FINAL REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: JMD-HER 387 OD

Product name: Jockey 387 OD

Chemical active substance:
2,4-D 2EHE, 377 g/L
Iodosulfuron-methyl-sodium, 10 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT
(authorization)

Applicant:
Pestila Spółka z ograniczoną odpowiedzialnością

Submission date: December 2022

MS Finalisation date: December 2023; March 2024

Version history

When	What
12.2023	ZRMs evaluated dRR submitted by Applicant
03.2024	Final version of RR after commenting period

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

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

The process chosen by the zRMS to transform the dRR into a RR should be explained. Options are to rewrite the document (with track change or not) or to use commenting boxes such as the following:

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

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

Abstract

Comments of zRMS: Overall summaries are not necessary here. It was provided at the end of each chapter of the dRR. However, in the briefly summary – Jockey 387 OD can be granted in PL and BG in line to accepted GAP table. However, cMS should decide about list of weeds accepted and their sensitivity. Also, analysis of resistance management should be made at national level. Detailed assessment is presented after each chapter in commenting box.

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No. *	**Member state(s)**	**Crop and/ or situation** (crop destination / purpose of crop)	**F, Fn, Fnp G, Gn, Gnp or I ****	**Pests or Group of pests controlled** (additionally: developmental stages of the pest or pest group)	**Application**				**Application rate**			**PHI** (days)	**Remarks:** e.g. g safener/ synergist per ha, other dose rate expression, dose range (min-max)	**zRMS Conclusion (efficacy)**
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	kg or L product / ha a) max. rate per appl. b) max. total rate per crop/season	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
Zonal uses (field or outdoor uses, certain types of protected crops)														
1	Poland	Winter wheat, Winter rye, Winter triticale,	F	Susceptible weeds (0.8L/ha): **Shepherd's purse** (*Capsella bursa-*pastoris) CAPBP, ~~**Cornflower** (*Centaurea cyanus*) CENCY,~~ **Purple deadnettle** (*Lamium purpureum*) LAMPU, **Field chamomile** (*Matricaria chamomila*) MATCH, **False chamomile** (*Tripleurospermum indorum*) MATIN, **Common chickweed** (*Stellaria media*) STEME, Susceptible weeds (1L/ha): **Silky apera** (*Apera spica*-venti) APESV, **Shepherd's purse** (*Capsella bursa-*pastoris) CAPBP, ~~**Cornflower** (*Centaurea cyanus*) CENCY,~~ **Cleavers** (*Galium aparine*) GALAP, **Common deadnettle** (*Lamium amplexicaule*) LAMAM, **Purple deadnettle** (*Lamium purpureum*) LAMPU, **Field chamomile** (*Matricaria chamomila*) MATCH,	broadcast spraying	BBCH 23-31 Spring, post emergence	1 a) 1 b) 1	N/A	0.8 - 1 L/ha a) 1 L/ha b) 1 L/ha	301.6-377 g 2,4-D EHE 8-10 g iodosulfuron-methyl-sodium a) 377 g 2,4-D EHE 10g iodosulfuron-methyl-sodium b) 377 g 2,4-D EHE 10g iodosulfuron-methyl-sodium	200-300 L/ha	not relevant	not relevant	Acceptable

				False chamomile (*Tripleurosper-mum indorum*) MATIN, **Common poppy** (*Papaver rhoeas*) PAPRH, **Common chickweed** (*Stellaria media*) STEME, **Fanweed** (*Thlaspi arvense*) THLAR, **Bird's eye speedwell** (*Veronica persica*) VERPE Moderately susceptible weeds (0.8L/ha): **Silky apera** (*Apera spica*-venti) APESV, **Cleavers** (*Galium aparine*) GALAP, **Common deadnettle** (*Lamium amplexicaule*) LAMAM, **Common poppy** (*Papaver rhoeas*) PAPRH, **Fanweed** (*Thlaspi arvense*) THLAR, **Bird's eye speedwell** (*Veronica persica*) VERPE **Field pansy** (*Viola arvensis*) VI-OAR, Moderately susceptible weeds (1L/ha): **Ivy-leaved speedwell** (*Veronica hederifolia*) VERHE, **Field pansy** (*Viola arvensis*) VI-OAR, Moderately resistant weeds (0.8L/ha): **Ivy-leaved speedwell** (*Veronica hederifolia*) VERHE,										
2	Poland	Spring wheat, Spring triticale	F	Susceptible weeds (0.8L/ha): **Volunteer oilseed rape** (*Brassica napus var.oleracea*) BRSNW, **Shepherd's purse** (*Capsella bursa*-pastoris) CAPBP, **Fat-hen** (*Chenopodium album*) CHEAL, **Cleavers** (*Galium aparine*) GALAP,	broadcast spraying	BBCH 23-31 Spring, post emergence	1 a) 1 b) 1	N/A	0.8 - 1 L/ha a) 1 L/ha b) 1 L/ha	301.6-377 g 2,4-D EHE 8-10 g iodosul-furon-methyl-sodium a) 377 g 2,4-D EHE 10g iodosulfu-	200-300 L/ha	not relevant	not relevant	Acceptable

				Common deadnettle (*Lamium amplexicaule*) LAMAM, **False chamomile** (*Tripleurospermum indorum*) MATIN, **Common poppy** (*Papaver rhoeas*) PAPRH, **Common chickweed** (*Stellaria media*) STEME, <u>Susceptible weeds (1L/ha):</u> ~~**Silky apera** (*Apera spica*-venti) APESV,~~ **Volunteer oilseed rape** (*Brassica napus var.oleracea*) BRSNW, **Shepherd's purse** (*Capsella bursa-*pastoris) CAPBP, **Fat-hen** (*Chenopodium album*) CHEAL, **Cleavers** (*Galium aparine*) GALAP, **Small-flower geranium** (*Geranium pusillum*) GERPU, **Common deadnettle** (*Lamium amplexicaule*) LAMAM, **False chamomile** (*Tripleurospermum indorum*) MATIN, **Common poppy** (*Papaver rhoeas*) **PAPRH,** **Wild buckwheat** (*Fallopia convolvulus*) POLCO, **Bird's eye speedwell** (*Veronica persica*) VERPE **Field pansy** (*Viola arvensis*) VIOAR, **Common chickweed** (*Stellaria media*) STEME, <u>Moderately susceptible weeds (0.8L/ha):</u> ~~**Silky apera** (*Apera spica*-venti) APESV,~~ **Small-flower geranium** (*Geranium pusillum*) GERPU, **Wild buckwheat** (*Fallopia convolvulus*) POLCO, **Bird's eye speedwell** (*Veronica persica*) VERPE **Field pansy** (*Viola arvensis*) VIOAR,						ron-methyl-sodium b) 377 g 2,4-D EHE 10g iodosulfuron-methyl-sodium				

3	Bulgaria	Winter wheat	F	<u>Susceptible weeds (0.8L/ha):</u> **Corn chamomile** (*Anthemis arvensis)* ANTAR **Silky apera** (*Apera spica-venti*) APESV **Shepherd's purse** (*Capsella bursa-pastoris)* CAPBP **Field bindweed** *(Convolvulus arvensis)* CONAR **Common deadnettle** (*Lamium amplexicaule)* LAMAM **Wild mustard** (*Sinapis arvensis)* SINAR **Common chickweed** *(Stellaria media)* STEME **Common cocklebur** (*Xanthium strumarium)* XANST <u>Susceptible weeds (1L/ha):</u> **Corn chamomile** (*Anthemis arvensis)* ANTAR **Silky apera** (*Apera spica-venti*) APESV **Shepherd's purse** (*Capsella bursa-pastoris)* CAPBP **Field bindweed** *(Convolvulus arvensis)* CONAR **Cleavers** *(Galium aparine)* GALAP **Common deadnettle** (*Lamium amplexicaule)* LAMAM **Common poppy** *(Papaver rhoeas)* PAPRH **Wild mustard** (*Sinapis arvensis)* SINAR **Common chickweed** *(Stellaria media)* STEME **Common cocklebur** (*Xanthium strumarium)* XANST <u>Moderately susceptible weeds (0.8L/ha):</u> **Eastern larkspur** *(Consolida orientalis)* CNSOR **Cleavers** *(Galium aparine)* GALAP **Common poppy** *(Papaver rhoeas)* PAPRH <u>Moderately susceptible weeds (1L/ha):</u>	broadcast spraying	BBCH 23-31 Spring, post emergence	1 a) 1 b) 1	N/A	0.8 - 1 L/ha a) 1 L/ha b) 1 L/ha	301.6-377 g 2,4-D EHE 8-10 g iodosulfuron a) 377 g 2,4-D EHE 10g iodosulfuron b) 377 g 2,4-D EHE 10g iodosulfuron	200-300 L/ha	not relevant	not relevant	Acceptable however list of accepted weed species and their sensitivity should be decide on cMS level.

				Eastern larkspur *(Consolida orientalis)* CNSOR **Purple deadnettle** *(Lamium purpureum)* LAMPU **Common speedwell** *(Veronica persica)* VERPE Moderately resistant weeds (0.8L/ha): **Purple deadnettle** *(Lamium purpureum)* LAMPU **Common speedwell** *(Veronica persica)* VERPE Moderately resistant weeds (1L/ha): **Ivy-leaved speedwell** *(Veronica hederifolia)* VERHE Resistant weeds (0.8L/ha) **Ivy-leaved speedwell** *(Veronica hederifolia)* VERHE										

* 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 is the application for registration of a plant protection product under working name JMD-HER 387 OD according to Article 33 of Regulation 1107/2009. JMD-HER 387 OD is a oil dispersion (OD) formula, containing 377 g/L of active substance – 2,4-D EHE, and 10 g/L of active substance – iodosulfuron-methyl-sodium, to be used as a herbicide to control broadleaved weeds in cereals. This is a core dossier in order to allow the approval of product JMD-HER 387 OD in Poland (zRMS).

Description of active substances

Active substances in JMD-HER 387 OD herbicide are: 2,4-D EHE (387 g/L) and iodosulfuron-methyl-sodium (10 g/L) which are included into Annex I of Directive 91/414. 2,4-D EHE and iodosulfuron-methyl-sodium are on the list of approved active substances (*Commission Implementing 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 list of approved active substances*). The active substance of the product is well known and commonly used in Poland and other EU countries. The efficacy of the substances has been proved in many trials and in crop protection practice.

Mode of action

2,4-D EHE is a selective, systemic herbicide that mimics natural auxin at the molecular level. Causes uncontrolled growth in broadleaf weeds which later leads to plant death. As auxin mimic, 2,4-D EHE belongs to HRAC group 4, and phenoxy-caroxylates chemical family. It controls wide array of docotyledonous weeds without affecticng monocots.
The herbicide iodosulfuron-methyl-sodium is a substance which is rapidly absorbed by leaf tissue and later translocated via phloem and xylem to meristems. With its selective mode of action, which is acetolactate synthase inhibition, it inhibits the production of three branched-chain amino acids: isoleucine, leucine and valine. Iodosulfuron-methyl-sodium belongs to acetolactate synthase (ALS) inhibitors group of herbicides and belongs to HRAC group 2. It belongs to sulfonylureas chemical family, to which also belongs f.e. rimsulfuron and mesosulfuron methyl. Iodosulfuron-methyl-sodium controls a wide array of broadleaved weeds in cereals.

Table 3.2-1: Details of the active substances

Active substance	2,4-D EHE	Iodosulfuron-methyl-sodium
Concentration	377 g/L	10 g/L
Chemical group	Phenoxy-carboxylates	Sulfonylurea
Mode of action	Mimix auxins on molecular level	Acetolactate synthase inibition (ALS)
Biological action	Post-emergence herbicide	Post-emergence herbicide

Description of the plant protection product

JMD-HER 387 OD is a oil dispersion (OD) containing 377 g/L 2,4-D EHE and 10 g/L iodosulfuron-methyl-sodium active substances.

Table 3.2-2: Simplified table of requested uses for the product code.

Uses		Member State	Requested rate(s)	Comments / Other relevant details on GAPs
Crop(s)	**Target(s)**			
Winter wheat, Winter triticale, Rye	Silky apera (*Apera spica*-venti) APESV, Shepherd's purse (*Capsella bursa*-pastoris) CAPBP, Cornflower (*Centaurea cyanus*) CENCY, Cleavers (*Galium aparine*) GALAP, Common deadnettle (*Lamium amplexicaule*) LAMAM, Purple deadnettle (*Lamium purpureum*) LAMPU, Field chamomile (*Matricaria chamomila*) MATCH, False chamomile (*Tripleurospermum indorum*) MATIN, Common poppy (*Papaver rhoeas*) PAPRH, Common chickweed (*Stellaria media*) STEME, Fanweed (*Thlaspi arvense*) THLAR, Ivy-leaved speedwell (*Veronica hederifolia*) VERHE, Bird's eye speedwell (*Veronica persica*) VERPE Field pansy (*Viola arvensis*) VIOAR,	PL	0.8 – 1 L/ha	-
Spring wheat, Spring triticale	Silky apera (*Apera spica*-venti) APESV, Volunteer oilseed rape (*Brassica napus var.oleracea*) BRSNW, Shepherd's purse (*Capsella bursa*-pastoris) CAPBP, Fat-hen (*Chenopodium album*) CHEAL, Cleavers (*Galium aparine*) GALAP, Small-flower geranium (*Geranium pusillum*) GERPU, Common deadnettle (*Lamium amplexicaule*) LAMAM, False chamomile (*Tripleurospermum indorum*) MATIN, Common poppy (*Papaver rhoeas*) PAPRH, Wild buckwheat (*Fallopia convolvulus*) POLCO, Bird's eye speedwell (*Veronica persica*) VERPE Field pansy (*Viola arvensis*) VIOAR,	PL	0.8 – 1 L/ha	-
Winter wheat	Corn chamomile (*Anthemis arvensis*) ANTAR Silky apera (*Apera spica-venti*) APESV Shepherd's purse (*Capsella bursa-pastoris*) CAPBP Eastern larkspur (*Consolida orientalis*) CNSOR Field bindweed (*Convolvulus arvensis*) CONAR Cleavers (*Galium aparine*) GALAP Common deadnettle (*Lamium amplexicaule*) LAMAM Purple deadnettle (*Lamium purpureum*) LAMPU Common poppy (*Papaver rhoeas*) PAPRH Wild mustard (*Sinapis arvensis*) SINAR Common chickweed (*Stellaria media*) STEME Ivy-leaved speedwell (*Veronica hederifolia*) VERHE Common speedwell (*Veronica persica*) VERPE Common cocklebur (*Xanthium strumarium*) XANST	BG	0.8 – 1 L/ha	-

The applicant carried out efficacy trials on winter wheat, winter barley, winter triticale, winter rye, spring wheat, spring barley, sprint triticale, oat. SE EPPO zone trials were performed on winter wheat. Required selectivity trials are presented in point 3.4 – Adverse effects on treated crop.

