipetally.</p> <p>The most typical injury symptoms of dicamba are epinasty or curled and twisted stems and leaves. These symptoms are caused by differences in growth on different sides of the leaves. When leaf edge meristems are inhibited by dicamba they often force the leaf to form a cup-shape and this is often associated with a darker green colour. In contrast to 2,4-D the upper surface usually forms the outside of 'the cup'. Monocot leaves can form tightly bunched shapes called 'onion-leaffing'.</p>

	Due to its auxin-like activity dicamba can cause growth abnormalities. A variety of morphological malformations can occur including leaf malformations and increased branching. Maize can form fasciated or fused abnormal brace roots. Stems can become brittle and break and they can also become weakened and formed a curved, or 'goose-neck', shape. Dicamba can cause normally tolerant monocot species to lay flat for a time just after treatment but these symptoms often disappears within hours or days after treatment.
mode of action	Auxin Mimics
application	apply from the phase, between growth stage BBCH 12-19 in maize

3. Climatic conditions

Poland and the Czech Republic are geographically very close to one another. The geographical coordinates of the Czech Republic are: latitude 49.45°N, longitude 15.30°E. The geographical coordinates of Poland are: latitude 52.00°N, longitude 20.00°E. The two countries share 615 km border. The following map (originating from maps.google.com) illustrates the two countries.

Figure 1. Location of Poland and the Czech Republic



The following sections present and compare particular elements of Polish and Czech climate. The following parameters are compared: average monthly temperature, average maximum monthly temperature, average minimum monthly temperature, average monthly precipitation sum. To compare data in each country there were selected several locations from which average readings were calculated. The following map presents the location of climate stations included in calculations.

Figure 2. Location of climate stations

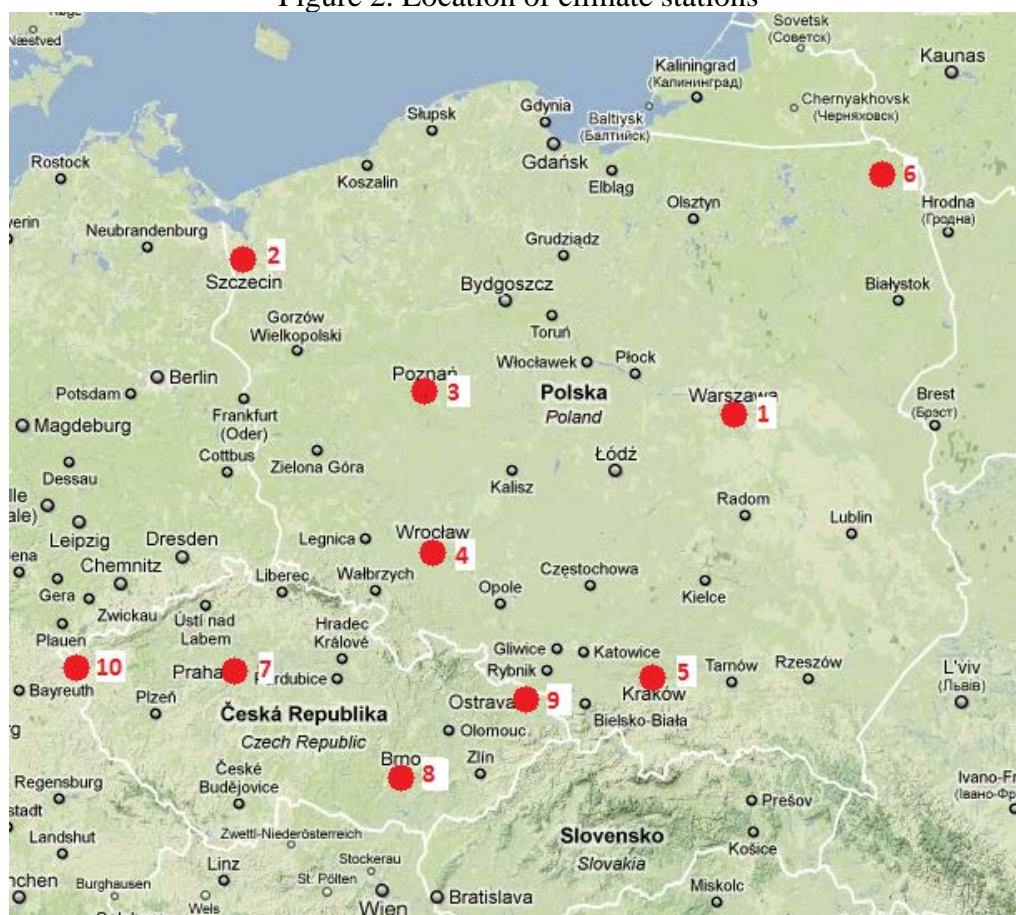


Table 3. Parameters of climate stations

Number on map	Location	Latitude	Longitude	Elevation (meters AMSL)
POLAND				
1.	Warsaw	52.10°N	20.58°E	106
2.	Szczecin	52.35°N	14.54°E	1
3.	Poznan	52.25°N	16.50°E	86
4.	Wrocław	51.06°N	16.53°E	120
5.	Krakow	50.05°N	19.48°E	237
6.	Suwalki	54.08°N	22.57°E	186
THE CZECH REPUBLIC				
7.	Prague	50.00°N	14.40°E	303
8.	Brno	49.15°N	16.70°E	238
9.	Ostrava	49.68°N	18.10°E	256
10.	Cheb	50.08°N	12.40°E	474

data source: <http://pl.allmetsat.com/klimat/>

Climate stations were selected in a way that ensures their equal distribution throughout the area of each country. Data from Poland was collected from six stations while data from the Czech Republic was collected from four stations. The number of Czech stations is smaller than that of Polish stations as detailed climatic data was not readily available from a greater number of stations in the Czech Republic. What is more, the authors of this report believe that the number of stations taken into account is sufficient to perform the comparison of climatic conditions and that it is relative to the acreage of each country.

3.1. Average monthly temperature

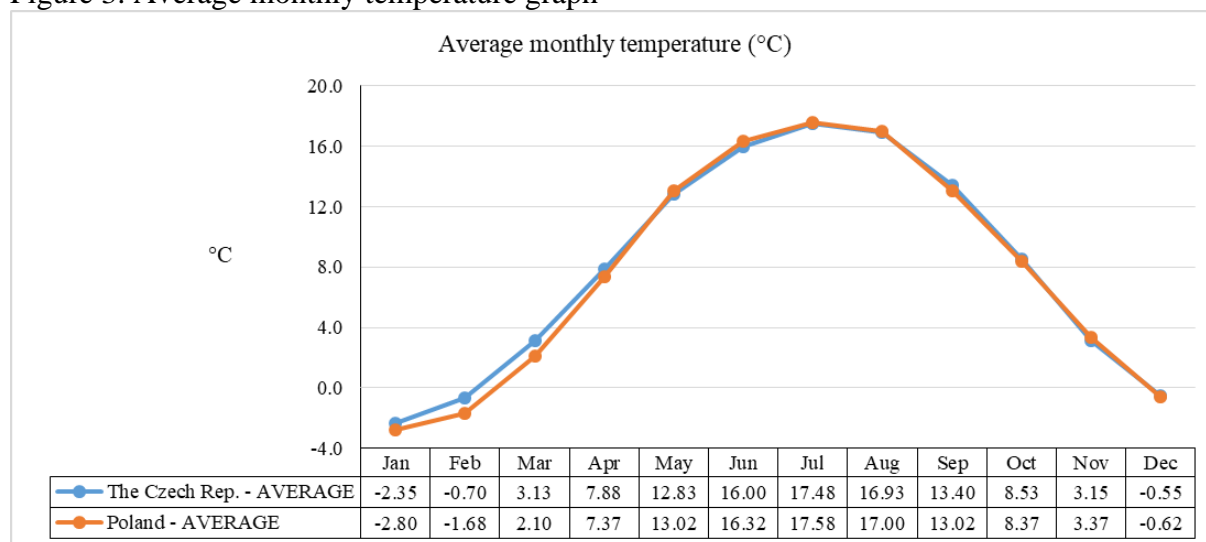
Table 4. Average monthly temperature data

Location	Average monthly temperature (°C)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Czech Rep.: Cheb	-2.5	-1.2	2.4	6.7	11.7	15.0	16.5	15.8	12.5	7.8	2.4	-1.0
The Czech Rep.: Prague	-2.0	-0.6	3.1	7.6	12.5	15.6	17.1	16.6	13.2	8.3	3.0	-0.2
The Czech Rep.: Brno	-2.5	-0.3	3.8	9.0	13.9	17.0	18.5	18.1	14.3	9.1	3.5	-0.6
The Czech Rep.: Ostrava	-2.4	-0.7	3.2	8.2	13.2	16.4	17.8	17.2	13.6	8.9	3.7	-0.4
The Czech Rep. - AVERAGE	-2.35	-0.70	3.13	7.88	12.83	16.00	17.48	16.93	13.40	8.53	3.15	-0.55
Poland: Warsaw	-3.3	-2.1	1.9	7.7	13.5	16.7	18.0	17.3	13.1	8.2	3.2	-0.9
Poland: Poznan	-2.0	-1.0	2.7	7.6	13.3	16.7	18.0	17.4	13.4	8.8	3.8	-0.1
Poland: Wroclaw	-1.8	-0.5	3.2	8.0	13.1	16.5	17.7	17.2	13.4	8.9	3.9	0.2
Poland: Krakow	-3.3	-1.6	2.4	7.9	13.1	16.2	17.5	16.9	13.1	8.3	3.2	-1.0
Poland: Szczecin	-1.1	-0.3	3.0	7.4	12.9	16.4	17.7	17.2	13.5	9.2	4.4	0.8
Poland: Suwalki	-5.3	-4.6	-0.6	5.6	12.2	15.4	16.6	16.0	11.6	6.8	1.7	-2.7
Poland - AVERAGE	-2.80	-1.68	2.10	7.37	13.02	16.32	17.58	17.00	13.02	8.37	3.37	-0.62

data source:

<http://www.climate-charts.com/>; NOAA Global Climate Normals 1961-1990; National Oceanic and Atmospheric Administration (NOAA).