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

Description of the target pests

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

EPPO code	Scientific name	Common name*
AMARE	*Amaranthus retroflexus*	Pigweed
ANTAR	*Anthemis arvensis*	Corn chamomile
APESV	*Apera spica-venti*	Silky apera
BRSNN	*Brassica napus*	Oilseed rape
CAPBP	*Capsella bursa-pastoris*	Shepherd’s purse
CENCY	*Centaurea cyanus*	Cornflower
CHEAL	*Chenopodium album*	Fat-hen
CNSOR	*Consolida orientalis*	Eastern larkspur
CIRAR	*Cirsium arvense*	Field thistle
CONAR	*Convolvulus arvensis*	Field bindweed
DESSO	*Descurainia sophia*	Flixweed
GALAP	*Galium aparine*	Cleavers
GASPA	*Galiinsoga parviflora*	Gallant soldier
GERMO	*Geranium molle*	Dove-foot geranium
GERPU	*Geranium pusillum*	Small-flower geranium
LAMAM	*Lamium amplexicaule*	Common deadnettle
LAMPU	*Lamium puprureum*	Purple deadnettle
MATCH	*Matricaria chamomilla*	Field chamomile
MATIN	*Tripleurospermum inodorum*	False chamomile
PAPRH	*Papaver rhoeas*	Common poppy
POLAV	*Polygonum aviculare*	Knotgrass
POLCO	*Fallopia convolvulus*	Wild buckwheat
SINAR	*Sinapis arvensis*	Wild mustard
STEME	*Stellaria media*	Common chickweed
THLAR	*Thlaspi arvense*	Fanweed
VERAR	*Veronica arvensis*	Wall speedwell
VERHE	*Veronica hederifolia*	Ivy-leaved speedwell
VERPE	*Veronica persica*	Bird’s-eye speedwell
VIOAR	*Viola arvensis*	Field pansy
XANST	*Xanthium strumarium*	Common cocklebur

* optional

Agricultural crop production has been the main branch of plant production in Poland for years. Season 2020 was analysed in this document since some data for 2021 have not been issued yet. Taking into consideration season 2020, following numbers were presented by the Statistics Poland:

Total arable land area reached 18 741 500 ha;
Total amount of sown area 13 603 022 ha.

Crop:	Crop yield (t):	Sowing area (ha):
Wheat	12 000 000	2 364 000
Barley	3 800 000	915 000
Rye	3 100 000	1 036 000
Triticale	5 100 000	1 480 000

The above presented numbers show that sown area of wheat, barley, rye and triticale in total exceeded 5.79 mln ha in 2020, which means that area of these cereal species sown in Poland have slightly increased when compared to 2019 (ca. 5.7 mln ha).

Hence, an appropriate protection in terms of weeds, fungal diseases and to control insects in the aforementioned crops, is inevitable. Chemical control of weeds is highly important in production of agricultural crops, especially in cereals because of its slower growing pace when compared to weeds. Most of weeds species, which are present in cereals, cause not only significant reduction of yield, but also deterioration of its quality parameters. Dicotyledonous (aka broadleaf) weeds are harmful for the crops, either because of their abundance, their competitiveness or difficulties involved in their control. Weeds are also known as intermediate host to many diseases and insects. In the case of some species, the problem is more due to their abundance (associated with a very large seed production and a high persistence of these seeds on the soil surface) rather than competitiveness with the crop. However, there are species, which produce high numbers of seeds although the competition with the crop can be quite high, especially in the early development stages of cereals. Other weeds have very fast growing pace and can outcompete young cereal plants almost completely.

Weeds, which were present in field trials of JMD-HER 387 OD are the known as serious cereals competitors. The results are showing that a lot of broadleaved weeds can be controlled by the product.

Weeds presented in field trials	**Winter wheat, winter triticale, rye** **Dose rate (l/ha)**	**Spring wheat, spring triticale** **Dose rate (l/ha)**	**Winter wheat SE EPPO zone** **Dose rate (l/ha)**
AMARE *Amaranthus retroflexus* Pigweed	x	x	x
ANTAR *Anthemis arvensis* Corn chamomile	x	x	0.8^{ms} -1^{ms}
APESV *Apera spica-venti* Silky apera	0.8^{ms}-1^{ms}	0.8^{ms}-1^{ms}	0.8^{ms} -1^{ms}
BRSNN *Brassica napus* oilseed rape	x	0.8^{ms} -1^{ms}	x
CAPBP *Capsella bursa-pastoris* shepherd’s purse	0.8^{ms} -1^{ms}	0.8-1^{ms}	0.8^{ms} -1^{ms}
CENCY *Centaurea cyanus* cornflower	0.8^{ms} -1^{ms}	x	x
CHEAL *Chenopodium album* fat-hen	x	0.8^{ms} -1^{ms}	x
CNSOR *Consolida orientalis* Eastern larkspur	x	x	0.8^{ms}-1^{ms}
DESSO *Descurainia sophia* flixweed	x	x	x
CIRAR *Cirsium arvense* field thistle	x	x	x
GALAP *Galium aparine* cleavers	0.8^{ms}-1^{ms}	0.8^{ms} -1^{ms}	0.8^{ms}-1^{ms}
GASPA *Galinsoga parviflora* gallant soldier	x	x	x
GERMO *Geranium molle* dove-foot geranium	x	x	x
GERPU *Geranium pusillum* small-flower geranium	x	0.8^{ms}-1^{ms}	x
LAMAM *Lamium amplexicaule* Common deadnettle	0.8^{ms}-1^{ms}	0.8^{ms} -1^{ms}	0.8^{ms} -1^{ms}
LAMPU *Lamium purpureum* purple deadnettle	0.8^{ms} -1^{ms}	x	0.8^{mr}-1^{ms}
MATCH *Matricaria chamomilla* Field chamomile	0.8^{ms} -1^{ms}	x	x
MATIN *Tripleurospermum indorum* false chamomile	0.8^{ms} -1^{ms}	0.8^{ms} -1^{ms}	x

PAPRH *Papaver rhoeas* common poppy	0.8^{ms}-1^{ms}	0.8^{ms} -1^{ms}	0.8^{ms}-1^{ms}
POLAV *Polygonum aviculare* Knotgrass	x	x	x
POLCO *Fallopia convolvulus* wild buckwheat	x	0.8^{ms}-1^{ms}	x
SINAR *Sinapis arvensis* wild mustard	x	x	0.8^{ms} -1^{ms}
STEME *Stellaria media* common chickweed	0.8^{ms} -1^{ms}	0.8^{ms} -1^{ms}	0.8^{ms} -1^{ms}
THLAR *Thlaspi arvense* fanweed	0.8^{ms}-1^{ms}	x	x
VERAR *Veronica arvensis* wall speedwell	x	x	x
VERHE *Veronica hederifolia* ivy-leaved speedwell	0.8^{mr}-1^{ms}	x	0.8^{r}-1^{ms}
VERPE *Veronica persica* bird's-eye speedwell	0.8^{ms}-1^{ms}	0.8^{ms}-1^{ms}	0.8^{mr}-1^{ms}
VIOAR *Viola arvensis* field pansy	0.8^{ms}-1^{ms}	0.8^{ms}-1^{ms}	x
XANST *Xanthium strumarium* Common cockleblur	x	x	0.8^{ms} -1^{ms}

ms – moderately susceptible
mr –moderately resistant
r - resistant
x – not present

According to Statistics Poland means of production in agriculture in the farming year 2020 (latest year with sulfonylurea herbicides data available) such as herbicides, were commonly used in Poland. Sales of plant protection products (in commodity mass) such as herbicides, haulm destructors and moss killers aimed 69849.4 tonnes, out of which herbicides based on phenoxy fitohormones, such as 2,4-D EHE, reached 4568.8 tonnes, and those based on sulfonylurea, such as iodosulfuron-methyl-sodium, reached 3320.5 tonnes.

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

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	minor		Major	minor
Winter wheat, Winter triticale Rye	X		Mono- and dicotyledonous weeds	X	
Spring wheat, Spring triticale	X		Mono- and dicotyledonous weeds	X	
			Brassica napus var. oleracea		X
			Geranium pusilum		X
			Lamium amplexicaule		X
			Veronica persica		X

Compliance with the Uniform Principles

The assessment was performed according to the uniform principles and EPPO guidelines and with the principles of GEP.

Information on trials submitted (3.1 Efficacy data)

Table 3.2-5: Presentation of trials (efficacy trials, preliminary trials...)

Crop(s) *	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		
Winter wheat	Dicot and monocot weeds	Poland, Czech Republic, Germany	2020; 2021	MED + E	15 (15)	GEP	-
Winter triticale	Dicot and monocot weeds	Poland	2020	MED + E	1 (1)	GEP	-
Winter barley	Dicot and monocot weeds	Poland, Czech Republic, Germany	2020; 2021	MED + E	6 (6)	GEP	-
Rye	Dicot and monocot weeds	Poland	2020	MED + E	1 (1)	GEP	-
Spring wheat	Dicot and monocot weeds	Poland	2020; 2021	MED + E	10 (10)	GEP	-
Spring triticale	Dicot and monocot weeds	Poland	2020	MED + E	1 (1)	GEP	-
Spring barley	Dicot and monocot weeds	Poland	2020	MED + E	1 (1)	GEP	-
Oat	Dicot and monocot weeds	Poland	2020	MED + E	1 (1)	GEP	-
Winter wheat	Dicot and monocot weeds	Bulgaria, Hungary, Romania	2020; 2021	MED + E	13 (13)	GEP	-
TOTAL	Dicotyledonous weeds	Poland	2020; 2021	MED + E	49 (49)	GEP	-

* According to the GAP table. Timing of the application(s) can be added if relevant (e.g. Pre-mergence 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.

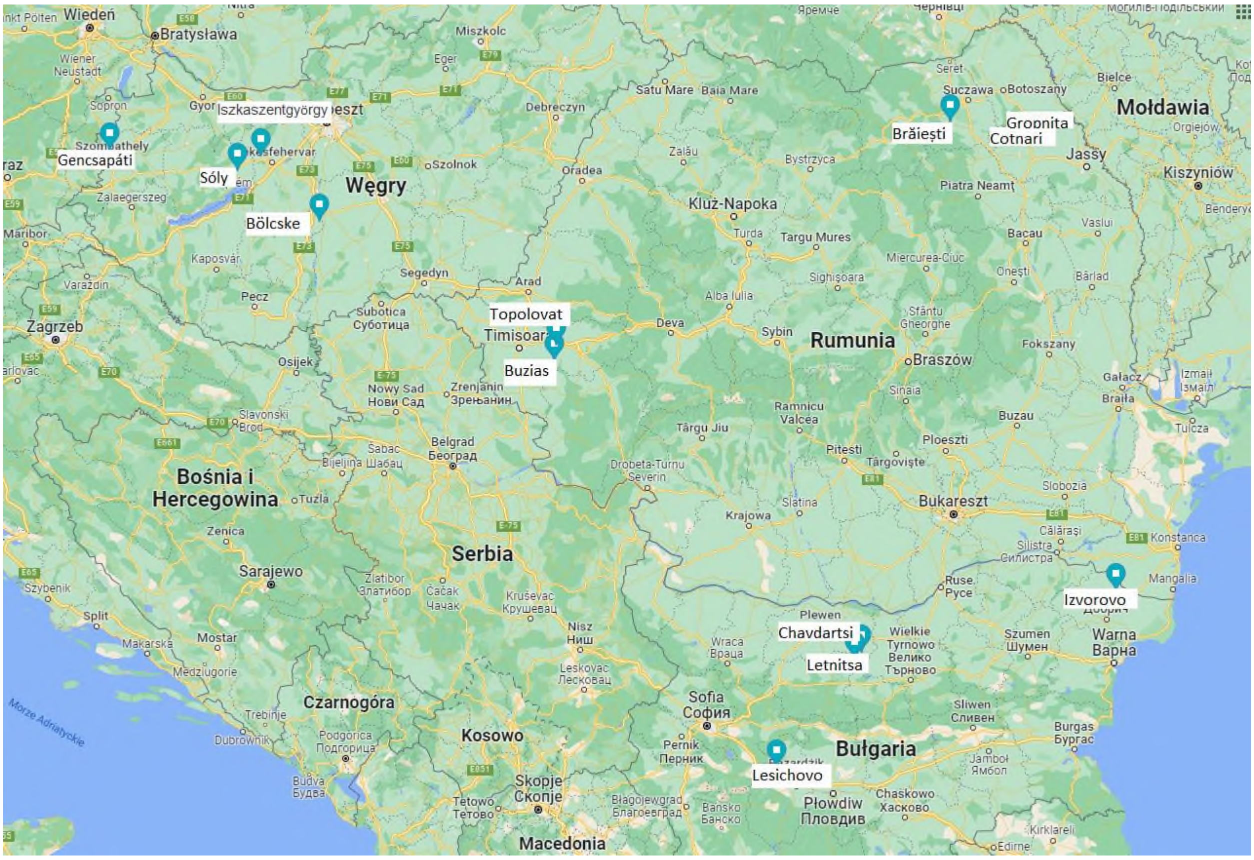
Efficacy trials of JMD-HER 387 OD herbicide were carried out during two growing seasons - 2020 and 2021 in different regions of Poland, Czech Republic, Germany, Bulgaria, Hungary and Romania. Maps below presents locations of the trials in each crop.

Picture 1. A map of efficacy trial locations in winter wheat performed in Poland (seasons 2020; 2021)

Picture 2. A map of efficacy trial locations in winter wheat performed in Czech Republic (season 2021)

Picture 3. A map of efficacy trial locations in winter wheat performed in Germany (season 2021)

Picture 4. A map of efficacy trial locations in winter wheat performed in SE EPPO zone (seasons 2020 and 2021)



JMD-HER 387 OD trails in winter wheat were performed on 13 varieties of this cereal in regions of Poland: Greater Poland, Łódź voivodeship and Silesia, differentiated on type of soil and climatic conditions, Czech Republic: Olomucky and Zlinsky regions, Germany: Baden-Wirtemberg, Brandenburg and Mecklemburg-Pomeranien regions.

In 2020 six winter wheat efficacy trials, conducted by Eurofins Agroscience Services sp. z o. o., were set in Greater Poland and Silesia in 4 different locations on 5 different winter wheat varieties:

a) Gaj Mały, Tulecka and Arkadia varieties sown on loamy sand and sandy loam;
b) Piotrowo Drugie, Patras variety sown on loamy sand;
c) Dalekie, Formacja variety sown on sandy loam;
d) Jasienica, Julius variety sown on loam;

2021 efficacy trials in Poland, Czech Republic and Germany were conducted also by Eurofins Agroscience Services sp. z o. o., they were set in Greater Poland and Łódź Voivodeship (Poland), Olomucky and Zlinsky regions (Czech Republic), Baden-Wirtemberg, Brandenburg and Mecklemburg-Pomeranien regions (Germany), on 9 winter wheat varieties:

a) Gaj Mały, Belissa and Tulecka varieties, grown on sandy loam;
b) Ordzin, Bosporus variety, grown on sandy loam;
c) Wólka Krosnowska, Rotax variety, grown on loam;
d) Vikýřovice, Vanessa variety, grown on clay loam;
e) Kroměříž, Dagmar variety, grown on silt loam;
f) Neidlingen, Partner variety, grown on silt loam;
g) Hönow, Findus variety, grown on loamy sand;
h) Rosenow, Akteur variety, grown on sandy loam.