Figure 3. Average monthly temperature graph



The table and graph above show that average temperature in Poland and in the Czech Republic is very similar. There are slight differences only in the winter months. The time which is of most importance to the application of product CHR/H/DIK 480 SL is spring. In the months of March through June there are a very close correlations between average temperatures in Poland and in the Czech Republic.

3.2 Average maximum monthly temperature

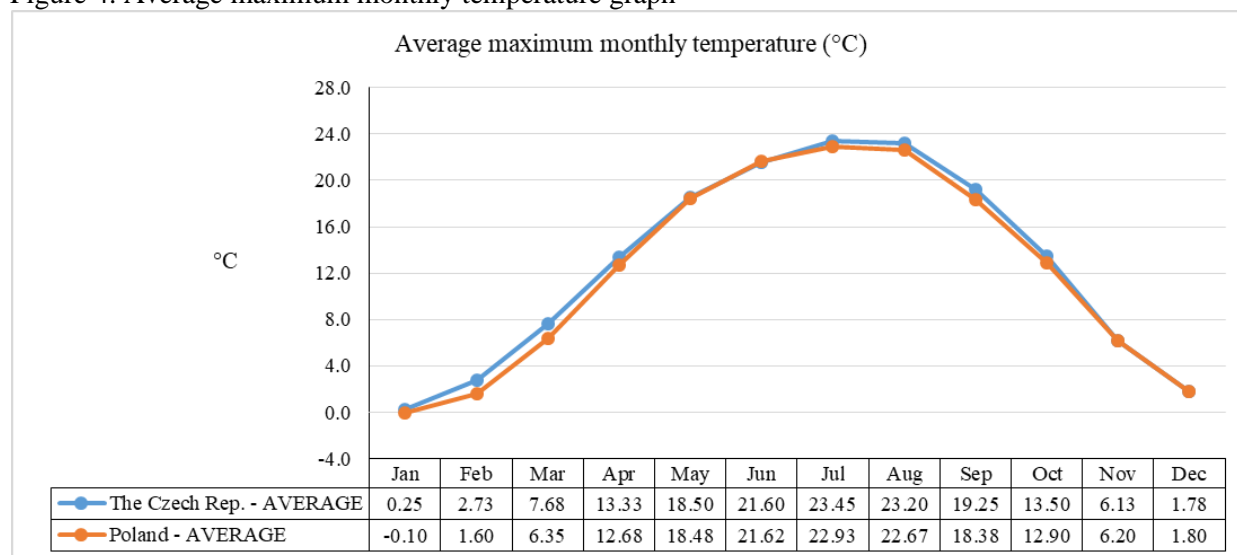
Table 5. Average maximum monthly temperature data

Location	Average maximum monthly temperature (°C)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Czech Rep.: Cheb	0.0	2.3	7.0	12.2	17.4	20.6	22.4	22.2	18.5	12.8	5.2	1.3
The Czech Rep.: Prague	0.4	2.7	7.7	13.2	18.3	21.4	23.3	23.0	19.0	13.1	6.0	1.9
The Czech Rep.: Brno	0.2	3.1	8.4	14.4	19.5	22.5	24.5	24.2	20.1	14.1	6.6	1.9
The Czech Rep.: Ostrava	0.4	2.8	7.6	13.5	18.8	21.9	23.6	23.4	19.4	14.0	6.7	2.0
The Czech Rep. - AVERAGE	0.25	2.73	7.68	13.33	18.50	21.60	23.45	23.20	19.25	13.50	6.13	1.78
Poland: Warsaw	-0.7	1.0	6.0	12.9	18.8	22.0	23.3	22.9	18.3	12.7	5.9	1.4
Poland: Poznan	0.5	2.2	6.8	13.0	18.8	22.1	23.5	23.1	18.7	13.1	6.4	2.2
Poland: Wroclaw	1.3	3.2	7.9	13.6	18.8	22.0	23.4	23.2	19.3	14.1	7.4	3.0
Poland: Krakow	-0.1	2.1	7.1	13.5	18.7	21.6	23.0	22.8	18.8	13.8	6.8	1.8
Poland: Szczecin	1.3	2.8	7.2	12.6	18.4	21.6	22.8	22.6	18.6	13.1	6.9	3.0
Poland: Suwalki	-2.9	-1.7	3.1	10.5	17.4	20.4	21.6	21.4	16.6	10.6	3.8	-0.6
Poland - AVERAGE	-0.10	1.60	6.35	12.68	18.48	21.62	22.93	22.67	18.38	12.90	6.20	1.80

data source:

<http://www.climate-charts.com/>; NOAA Global Climate Normals 1961-1990; National Oceanic and Atmospheric Administration (NOAA).

Figure 4. Average maximum monthly temperature graph



The table and graph above present the average maximum temperature in each month. It is clear that maximum temperature in Poland and in the Czech Republic is very similar. In spring months that are crucial to the application of product CHR/H/DIK 480 SL average maximum temperature in both countries differs by no more than 1.33°C in March.

3.3 Average minimum monthly temperatures

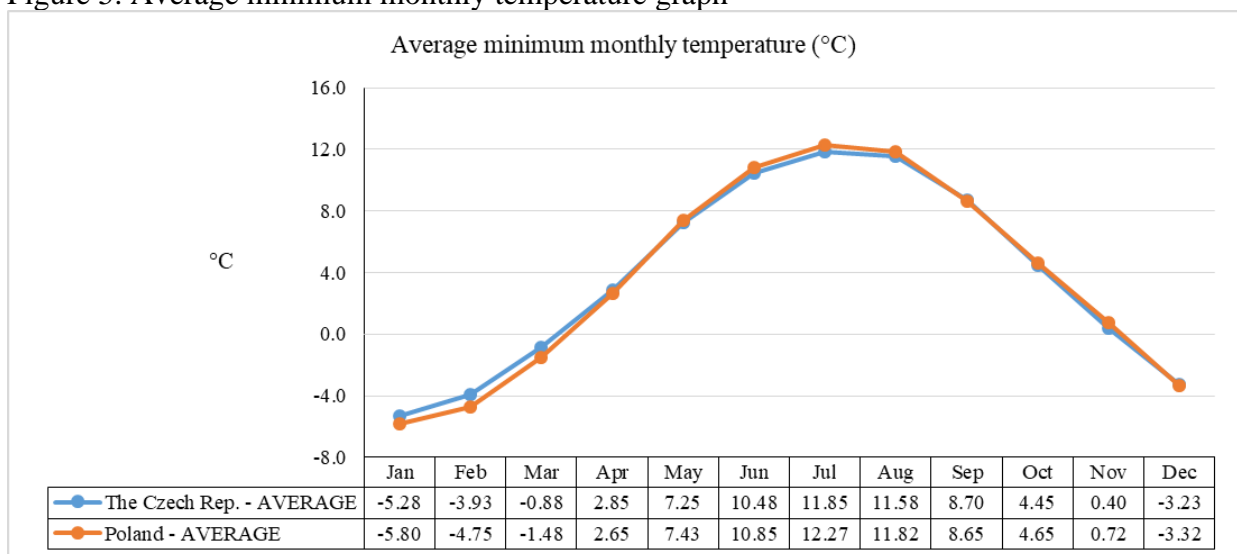
Table 6. Average minimum monthly temperature data

Location	Average minimum monthly temperature (°C)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Czech Rep.: Cheb	-5.0	-4.1	-1.2	2.1	6.3	9.6	11.0	10.6	8.0	4.1	0.0	-3.3
The Czech Rep.: Prague	-5.3	-4.2	-1.3	2.4	7.1	10.4	11.8	11.5	8.6	4.0	-0.2	-3.4
The Czech Rep.: Brno	-5.2	-3.3	-0.2	3.9	8.3	11.3	12.7	12.6	9.5	5.0	0.9	-3.0
The Czech Rep.: Ostrava	-5.6	-4.1	-0.8	3.0	7.3	10.6	11.9	11.6	8.7	4.7	0.9	-3.2
The Czech Rep. - AVERAGE	-5.28	-3.93	-0.88	2.85	7.25	10.48	11.85	11.58	8.70	4.45	0.40	-3.23
Poland: Warsaw	-6.1	-5.0	-1.5	3.0	8.0	11.3	12.6	12.1	8.7	4.5	0.8	-3.4
Poland: Poznan	-4.8	-3.9	-0.8	2.8	7.7	11.2	12.5	12.2	9.0	5.3	1.2	-2.6
Poland: Wroclaw	-5.3	-4.0	-0.9	2.8	7.1	10.7	12.0	11.6	8.7	4.6	0.6	-3.1
Poland: Krakow	-6.7	-4.8	-1.3	3.0	7.6	10.8	12.2	11.8	8.6	4.2	0.2	-4.0
Poland: Szczecin	-3.7	-3.1	-0.4	2.9	7.5	11.1	12.9	12.3	9.5	5.8	2.0	-1.6
Poland: Suwalki	-8.2	-7.7	-4.0	1.4	6.7	10.0	11.4	10.9	7.4	3.5	-0.5	-5.2
Poland - AVERAGE	-5.80	-4.75	-1.48	2.65	7.43	10.85	12.27	11.82	8.65	4.65	0.72	-3.32

data source:

<http://www.climate-charts.com/>; NOAA Global Climate Normals 1961-1990; National Oceanic and Atmospheric Administration (NOAA) .

Figure 5. Average minimum monthly temperature graph



Average minimum monthly temperature in Poland and in the Czech Republic follows almost the same pattern, therefore, it is comparable. The table and graph above show that minimum monthly temperature in Poland and in the Czech Republic is very similar. There are slight differences only in the winter months. The time which is of most importance to the application of product CHR/H/DIK 480 SL is spring. In the months of March through June there are a very close correlations between average temperatures in Poland and in the Czech Republic.