2020 and 2021 seasons trials in SE EPPO zone were conducted by Eurofins Agroscience Services sp. z o. o., they were set in:
-Bulgaria (Dobrich, Pazardzhik and Lovech provinces)
-Hungary (Vas, Fejér, Veszprém and Tolna provinces)
-Romania (Suceava, Iasi and Timis provinces)

Trials were performed on 12 winter wheat varieties:

a) Brăiești (RO), Putna variety, grown on clay loam;
b) Gropnița (RO), Dunston variety, grown on clay loam;
c) Cotnari (RO), Glosa variety, grown on clay loam;
d) Topolovat (RO), Glosa variety, grown sandy clay;
e) Buzias (RO), Altigo variety, grown on clay loam;
f) Izvorovo (BG), Avenue variety, grown on silty clay loam;
g) Lesichovo (BG), Anapurna variety, grown on sandy clay loam;
h) Chavdartsi (BG), Forkali variety, grown on silty clay loam;
i) Letnitsa (BG), Sadovo 772 variety, grown on clay loam;
j) Gencsapáti (HU), CH Combin variety, grown on clay loam;
k) Iszkaszentgyörgy (HU), MV Nador variety, grown on loam;
l) Sóly (HU), GK Szilard variety, grown on silt loam;
m) Bölcske (HU), GK Bekes variety, grown on loam;

Picture 4. A map of efficacy trial locations in spring wheat (seasons 2020; 2021)

JMD-HER 387 OD trails in spring wheat were performed on 4 varieties of this cereal in regions of Poland: Greater Poland, Pomerania and Silesia, differentiated on type of soil and climatic conditions.

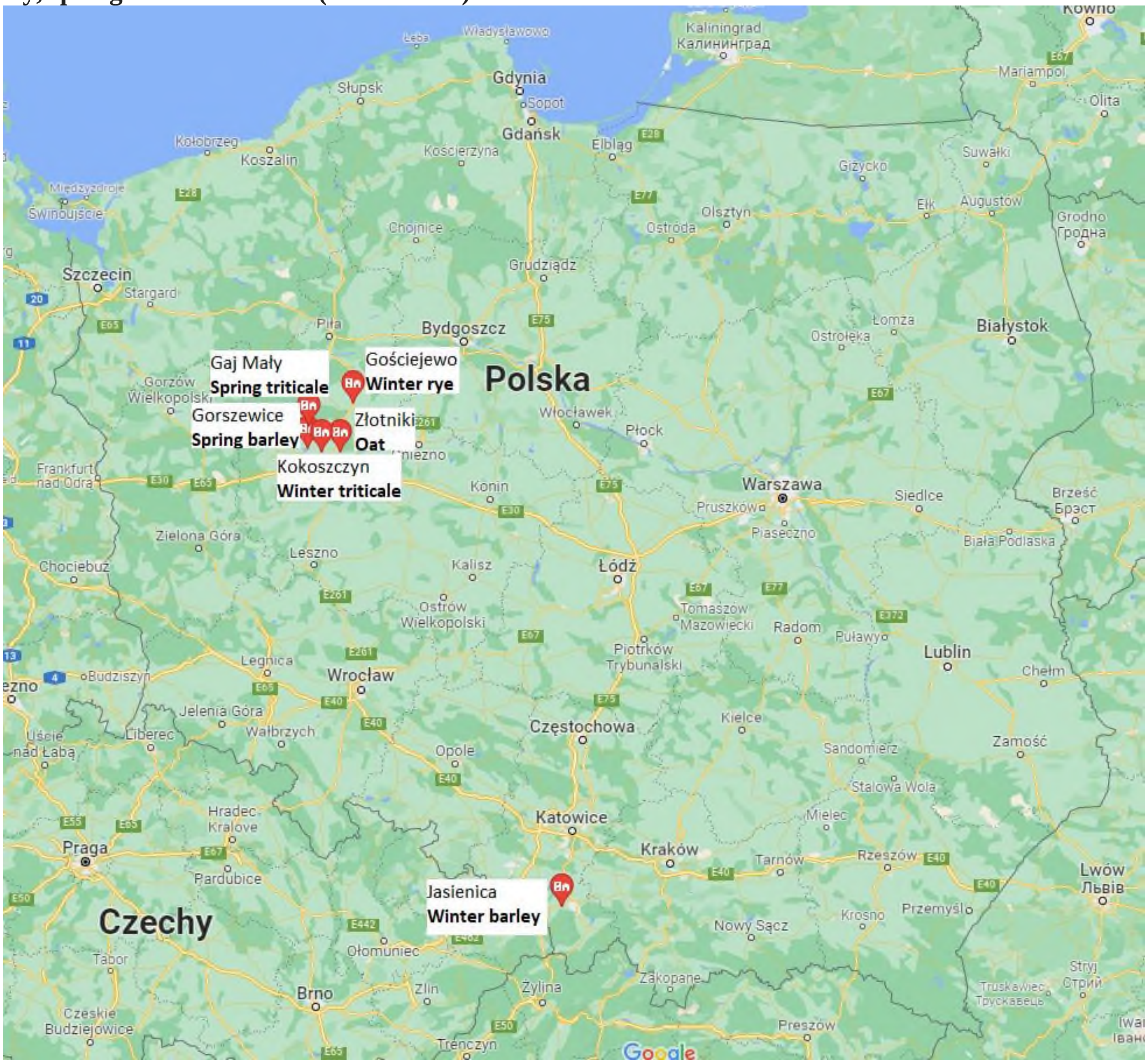
In 2020 six spring wheat efficacy trials, conducted by Eurofins Agroscience Services sp. z o. o., were set in Greater Poland, Pomerania and Silesia in 5 different locations on 3 different spring wheat varieties:

e) Gaj Mały, Telimena variety sown on sandy loam;
f) Otorowo, Tybalt variety sown on sandy clay;
g) Ordzin, Tybalt variety sown on sandy loam;
h) Bielowicko, Tybalt variety sown on loam;
i) Płonina, Goplana variety sown on silt loam;

2021 efficacy trials were conducted also by Eurofins Agroscience Services sp. z o. o., they were set in Greater Poland and Łódź Voivodeship, on 4 winter wheat varieties:

n) Gaj Mały, Goplana variety, grown on sandy loam;
o) Ostroróg, Tybalt variety, grown on sandy loam;
p) Baborowo, Goplana variety, grown on sandy loam;
q) Wielonek, Rusałka variety, grown on loamy sand;

Picture 5. A map of efficacy trial locations in winter barley, winter triticale, winter rye, spring barley, spring triticale and oat (season 2020)

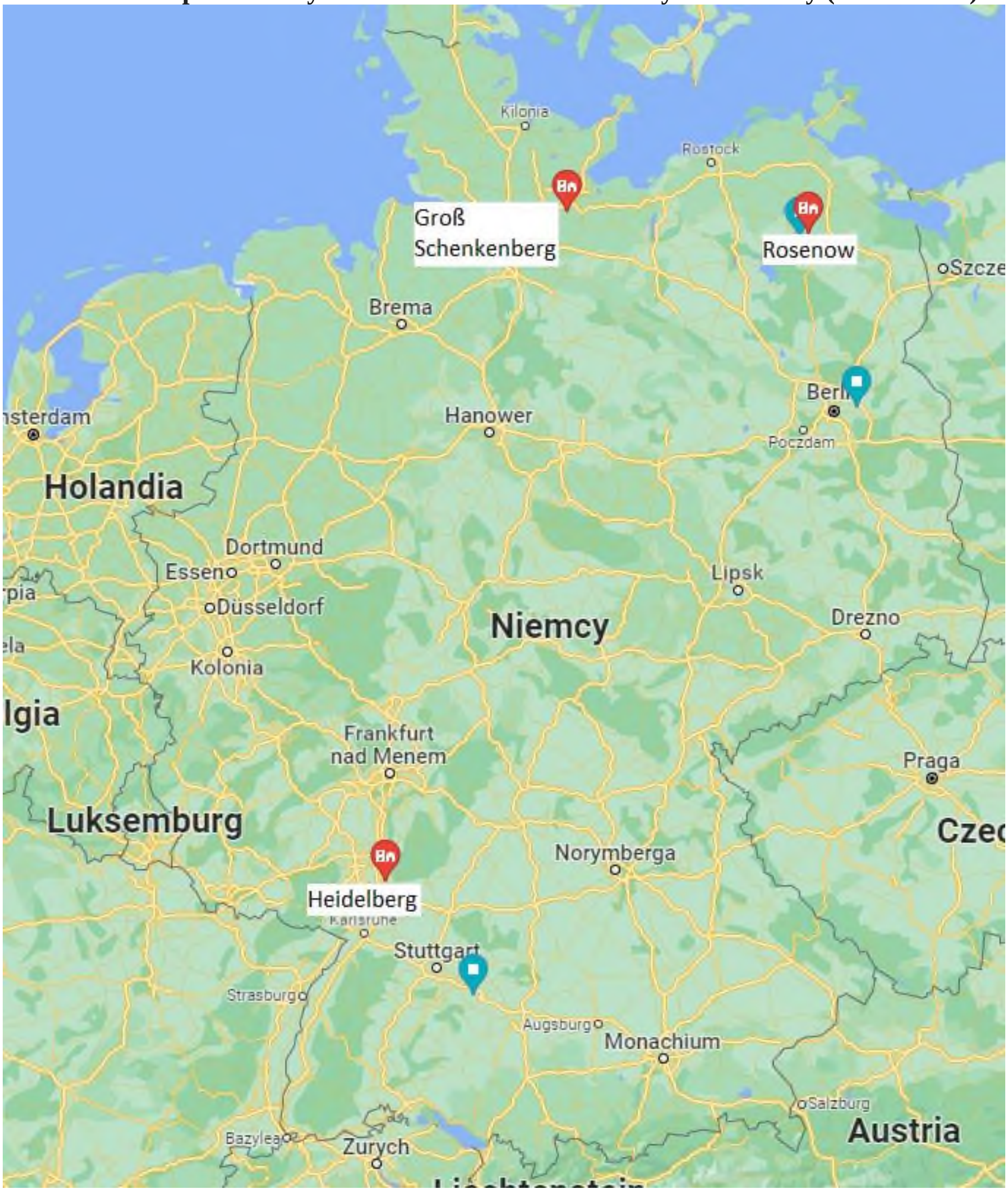


In 2020 six trials conducted by Eurofins Agroscience Services sp. z o. o., were set in Greater Poland and Silesia in 6 different locations on 6 additional cereals species:

a) Gaj Mały, spring triticale (variety: Dublet) sown on sandy loam;
b) Gorszewice, spring barley (variety: Nokia) sown on sandy loam;
c) Kokoszczyn, winter triticale (variety: Baltico) sown on sandy loam;
d) Gościejewo, winter rye (variety: Dankowskie Agat) sown on sandy loam;
e) Jasienica, winter barley (variety: Padura) sown on loam;
f) Złotniki, oat (variety: Bingo) sown on sandy loam;

Picture 6. A map of efficacy trial locations in winter barley in Czech Republic (season 2021)

Picture 7. A map of efficacy trial locations in winter barley in Germany (season 2021)



Additional five JMD-HER 387 OD trails in winter barley were performed on 4 varieties of this cereal in Olomucky region of Czech Republic and German regions: Baden-Wirtemberg, Mecklemburg-Pomeranien and Schleswig-Holstein , which differentiated on type of soil and climatic conditions.

Those five trials were set in 2021 and conducted by Eurofins Agroscience Services sp. z o. o., were set in:

a) Šumperk, Fredericus variety grown on clay loam;
b) Rovensko, Fredericus variety grown on clay loam;
c) Heidelberg, Sandra variety grown on loamy sand,
d) Rosenow, Lomerit variety grown on sandy loam
e) Groß Schenkenberg, KWS Higgins grown on sandy loam

All of the abovementioned trials were conducted in randomized complete block design in four replications. Weed infestation Assessments were done between crop BBCH 15 and 89 in accordance with EPPO PP 1/93 (3) “Weeds in cereals” guideline.

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 sub-stance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treat-ment)	Remark(4)
					Type(2)	Concentra-tion of a.s.			
Winter wheat	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Winter wheat	Husar OD	DE	006209-00/00-001	Iodosulfu-ron	OD	93.197 g/L	0.1 L/ha	0.1 L/ha	1. application per season; 200-400 L/ha of spray volume; foliar spray
Winter wheat	Sekator Plus	CZ	5586-0	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Amidosul-furon	OD	287 g/L; 6.25 g/L 25 g/L	0.45-0.6 L/ha	0.5 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Winter wheat	Secator OD	BG	1907/2006	Amidosul-furon, Iodosulfu-ron-methyl-sodium	OD	100 g/L; 25 g/L	0.1-0.15 L/ha	0.15 L/ha	1. application per season; 200-400 L/ha of spray volume; foliar spray
Winter wheat	Huszar Active Plusz	HU	04.2/1437-1/2014	2,4-D; Iodosulfu-ron-methyl-natrium	OD	250 g/L; 10 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Winter wheat	Hussar Activ Plus OD	RO	Nr. 521PC din 12.07.2019	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-400 L/ha of spray volume; foliar spray
Winter triticale	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Winter barley	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium;	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray

Crop(s)	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active sub-stance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treat-ment)	Remark(4)
					Type(2)	Concentra-tion of a.s.			
				Thien-carbazone; Mefenpyr diethyl					
Winter barley	Hoestar Super	DE	024778-00	Amidosul-furon, Iodosulfu-ron-methyl-natriu, Mefenpyr-diethyl	WG	125 g/kg; 12.5 g/kg; 125 g/kg	0.15-0.2 kg/ha	0.15 kg/ha	1. application per season; 200-400 L/ha of spray volume; foliar spray
Winter barley	Sekator Plus	CZ	5586-0	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Amidosul-furon	OD	287 g/L; 6.25 g/L 25 g/L	0.45-0.6 L/ha	0.5 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Winter rye	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Spring wheat	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Spring triticale	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Spring barley	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-sodium; Thien-carbazone; Mefenpyr diethyl	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray
Oat	Huzar Active Plus	PL	R-107/2018	2,4-D EHE; Iodosulfu-ron-methyl-	OD	300 g/L; 10 g/L; 7.5 g/L; 30 g/L	1 L/ha	1 L/ha	1. application per season; 200-300 L/ha of spray volume; foliar spray

Crop(s)	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active sub-stance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treat-ment)	Remark(4)
					Type(2)	Concentra-tion of a.s.			
				sodium; Thien-carbazone; Mefenpyr diethyl					

(1) only on use(s) applied for (with the test product).
(2) e.g. WP (wettable 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.).

Comments of zRMS:	This document summarizes the information related to the efficacy of the plant protection product – Jockey 387 OD (product code: JMD-HER 387 OD). Jockey 387 OD is an oil dispersion (OD) formulation containing 2,4-D EHE (377 g/L) and iodosulfuron-methyl-sodium (10 g/L) in Poland under Regulation (EC) 1107/2009. For now, this mentioned active substances are on the list of approved active substances. Iodosulfuron-methyl-sodium is an inhibitor of the branched chain amino acid synthesis (ALS/AHAS). It act by inhibiting the biosynthesis of the essential amino acids valine and isoleucine, hence stopping cell division and plant growth. Jockey 387 OD is used for post-emergence control of grass and broadleaved weeds in cereals. All necessary information's about tested plant protection products, active compound, studied weeds, reference products, etc. are correctly presented in this drr by Applicant. 2,4-D EHE is a selective, systemic herbicide that mimics natural auxin at the molecular level. Causes uncontrolled growth in broadleaf weeds which later leads to plant death. As auxin mimic, 2,4-D EHE belongs to HRAC group 4, and phenoxy-caroxylates chemical family. It controls wide array of dicotyledonous weeds without affecticng monocotyledonous. In Poland 25 PPPs with iodosulfuron-methyl-sodium and 2 PPPs with 2,4-D EHE are already registered in Poland. However, this formulation of iodosulfuron me-thyl-sodium with 2,4-D EHE is not registered in Poland yet. Jockey 387 OD will be the first PPP on the Polish market. In 2 PPPs iodosulfuron methyl-sdium and 2,4-D EHE is registered with also third active substance - methyl thiencarbazone in Huzar Active Plus and with – amidosulfuron in Sekator Plus. The product – Jockey 387 OD (product code: JMD-HER 387 OD) containing iodosulfuron-methyl-sodium (10 g/L) and 2,4-D EHE (377 g/L) by Pestila Spółka z ograniczoną odpowiedzialnością has not been previously evaluated in any coun-try according to Uniform Principles. Poland is a ZRMs and BG is a cMS.

3.2.1 Preliminary tests (KCP 6.1)

No results of the preliminary range-finding tests are presented since no screening trials were carried out. However, the active substances of JMD-HER 387 OD, 2,4-D EHE and iodosulfuron-methyl-sodium, have been commonly used in agricultural practice for many years.

Comments of zRMS:	Preliminary range-finding tests were not submitted by the Applicant. The active substances of Jockey 387 OD (product code: JMD-HER 387 OD) – iodosulfuron-

	methyl-sodium and 2,4-D EHE, are registered and have been commonly used in agricultural practice for many years. So, many efficacy trials are available to evaluate the effectiveness of products containing those active compounds. **Preliminary tests were not necessary in this case in the opinion of Evaluator.** In Poland this formulation is not registered yet. Applicant did not submitted justification to combine both active ingredients in Jockey 387 OD. However, in the opinion of ZRMs such justification in this case is not required. Expecially in case that the presented efficacy trials, of these two compounds (iodosulfuron methyl-sodium and 2,4-D EHE) demonstarted the activity against studied weeds in cereals (winter and spring). Jockey 387 OD demonstarted at least comparable control or even higher to the standard reference products used during trials (ex. Hoester super, Husar OD, Huzar active plus or Sekator Plus. Therefore, in the opinion of ZRMs the inclusion of proposed amount of iodosulfuron methyl-sodium (10 g/L) and 2,4-D EHE (377 g/L) in the formulation of Jockey 387 OD are fully justified. 2,4-D is generally formulated as an amine salt or an ester, each of which have their own advantages and tradeoffs. Generally, ester formulations are considered more efficacious, but more likely to drift off target, while amine salts are considered less efficacious but more stable. <u>Some general differences in amine and ester formulations include the following [Nelson et al. 2018]:</u> • Esters are absorbed more quickly than amines on broadleaf weeds and are more efficient under certain environmental conditions and for the control of certain plant species. • Amine formulations of 2,4-D are essentially non-volatile, and pose less potential for vapor movement following application. • Esters are absorbed more quickly by plants and therefore are less likely to be washed away by rain. • Amines are often thought of as being less phytotoxic to crops than ester formulations, however, this is not accurate for all crops and all situations. **Jockey 387 OD (product code: JMD-HER 387 OD) – composition of iodoosulfuron methyl sodium (10 g/L) and 2,4-D EHE (377 g/L) have a very good effectiveness against cereal weeds, as shown in the following section.**

3.2.2 Minimum effective dose tests (KCP 6.2)

Minimum effective dose tests were not carried out. However, several doses of JMD-HER 387 OD were tested during efficacy studies and the lowest effective dose was selected. The tests were conducted in accordance with EPPO standard PP 1/225 (2) '*Minimum effective dose',* which advises on the minimum requirements necessary to ensure consistency of decision making.

Cereals and dicotyledonous weeds

49 field trials were established to present the control of the mono and dicotyledonous weeds in cereals. JMD-HER 387 OD was tested in rates from 0.6 L/ha to 1 L/ha (226-377 g/ha of 2,4-D EHE; 6-10 g/ha of iodosulfuron-methyl-sodium) in order to determine the minimum effective dose in cereals for the control of mono and dicotyledonous weeds. The rates reflect the proposed label rates, 60% and 80% of the lowest recommended rate, which in this case was 0.6 L/ha and 0.8 L/ha, of JMD-HER 387 OD, in accordance with the EPPO standard PP 1/225 (2) '*Minimum effective dose'*.
For the BBCH 23-31, the 0.6 L/ha dose of JMD-HER 387 OD provided inferior control when compared to 0.8-1 L/ha of JMD-HER 387 OD in 49 trials out of 49 trials.

Table 3.2-7: Minimum effective dose. Efficacy of JMD-HER 387 OD at proposed label rates, at 60% and 80% of the lowest recommended dose rate at BBCH 23-36 against mono and dicotyledonous weeds in winter cereals.

Grouping *	Number of trials	Infestation of the untreated control (unit)		% control with JMD-HER 387 OD					
				0.6 L/ha (60% of the lowest recommended rate)		0.8 L/ha (The lowest recom-mended rate)		1 L/ha (Full rate)	
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
APESV	10	8	5-15.8	63.9	44-82	82.6	65-95	90.8	85-96
BRSNN	1	5.5	5.5-5.5	80	80-80	88	88-88	95	95-95
CAPBP	9	8.4	5-11.9	81.3	63-100	90.7	80-100	94.4	88-100
CENCY	5	6.7	5-8	69.4	58-90	86.2	85-90	91.4	89-94
DESSO	1	6	6-6	79	79-79	100	100-100	100	100-100
GALAP	13	6.9	2.5-10.8	68.2	38-95	83.2	53-100	90	58-100
GERMO	1	9.5	9.5-9.5	40	40-40	56	56-56	75	75-75
GERPU	1	5	5-5	41	41-41	71	71-71	89	89-89
LAMAM	6	6.1	5-9	55	40-73	75.7	59-90	89	86-96
LAMPU	9	6.5	4-10.3	75	61-99	87.4	83-98	90.7	86-98
MATCH	4	17	6.8-30.8	94	83-100	96	89-100	98.3	95-100
MATIN	12	5.9	3-10	71.8	28-100	87.2	73-100	92	88-100
PAPRH	12	11.6	5-42.5	70.8	50-100	84.4	55-100	87.7	59-100
POLCO	2	5	4-6	97.5	97-98	99.5	99-100	98.5	98-99
SINAR	1	5	5-5	80	80-80	85	85-85	90	90-90
STEME	12	8	5-12	72.6	38-97	87	73-100	93.7	88-100
THLAR	8	6.9	5-9.3	65.1	46-80	83.8	73-89	90.1	85-94
VERAR	1	5	5-5	66	66-66	76	76-76	88	88-88
VERHE	7	8.2	5-17.5	59.9	16-90	69.7	38-90	78.1	60-90
VERPE	12	7.8	2-17	66.1	29-99	80.3	68-99	87.4	65-99
VIOAR	16	13.5	5-46.5	62	11-99	73	49-99	81	66-99

Table 3.2-8: Minimum effective dose. Efficacy of JMD-HER 387 OD at proposed label rates, at 60% and 80% of the lowest recommended dose rate at BBCH 23-31 against mono and dicotyledonous weeds in spring cereals.

Grouping *	Number of trials	Infestation of the untreated control (unit)		% control with JMD-HER 387 OD					
				0.6 L/ha (60% of the lowest recommended rate)		0.8 L/ha (The lowest recom-mended rate)		1 L/ha (Full rate)	
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
AMARE	1	5	5-5	84	84-84	100	100-100	100	100-100
APESV	4	7.3	5-13	62.3	38-83	83.8	71-100	98.8	96-100
BRSNW	3	8.4	5-15	65.7	45-84	93.4	85-100	96.7	90-100

Grouping *	Number of trials	Infestation of the untreated control (unit)		% control with JMD-HER 387 OD					
				0.6 L/ha (60% of the lowest recommended rate)		0.8 L/ha (The lowest recom-mended rate)		1 L/ha (Full rate)	
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
CAPBP	4	5.9	5-7	83.3	83-84	94	88-100	97.8	93-100
CENCY	1	9	9-9	79	79-79	96	96-96	100	100-100
CHEAL	13	9.7	5.5-14.8	72.7	29-83	92.3	85-100	97.7	89-100
CIRAR	1	5.5	5.5-5.5	80	80-80	93	93-93	98	98-98
GALAP	4	7	5-9	68	31-85	91.3	85-100	98.3	95-100
GASPA	1	8	8-8	86	86-86	100	100-100	100	100-100
GERPU	3	6	6-6	47.7	34-71	73.3	65-84	88.3	86-90
LAMAM	3	8	5-13	67.3	34-84	89.7	85-99	93.3	86-100
LAMPU	2	7.1	6-8.3	75.5	70-81	93.5	93-94	97.5	95-100
MATIN	6	5.8	5-8	71.3	39-83	91.5	80-100	97.7	93-100
PAPRH	4	5.7	5-7	68.8	40-81	85.5	68-97	93.3	86-100
POLAV	2	7	5-9	74.5	66-83	88.5	79-98	100	100-100
POLCO	7	7.6	4-14	67.9	28-80	81.3	70-85	90	85-97
SINAR	1	5	5-5	80	80-80	85	85-85	90	90-90
STEME	6	5.8	5-7.5	73.2	50-81	87.3	85-95	92.8	88-100
THLAR	2	5.5	5-6	81.5	80-83	96.5	93-100	97	94-100
VERHE	1	5	5-5	80	80-80	95	95-95	99	99-99
VERPE	3	7.3	5-10	67.7	41-83	76.3	58-86	87.7	78-97
VIOAR	8	9.4	5-30	62	16-84	82	70-90	89.3	78-98

Table 3.2-9: Minimum effective dose. Efficacy of JMD-HER 387 OD at proposed label rates, at 60% and 80% of the lowest recommended dose rate at BBCH 23-31 against mono and dicotyledonous weeds in winter wheat in SE EPPO zone.

Grouping *	Number of trials	Infestation of the untreated control (unit)		% control with JMD-HER 387 OD					
				0.6 L/ha (60% of the lowest recommended rate)		0.8 L/ha (The lowest recom-mended rate)		1 L/ha (Full rate)	
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
ANTAR	2	18.875	5.75-32	73	63-83	91	88-94	92.5	90-95
APESV	2	7.875	7.25-8.5	78.5	78-79	100	100-100	100	100-100
CAPBP	5	7.3	5-10.5	76.4	70-80	91	80-100	95.6	88-100
CHEAL	1	12.7	12.7-12.7	79	79-79	95	95-95	99	99-99
CIRAR	1	8	8-8	76.4	70-80	91	80-100	95.6	88-100
CNSOR	2	12.875	6.5-19.25	65	60-70	77.5	75-80	77.5	71-84
CONAR	3	10.233	8.75-12.7	77.3	76-78	94	93-95	98.6	98-99
GALAP	6	8.25	5.25-12.75	75.5	70-78	89.6	80-100	95.3	90-100
LAMAM	2	7.75	7.5-8	80	80-80	87.5	85-90	92	89-95
LAMPU	5	7.75	5.75-11.75	57.2	43-79	70	55-100	81.2	70-100

Grouping *	Number of trials	Infestation of the untreated control (unit)		% control with JMD-HER 387 OD					
				0.6 L/ha (60% of the lowest recommended rate)		0.8 L/ha (The lowest recom-mended rate)		1 L/ha (Full rate)	
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
PAPRH	6	10.9	5-25.5	74.5	70-78	88.5	85-100	96	86-100
SINAR	2	5.375	5.25-5.5	100	100-100	100	100-100	100	100-100
STEME	2	8	7-9	77.5	75-80	86.5	85-88	90	90-90
VERHE	5	10.35	6-16	51.6	31-79	59.8	39-100	61.2	41-100
VERPE	4	5.875	5.5-6.25	45.25	5-70	72	65-85	81.25	80-85
VIOAR	1	5	5-5	58	58-58	73	73-73	85	85-85
XANST	2	9.875	8.75-11	79.5	79-80	95	95-95	98.5	98-99

Results presented in the tables above are combined for all winter cereals (tab. 3.2-7) and all spring cereals (tab. 3.2-8) on which trials were performed. (Winter cereals were: winter wheat, winter barley, winter triticale, rye. Spring cereals were: spring wheat, spring barley, spring triticale, oat. In each of those two groups, results for each weed species can be extrapolated between species of each group (f.e. from spring wheat to spring triticale, winter barley to winter wheat etc.). National PPP regulations of Poland, extrapolation tables to be precise, allow such situation.
Third table (tab. 3.2-9) contains trails results from SE EPPO zone, performed on winter wheat. GAP and tables for SE EPPO zone were prepared in accordance with the “НАРЕДБА ЗА РАЗРЕШАВАНЕ НА ПРОДУКТИ ЗА РАСТИТЕЛНА ЗАЩИТА” of September, 1st 2006, where efficacy trial number and weed susceptibility categories are described.

Summary and conclusions on the minimum effective dose

According to the presented results, 0.8-1 L/ha dosage of JMD-HER 387 OD provided the optimum overall control (higher dose is to be used when demanding weed species occur or infestation level is high) and should be considered as effective against dicotyledonous and monocotyledonous weeds in winter wheat, winter triticale, rye, spring wheat and spring triticale, for which activity of JMD-HER 387 OD is claimed.

As a result, the proposed rate of 0.8 L/ha should be considered as the minimum effective dose to deliver broad spectrum control of mono and dicotyledonous weeds under a wide range of environmental conditions.

Comments of zRMS:	To provide information to establish the minimum effective dose, some of the trials conducted to demonstrate efficacy should include at least two lower dose(s) than recommended dose. However, in the appropriate research of efficacy were tested differ doses and to register was chosen the lowest effective, which is in accordance with EPPO 1/225 (2). Jockey 387 OD (product code: JMD-HER 387 OD) containing iodosulfuron methyl sodium (10 g/L) and 2,4-D EHE (377 g/L) was tested at a range of dose rates, but to demonstrate minimum effective dose rate, the control obtained with Jockey 387 OD applied at different dose rates was evaluated in 36 eff. trials carried out on winter cereals and 13 eff. trials performed on spring cereals. Trials on winter cereals were conducted in three EPPO zones: Maritime 10 trials (DE-6, CZ-4), N-E EPPO zone 13 trials (PL) and S-E EPPO zone 13 trials (RO-5, BG-4, HU-4). Spring cereals were studied only in one EPPO zone – N-E in PL.