3.3 Average monthly precipitation sum

Table 7. Average monthly precipitation sum data

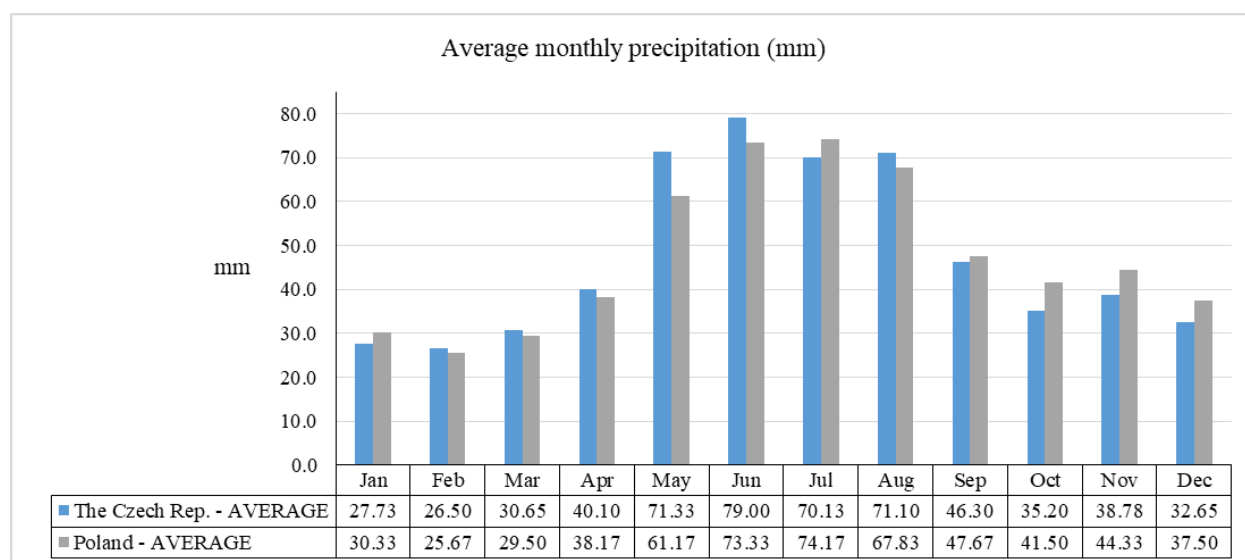
Location	Average monthly precipitation sum (mm)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
The Czech Rep.: Cheb	36.1	29.5	36.3	38.3	56.0	66.9	59.2	66.5	48.4	37.5	41.1	43.9

The Czech Rep.: Prague	23.6	22.6	28.1	38.2	77.2	72.7	66.2	69.6	40.4	30.5	31.9	25.3
The Czech Rep.: Brno	24.5	23.7	24.2	31.5	60.9	72.0	64.0	56.5	37.6	30.5	37.5	27.1
The Czech Rep.: Ostrava	26.7	30.2	34.0	52.4	91.2	104.4	91.1	91.8	58.8	42.3	44.6	34.3
The Czech Rep. - AVERAGE	27.73	26.50	30.65	40.10	71.33	79.00	70.13	71.10	46.30	35.20	38.78	32.65
Poland: Warsaw	22.0	21.0	26.0	33.0	58.0	71.0	69.0	62.0	43.0	37.0	41.0	32.0
Poland: Poznan	30.0	24.0	27.0	36.0	53.0	60.0	69.0	57.0	43.0	39.0	39.0	38.0
Poland: Wroclaw	28.0	26.0	26.0	39.0	64.0	80.0	84.0	78.0	48.0	40.0	43.0	34.0
Poland: Krakow	34.0	32.0	34.0	48.0	83.0	97.0	85.0	87.0	54.0	46.0	45.0	41.0
Poland: Szczecin	36.0	27.0	32.0	38.0	52.0	57.0	61.0	55.0	44.0	38.0	46.0	41.0
Poland: Suwalki	32.0	24.0	32.0	35.0	57.0	75.0	77.0	68.0	54.0	49.0	52.0	39.0
Poland - AVERAGE	30.33	25.67	29.50	38.17	61.17	73.33	74.17	67.83	47.67	41.50	44.33	37.50

data source:

<http://www.climate-charts.com/>; NOAA Global Climate Normals 1961-1990; National Oceanic and Atmospheric Administration (NOAA).

Figure 6. Average monthly precipitation sum graph



4. Soil conditions

Poland

Maize requirements are much smaller than wheat. It could be cultivated on almost all soils with exception of cold, wet and very heavy or very light soils. Also mountain soil are not appropriate for maize. The best soils are fertile and deep soils of high OM content. Requirements according to soil pH are small and maize could be cultivated within wide range of 5-7.5.

Czech Republic

Soil requirements of maize are much smaller than those on temperature. Only heavy and cold soils are unsuitable as these prevent early sowing. Light soils are suitable only in wet regions and require higher doses of nutrients. Aspect of the field should be to the south or related and maize is generally avoided on higher slopes due to high erosion risk.

5. Agricultural practice

5.1 Maize sowing timing

According to the MOCA study in Poland sowing of maize takes place usually between 1st of April to 15th of May depending on the region. In Czech Republic sowing maize take place in the same time.

5.2 Maize growth and development

Figure 9. Phenological crop calendar for maize in Poland

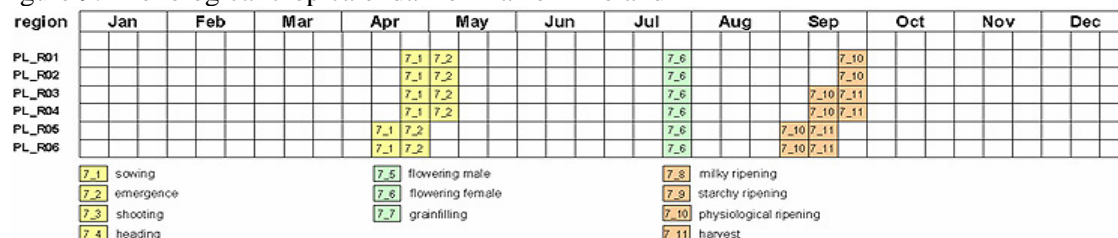
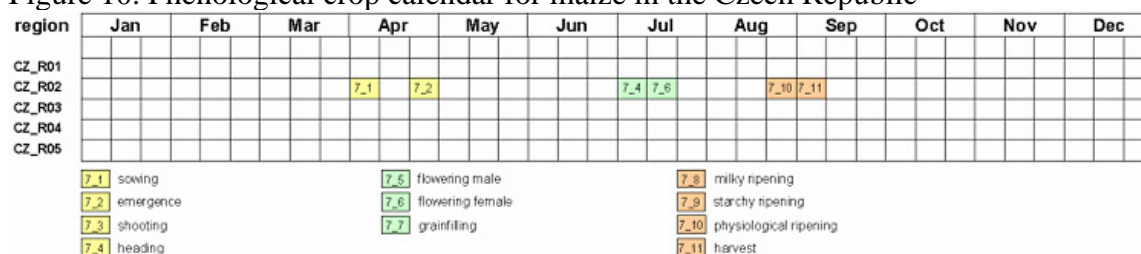


Figure 10. Phenological crop calendar for maize in the Czech Republic



In general, it may be stated that maize develops in a similar way in Poland and in the Czech Republic.

5.3 Timing of application

According to *Dicamba_DRAR_01_Volume_1_2021-03-02.pdf* dicamba is applied up to maximum rate 288 g a.s./ha between growth stage BBCH 12-19 of the maize, once per season, in 200-400 L water/ha.

5.4 Target weeds

5.4.1 Weed spectrum in Europe

According to Shroeder et al. (1993) Table 8. the most abundant weeds in maize are:

Weeds	% max. result (78 point.)*
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<i>Echinochloa crus-galli</i>	65
<i>Chenopodium album</i>	62
<i>Amaranthus retroflexus</i>	50
<i>Solanum nigrum</i>	44
<i>Stellaria pumila</i>	43
<i>Convolvulus arvensis</i>	42
<i>Digitaria sanguinalis</i>	41
<i>Polygonum persicaria</i>	38
<i>Polygonum aviculare</i>	35
<i>Sorghum halepense</i>	32
<i>Stellaria media</i>	31
<i>Fallopia convolvulus</i>	30
<i>Capsella bursa-pastoris</i>	25
<i>Sonchus arvensis</i>	25
<i>Cynodon dactylon</i>	23

5.4.2 Weed spectrum in the Czech Republic

According to Losová et al. (2008) Table 9. the most abundant weeds in the Czech Republic in cereals are:

Table 9. Weed abundance in cereals in the Czech Republic

Weed species	% of vegetation plots in which the species was recorded*
<i>Viola arvensis</i>	79
<i>Stellaria media</i>	71
<i>Fallopia convolvulus (Polygonum convolvulus)</i>	67
<i>Tripleurospermum inodorum (Matricaria inodora)</i>	65
<i>Capsella bursa-pastoris</i>	64
<i>Cirsium arvense</i>	61
<i>Myosotis arvensis</i>	58
<i>Galium aparine</i>	57
<i>Polygonum aviculare</i>	57
<i>Thlaspi arvense</i>	56
<i>Elytrigia repens (Agropyron repens)</i>	52
<i>Chenopodium album</i>	52
<i>Veronica persica</i>	51

* data from 2696 plots that were between 12 and 100 m² in size and sampled on arable land

5.4.3. Weed species controlled by CHR/H/DIK 480 SL

The following table lists weeds that were included in efficacy studies of product CHR/H/DIK 480 SL. These weeds were present in experimental plots and their sensitivity depended on the dose of the product applied.