Following cerelas were studed during trials:

- *winter cereals* (36 trials): wheat – 28 trials (DE-3, CZ-2, PL-10, RO-5, BG-4 and RO-4), triticale -1 trial (PL), barley – 6 trials (PL-1, DE-3, CZ-2), rye – 1 trial (PL).
- *spring cereals* (13 trials): wheat – 10 trials (PL), triticale -1 trial (PL), barley – 1 trial (PL) and oat -1 trial (PL).

Applicant would like to register Jockey 387 OD in PL and BG. So, in the opinion of Evaluator – results are presented correctly. For Poland trials are valid from N-E EPPO zone and neighbouring countries from other zone (ex. DE, CZ). So, they can be presented together in tables. For BG –valid trials are from S-E EPPO zone, so they were correctly presented separately by Applicant.

Trials submitted by Applicant are sufficient for Poland for MED dose for PL for winter and spring cereals and for BG for winter cereals.

The applicant has proposed doses of Jockey 387 OD (product code: JMD-HER 387 OD) that reflect those of currently authorised iodosulfuron methyl-sodium and 2,4-D EHE OD products across the EU.

Following weed species were studied during trials:

- ***winter cereals**:*

✓ assessment for PL (trials from PL, DE and CZ): APESV (10), BRSNW (1), CAPBP (9), CENCY (5), DESSO (1), GALAP (13), GERMO (1), GERPU (1), LAMAM (6), LAMPU (9), MATCH (4), MATIN (12), PAPRH (12), POLCO (2), SINAR (1), STEME (12), THLAR (8), VERAR (1), VERHE (7), VERPE (12) and VIOAR (16).

To determine the minimum effective dose for the control of weeds in winter cereals by Jockey 387 OD, the Applicant presented data from 23 field trials. Jockey 387 OD was tested at three different doses: 0,6 L/ha (60% of the target dose rate), 0,8 L/ha (80% of the target dose rate) and 1,0 L/ha (full target rate). A clear dose response was observed for studied weeds. In the opinion of ZRMs also dose 0,8 L/ha should be recommended as an effective for use in the case of lower infestation the field by weeds.

✓ assessment for BG (trials from BG, RO and HU): ANTAR (2), APESV (2), CAPBP (5), CHEAL (1), CIRAR (1), CNSOR (2), CONAR (3), GALAP (6), LAMAM (2), LAMPU (5), PAPRH (6), SINAR (2), STEME (2), VERHE (5), VERPE (4), VIOAR (1) and XANST (2).

To determine the minimum effective dose for the control of weeds in winter cereals by Jockey 387 OD, the Applicant presented data from 13 field trials. Jockey 387 OD was tested at three different doses: 0.6 L/ha (60% of the target dose rate); 0,8 L/ha (80% of the target dose) and 1,0 L/ha (full target dose). A clear dose response was observed during trials. In the opinion of ZRM also dose 0.8 L/ha should be recommended as an effective for use in the case of lower infestation the field by weeds.

- ***spring cereals**:*

✓ assessment for PL (trials from PL): AMARE (1), APESV (4), BRSNW (3), CAPBP (4), CENCY (1), CHEAL (13), CIRAR (1), GALAP (4), GASPA (1), GERPU (3), LAMAM (3), LAMPU (2), MATIN (6), PAPRH (4), POLAV (2), POLCO (4), SINAR (1), STEME (6), THLAR (2), VERHE (1), VERPE (3) and VIOAR (8).

✓ Assessment for BG: lack of trials carried out on spring cereals in Maritime

	EPPO zone. Also, use on spring cereals is not included in GAP table. So, spring cereals can be registered only in PL (N-E EPPO zone). To determine the minimum effective dose for the control of weeds in spring cereals by Jockey 387 OD, the Applicant presented data from 13 field trials. Jockey 387 OD was tested at three different doses: 0,6 L/ha (60% of the target dose rate), 0,8 L/ha (80% of the target dose rate) and 1,0 L/ha (full target rate). A clear dose response was observed for studied weeds. In the opinion of ZRMs also dose 0,8 L/ha should be recommended as an effective for use in the case of lower infestation the field by weeds. **Summary: On the basis on the submitted trials (49) for Jockey 387 OD against weeds on winter and spring cereals is recommended to use a dose of 0.8 L/ha (in the case of lower infestation) and 1.0 L/ha.**

3.2.3 Efficacy tests (KCP 6.2)

A total of 49 trials were carried out in years 2020 and 2021 to evaluate the efficacy of JMD-HER 387 OD for the control of weeds in winter and spring cereals in four different regions of Poland, two in Czech Republic and four in Germany, which differentiated by the type of soil and climatic conditions.

Additionally 13 trials were performed on winter wheat in SE EPPO zone (Bulgaria, Hungary, Romania) which differentiated by the type of soil and climatic conditions.

All trials were conducted in randomized complete block design in four replications. All treatments were performed using specialized plot application equipment, with 200-312.5 litres of working solution per hectare. All trials were conducted in compliance with GEP principles and following appropriate EPPO guidelines: EPPO PP 1/93 (3), EPPO PP 1/135 (4), EPPO PP 1/152 (4), EPPO PP 1/181 (4). Also EPPO PP 1/225 (2) guideline was considered when choosing JMD-HER 387 OD doses for efficacy trials.

Table 3.2-10: Details on methodology of efficacy trials in winter wheat

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	17.5-25 m²
	Number of replications	4
Crop	Trials per crop	Winter wheat (15)
	Varieties per crop	Winter wheat: Tulecka, Patras, Formacja, Arkadia, Julius, Belissa, Bosporus, Rotax, Findus, Partner, Akteur, Dagmar, Vanessa
	Sowing period	Winter wheat: 05.10.2019 – 13.11.2019; 22.09.2020-07.11.2020
Application	Crop stage (BBCH)* at application	Winter wheat: BBCH 23 -36
	Timing Pest stage at application (1)	APESV 12-21 CAPBP 17-39 CENCY 14-22 GALAP 13-30 LAMAM 17-51 LAMPU 14-63 MATCH 19-25 MATIN 16-30 PAPRH 14-25 STEME 16-59 THLAR 16-51 VERAR 14 VERHE 21-62 VERPE 21-51 VIOAR 13-44

	Number of applications Intervals between applications	1 N/A
	Spray volumes	200-312.5 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 12 DA-A, 13 DA-A, 14 DA-A, 18 DA-A, 26 DA-A, 28 DA-A, 32 DA-A, 35 DA-A, 42 DA-A, 48 DA-A, 61 DA-A, 71 DA-A, 82 DA-A, 83 DA-A, 84 DA-A, 85 DA-A, 86 DA-A, 92 DA-A, 101 DA-A
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 5.8 – 7.5 2. Loamy sand pH 5.8 – 7.8 3. Loam pH 6.5 – 7.3 4. Silt loam pH 4.82 – 7.2 5. Clay loam 5.6
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-11: Details on methodology of efficacy trials in spring wheat

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	20-22.5 m²
	Number of replications	4
Crop	Trials per crop	Spring wheat (10)
	Varieties per crop	Spring wheat: Tybalt, Telimena, Goplana, Rusałka
	Sowing period	Spring wheat: 18.03.2020 – 26.03.2020. 23.03.2021 – 10.04.2020
Application	Crop stage (BBCH)*at application	Spring wheat: BBCH 23 - 31
	Timing Pest stage at application (1)	APESV 13-16 BRSNW 14 CAPBP 14-31 CENCY 16 CHEAL 14-18 CIRAR 15 GALAP 14-24 GASPA 15 GERPU 14-18 LAMAM 23-26 LAMPU 13-14 MATIN 14-30 PAPRH 12-14 POLAV 16 POLCO 13-23 SINAR 14 STEME 14-35 THLAR 31 VERPE 22-24 VIOAR 16-23
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 15 DA-A, 23 DA-A, 28 DA-A, 30 DA-A, 42 DA-A, 47 DA-A, 53 DA-A, 60 DA-A, 61 DA-A, 68 DA-A, 77 DA-A, 82 DA-A, 89 DA-A,
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 5.8 – 7.9 2. Loamy sand pH 6.7 3. Sandy clay pH 7.6 4. Loam pH 5.9 6. Silt loam pH 5.2
	e.g. Natural / artificial innocula-tion…	Natural

	e.g. Field / Greenhouse...	Field

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

Table 3.2-12: Details on methodology of efficacy trials in winter barley

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	17.5 - 25 m²
	Number of replications	4
Crop	Trials per crop	Winter barley (6)
	Varieties per crop	Winter barley: Padura, KWS Higgins, Sandra, Lomerit, Fredericus
	Sowing period	Winter barley: 27.09.2019; 21.09.2020-9.10.2020
Application	Crop stage (BBCH)*at application	Winter barley: BBCH 28 - 29
	Timing Pest stage at application (1)	GALAP 15, LAMAM 17, MATIN 16, SINAR 15, VERPE 16
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 12 DA-A, 14 DA-A, 15 DA-A, 23 DA-A, 26 DA-A, 28 DA-A, 29 DA-A, 36 DA-A, 38 DA-A, 41 DA-A, 42 DA-A, 50 DA-A, 55 DA-A, 61 DA-A, 66 DA-A, 70 DA-A, 76 DA-A.
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Loam pH 7 2. Sandy loam pH 6.5 3. Loamy sand pH 7.1 4. Clay loam pH 6
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-13: Details on methodology of efficacy trials in winter triticale

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Winter triticale (1)
	Varieties per crop	Winter triticale: Baltiko
	Sowing period	Winter triticale: 22.10.2019
Application	Crop stage (BBCH)*at application	Winter triticale: BBCH 29
	Timing Pest stage at application (1)	APESV 18, CAPBP 39, MATIN 19, STEME 51, THLAR 39, VERHE 51, VIOAR 51,
	Number of applications	1

	Intervals between applications	N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 28 DA-A, 82 DA-A
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 7.6
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-14: Details on methodology of efficacy trials in rye

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Rye (1)
	Varieties per crop	Rye: Dankowskie Agat
	Sowing period	Rye: 25.10.2019
Application	Crop stage (BBCH)*at application	Rye: BBCH 28
	Timing Pest stage at application (1)	APESV 18, GALAP 29, GERPU 22, LAMAM 18, MATIN 21, STEME 24, THLAR 31, VERPE 16, VIOAR 26
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 28 DA-A, 104 DA-A
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 7.2
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-15: Details on methodology of efficacy trials in spring barley

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Spring barley: (1)
	Varieties per crop	Spring barley: Nokia

	Sowing period	Spring barley: 18.03.2020
Application	Crop stage (BBCH)*at application	Spring barley: BBCH 27
	Timing Pest stage at application (1)	BRSNW 17, CHEAL 16, LAMAM 18, MATIN 15, POLAV 18, POLCO 16, VERPE 22
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 28 DA-A, 84 DA-A,
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 6.8
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-16: Details on methodology of efficacy trials in spring triticale

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Spring triticale: (1)
	Varieties per crop	Spring triticale: Dublet
	Sowing period	Spring triticale: 30.03.2020
Application	Crop stage (BBCH)*at application	Spring triticale: BBCH 15
	Timing Pest stage at application (1)	AMARE 12, CHEAL 14, MATIN 15, PAPRH 14, POLCO 15, VERHE 14,
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 28 DA-A, 80 DA-A,
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 7
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-17: Details on methodology of efficacy trials in oat

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Oat (1)
	Varieties per crop	Oat: LG Perley, SY Werena, SY Multipass, SY Campona, SY TALISMAN, Subito, Nimba, DKC 971, LG 22 44, DKC 4098, ES Faraday.
	Sowing period	Oat: 26.03.2020
Application	Crop stage (BBCH)*at application	Oat: BBCH 29
	Timing Pest stage at application (1)	APESV 18, BRSNN 14, CHEAL 18, GERPU 21, MATIN 21, PAPRH 16, STEME 24, VIOAR 21,
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 14 DA-A, 27 DA-A, 83 DA-A
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. Sandy loam pH 6.2
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-18: Details on methodology of efficacy trials on winter wheat in SE EPPO zone.

Guidelines	General guidelines	EPPO PP 1/135 (4), 1/152 (4), 1/181 (4),
	Specific guidelines	EPPO PP 1/93 (3)
Experimental design	Plot design	Randomized Complete Block RCBD
	Plot size	21 m²
	Number of replications	4
Crop	Trials per crop	Winter wheat (13)
	Varieties per crop	Winter wheat: Putna, Dunston, Glosa, Altigo, Avenue, Anapurna, Forkali, Sadovo 772, CH Combin, MV Nador, GK Szilard, Gk Bekes
	Sowing period	Winter wheat: 27.09.2019 – 21.10.2019; 5.10.2020-11.11.2020
Application	Crop stage (BBCH)*at application	Winter wheat: BBCH 26-29
	Timing Pest stage at application (1)	ANTAR 38-48, APESV 23-24, CAPBP 17-33, CHEAL 17, CIRAR 19, CNSOR 18, CONAR 25-27, GALAP 24-51 LAMAM 52, LAMPU 32-59, PAPRH 17-34, SINAR 51-55,

		STEME 51-62, VERHE 33-63, VERPE 55-62, VIOAR 59, XANST 14-16,
	Number of applications Intervals between applications	1 N/A
	Spray volumes	200-300 L/ha
Assessment	Assessment types	weeds infestation level (no/m^2)
	Assessment dates	0 DA-A, 13 DA-A, 14 DA-A, 15 DA-A, 26 DA-A, 27 DA-A, 28 DA-A, 29 DA-A, 30 DA-A, 39 DA-A, 61 DA-A, 63 DA-A, 66 DA-A, 68 DA-A, 71 DA-A, 72 DA-A, 75 DA-A, 76 DA-A, 79 DA-A, 86 DA-A, 91 DA-A
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	1. clay loam 6.15 – 7.32 2. sandy clay 7.4 3. silty clay loam 6.4 - 6.9 4. loam 7.18 - 7.58 5. silt loam 7.7
	e.g. Natural / artificial innocula-tion…	Natural
	e.g. Field / Greenhouse...	Field

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

Table 3.2-18: Efficacy of active substance components in JMD-HER 387 OD trials in winter cereals

Grouping *	Number of trials	Infestation of the untreated control (number of plants)		% control														No of trials where JMD-HER 387 OD at full recommended dose is >, <, = compared to standard(s)**
				JMD-HER 387 OD 2,4-D EHE 226 g/ha iodosulfuron-methyl-sodium 6 g/ha		**JMD-HER 387 OD** 2,4-D EHE 301.4 g/ha iodosulfuron-methyl-sodium 8 g/ha		**JMD-HER 387 OD** 2,4-D EHE 376.7 g/ha iodosulfuron-methyl-sodium 10 g/ha		**Huzar Active Plus** 2,4-D EHE 300 g/ha Iodosulfuron-methyl-sodium 10 g/ha Tiencarbazon 7.5 g/ha Mefenpyr diethyl 30 g/ha		**Husar OD** Iodosulfuron-methyl-sodium 9.2 g/ha		**Hoestar Super** Amidosulfuron 18.75 g/ha, Iodosulfuron-methyl-natrium 1.875 g/ha, Mefenpyr diethyl 18.75 g/ha		**Sekator Plus** 2,4-D EHE 143.5 g/ha, Iodosulfuron-methyl-sodium 3.125 g/ha, Mefenpyr diethyl 12.5 g/ha		
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	
	[-]	Plants/ m^2	Plants/m^2	%	%	%	%	%	%	%	%	%	%	%	%	%	%	[-]
APESV	10	8	5-15.8	63.9	44-82	82.6	65-95	90.8	85-96	90.4	85-99	-	-	14	14-14	-	-	8 trials > 2 trials <
BRSNN	1	5.5	5.5-5.5	80	80-80	88	88-88	95	95-95	-	-	-	-	100	100-100	-	-	1 trial <
CAPBP	9	8.4	5-11.9	81.3	63-100	90.7	80-100	94.4	88-100	90.4	90-91	95	90-100	99	98-100	-	-	4 trials > 4 trial = 1 trial <
CENCY	5	6.7	5-8	69.4	58-90	86.2	85-90	91.4	89-94	91.5	86-95	50	50-50	-	-	-	-	2 trial > 3 trials <
DESSO	1	6	6-6	79	79-79	100	100-100	100	100-100	-	-	-	-	-	-	100	100-100	1 trial =
GALAP	13	6.9	2.5-10.8	68.2	38-95	83.2	53-100	90	58-100	90.5	85-98	93	93-93	58	58-58	98.7	97-100	4 trials > 3 trial = 6 trials <
GERMO	1	9.5	9.5-9.5	40	40-40	56	56-56	75	75-75	-	-	-	-	6	6-6	-	-	1 trials >
GERPU	1	5	5-5	41	41-41	71	71-71	89	89-89	88	88-88	-	-	-	-	-	-	1 trial >
LAMAM	6	6.1	5-9	55	40-73	75.7	59-90	89	86-96	88.8	85-95	-	-	-	-	-	-	4 trials > 1 trial = 3 trials <
LAMPU	9	6.5	4-10.3	75	61-99	87.4	83-98	90.7	86-98	91.8	88-98	92	85-99	-	-	88	88-88	5 trials > 1 trial = 5 trials <
MATCH	4	17	6.8-30.8	94	83-100	96	89-100	98.3	95-100	-	-	97	94-100	87.5	75-100	-	-	2 trials > 2 trials =
MATIN	12	5.9	3-10	71.8	28-100	87.2	73-100	92	88-100	88.6	86-91	-	-	94	89-99	100	100-100	5 trials > 2 trials = 5 trials <
PAPRH	12	11.6	5-42.5	70.8	50-100	84.4	55-100	87.7	59-100	90.4	88-95	79	58-100	52	39-65	100	100-100	5 trials > 5 trials = 2 trials <
POLCO	2	5	4-6	97.5	97-98	99.5	99-100	98.5	98-99	-	-	99	99-99	-	-	99	99-99	1 trials =

																		1 trials <
SINAR	1	5	5-5	80	80-80	85	85-85	90	90-90	90	90-90	-	-	-	-	-	-	1 trial =
STEME	12	8	5-12	72.6	38-97	87	73-100	93.7	88-100	92	86-96	95	95-95	100	100-100	-	-	6 trials > 6 trials =
THLAR	8	6.9	5-9.3	65.1	46-80	83.8	73-89	90.1	85-94	90.1	86-93	-	-	-	-	-	-	3 trials > 2 trials = 3 trials <
VERAR	1	5	5-5	66	66-66	76	76-76	88	88-88	-	-	-	-	-	-	83	83-83	1 trials >
VERHE	7	8.2	5-17.5	59.9	16-90	69.7	38-90	78.1	60-90	80.6	75-87	90	90-90	5	5-5	-	-	2 trial > 4 trials = 1 trial <
VERPE	12	7.8	2-17	66.1	29-99	80.3	68-99	87.4	65-99	86.7	85-90	99	99-99	65	65-65	96	93-98	8 trials = 4 trial <
VIOAR	16	13.5	5-46.5	62	11-99	73	49-99	81	66-99	77.3	66-90	78	50-99	32.5	15-50	93.5	87-100	8 trials > 3 trials = 5 trial <

* 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

According to statistical analysis, data assessed in trials demonstrated that the efficacy of JMD-HER 387 OD in control of weeds in winter cereals at the proposed rate of 1 L/ha was equivalent (there was no statistically significant difference between the results) to the efficacy of Huzar Active Plus at rate of 1 L/ha.

Table 3.2-19: Efficacy of active substance components in JMD-HER 387 OD trials in spring cereals

Grouping *	Number of trials	Infestation of the untreated control (number of plants)		% control								No of trials where JMD-HER 387 OD at full recom-mended dose is >, <, = compared to standard(s)**
				JMD-HER 387 OD 2,4-D EHE 226 g/ha iodosulfuron-methyl-sodium 6 g/ha		**JMD-HER 387 OD** 2,4-D EHE 226 g/ha iodosulfuron-methyl-sodium 6 g/ha		**JMD-HER 387 OD** 2,4-D EHE 226 g/ha iodosulfuron-methyl-sodium 6 g/ha		**Huzar Active Plus** 2,4-D EHE 300 g/ha Iodosulfuron-methyl-sodium 10 g/ha Tiencarbazon 7.5 g/ha Mefenpyr diethyl 30 g/ha		
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	
	[-]	Plants/m²	Plants/m²	%	%	%	%	%	%	%	%	[-]
AMARE	1	5	5-5	84	84-84	100	100-100	100	100-100	100	100-100	1 trial =
APESV	4	7.3	5-13	62.3	38-83	83.8	71-100	98.8	96-100	98.5	95-100	1 trial > 3 trials =
BRSNW	3	8.4	5-15	65.7	45-84	93.4	85-100	96.7	90-100	97	91-100	2 trials = 1 trial <
CAPBP	4	5.9	5-7	83.3	83-84	94	88-100	97.8	93-100	98.8	96-100	2 trials = 2 trials <
CENCY	1	9	9-9	79	79-79	96	96-96	100	100-100	100	100-100	1 trial =
CHEAL	13	9.7	5.5-14.8	72.7	29-83	92.3	85-100	97.7	89-100	97.8	88-100	2 trials > 8 trials = 3 trials <
CIRAR	1	5.5	5.5-5.5	80	80-80	93	93-93	98	98-98	98	98-98	1 trial =
GALAP	4	7	5-9	68	31-85	91.3	85-100	98.3	95-100	97.3	94-100	1 trial > 2 trials = 1 trial <
GASPA	1	8	8-8	86	86-86	100	100-100	100	100-100	100	100-100	1 trial =
GERPU	3	6	6-6	47.7	34-71	73.3	65-84	88.3	86-90	89.7	89-91	2 trials = 1 trial <
LAMAM	3	8	5-13	67.3	34-84	89.7	85-99	93.3	86-100	95	88-100	1 trials = 2 trial <
LAMPU	2	7.1	6-8.3	75.5	70-81	93.5	93-94	97.5	95-100	97.5	95-100	2 trials =
MATIN	6	5.8	5-8	71.3	39-83	91.5	80-100	97.7	93-100	96.8	94-100	3 trials > 2 trials = 1 trial <
PAPRH	4	5.7	5-7	68.8	40-81	85.5	68-97	93.3	86-100	94.8	90-100	1 trial > 1 trial = 2 trials <
POLAV	2	7	5-9	74.5	66-83	88.5	79-98	100	100-100	100	100-100	2 trials =
POLCO	7	7.6	4-14	67.9	28-80	81.3	70-85	90	85-97	91.1	85-96	1 trial > 1 trials = 5 trials <
SINAR	1	5	5-5	80	80-80	85	85-85	90	90-90	90	90-90	1 trial =

STEME	6	5.8	5-7.5	73.2	50-81	87.3	85-95	92.8	88-100	93.8	91-100	1 trial > 3 trials = 2 trials <
THLAR	2	5.5	5-6	81.5	80-83	96.5	93-100	97	94-100	97	94-100	2 trials =
VERHE	1	5	5-5	80	80-80	95	95-95	99	99-99	99	99-99	1 trial =
VERPE	3	7.3	5-10	67.7	41-83	76.3	58-86	87.7	78-97	85.7	76-94	2 trials > 1 trial =
VIOAR	8	9.4	5-30	62	16-84	82	70-90	89.3	78-98	89.1	75-96	3 trials > 2 trials = 3 trials <

* 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

According to statistical analysis, data assessed in trials demonstrated that the efficacy of JMD-HER 387 OD in control of weeds in spring cereals at the proposed rate of 1 L/ha was equivalent (there was no statistically significant difference between the results) to the efficacy of Huzar Active Plus at rate of 1 L/ha.

Table 3.2-20: Efficacy of active substance components in JMD-HER 387 OD trials in winter cereals in SE EPPO zone

Grouping *	Number of trials	Infestation of the untreated control (number of plants)		% control												No of trials where JMD-HER 387 OD at full recommended dose is >, <, = compared to standard(s)**
				JMD-HER 387 OD 2,4-D EHE 226 g/ha iodosulfuron-methyl-sodium 6 g/ha		**JMD-HER 387 OD** 2,4-D EHE 301.4 g/ha iodosulfuron-methyl-sodium 8 g/ha		**JMD-HER 387 OD** 2,4-D EHE 376.7 g/ha iodosulfuron-methyl-sodium 10 g/ha		**Huzar Active Plus** 2,4-D EHE 300 g/ha Iodosulfuron-methyl-sodium 10 g/ha Tiencarbazon 7.5 g/ha Mefenpyr diethyl 30 g/ha		**Huszar Active Plusz** 2,4-D EHE 250 g/ha Iodosulfuron-methyl-natrium 10 g/ha		**Secator OD** Amidosulfuron 10 g/ha, Iodosulfuron-methyl-sodium 2.5 g/ha,		
		Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	
	[-]	Plants/m²	Plants/m²	%	%	%	%	%	%	%	%	%	%	%	%	[-]
ANTAR	2	18.875	5.75-32	73	63-83	91	88-94	92.5	90-95	-	-	93	93-93	73	73-73	2 trials >
APESV	2	7.875	7.25-8.5	78.5	78-79	100	100-100	100	100-100	100	100-100	-	-	-	-	2 trials =
CAPBP	5	7.3	5-10.5	76.4	70-80	91	80-100	95.6	88-100	100	100-100	89	88-90	85	85-85	1 trial > 4 trials =
CHEAL	1	12.7	12.7-12.7	79	79-79	95	95-95	99	99-99	100	100-100	-	-	-	-	1 trial <
CIRAR	1	8	8-8	76.4	70-80	91	80-100	95.6	88-100	100	100-100	-	-	-	-	1 trial <
CNSOR	2	12.875	6.5-19.25	65	60-70	77.5	75-80	77.5	71-84	-	-	80.5	78-83	-	-	1 trial <
CONAR	3	10.233	8.75-12.7	77.3	76-78	94	93-95	98.6	98-99	100	100-100	-	-	-	-	3 trials <
GALAP	6	8.25	5.25-12.75	75.5	70-78	89.6	80-100	95.3	90-100	100	100-100	90	90-90	76.5	75-78	2 trials > 3 trials =

																2 trials <
LAMAM	2	7.75	7.5-8	80	80-80	87.5	85-90	92	89-95	-	-	90.5	86-95	-	-	1 trial > 1 trial =
LAMPU	5	7.75	5.75-11.75	57.2	43-79	70	55-100	81.2	70-100	100	100-100	89	89-89	61.6	60-65	4 trials > 1 trial =
PAPRH	6	10.9	5-25.5	74.5	70-78	88.5	85-100	96	86-100	100	100-100	85.16	83-90	79.3	78-80	4 trials > 2 trials =
SINAR	2	5.375	5.25-5.5	100	100-100	100	100-100	100	100-100	-	-	-	-	100	100-100	2 trials =
STEME	2	8	7-9	77.5	75-80	86.5	85-88	90	90-90	-	-	90	90-90	-	-	2 trials =
VERHE	5	10.35	6-16	51.6	31-79	59.8	39-100	61.2	41-100	100	100-100	60.2	36-74	-	-	2 trials > 2 trials = 1 trial <
VERPE	4	5.875	5.5-6.25	45.25	5-70	72	65-85	81.25	80-85	-	-	85	85-85	66	65-68	3 trials > 2 trials =
VIOAR	1	5	5-5	58	58-58	73	73-73	85	85-85	-	-	-	-	70	70-70	1 trials >
XANST	2	9.875	8.75-11	79.5	79-80	95	95-95	98.5	98-99	100	100-100	-	-	-	-	2 trials =

* 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

According to statistical analysis, data assessed in trials demonstrated that the efficacy of JMD-HER 387 OD in control of weeds in winter cereals at the proposed rate of 1 L/ha was equivalent (there was no statistically significant difference between the results) or better when compared to the efficacy of reference products in each of SE EPPO countries.

Minor use

Not relevant.

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

Not relevant.

Summary and conclusion

23 trials total were conducted to confirm efficacy of JMD-HER 387 OD in control of dicotyledonous and monocotyledonous weeds in winter cereals. JMD-HER 387 OD showed its effectiveness in control of weed species listed below, in winter cereals at the proposed label rates:
0.8 L/ha –
Susceptible weeds:
Voluntary oilseed rape (*Brassica napus* var. *napus*), Shepherd's purse (*Capsella bursa-pastoris*), Cornflower (*Centaurea cyanus*), Flixweed (*Descuraina Sophia*), Purple deadnettle (*Lamium purpureum*), Field chamomile (*Matricaria chamomila*), False chamomile (*Tripleurospermum indorum*), Wild buckwheat (*Fallopia convolvulus*), Wild mustard (*Sinapis arvensis*), Common chickweed (*Stellaria media*),

Moderately susceptible weeds:
Silky apera (*Apera spica-venti*), Cleavers (*Galium aparine*), Small-flower geranium (*Geranium purpureum*), Common deadnettle (*Lamium amplexicaule*), Common poppy (*Papaver rhoeas*), Fanweed (*Thlaspi arvense*), Wall speedwell (*Veronica arvensis*), Bird's eye speedwell (*Veronica persica*), Field pansy (*Viola arvensis*)

Moderately resistant weeds:
Ivy-leaved speedwell (*Veronica hederifolia*),

Tolerant weeds:
Dove-foot geranium (*Geranium mole*)

1 L/ha –
Susceptible weeds:
Silky apera (*Apera spica-venti*), Voluntary oilseed rape (*Brassica napus* var. *napus*), Shepherd's purse (Capsella bursa-pastoris), Cornflower (*Centaurea cyanus*), Flixweed (*Descuraina Sophia*), Small-flower geranium (*Geranium purpureum*), Cleavers (*Galium aparine*), Common deadnettle (*Lamium amplexicaule*), Purple deadnettle (*Lamium purpureum*), Field chamomile (*Matricaria chamomila*), False chamomile (*Tripleurospermum indorum*), Common poppy (*Papaver rhoeas*), Wild buckwheat (*Fallopia convolvulus*), Common chickweed (*Stellaria media*), Wild mustard (*Sinapis arvensis*), Fanweed (*Thlaspi arvense*), Wall speedwell (*Veronica arvensis*), Bird's eye speedwell (*Veronica persica*)

Moderately susceptible weeds:
Ivy-leaved speedwell (*Veronica hederifolia*), Field pansy (*Viola arvensis*),

Tolerant weeds:
Dove-foot geranium (*Geranium mole*)