Table 10. Weed species and their sensitivity to CHR/H/DIK 480 SL

The obtained data in performed trials show that CHR/H/DIK 480 SL provides benefits against the most important weeds in maize as shown in the table 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%
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The following table shows the average sensitivity of weeds in maize:

Product code (L, kg/ha)	EPPO code	Scientific name	DA-A	Pest stage	Average	Efficacy
CHR/H/DIK 480 SL 0.4 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	59.27	T
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	53.94	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	64.29	MT
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	36.56	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	64.86	MT
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	19.10	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	48.75	T
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	74.43	MS
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	61.92	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	58.13	T
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	71.01	MS
CHR/H/DIK 480 SL 0.5 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	69.68	MT
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	67.27	MT
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	72.93	MS
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	46.48	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	75.17	MS
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	24.52	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	62.53	MT
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	85.93	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	65.45	MT
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	71.43	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	80.59	MS
CHR/H/DIK 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	85.02	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	76.63	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	87.16	S
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	56.05	T
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	86.16	S
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	34.77	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.01	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	94.50	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	80.90	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	79.63	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.85	S
Dicash 480 SL 0.6 L/ha	CHEAL	<i>Chenopodium album</i>	24-56 DA-A	BBCH 10-16	87.47	S
	ARTVU	<i>Arthemis vulgaris</i>	24-28 DA-A	BBCH 11-16	75.29	MS
	POLCO	<i>Fallopia convolvulus</i>	24-56 DA-A	BBCH 12-21	84.30	MS
	ANTAR	<i>Anthemis arvensis</i>	24-56 DA-A	BBCH 12-31	61.69	MT
	POLPE	<i>Polygonum persicaria</i>	24-56 DA-A	BBCH 10-16	84.31	MS
	VIOAR	<i>Viola arvensis</i>	24-28 DA-A	BBCH 10-14	33.57	T
	AMARE	<i>Amaranthus retroflexus</i>	24-56 DA-A	BBCH 14-16	75.57	MS
	PLAMA	<i>Plantago major</i>	24-28 DA-A	BBCH 12-16	93.67	S
	CONAR	<i>Convolvulus arvensis</i>	24-56 DA-A	BBCH 10-16	74.70	MS
	CIRAR	<i>Cirsium arvense</i>	24-56 DA-A	BBCH 10-31	78.84	MS
	MATCH	<i>Matricaria chamomilla</i>	24-56 DA-A	BBCH 12-14	86.27	S

On the basis of submitted research, it is possible to state that CHR/H/DIK 480 SL used at dose controlled:

Dose CHR/H/DIK 480 SL 0.4 L/ha

Moderately Susceptible: *Plantago major* (PLAMA), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Convolvulus arvensis* (CONAR),

Tolerant: *Chenopodium album* (CHEAL), *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR), *Amaranthus retroflexus* (AMARE), *Cirsium arvense* (CIRAR),

Dose CHR/H/DIK 480 SL 0.5 L/ha

Susceptible: *Plantago major* (PLAMA)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Fallopia convolvulus* (POLCO), *Polygonum persicaria* (POLPE), *Cirsium arvense* (CIRAR), *Matricaria chamomilla* (MATCH)

Moderately Tolerant: *Chenopodium album* (CHEAL), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

Dose CHR/H/DIK 480 SL 0.6 L/ha

Susceptible: *Fallopia convolvulus* (POLCO), *Plantago major* (PLAMA), *Polygonum persicaria* (POLPE), *Chenopodium album* (CHEAL), *Matricaria chamomilla* (MATCH)

Moderately Susceptible: *Arthemis vulgaris* (ARTVU), *Amaranthus retroflexus* (AMARE), *Convolvulus arvensis* (CONAR), *Cirsium arvense* (CIRAR),

Tolerant: *Anthemis arvensis* (ANTAR), *Viola arvensis* (VIOAR)

In summary, it may be stated that the most problematic weeds species in maize in Poland and in the Czech Republic are comparable and they are almost all controlled by CHR/H/DIK 480 SL. Therefore product CHR/H/DIK 480 SL is expected to be equally highly efficient in both Poland and in the Czech Republic.

6. Conclusion

Poland and the Czech Republic are neighboring countries. Both lie in central Europe in the moderate climate zone. They share not only the border but also important climatic characteristics. Yearly temperature and precipitation patterns are very similar in both counties. This has influence on the agricultural practice in these countries and on the development of cultivated crops. Maize which is of interest to the authors of this report, go through its development phases at relatively close calendar dates. What is more, the greatest weed problems are posed by almost the same weed species in both countries. All of these and many more are targeted by dicamba which is the active substances of product CHR/H/DIK 480 SL.

In conclusion, authors of this report state that Poland and the Czech Republic share many elements of climatic and agricultural conditions. This allows efficacy and phytotoxicity study results acquired in Poland to be used in registration procedures of a spring, foliar applied, maize herbicide CHR/H/DIK 480 SL in the Czech Republic.

Study Comments: Appendix 2 Additional information provided by the applicant dRR point: Appendix 2 Additional information provided by the applicant	Information not relevant
All data were conducted in PL therefore the document included in the dRR "Comparison of climatic and agricultural conditions in Poland and the Czech Republic in reference to registration of plant protection product CHR/H/DIK 480 SL" is not relevant in this case.	

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

Test report/ re- search number (1)	Trial location (2); Crop culti- var; F/G (3); N/A (4)	Testing Unit (5)	Test method (6); Plot size; Sample size (7)	Treatment			
				Growth stage (8)	Inter- val	Total num- ber	Spray volume (L/ha)
A.T/2021/072/KK	Chludowo/ Po- land maize/ DKC 3595F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 8.0 m = 20.0 m ²	BBCH 12- 13	n/a	1	200 L/ha
A.T/2021/073/KK	Orzelski Młyn/ Poland maize/ Amavit F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 8.0 m = 20.0 m ²	BBCH 13- 14	n/a	1	200 L/ha
A.T/2021/074/KK	Trzciany/ Po- land maize/ ES Per- spective F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 8.0 m = 20.0 m ²	BBCH 14- 15	n/a	1	200 L/ha
A.T/2021/075/KK	Szapsk/ Poland maize/ Farm- rock F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 8.0 m = 20.0 m ²	BBCH 12- 14	n/a	1	200 L/ha
A.T/2021/076/KK	Studzieniec/ Po- land maize/ Far- mezzo F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 8.0 m = 20.0 m ²	BBCH 14- 15	n/a	1	300 L/ha
AH/21/K/16/ZL/01	Złotniki/ Poland maize/ FAR- MODENA F N	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 3.0 m x 10.0 m = 30.0 m ²	BBCH 13	n/a	1	200 L/ha
AH/21/K/16/BR/02	Brody/ Poland maize/ FARM- FIIRE F N	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 2.5 m x 9.0 m = 22.5 m ²	BBCH 12	n/a	1	230 L/ha
AH/21/K/16/GR/03	Gorzyń/ Poland maize/ DKC 3350 F N	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 2.8 m x 10.0 m = 28.0 m ²	BBCH 13	n/a	1	200 L/ha
A.T/2021/067/KK	Trzebaw/ Po- land maize/ P7948 F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 5.0 m = 12.5 m ²	BBCH 12- 14	n/a	1	200 L/ha
A.T/2021/068/KK	Koninek/ Po- land maize/ Dyna- mite F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 5.0 m = 12.5 m ²	BBCH 12- 14	n/a	1	200 L/ha

A.T/2021/069/KK	Dąbrówka/ Poland maize/ Baobi F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 5.0 m = 12.5 m ²	BBCH 13- 14	n/a	1	200 L/ha
A.T/2021/070/KK	Trzemiętowo/ Poland maize/ LG 32.16 F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 7.0 m = 17.5 m ²	BBCH 13- 14	n/a	1	200 L/ha
A.T/2021/104/KK	Borkowo Ko- ścielne/ Poland maize/ Opoka F N	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	EPPO PP 1/50(4) 2.5 m x 5.0 m = 12.5 m ²	BBCH 13- 15	n/a	1	200 L/ha
SRPL21-445- 336FE	Rąbłów /Poland maize/ PIO- NEER P8307 F N	SynTech Research Poland Sp. z o.o. Ja- giellońska 69/1 Byd- goszcz	EPPO PP 1/50(4) 3.0 m x 5.0 m = 15.0 m ²	BBCH 12- 13	n/a	1	300 L/ha
SRPL21-446- 336FE	Jankowice Wielkie/ Poland maize/ SY Ta- lisman F N	SynTech Research Poland Sp. z o.o. Ja- giellońska 69/1 Byd- goszcz	EPPO PP 1/50(4) 3.0 m x 5.0 m = 15.0 m ²	BBCH 12- 13	n/a	1	300 L/ha
SRPL21-447- 336FE	Słabomierz/ Po- land maize/ SY Tal- isman F N	SynTech Research Poland Sp. z o.o. Ja- giellońska 69/1 Byd- goszcz	EPPO PP 1/50(4) 3.0 m x 5.0 m = 15.0 m ²	BBCH 13- 14	n/a	1	300 L/ha
SRPL21-448- 336FE	Gietrzwałd/ Po- land maize/ Cedro (FAO 200) F N	SynTech Research Poland Sp. z o.o. Ja- giellońska 69/1 Byd- goszcz	EPPO PP 1/50(4) 3.0 m x 5.0 m = 15.0 m ²	BBCH 13- 14	n/a	1	200 L/ha
SRPL21-449- 336FE	Janowiec Wiel- kopolski/ Po- land maize/ Roso- mak-HR SMO- LICE F N	SynTech Research Poland Sp. z o.o. Ja- giellońska 69/1 Byd- goszcz	EPPO PP 1/50(4) 3.0 m x 4.0 m = 12.0 m ²	BBCH 12- 13	n/a	1	200 L/ha
AH/22/K/20/Jab/0 2	Jabłowo Pałuc- kie/ Poland maize/ DKC3595 F N	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Depart- ment; ul. Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 4.0 m x 6.0 m = 24.0 m ²	BBCH 11- 13	n/a	1	300 L/ha
AH/22/K/20/Mal/0 3	Małujowice/ Poland maize/ Ułan F N	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Depart- ment; ul. Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 4.0 m x 6.0 m = 24.0 m ²	BBCH 13- 15	n/a	1	300 L/ha