13 trials total were conducted to confirm efficacy of JMD-HER 387 OD in control of dicotyledonous and monocotyledonous weeds in spring cereals. JMD-HER 387 OD showed its effectiveness in control of weed species listed below, in cereals at the proposed label rates:
0.8 L/ha –
Susceptible weeds:
Volunteer oilseed rape (*Brassica napus* var.*oleracea*), Shepherd's purse (*Capsella bursa-pastoris*), Fat-

hen (*Chenopodium album*), Cleavers (*Galium aparine*), Common deadnettle (*Lamium amplexicaule*), False chamomile (*Tripleurospermum indorum*), Common poppy (*Papaver rhoeas*),

Moderately susceptible weeds:
Silky apera (*Apera spica-venti*), Small-flower geranium (*Geranium pusillum*), Wild buckwheat (*Fallopia convolvulus*), Bird's eye speedwell (*Veronica persica*), Field pansy (*Viola arvensis*),

1 L/ha –
Susceptible weeds:
Silky apera (*Apera spica-venti*), Volunteer oilseed rape (*Brassica napus* var.*oleracea*), Shepherd's purse (*Capsella bursa-pastoris*), Fat-hen (*Chenopodium album*), Cleavers (*Galium aparine*), Small-flower geranium (*Geranium pusillum*), Common deadnettle (*Lamium amplexicaule*), False chamomile (*Tripleurospermum indorum*), Common poppy (*Papaver rhoeas*), Wild buckwheat (*Fallopia convolvulus*), Bird's eye speedwell (*Veronica persica*), Field pansy (*Viola arvensis*)

13 trials total were conducted to confirm efficacy of JMD-HER 387 OD in control of dicotyledonous and monocotyledonous weeds in winter wheat in SE EPPO zone. JMD-HER 387 OD showed its effectiveness in control of weed species listed below, in winter wheat at the proposed label rates:
0.8 L/ha –
Susceptible weeds:
Corn chamomile (*Anthemis arvensis*), Silky apera (*Apera spica-venti*), Shepherd's purse (*Capsella bursa-pastoris*), Field bindweed (*Convolvulus arvensis*), Common deadnettle (*Lamium amplexicaule*), Wild mustard (*Sinapis arvensis*), Common chickweed (*Stellaria media*), Common cocklebur (*Xanthium strumarium*)

Moderately susceptible weeds:
Eastern larkspur (*Consolida orientalis*), Cleavers (*Galium aparine*), Common poppy (*Papaver rhoeas*)

Moderately resistant weeds:
Purple deadnettle (Lamium purpureum), Common speedwell (Veronica persica)

Moderately weeds:
Ivy-leaved speedwell (*Veronica hederifolia*)

1 L/ha –
Susceptible weeds:
Corn chamomile (*Anthemis arvensis*), Silky apera (*Apera spica-venti*), Shepherd's purse (*Capsella bursa-pastoris*), Field bindweed (*Convolvulus arvensis*), Cleavers (*Galium aparine*), Common deadnettle (*Lamium amplexicaule*), Common poppy (*Papaver rhoeas*), Wild mustard (*Sinapis arvensis*), Common chickweed (*Stellaria media*), Common cocklebur (*Xanthium strumarium*)

Moderately susceptible weeds:
Eastern larkspur (*Consolida orientalis*), Purple deadnettle *(Lamium purpureum*), Common speedwell (*Veronica persica*)

Moderately resistant weeds:
Ivy-leaved speedwell (*Veronica hederifolia*)

Comments of zRMS:	All details about efficacy methodology used during efficacy trials are presented above by Applicant. Submitted reports from field trials (49 in total: 13 trials carried out on spring cereals and 36 on winter cereals) include a detailed data on soil and field conditions, agro-technological procedures, fore-crop as well as meteorological conditions and technical details of the spraying etc. Applicant properly presented efficacy results. As, Applicant wish to register Jock-

	ey 387 OD in PL (N-E EPPO zone) and BG (S-E EPPO zone) – results were presented sperately for S-E EPPO zone and together for N-E and DE and CZ (from Maritime EPPO zone) as a valid for the Polish assessment. Only trials with greater than 4-5 weeds/m^2 or over 2% ground cover should be taken for assessment. According to EPPO PP 1/226 at least 6 fully supportive results for major weeds and 2 trials for minor weeds should be required. Therefore, based on knowledge of major/minor status of weeds in each country, weeds with insufficient results should be excluded. Considering comparable results in all zones, it is recommended to take into account results from all zones to get more reliable set of data. The results should be adjusted to known efficacy from long term use of iodosulfuron-methyl-sodium and 2,4-D EHE standard products by cMS. Therefore, the sufficiency of results should be considered on the national level based on importance of weed in their country. Also, concerned Member States will need to consider the relevance of the submitted formulation comparability data in relation to the current authorized uses for the reference product in their own Member State. The evaluation was conducted in accordance with Uniform Principles. In Poland, no PPP with iodosulfuron methyl-sodium and 2,4-D EHE is registered. Jockey 387 OD will be the first on the Polish market in this formulation and composition. So, according to Polish rules for major weeds – at least 6 trials are required and for minor weeds – at least 3 trials. Submitted efficacy trials are correctly performed according to appropriate EPPO standards. Two growing seasons were studied for winter and spring cereals (2020 and 2021). cMS should determine the sensitivity of the accepted weed species in accordance with their applicable internal regulations. For Poland the classification of weed sensitivity differ to SANCO. Accepted weed species for Poland (N-E EPPO zone) should be presented to following scale of sensitivity: S (susceptible) > 85%; MS (moderately susceptible) 70-85%; MT (moderately tolerant) 60-70%; T (tolerant) < 60%. Applicant submitted trials carried out in 2020 and 2021. Those studies were carried out by testing unit mandated to conduct research in the field of efficacy of plant protection products by the Chief Inspector of Plant Health and Seed Inspection and are officially GEP recognized. Appropriate window application, number of applications and water volume was studied during those trials. The cite of the original registrant's data on iodosulfuron-methyl-sodium and 2,4-D EHE now out of protection in support of those recommendations on the draft label that are not adequately supported. Such extrapolations should be considered by individual member states on a national level based on current registration, data protection and experience with similar iodosulfuron-methyl-sodium and 2,4-D EHE products. The spectrum of weeds should be checked with label claims on these reference products. **<u>ASSESSMENT FOR POLAND ON THE BASIS ON RESULTS FROM DE, CZ AND PL:</u>** Applicant submitted in total 36 efficacy trials valid for Poland: 13 trials were performed on spring cereals and 23 trials on winter cereals. <u>Following cerelas were studed during trials:</u> – *winter cereals* (23 trials): wheat – 15 trials (DE-3, CZ-2, PL-10), triticale -1 trial (PL), barley – 6 trials (PL-1, DE-3, CZ-2), rye – 1 trial (PL). – *spring cereals* (13 trials): wheat – 10 trials (PL), triticale -1 trial (PL), barley

	– 1 trial (PL) and oat -1 trial (PL). In the opinion of ZRMs number of trials for winter and spring cereals is accepted. On the basis on submitted efficacy trials and possibility of extrapolation between winter cereals (from winter wheat to winter triticale, winter barley, winter rye) and spring cereals (from spring wheat to sping triticale, spring barley and oat) all uses propsed in GAP – can be accepted. Expecially, when Applicant submitted sufficient number of selectivity trials for extrapolation performed on winter wheat (20), winter triticale (5) and winter rye (5) and for spring cereals: wheat (16) and triticale (5). Only, lack of selelctivity trials were presented for oat, winter barley and spring barley. So extrapolation from spring cereals to those crops is not possible according to Polish rules. But, Applicant, properly – not included oat, winter barley and spring barley in GAP table. So, all winter cereals included in GAP table can be accepted. <u>Below, ZRMs presented the assessment for accepted weed species in Polish label;</u> –***winter cereals*** (weeds from all studied winter cereals were assessed together): **APESV** – major weed – 10 trials (so, number of trials is sufficient) – average level of infestation: 8.0 (min 5, max 15.8) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-7), winter triticale (PL-1), rye (PL-1) and winter barley (DE-1). **It can be concluded that Jockey 387 OD moderately efficiency control APESV at dose 0.8 L/ha (82.6%) and effectively the 1.0 L/ha (90.8%).** Results were comparable to st. ref. product Huzar Active Plus and characterized by betted efficiency than Hoester Super. **CAPBP** – minor weed – 9 trials (so, number of trials is sufficient) – average level of infestation: 8.4 (min 5, max 11.9) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-4, DE-2), winter triticale (PL-1) and winter barley (DE-2). **It can be concluded that Jockey 387 OD efficiency control CAPBP at dose 0.8 L/ha (90.7%) and 1.0 L/ha (94.4%).** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD and Hoester Super. **CENCY** – major weed – 5 trials (so, number of trials is not acceptable). **Due to insufficient number of trials, this weed should be excluded from GAP table and label project**. At least 6 valid trials are required. **GALAP** – major weed – 13 trials (so, number of trials is sufficient) – average level of infestation: 6.9 (min 2.5, max 10.8) was at the acceptable level in all trials (in the exception of one trial: E-WW-PL-2021-S21-03802804). This trial was excluded from the assessment. Valid trials were carried out on winter wheat (PL-5, DE-1, CZ-2), winter barley (DE-1, PL-1, CZ-1) and rye (PL-1). **It can be concluded that Jockey 387 OD efficiency control GALAP at dose 1.0 L/ha and moderately efficiency at dose 0.8 L/ha.** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD and Secator Plus and were characterized by better efficienct than and Hoester Super. **LAMAM** – minor weed – 6 trials (so, number of trials is sufficient) – average level of infestation: 6.1 (min 5, max 9) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-4), winter rye (PL-1) and winter barley (PL-1). **It can be concluded that Jockey 387 OD moderately efficiency control LAMAM at dose 0.8 L/ha (75.7%) and efficiency at dose 1.0 L/ha (89.0%).** Results were comparable to st. ref. product Huzar Active Plus. **LAMPU** – minor weed – 9 trials (so, number of trials is sufficient) – average level of infestation: 6.5 (min 4, max 10.3) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-6, DE-2) and winter barley (CZ-1). **It can be concluded that Jockey 387 OD efficiency control LAMPU at dose 0.8 L/ha (87.4%) and dose 1.0 L/ha (90.7%).** Results were comparable to st. ref. product

	Huzar Active Plus, Huzar OD and Sekator Plus. **MATCH** – minor weed – 4 trials (so, number of trials is sufficient) – average level of infestation: 17 (min 6.8, max 30.8) was at the acceptable level in all trials. Trials were carried out on winter wheat (DE-2) and winter barley (DE-2). **It can be concluded that Jockey 387 OD efficiency control MATCH at dose 0.8 L/ha (96.0%) and dose 1.0 L/ha (98.3%).** Results were comparable to st. ref. product Huzar OD and Hoester Super. **MATIN** – major weed – 12 trials (so, number of trials is sufficient) – average level of infestation: 5.9 (min 3, max 10) was at the acceptable level in all trials (in the exception of one trial: E-WB-CZ-2021_S21_0382820). This trial was exclud-ed from the assessment. Valid trials were carried out on winter wheat (PL-5, CZ-2), winter triricale (PL-1), winter rye (PL-1) and winter barley (PL-1, CZ-1). **It can be concluded that Jockey 387 OD efficiency control MATIN at dose 0.8 L/ha and dose 1.0 L/ha.** Results were comparable to st. ref. product Huzar Active Plus, Hoester Super and Sekator Plus. **PAPRH -** major weed in winter wheat, winter barley and winter triticale, in other winter cereals – minor weed– 12 trials (so, number of trials is sufficient) – average level of infestation: 11.6 (min 5, max 42.5) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-7, DE-2, CZ-1) and winter barley (DE-2). **It can be concluded that Jockey 387 OD moderately efficiency control PAPRH at dose 0.8 L/ha (84.4%) and efficiency at dose 1.0 L/ha (87.7%).** Results were comparable to st. ref. product Huzar Active Plus, Sekator Plus, Hu-zar OD and were characterized by better efficiency than Hoester Super. **STEME -** minor weed – 12 trials (so, number of trials is sufficient) – average level of infestation: 8 (min 5, max 12) was at the acceptable level in all trials. Tri-als were carried out on winter wheat (PL-8, DE-1), winter triticale (PL-1), winter rye (PL-1) and winter barley (DE-1). **It can be concluded that Jockey 387 OD efficiency control STEME at dose 0.8 L/ha (87.0%) and efficiency at dose 1.0 L/ha (93.7%).** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD and Hoester Super. **THLAR -** minor weed – 8 trials (so, number of trials is sufficient) – average level of infestation: 6.9 (min 5, max 9.3) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-6), winter triticale (PL-1), winter rye (PL-1). **It can be concluded that Jockey 387 OD moderately efficiency control THLAR at dose 0.8 L/ha (83.8%) and efficiency at dose 1.0 L/ha (90.1%).** Results were comparable to st. ref. product Huzar Active Plus. **VERHE -** minor weed – 7 trials (so, number of trials is sufficient) – average level of infestation: 8.2 (min 5, max 17.5) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-4, DE-1), winter triticale (PL-1), winter barley (DE-1). **It can be concluded that Jockey 387 OD moderately tolerant control VERHE at dose 0.8 L/ha (69.7%) and moderately efficiency at dose 1.0 L/ha (78.1%).** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD and were characterized by better efficiency than Hoester Super. **VERPE -** minor weed – 12 trials (so, number of trials is sufficient) – average level of infestation: 7.8 (min 2, max 17.5) was at the acceptable level in all trials (in the exception of one trial: E-WB-CZ-2021-S21-0382820). This trial was excluded from the assessment. Valid trials were carried out on winter wheat (PL-5, CZ-1), winter rye (PL-1), winter barley (PL-1, DE-1, CZ-2). **It can be concluded that Jockey 387 OD moderately efficiency control VERPE at dose 0.8 L/ha and efficiency at dose 1.0 L/ha.** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD, Sekator Plus and were characterized by better efficiency than Hoester Super.