AH/22/K/20/NW/04	Nowa Wieś/ Poland maize/ Subito F N	Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 4.0 m x 6.0 m = 24.0 m ²	BBCH 12-14	n/a	1	300 L/ha
AH/22/K/20/Mr/01	Przybroda/ Poland maize/ DKC 3350 F N	Poznań University of Life Sciences, Research and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	EPPO PP 1/50(4) 3.0 m x 10.0 m = 30.0 m ²	BBCH 14-15	n/a	1	230 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 Harmful organism/ weed species or in- tended use	Assessed part and varia- ble (2) no / m²	Untreated BBCH (during appli- cation)	Efficacy treatments (3)				Remarks (4)
				Product		Standard (s)		
				name	Dose [L,kg/ha]	name	dose [L/ha]	
A.T/2021/067/KK	maize/ P7948	CHEAL 14.0	CHEAL BBCH 12-14	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 31.05.2021 Assessment date: 31.05.2021 14.06.2021 24.06.2021 16.07.2021
	CHEAL	ARTVU 6.0	ARTVU BBCH 11-12					
	ARTVU	VIOAR 5.0	VIOAR BBCH 12-14					
	VIOAR	GERPU 5.0	GERPU BBCH 14-18					
	GERPU	AMARE 5.0	AMARE BBCH 12-14					
	AMARE	CAPBP 8.0	CAPBP BBCH 14-16					
	CAPBP	PLAMA 5.0	PLAMA BBCH 11-12					
	PLAMA	ANTAR 5.0	ANTAR BBCH 12-16					
	ANTAR	DESSO 5.0	DESSO BBCH 12-14					
A.T/2021/068/KK	maize/ Dynamite	CENCY 5.0	CENCY BBCH 12-14	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 31.05.2021 Assessment date: 31.05.2021 09.06.2021 25.06.2021 09.07.2021
	CENCY	CHEAL 22.0	CHEAL BBCH 12-14					
	CHEAL	POLPE 5.0	POLPE BBCH 12-14					
	POLPE	POLCO 8.0	POLCO BBCH 12-14					
	POLCO	MATCH 5.0	MATCH BBCH 12-14					
	MATCH	VIOAR 12.0	VIOAR BBCH 12-14					
	VIOAR	CIRAR 5.0	CIRAR BBCH 12-14					
	CIRAR	BRSNW 5.0	BRSNW BBCH 12-14					
	BRSNW							
A.T/2021/069/KK	maize/ Baobi	CHEAL 20.0	CHEAL BBCH 14-16	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 08.06.2021 Assessment date: 08.06.2021 22.06.2021 06.07.2021 05.08.2021
	CHEAL	ANTAR 7.0	ANTAR BBCH 14-16					
	ANTAR	POLCO 7.0	POLCO BBCH 14-16					
	POLCO	POLPE 6.0	POLPE BBCH 14-16					
	POLPE	GERPU 5.0	GERPU BBCH 14-16					
	GERPU	CAPBP 5.0	CAPBP BBCH 14-16					
	CAPBP	VERHE 5.0	VERHE BBCH 14-16					
	VERHE	LYCAR 5.0	LYCAR BBCH 14-16					
	LYCAR	VIOAR 5.0	VIOAR BBCH 14-16					
	VIOAR	AMARE 5.0	AMARE BBCH 14-16					
	AMARE	ARTVU 5.0	ARTVU BBCH 14-16					

	ARTVU							
	maize/ LG 32.16							
A.T/2021/070/KK	CHEAL POLCO VIOAR CENCY ANTAR THLAR CAPBP SINAR AMARE PLAMA	CHEAL 7.0 POLCO 5.0 VIOAR 7.0 CENCY 6.0 ANTAR 8.0 THLAR 10.0 CAPBP 6.0 SINAR 5.0 AMARE 5.0 PLAMA 5.0	CHEAL BBCH 12-14 POLCO BBCH 12-14 VIOAR BBCH 12-14 CENCY BBCH 12-14 ANTAR BBCH 12-14 THLAR BBCH 12-16 CAPBP BBCH 14-16 SINAR BBCH 12-14 AMARE BBCH 12-16 PLAMA BBCH 12-16	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 07.06.2021 Assessment date: 07.06.2021 21.06.2021 05.07.2021 05.08.2021
A.T/2021/104/KK	maize/ Opoka CHEAL VIOAR POLPE POLCO ANTAR CENCY CIRAR ARTVU PLAMA	CHEAL 12.0 VIOAR 13.0 POLPE 5.0 POLCO 5.0 ANTAR 5.0 CENCY 5.0 CIRAR 5.0 ARTVU 5.0 PLAMA 5.0	CHEAL BBCH 12-21 VIOAR BBCH 10-14 POLPE BBCH 10-16 POLCO BBCH 12-21 ANTAR BBCH 12-31 CENCY BBCH 12-31 CIRAR BBCH 10-31 ARTVU BBCH 14-16 PLAMA BBCH 14-16	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 26.06.2021 Assessment date: 26.06.2021 10.07.2021 24.07.2021 06.08.2021
SRPL21-445-336FE	maize/ PIONEER P8307 CHEAL ECHCG VERPE GASCI CONAR	CHEAL 9.75 ECHCG 9.75 VERPE 5.0 GASCI 5.25 CONAR 5.0	CHEAL BBCH 12-14 ECHCG BBCH 11-14 VERPE BBCH 12-14 GASCI BBCH 12-14 CONAR BBCH 11-13	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 15.06.2021 Assessment date: 15.06.2021 22.06.2021 29.06.2021 13.07.2021 10.08.2021
SRPL21-446-336FE	maize/ SY Talisman CHEAL POLPE POLCO AMARE	CHEAL 10.5 POLPE 7.3 POLCO 6.5 AMARE 9.5	CHEAL BBCH 12-14 POLPE BBCH 12-14 POLCO BBCH 12-14 AMARE BBCH 12-14	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 05.05.2021 Assessment date: 05.05.2021 12.05.2021 19.05.2021 02.06.2021 30.06.2021
SRPL21-447-336FE	maize/ SY Talisman	GERPU 7.0 MATCH 8.0	GERPU BBCH 12-13 CHEAL BBCH 13-14	CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 02.06.2021

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	GERPU MATCH ANTAR AMARE SENVU CIRAR	ANTAR 12.0 AMARE 13.0 SENVU 6.0 CIRAR 5.0	MATCH BBCH 12-14 ANTAR BBCH 13-15 AMARE BBCH 12-14 SENVU BBCH 12-14 CIRAR BBCH 14-16	CHR/H/DIK 480 SL	0.6 L/ha			Assessment date: 02.06.2021 09.06.2021 16.06.2021 30.06.2021 28.07.2021
SRPL21-448-336FE	maize/ Cedro (FAO 200) CHEAL POLCO ANTAR AMARE CONAR	CHEAL 7.0 POLCO 5.0 ANTAR 13.75 AMARE 8.5 CONAR 5.25	CHEAL BBCH 10-12 POLCO BBCH 11-13 ANTAR BBCH 10-14 AMARE BBCH 12-16 CONAR BBCH 10-16	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 07.06.2021 Assessment date: 07.06.2021 14.06.2021 21.06.2021 05.07.2021 02.08.2021
SRPL21-449-336FE	maize/ Rosomak-HR SMOLICE GERPU CHEAL POLCO POLPE CIRAR	GERPU 6.0 CHEAL 10.0 POLCO 7.0 POLPE 6.0 CIRAR 5.0	GERPU BBCH 11-12 CHEAL BBCH 12-14 POLCO BBCH 11-13 POLPE BBCH 11-13 CIRAR BBCH 11-13	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 04.06.2021 Assessment date: 04.06.2021 11.06.2021 18.06.2021 02.07.2021 30.07.2021
AH/22/K/20/Jab/02	maize/ DKC3595 ARTVU CONAR MATCH CIRAR	ARTVU 6.0 CONAR 5.0 MATCH 7.0 CIRAR 8.0	ARTVU BBCH 11-12 CONAR BBCH 11-15 MATCH BBCH 13-16 CIRAR BBCH 12-17	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 22.06.2022 Assessment date: 29.06.2022 06.07.2022 31.08.2022 17.08.2022
AH/22/K/20/Mal/03	maize/ Ułan ARTVU CONAR MATCH POLPE	ARTVU 5.0 CONAR 8.0 MATCH 10.0 POLPE 7.0	ARTVU BBCH 11-13 CONAR BBCH 11-13 MATCH BBCH 12-14 POLPE BBCH 12-14	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 21.06.2022 Assessment date: 21.06.2022 28.06.2022 26.07.2022 23.08.2022
AH/22/K/20/NW/04	maize/ Subito ARTVU CONAR MATCH CIRAR	ARTVU 6.0 CONAR 7.0 MATCH 11.0 CIRAR 5.0	ARTVU BBCH 12-14 CONAR BBCH 13-15 MATCH BBCH 13-17 CIRAR BBCH 13-16	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 12.07.2022 Assessment date: 12.07.2022 19.07.2022 02.08.2022

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								30.08.2022
AH/22/K/20/Mr/01	maize/ DKC 3350 ARTVU CONAR MATCH POLPE CHEAL VIOAR LAMPU	ARTVU 5.0 CONAR 5.0 MATCH 5.0 POLPE 5.0 CHEAL 35.0 VIOAR 19.0 LAMPU 6.0	ARTVU BBCH 12-15 CONAR BBCH 13-17 MATCH BBCH 12-15 POLPE BBCH 12-16 CHEAL BBCH 12-16 VIOAR BBCH 12-14 LAMPU BBCH 12-15	CHR/H/DIK 480 SL CHR/H/DIK 480 SL CHR/H/DIK 480 SL	0.4 L/ha 0.5 L/ha 0.6 L/ha	Dicash 480 SL	0.6 L/ha	Application date: 23.05.2022 Assessment date: 06.06.2022 20.06.2022

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/DIK 480 SL in control of CHEAL *Chenopodium album*

Pest code			Chenopodium album CHEAL										Ave- rage	Min.	Max.	
Report code	A.T/2021/06 7/KK	A.T/2021/06 8/KK	A.T/2021/06 9/KK	A.T/2021/07 0/KK	A.T/2021/10 4/KK	SRPL21- 445-336FE	SRPL21- 446-336FE	SRPL21- 447-336FE	SRPL21- 448-336FE	SRPL21- 449-336FE	AH/22/K/20 /Mr/01					
Application date	31.05.2021	31.05.2021	08.06.2021	07.06.2021	26.06.2021	15.06.2021	05.05.2021	02.06.2021	07.06.2021	04.06.2021	23.05.2022					
Crop stage in application	BBCH 12- 14	BBCH 12- 14	BBCH 13- 14	BBCH 13- 14	BBCH 13- 15	BBCH 12- 13	BBCH 12- 13	BBCH 13- 14	BBCH 13- 14	BBCH 12- 13	BBCH 14- 15					
Pest stage	BBCH 12- 14	BBCH 12- 14	BBCH 14- 16	BBCH 12- 14	BBCH 12- 21	BBCH 12- 14	BBCH 12- 14	BBCH 13- 14	BBCH 10- 12	BBCH 12- 14	BBCH 12- 16					
Assessment date	24.06.2021	25.06.2021	06.07.2021	05.07.2021	24.07.2021	10.08.2021	30.06.2021	28.07.2021	02.08.2021	30.07.2021	20.06.2022					
Days after application DA-A	24 DA-A	25 DA-A	28 DA-A	28 DA-A	28 DA-A	56 DA-A	56 DA-A	56 DA-A	56 DA-A	56 DA-A	28 DA-A					
weeds density pcs/m²			14.0	20.0	20.0	8.0	13.0	28.5	12.5	25.0	13.0	10.0	20.5	16.8	8.0	28.5
N o.	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	0.00	0.00
2	CHR/H/DIK 480 SL	0.40	61.30	42.50	62.50	60.00	48.80	70.00	67.50	38.75	57.50	68.80	74.30	59.27	38.75	74.30
3	CHR/H/DIK 480 SL	0.50	73.30	60.00	70.00	76.30	62.50	75.00	73.80	53.75	67.50	72.50	81.80	69.68	53.75	81.80
4	CHR/H/DIK 480 SL	0.60	82.00	70.00	78.80	81.30	77.50	95.00	91.30	75.00	94.50	93.80	96.00	85.02	70.00	96.00
5	Dicash 480 SL	0.60	82.00	70.00	77.50	83.80	77.50	75.00	87.50	73.75	91.30	77.50	90.00	80.53	70.00	91.30
LSD(P=.05)			3.820	9.330	7.800	4.670	4.670	-	4.620	5.841	7.340	3.790	3.820			

Table 2. The efficacy of CHR/H/DIK 480 SL in control of ARTVU *Artemisia vulgaris*

Pest code			<i>Artemisia vulgaris</i> ARTVU				
Report code	A.T/2021/067/K K	A.T/2021/069/K K	A.T/2021/104/K K	AH/22/K/20/Jab/ 02	AH/22/K/20/Mal/ 03	AH/22/K/20/NW/ 04	AH/22/K/20/Mr/ 01
Application date	31.05.2021	08.06.2021	26.06.2021	22.06.2022	21.06.2022	12.07.2022	23.05.2022
Crop stage in application	BBCH 12-14	BBCH 13-14	BBCH 13-15	BBCH 11-13	BBCH 13-15	BBCH 12-14	BBCH 14-15
Pest stage	BBCH 11-12	BBCH 14-16	BBCH 14-16	BBCH 11-12	BBCH 11-13	BBCH 12-14	BBCH 12-15

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Assessment date			24.06.2021	06.07.2021	24.07.2021	17.08.2022	23.08.2022	30.08.2022	20.06.2022			
Days after application DA-A			24 DA-A	28 DA-A	28 DA-A	56 DA-A	63 DA-A	49 DA-A	28 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m ²			6.0	5.0	5.0	6.0	4.0	6.0	6.5	5.5	4.0	6.5
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/DIK 480 SL	0.40	62.80	68.00	57.50	42.50	53.80	40.00	53.00	53.94	40.00	68.00
3	CHR/H/DIK 480 SL	0.50	74.00	80.00	70.00	60.10	67.50	56.30	63.00	67.27	56.30	80.00
4	CHR/H/DIK 480 SL	0.60	80.80	85.00	82.50	71.30	76.30	70.00	70.50	76.63	70.00	85.00
5	Dicash 480 SL	0.60	81.30	85.00	81.80	68.90	75.00	67.50	67.50	75.29	67.50	85.00
LSD(P=.05)			4.790	5.160	5.200	7.930-8.440	4.270	10.170	5.630			

Table 3. The efficacy of CHR/H/DIK 480 SL in control of POLCO Fallopia convolvulus

Pest code	Fallopia convolvulus POLCO											
Report code	A.T/2021/068/K K	A.T/2021/069/K K	A.T/2021/070/K K	A.T/2021/104/K K	SRPL21-446-336FE	SRPL21-448-336FE	SRPL21-449-336FE					
Application date	31.05.2021	08.06.2021	07.06.2021	26.06.2021	05.05.2021	07.06.2021	04.06.2021					
Crop stage in application	BBCH 12-14	BBCH 13-14	BBCH 13-14	BBCH 13-15	BBCH 12-13	BBCH 13-14	BBCH 12-13					
Pest stage	BBCH 12-14	BBCH 14-16	BBCH 12-14	BBCH 12-21	BBCH 12-14	BBCH 11-13	BBCH 11-13					
Assessment date	25.06.2021	06.07.2021	05.07.2021	24.07.2021	30.06.2021	02.08.2021	30.07.2021					
Days after application DA-A	25 DA-A	28 DA-A	28 DA-A	28 DA-A	56 DA-A	56 DA-A	56 DA-A	Ave- rage	Min.	Max.		
weeds density pcs/m ²	7.0	7.0	5.0	5.0	9.0	6.5	7.0	6.6	5.0	9.0		

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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/DIK 480 SL	0.40	52.50	80.00	77.50	57.50	67.50	52.50	62.50	64.29	52.50	80.00
3	CHR/H/DIK 480 SL	0.50	68.00	80.00	82.50	70.00	72.50	67.50	70.00	72.93	67.50	82.50
4	CHR/H/DIK 480 SL	0.60	80.00	91.30	90.00	85.00	90.00	88.80	85.00	87.16	80.00	91.30
5	Dicash 480 SL	0.60	80.00	90.00	91.30	87.50	87.50	80.00	73.80	84.30	73.80	91.30
LSD(P=.05)			4.910	2.000	2.750	4.990	4.420	4.100	2.440			

Table 4. The efficacy CHR/H/DIK 480 SL in control of ANTAR Anthemisa arvensis

Pest code			Anthemisa arvensis ANTAR								
Report code			A.T/2021/067/K K	A.T/2021/069/K K	A.T/2021/070/K K	A.T/2021/104/K K	SRPL21-447- 336FE	SRPL21-448- 336FE			
Application date			31.05.2021	08.06.2021	07.06.2021	26.06.2021	02.06.2021	07.06.2021			
Crop stage in application			BBCH 12-14	BBCH 13-14	BBCH 13-14	BBCH 13-15	BBCH 13-14	BBCH 13-14			
Pest stage			BBCH 12-16	BBCH 14-16	BBCH 12-14	BBCH 12-31	BBCH 13-15	BBCH 10-14			
Assessment date			24.06.2021	06.07.2021	05.07.2021	24.07.2021	28.07.2021	02.08.2021			
Days after application DA-A			24 DA-A	28 DA-A	28 DA-A	28 DA-A	56 DA-A	56 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m ²			5.0	6.0	7.0	5.0	12.0	16.0	8.5	5.0	16.0
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/DIK 480 SL	0.40	25.00	30.00	61.80	42.50	48.75	11.30	36.56	11.30	61.80

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3	CHR/H/DIK 480 SL	0.50	35.00	40.00	71.30	48.80	67.50	16.30	46.48	16.30	71.30
4	CHR/H/DIK 480 SL	0.60	45.00	60.00	78.80	47.50	75.00	30.00	56.05	30.00	78.80
5	Dicash 480 SL	0.60	45.00	58.80	78.80	50.00	78.75	58.80	61.69	45.00	78.80
LSD(P=.05)			3.270	10.170	3.530	3.330	4.503	6.630			

Table 5. The efficacy of CHR/H/DIK 480 SL in control of POLPE *Polygonum persicaria*

Pest code			Persicaria maculosa POLPE									
Report code			A.T/2021/068/K K	A.T/2021/069/K K	A.T/2021/104/K K	SRPL21- 446-336FE	SRPL21- 449-336FE	AH/22/K/20/Ma/ 03	AH/22/K/20/Mr/ 01			
Application date			31.05.2021	08.06.2021	26.06.2021	05.05.2021	04.06.2021	21.06.2022	23.05.2022			
Crop stage in application			BBCH 12-14	BBCH 13-14	BBCH 13-15	BBCH 12- 13	BBCH 12- 13	BBCH 13-15	BBCH 14-15			
Pest stage			BBCH 12-14	BBCH 14-16	BBCH 10-16	BBCH 12- 14	BBCH 11- 13	BBCH 12-14	BBCH 12-16			
Assessment date			25.06.2021	06.07.2021	24.07.2021	30.06.2021	30.07.2021	23.08.2022	20.06.2022			
Days after application DA-A			25 DA-A	28 DA-A	28 DA-A	56 DA-A	56 DA-A	63 DA-A	28 DA-A	Ave- rage	Min.	Max
weeds density pcs/m²			5.0	5.0	5.0	9.5	6.0	7.0	5.5	6.1	5.0	9.5
No	Name	Rate (L, kg/ha)										
1	Untreated Check	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0
2	CHR/H/DIK 480 SL	0.40	50.00	82.50	52.50	65.00	70.00	67.50	66.50	64.86	50.0 0	82.5 0
3	CHR/H/DIK 480 SL	0.50	70.00	86.30	71.30	72.50	71.30	78.80	76.00	75.17	70.0 0	86.3 0
4	CHR/H/DIK 480 SL	0.60	85.00	90.00	88.80	88.80	85.00	86.00	79.50	86.16	79.5 0	90.0 0
5	Dicash 480 SL	0.60	85.00	90.00	88.80	83.80	78.80	84.00	79.80	84.31	78.8 0	90.0 0
LSD(P=.05)			6.800	5.030	4.270	3.770	2.330	4.540	3.570			

Table 6. The efficacy of CHR/H/DIK 480 SL in control of VIOAR *Viola arvensis*

Pest code			Viola arvensis VIOAR								
Report code			A.T/2021/067/K K	A.T/2021/068/K K	A.T/2021/069/K K	A.T/2021/070/K K	A.T/2021/104/K K	AH/22/K/20/Mr/0 1			
Application date			31.05.2021	31.05.2021	08.06.2021	07.06.2021	26.06.2021	23.05.2022			
Crop stage in application			BBCH 12-14	BBCH 12-14	BBCH 13-14	BBCH 13-14	BBCH 13-15	BBCH 14-15			
Pest stage			BBCH 12-14	BBCH 12-14	BBCH 14-16	BBCH 12-14	BBCH 10-14	BBCH 12-16			
Assessment date			24.06.2021	25.06.2021	06.07.2021	05.07.2021	24.07.2021	20.06.2022			
Days after application DA-A			24 DA-A	25 DA-A	28 DA-A	28 DA-A	28 DA-A	28 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m²			6.0	11.0	5.0	7.0	12.0	32.0	12.2	5.0	32.0
No .	Name	Rate (L, kg/ha)						1	1	1	1
1	Untreated Check	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	CHR/H/DIK 480 SL	0.40	0.00	0.00	20.00	20.00	11.30	63.30	19.10	0.00	63.30
3	CHR/H/DIK 480 SL	0.50	16.30	10.00	20.00	20.00	17.50	63.30	24.52	10.00	63.30
4	CHR/H/DIK 480 SL	0.60	28.80	30.00	30.00	25.00	21.30	73.50	34.77	21.30	73.50
5	Dicash 480 SL	0.60	28.80	30.00	30.00	22.50	21.30	68.80	33.57	21.30	68.80
LSD(P=.05)			4.270	-	-	6.660	4.270	5.310			

Table 7. The efficacy of CHR/H/DIK 480 SL in control of AMARE *Amaranthus retroflexus*

Pest code		<i>Amaranthus retroflexus</i> AMARE					
Report code		A.T/2021/067/KK	A.T/2021/069/KK	A.T/2021/070/KK	SRPL21-446- 336FE	SRPL21-447- 336FE	SRPL21-448- 336FE
Application date		31.05.2021	08.06.2021	07.06.2021	05.05.2021	02.06.2021	07.06.2021

Crop stage in application			BBCH 12-14	BBCH 13-14	BBCH 13-14	BBCH 12-13	BBCH 13-14	BBCH 13-14			
Pest stage			BBCH 12-14	BBCH 14-16	BBCH 12-16	BBCH 12-14	BBCH 12-14	BBCH 12-16			
Assessment date			24.06.2021	06.07.2021	05.07.2021	30.06.2021	28.07.2021	02.08.2021			
Days after application DA-A			24 DA-A	28 DA-A	28 DA-A	56 DA-A	56 DA-A	56 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m ²			5.0	5.0	5.0	11.5	13.0	9.8	8.2	5.0	13.0
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/DIK 480 SL	0.40	52.50	50.00	50.00	57.50	50.00	32.50	48.75	32.50	57.50
3	CHR/H/DIK 480 SL	0.50	63.80	65.00	60.00	66.30	61.25	58.80	62.53	58.80	66.30
4	CHR/H/DIK 480 SL	0.60	70.00	75.00	72.50	78.80	76.25	77.50	75.01	70.00	78.80
5	Dicash 480 SL	0.60	70.80	73.80	73.80	77.50	80.00	77.50	75.57	70.80	80.00
LSD(P=.05)			4.650	3.770	4.270	4.620	4.717	3.980			

Table 8. The efficacy of CHR/H/DIK 480 SL in control of PLAMA *Plantago major*

Pest code	<i>Plantago major</i> PLAMA		
Report code	A.T/2021/067/KK	A.T/2021/070/KK	A.T/2021/104/KK
Application date	31.05.2021	07.06.2021	26.06.2021
Crop stage in application	BBCH 12-14	BBCH 13-14	BBCH 13-15
Pest stage	BBCH 11-12	BBCH 12-16	BBCH 14-16
Assessment date	24.06.2021	05.07.2021	24.07.2021

Days after application DA-A			24 DA-A	28 DA-A	28 DA-A	Average	Min.	Max.
weeds density pcs/m ²			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/DIK 480 SL	0.40	78.30	75.00	70.00	74.43	70.00	78.30
3	CHR/H/DIK 480 SL	0.50	87.80	87.50	82.50	85.93	82.50	87.80
4	CHR/H/DIK 480 SL	0.60	96.00	95.00	92.50	94.50	92.50	96.00
5	Dicash 480 SL	0.60	96.00	95.00	90.00	93.67	90.00	96.00
LSD(P=.05)			3.690	4.610	4.990			

Table 9. The efficacy of CHR/H/DIK 480 SL in control of CONAR Convolvulus arvensis

[illegible]

2	CHR/H/DIK 480 SL	0.40	65.00	45.00	55.00	82.50	67.50	56.50	61.92	45.00	82.50
3	CHR/H/DIK 480 SL	0.50	75.00	52.50	66.30	72.80	63.80	62.30	65.45	52.50	75.00
4	CHR/H/DIK 480 SL	0.60	90.00	88.80	79.30	83.50	68.80	75.00	80.90	68.80	90.00
5	Dicash 480 SL	0.60	70.00	93.80	73.80	71.00	66.30	73.30	74.70	66.30	93.80
LSD(P=.05)			-	5.490	6.870	9.550	11.170	9.690			

Table 10. The efficacy of CHR/H/DIK 480 SL in control of CIRAR *Cirsium arvense*

Pest code			<i>Cirsium arvense</i> CIRAR								
Report code			A.T/2021/068/K K	A.T/2021/104/K K	SRPL21-447- 336FE	SRPL21-449- 336FE	AH/22/K/20/Jab/0 2	AH/22/K/20/NW/0 4			
Application date			31.05.2021	26.06.2021	02.06.2021	04.06.2021	22.06.2022	12.07.2022			
Crop stage in application			BBCH 12-14	BBCH 13-15	BBCH 13-14	BBCH 12-13	BBCH 11-13	BBCH 12-14			
Pest stage			BBCH 12-14	BBCH 10-31	BBCH 14-16	BBCH 11-13	BBCH 12-17	BBCH 12-14			
Assessment date			25.06.2021	24.07.2021	28.07.2021	30.07.2021	18.08.2022	30.08.2022			
Days after application DA-A			25 DA-A	28 DA-A	56 DA-A	56 DA-A	56 DA-A	49 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m ²			6.0	5.0	5.0	8.0	8.0	5.0	6.2	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
2	CHR/H/DIK 480 SL	0.40	60.00	57.50	38.75	52.50	72.50	67.50	58.13	38.75	72.50
3	CHR/H/DIK 480 SL	0.50	85.00	80.00	50.00	56.30	82.30	75.00	71.43	50.00	85.00
4	CHR/H/DIK 480 SL	0.60	90.00	87.50	57.50	65.00	92.30	85.50	79.63	57.50	92.30

5	Dicash 480 SL	0.60	87.50	86.30	63.75	62.50	88.50	84.50	78.84	62.50	88.50
LSD(P=.05)			5.810	5.370	5.669	2.980	3.550	5.650			

Table 11. The efficacy of CHR/H/DIK 480 SL in control of MATCH *Matricaria chamomilla*

Pest code			Matricaria chamomilla MATCH								
Report code			A.T/2021/068/K K	SRPL21-447- 336FE	AH/22/K/20/Jab/0 2	AH/22/K/20/Mal/0 3	AH/22/K/20/NW/0 4	AH/22/K/20/Mr/0 1			
Application date			31.05.2021	02.06.2021	22.06.2022	21.06.2022	12.07.2022	23.05.2022			
Crop stage in application			BBCH 12-14	BBCH 13-14	BBCH 11-13	BBCH 13-15	BBCH 12-14	BBCH 14-15			
Pest stage			BBCH 12-14	BBCH 12-14	BBCH 13-16	BBCH 12-14	BBCH 13-17	BBCH 12-15			
Assessment date			25.06.2021	28.07.2021	18.08.2022	23.08.2022	30.08.2022	20.06.2022			
Days after application DA-A			25 DA-A	56 DA-A	56 DA-A	63 DA-A	49 DA-A	28 DA-A	Ave- rage	Min.	Max.
weeds density pcs/m²			5.0	8.0	7.0	10.0	11.0	5.5	7.8	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
2	CHR/H/DIK 480 SL	0.40	60.00	41.25	87.50	88.00	83.00	66.30	71.01	41.25	88.00
3	CHR/H/DIK 480 SL	0.50	72.50	58.75	94.00	97.30	86.00	75.00	80.59	58.75	97.30
4	CHR/H/DIK 480 SL	0.60	80.00	75.00	98.80	100.00	88.50	82.50	87.47	75.00	100.00
5	Dicash 480 SL	0.60	80.00	77.50	98.00	100.00	84.80	77.30	86.27	77.30	100.00
LSD(P=.05)			3.530	4.821	2.900	5.570	3.35	4.620			

Appendix 6 Summary of phytotoxicity trials data in summary form

Table 1 – data from phytotoxicity trials – maize (selectivity trials)

Report code	Treatment	Dose [L/ha]	Phytotoxicity in %			
A.T/2021/072/KK	Timing of assessment date	DA-A	11 DA-A	20 DA-A	26 DA-A	52 DA-A
			08.06.2021	17.06.2021	23.06.2021	19.07.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	1.20	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
A.T/2021/073/KK	Timing of assessment date	DA-A	14 DA-A	28 DA-A	59 DA-A	-
			21.06.2021	05.07.2021	05.08.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	1.20	0.00	0.00	0.00	-
	LSD (P=0.05)					-
A.T/2021/074/KK	Timing of assessment date	DA-A	14 DA-A	25 DA-A	52 DA-A	-
			28.06.2021	09.07.2021	05.08.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	1.20	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/075/KK	Timing of assessment date	DA-A	14 DA-A	23 DA-A	54 DA-A	-
			14.06.2021	23.06.2021	24.07.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-

	Dicash 480 SL	1.20	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/076/KK	Timing of assessment date	DA-A	14 DA-A	28 DA-A	43 DA-A	-
			21.06.2021	05.07.2021	20.07.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	1.20	0.00	0.00	0.00	-
	LSD (P=0.05)					-
AH/21/K/16/ZL/01	Timing of assessment date	DA-A	7 DA-A	14 DA-A	21 DA-A	28 DA-A
			01.06.2021	08.06.2021	15.06.2021	22.06.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	1.20	0.00	0.00	0.00	0.00
	LSD (P=0.05)					
AH/21/K/16/BR/02	Timing of assessment date	DA-A	7 DA-A	14 DA-A	21 DA-A	28 DA-A
			31.05.2021	07.06.2021	14.06.2021	21.06.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	1.20	0.00	0.00	0.00	0.00
	LSD (P=0.05)					
AH/21/K/16/GR/03	Timing of assessment date	DA-A	7 DA-A	14 DA-A	21 DA-A	28 DA-A
			14.06.2021	21.06.2021	28.06.2021	05.07.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	1.20	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	1.20	0.00	0.00	0.00	0.00
	LSD (P=0.05)					

Table 2 – data from phytotoxicity trials – maize (efficacy trials)

Report code	Treatment	Dose [L/ha]	Phytotoxicity in %			
A.T/2021/067/KK	Timing of assessment date	DA-A	14 DA-A	24 DA-A	46 DA-A	-
			14.06.2021	24.06.2021	16.07.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/068/KK	Timing of assessment date	DA-A	9 DA-A	25 DA-A	39 DA-A	-
			09.06.2021	25.06.2021	09.07.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/069/KK	Timing of assessment date	DA-A	14 DA-A	28 DA-A	58 DA-A	-
			22.06.2021	06.07.2021	05.08.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/070/KK	Timing of assessment date	DA-A	14 DA-A	28 DA-A	59 DA-A	-
			21.06.2021	05.07.2021	05.08.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	-

	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
A.T/2021/104/KK	Timing of assessment date	DA-A	14 DA-A	28 DA-A	41 DA-A	-
			10.07.2021	24.07.2021	06.08.2021	-
	Untreated Check	-	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	-
	Dicash 480 SL	0.60	0.00	0.00	0.00	-
	LSD (P=0.05)		-	-	-	-
SRPL21-445-336FE	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			22.06.2021	29.06.2021	13.07.2021	10.08.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
SRPL21-446-336FE	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			12.05.2021	19.05.2021	02.06.2021	30.06.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
SRPL21-447-336FE	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			09.06.2021	16.06.2021	30.06.2021	28.07.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00

	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
SRPL21-448-336FE	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			14.06.2021	21.06.2021	05.07.2021	02.08.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
SRPL21-449-336FE	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			11.06.2021	18.06.2021	02.07.2021	30.07.2021
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
AH/22/K/20/Jab/02	Timing of assessment date	DA-A	7 DA-A	14 DA-A	28 DA-A	56 DA-A
			29.06.2022	06.07.2022	31.08.2022	17.08.2022
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
AH/22/K/20/Mal/03	Timing of assessment date	DA-A	0 DA-A	7 DA-A	35 DA-A	63 DA-A
			21.06.2022	28.06.2022	26.07.2022	23.08.2022
	Untreated Check	-	0.00	0.00	0.00	0.00

	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
AH/22/K/20/NW/04	Timing of assessment	DA-A	0 DA-A	7 DA-A	21 DA-A	49 DA-A
	date	-	12.07.2022	19.07.2022	02.08.2022	30.08.2022
	Untreated Check	-	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.40	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.50	0.00	0.00	0.00	0.00
	CHR/H/DIK 480 SL	0.60	0.00	0.00	0.00	0.00
	Dicash 480 SL	0.60	0.00	0.00	0.00	0.00
	LSD (P=0.05)		-	-	-	-
AH/22/K/20/Mr/01	Timing of assessment	DA-A	14 DA-A	28 DA-A	-	-
	date	-	06.06.2022	20.06.2022	-	-
	Untreated Check	-	0.00	0.00	-	-
	CHR/H/DIK 480 SL	0.40	0.00	0.00	-	-
	CHR/H/DIK 480 SL	0.50	0.00	0.00	-	-
	CHR/H/DIK 480 SL	0.60	0.00	0.00	-	-
	Dicash 480 SL	0.60	0.00	0.00	-	-
	LSD (P=0.05)		-	-	-	-

Table 3 – data from phytotoxicity trials

Test report (1)	Testing Unit GEP (2)	Country Re- gion (3)	Dates of trials and GS (4)	Cultivar F/G (5) N/A (6)	Experimental de- sign Test method (7) Replicates	Remarks
A.T/2021/072/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Chludowo/ Po- land	28.05.2021 BBCH 12-13	maize/ DKC 3595 F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 6.1

A.T/2021/073/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Orzelski Młyn/ Poland	07.06.2021 BBCH 13-14	maize/ Amavit F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: sandy loam pH 5.9
A.T/2021/074/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Trzciany/ Po- land	14.06.2021 BBCH 14-15	maize/ ES Perspective F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 5.8
A.T/2021/075/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Szapsk/ Poland	31.05.2021 BBCH 12-14	maize/ Farmrock F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: sand pH 5.9
A.T/2021/076/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Studzieniec/ Po- land	07.06.2021 BBCH 14-15	maize/ Farnezzo F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: sand pH 5.9
AH/21/K/16/ZŁ/01	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Złotniki/ Poland	25.05.2021 BBCH 13	maize/ FARMODENA F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 6.1
AH/21/K/16/BR/02	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Brody/ Poland	24.05.2021 BBCH 12	maize/ FARMFIIRE F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 6.8
AH/21/K/16/GR/03	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Gorzyń/ Poland	07.06.2021 BBCH 13	maize/ DKC 3350 F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 6.0
A.T/2021/067/KK	A.T Sp. z o.o. ul. Przemysłowa 3 88-300 Mogilno	Trzebaw/ Po- land	31.05.2021 BBCH 12-14	maize/ P7948 F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 7.0
A.T/2021/068/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Koninek/ Po- land	31.05.2021 BBCH 12-14	maize/ Dynamite F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 5.3
A.T/2021/069/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Dąbrówka/ Po- land	08.06.2021 BBCH 13-14	maize/ Baobi F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loamy sand pH 5.8
A.T/2021/070/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Trzęmiętowo/ Poland	07.06.2021 BBCH 13-14	maize/ LG 32.16 F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: slit pH 5.0

A.T/2021/104/KK	A.T Sp. z o.o. ul. Przemysłowa 3, 88-300 Mogilno	Borkowo Ko- ścielne/ Poland	26.06.2021 BBCH 13-15	maize/ Opoka F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: loamy sand pH 6.0
SRPL21-445-336FE	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska, 85-027 Bydgoszcz Po- land	Rąblów/ Poland	15.06.2021 BBCH 12-13	maize/ PIONEER P8307 F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: slit loam pH 5.9
SRPL21-446-336FE	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska, 85-027 Bydgoszcz Po- land	Jankowice Wielkie/ Poland	05.05.2021 BBCH 12-13	maize/ SY Talisman F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: sandy loam pH 6.3
SRPL21-447-336FE	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska, 85-027 Bydgoszcz Po- land	Słabomierz/ Po- land	02.06.2021 BBCH 13-14	maize/ SY Talisman F N	Randomized blocks EPPO PP 1/135 (4) 4	Soil type: loam pH 6.8
SRPL21-448-336FE	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska, 85-027 Bydgoszcz Po- land	Gietrzwałd/ Po- land	07.06.2021 BBCH 13-14	maize/ Cedro (FAO 200) F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: loamy sand pH 5.9
SRPL21-449-336FE	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska, 85-027 Bydgoszcz Po- land	Janowiec Wiel- kopolski/ Po- land	04.06.2021 BBCH 12-13	maize/ Rosomak-HR SMOLICE F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: sandy loam pH 5.1
AH/22/K/20/Jab/02	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Jabłowo Pałuc- kie/ Poland	22.06.2022 BBCH 11-13	maize/ DKC3595 F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: loamy sand pH 6.5
AH/22/K/20/Ma/03	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Małujowice/ Po- land	21.06.2022 BBCH 13-15	maize/ Ułan F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: loamy sand pH 6.9
AH/22/K/20/NW/04	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Nowa Wieś/ Po- land	12.07.2022 BBCH 12-14	maize/ Subito F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: sandy loam pH 5.8
AH/22/K/20/Mr/01	Poznań University of Life Sciences, Re- search and Education Center Gorzyń, Agronomy Department; ul. Wojska Polskiego 28, 60-637 Poznań	Przybroda/ Po- land	23.05.2022 BBCH 14-15	maize/ DKC 3350 F N	Randomized blocks EPPO PP 1/135 (3) 4	Soil type: sandy loam pH 6.1

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