	VIOAR – major weed in winter wheat and minor in other winter cereals – 16 trials (so, number of trials is sufficient) – average level of infestation: 13.5 (min 5, max 46.5) was at the acceptable level in all trials. Trials were carried out on winter wheat (PL-7, DE-3, CZ-1), winter triticale (PL-1), winter rye (PL-1) and winter barley (DE-2, CZ-1). **It can be concluded that Jockey 387 OD moderately efficiency control VIOAR at dose 0.8 L/ha (73.0%) and dose 1.0 L/ha (81.0%).** Results were comparable to st. ref. product Huzar Active Plus, Huzar OD and were characterized by better efficiency than Hoester Super. Following weed species should be excluded from GAP table and label project: BRSNN, DESSO, GERMO, GERPU, SINAR – only represented by 1 trial and POLCO and CENCY for which not enough number of trials were presented due to their importance. – ***spring cereals*** (weeds from all studied winter cereals were assessed together): **APESV** – major weed – 4 trials (so, number of trials is not sufficient) – **Due to insufficient number of trials, this weed should be excluded from GAP table and label project**. At least 6 valid trials are required. **BRSNN** – minor weed – 3 trials (so, number of trials is sufficient) – average level of infestation: 8.4 (min 5, max 15) was at the acceptable level in all trials. Trials were carried out on spring wheat (1PL), spring barley (PL-1) and oat (PL-1). **It can be concluded that Jockey 387 OD efficiency control BRSNN at dose 0.8 L/ha (93.4%) and 1.0 L/ha (96.7%).** Results were comparable to st. ref. product Huzar Active Plus. **CAPBP** – minor weed – 4 trials (so, number of trials is sufficient) – average level of infestation: 5.9 (min 5, max 7) was at the acceptable level in all trials. Trials were carried out on spring wheat (4PL). **It can be concluded that Jockey 387 OD efficiency control CAPBP at dose 0.8 L/ha (94.0%) and 1.0 L/ha (97.8%).** Results were comparable to st. ref. product Huzar Active Plus. **CHEAL** – major weed – 13 trials (so, number of trials is sufficient) – average level of infestation: 9.79 (min 5.5, max 14.8) was at the acceptable level in all trials. Trials were carried out on spring wheat (PL-10), spring triticale (PL-1), oat (PL-1) and spring barley (PL-1). **It can be concluded that Jockey 387 OD efficiency control CHEAL at dose 0.8 L/ha (92.3%) and 1.0 L/ha (97.7%).** Results were comparable to st. ref. product Huzar Active Plus. **GALAP** – minor weed – 4 trials (so, number of trials is sufficient) – average level of infestation: 7 (min 5, max 9) was at the acceptable level in all trials. Trials were carried out on spring wheat (4PL). **It can be concluded that Jockey 387 OD efficiency control GALAP at dose 0.8 L/ha (91.3%) and 1.0 L/ha (98.3%).** Results were comparable to st. ref. product Huzar Active Plus. **GERPU** – minor weed – 3 trials (so, number of trials is sufficient) – average level of infestation: 6 (min 6, max 6) was at the acceptable level in all trials. Trials were carried out on spring wheat (3PL) and oat (1PL). **It can be concluded that Jockey 387 OD moderately efficiency control GERPU at dose 0.8 L/ha (79.3%) and efficiency control at dose 1.0 L/ha (88.3%).** Results were comparable to st. ref. product Huzar Active Plus. **LAMAM** – minor weed – 3 trials (so, number of trials is sufficient) – average level of infestation: 8 (min 5, max 13) was at the acceptable level in all trials. Trials were carried out on spring wheat (2PL) and spring barley (1PL). **It can be concluded that Jockey 387 OD efficiency control LAMAM at dose 0.8 L/ha and 1.0 L/ha.** Results were comparable to st. ref. product Huzar Active Plus.

	MATIN – minor weed – 6 trials (so, number of trials is sufficient) – average level of infestation: 5.8 (min 5, max 8 was at the acceptable level in all trials. Trials were carried out on spring wheat (3PL), spring triticale (PL1), spring barley (PL1) and oat (1PL). **It can be concluded that Jockey 387 OD efficiency control MATIN at dose 0.8 L/ha (91.5%) and 1.0 L/ha (97.7%).** Results were comparable to st. ref. product Huzar Active Plus. **PAPRH** – minor weed – 4 trials (so, number of trials is sufficient) – average level of infestation: 5.7 (min 5, max 7) was at the acceptable level in all trials. Trials were carried out on spring wheat (2PL) and spring triticale (2PL). **It can be concluded that Jockey 387 OD efficiency control PAPRH at dose 0.8 L/ha (85.5%) and 1.0 L/ha (93.3%).** Results were comparable to st. ref. product Huzar Active Plus. **POLCO** – major weed – 7 trials (so, number of trials is sufficient) – average level of infestation: 7.6 (min 4, max 14) was at the acceptable level in all trials. Trials were carried out on spring wheat (5PL), spring barley (PL1) and spring triticale (1PL). **It can be concluded that Jockey 387 OD moderately efficiency control POLCO at dose 0.8 L/ha (81.3%) and efficiently at dose 1.0 L/ha (90.0%).** Results were comparable to st. ref. product Huzar Active Plus. **STEME** – minor weed – 6 trials (so, number of trials is sufficient) – average level of infestation: 5.8 (min 5, max 7.5) was at the acceptable level in all trials. Trials were carried out on spring wheat (5PL) and oat (1PL). **It can be concluded that Jockey 387 OD efficiency control STEME at dose 0.8 L/ha (87.3%) and efficiently at dose 1.0 L/ha (92.8%).** Results were comparable to st. ref. product Huzar Active Plus. **VERPE** – minor weed – 3 trials (so, number of trials is sufficient) – average level of infestation: 7.3 (min 5, max 10) was at the acceptable level in all trials. Trials were carried out on spring wheat (2PL), spring barley (PL1). **It can be concluded that Jockey 387 OD moderately efficiency control VERPE at dose 0.8 L/ha (76.3%) and efficiently at dose 1.0 L/ha (87.7%).** Results were comparable to st. ref. product Huzar Active Plus. **VIOAR** – minor weed – 8 trials (so, number of trials is sufficient) – average level of infestation: 9.4 (min 5, max 30) was at the acceptable level in all trials. Trials were carried out on spring wheat (7PL) and oat (1PL). **It can be concluded that Jockey 387 OD moderately efficiency control VIOAR at dose 0.8 L/ha (82.0%) and efficiently at dose 1.0 L/ha (89.3%).** Results were comparable to st. ref. product Huzar Active Plus. Following weed species should be excluded from GAP table and label project: AMARE, CENCY, CIRAR, GASPA, SINAR, VERHE – only represented by 1 trial and APESV, LAMPU, POLAV, THLAR for which not enough number of trials were presented due to their importance in Poland. **ASSESSMENT FOR BELGIUM ON THE BASIS ON RESULTS FROM RO, HU and BG:** In the opinion of ZRMs number of trials for winter cereals is accepted. On the basis on submitted efficacy trials and possibility of extrapolation between winter cereals (from winter wheat to winter triticale, winter barley, winter rye) all uses can be accepted. However, only winter wheat is included in GAP table for BG. Below, ZRMs present weed species represented at least by 2 trials, classification of weed sensitivity for BG is made in line to SANCO. cMS should decide if it is correct due to its national rules. Also, cMS should decide which species can be accepted due to their importance.

	ANTAR- 2 trials. It can be concluded that ANTAR was sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **APESV-** 2 trials. It can be concluded that APESV was highly sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **CAPBP-** 5 trials. It can be concluded that CAPBP was sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **CNSOR-** 2 trials. It can be concluded that CNSOR was moderaletly sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **CONAR-** 3 trials. It can be concluded that CONAR was sensitive against Jockey 387 OD at dose 0.8 L/ha and highly sensitive 1.0 L/ha. Results were comparable to st. ref. product. **GALAP-** 6 trials. It can be concluded that GALAP was sensitive against Jockey 387 OD at dose 0.8 L/ha and highly sensitive 1.0 L/ha. Results were comparable to st. ref. product. **LAMAM-** 2 trials. It can be concluded that LAMAM was sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **LAMPU-** 5 trials. It can be concluded that LAMPU was sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **PAPRH-** 6 trials. It can be concluded that PAPRH was sensitive against Jockey 387 OD at dose 0.8 L/ha and highly sensitive 1.0 L/ha. Results were comparable to st. ref. product. **SINAR-** 2 trials. It can be concluded that SINAR was highly sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **STEME-** 2 trials. It can be concluded that STEME was sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **VERHE-** 5 trials. It can be concluded that VERHE was moderately tolerant against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **VERPE-** 4 trials. It can be concluded that VERPE was moderately sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. **XANST-** 2 trials. It can be concluded that XANST was higly sensitive against Jockey 387 OD at dose 0.8 L/ha and 1.0 L/ha. Results were comparable to st. ref. product. Following weed species should be excluded from GAP table and label project: CHEAL, CIRAR, VIOAR – only represented by 1 trial **Summary:** Obtained results were comparable to standard reference product in most cases (in some cases – were characterized by better efficiency than standards). The most effective for most studied weed species for post-emergence use on winter and spring cereals was dose 0.8 L/ha (should be use in condition of lower infestation) and dose 1.0 L/ha.

	<u>In Polish label following weeds species can be included:</u> – ***for winter cereals (wheat, triticale rye)*** • **Dose 0,8 L/ha**: *Susceptible weeds*: CAPBP, LAMPU, MATCH, MATIN, STEME; *Moderately susceptible weeds*: APESV, GALAP, LAMAM, PAPRH, THLAR, VERPE, VIOAR; *Moderately tolerant weeds*; VERHE. • **Dose 1.0 L/ha:** *Susceptible weeds:*APESV, CAPBP, GALAP, LAMAM, LAMPU, MATCH, MATIN, STEME, PAPRH, THLAR, VERPE; *Moderately susceptible weeds:*VERHE, VIOAR. – ***for spring cereals (wheat, triticale)*** • **Dose 0,8 L/ha**: *Susceptible weeds*: BRSNN, CAPBP, CHEAL, GALAP, LAMAM, MATIN, PAPRH, STEME; *Moderately susceptible weeds* GERPU, POLCO, VERPE, VIOAR. • **Dose 1.0 L/ha:** *Susceptible weeds:* BRSNN, CAPBP, CHEAL, GALAP, GERPU, LAMAM, MATIN, PAPRH, POLCO, STEME, VERPE, VIOAR. This plant protection product 'Jockey 387 OD' can be used on winter cereals (wheat, triticale and rye) and spring cereals (wheat, triticale) against weed species included in GAP table and label project. Product can be use post-emergence at BBCH 23-31 at spring application. ZRMs left the final decision about acceptance use (only winter wheat according to GAP or extension for other winter cereals on the basis on the possibility of extrapolation results between winter cereals). Also, cMS should decidie about list of accepted weed species and their sensitivity classification. The OD is a new formulation that combines the advantages of solid and liquid formulations. This formulation improves retention of spray solution and its spreading on the surface of the leaves. It keeps the leaf surface moist longer than water dispersible granules, lengthening the period of the herbicide penetration, thus increasing the amount of the active ingredient that will enter the plant. Therefore its action is less dependent on air and soil water status. The use of OD formulation is especially advantageous under critical weather conditions or in the case of a relatively late application, when weeds are older and therefore less sensitive to herbicide.

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

According to the HRAC code list, first active substances of JMD-HER 387 OD - 2,4-D is mimicking auxins on molecular level (chemical family: Phenoxy-carboxylates) is classified in Group 4 which is considered as a group of substances with low risk of resistance development. As it is said earlier it mimics auxins – plant hormones responsible for its cells elongation and growth. Causes leaves and stems deformations due to uncontrolled growth which later leads to plants death. 2,4-D is an active substance well known and used for years. It is available on the market since 40's of XX century. Available data says that there are 47 (20 cases with resistance only to 2,4-D) cases of weed species in which resistance to herbicides containing 2,4-D, occurred worldwide. Seven of which were discovered in Europe (only one case of resistance just for 2,4-D, was discovered in Italy).

Second active substance, iodosulfuron-methyl-sodium, is an ALS-inhibiting herbicide (Chemical Family: Sulfonylurea) classified in Group 2. ALS is a key enzyme responsible for biosynthesis of amino acids such as valine, leucine and isoleucine. Susceptible weeds exposed to iodosulfuron show various injuries as: inhibition of plant growth, shortening of internodes, purplish foliage, and shortening of lateral roots, resulting in plant death, caused by deficiency in branched-chain amino acids.

ALS-inhibiting and auxin mimics herbicides, are used in all major agronomic crops and have been widely adopted due to their low dose rates and high efficacy against a broad spectrum of weeds, relatively low mammalian toxicity, mild toxicological profile, and excellent crop selectivity. However, the widespread use of ALS-inhibiting herbicides led to rapid selection of many resistant weed populations. ALS-resistant weeds represent the fastest-growing group of herbicide-resistant weeds worldwide, with 111 (more than half of which occurred in Europe) monocot and dicot weed cases found worldwide to be resistant to herbicides that contain iodosulfuron-methyl-sodium.

Due to the different mode of action of both active substances iodosulfuron-methyl-sodium and 2.4 D, the occurrence of resistance to this herbicide is minimal. Worth noting is the fact that the application of the mixture of active substance from sulfonylurea group and 2,4-D has been widely adopted for weed control in winter cereals to manage ALS resistant weeds.

Comments of zRMS:

Final assessment of the resistance risk has to be carried out on member state level since the agronomic factors influencing the risk of resistance development tend to vary between the Member States.

There are currently 523 unique cases of herbicide resistant weeds globally, with 269 species (154 dicots and 115 monocots). Weeds have evolved resistance to 21 of the 31 known herbicide sites of action and to 167 different herbicides. Herbicide resistant weeds have been reported in 99 crops in 72 countries. The website has 3264 registered users and 696 weed scientists have contributed new cases of herbicide resistant weeds. Resistance events have been reported in Europe for the two active substances and weed species target of Jockey 387 OD (product code: JMD-HER 387 OD). Following table summarizes these events (Source; www.weedscience.org).

- **Iodosulfuron-methyl-sodium**

#	Year	Species	Country	MOAs	Actives	Situations
1	2008	*Raphanus sativus*	Argentina	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	imazethapyr, imazapyr, bispyribac-sodium, chlorimuron-ethyl, metsulfuron-methyl, diclosulam, flumetsulam, imazamox, iodosulfuron-methyl-Na, flucarbazone-Na	Wheat, Sunflower, Canola
2	2010	*Lolium perenne ssp. multiflorum*	Argentina	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	glyphosate, iodosulfuron-methyl-Na, pyroxsulam	Wheat
3	2017	*Poa annua*	Australia (New South Wales)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	bispyribac-sodium, rimsulfuron, iodosulfuron-methyl-Na, foramsulfuron	Golf courses
4	2017	*Poa annua*	Australia (New South Wales)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G), Inhibition of Microtubule Assembly 2 HRAC Group 3 (Legacy K1), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1	endothall, bispyribac-sodium, rimsulfuron, simazine, glyphosate, propyzamide/pronamide, iodosulfuron-methyl-Na, foramsulfuron	Golf courses

					C2), Unknown HRAC Group 0 (Legacy Z)		
	5	1998	*Raphanus raphanistrum*	Australia (South Australia)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	chlorsulfuron, metosulam, iodosulfuron-methyl-Na	Spring Barley, Wheat
	6	2005	*Avena sterilis ssp. ludoviciana*	Australia (South Australia)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na	Wheat
	7	2010	*Lolium rigidum*	Australia (South Australia)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), Inhibition of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G), PS I Electron Diversion HRAC Group 22 (Legacy D), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	haloxyfop-methyl, clethodim, imazapyr, chlorsulfuron, atrazine, paraquat, glyphosate, iodosulfuron-methyl-Na	Pasture seed
	8	2012	*Galium tricornutum*	Australia (South Australia)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	imazapyr, imazamox, iodosulfuron-methyl-Na, pyroxsulam	Spring Barley, Wheat
	9	2017	*Poa annua*	Australia (South Australia)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	bispyribac-sodium, rimsulfuron, iodosulfuron-methyl-Na, foramsulfuron	Golf courses
	10	2017	*Poa annua*	Australia (Victoria)	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	bispyribac-sodium, rimsulfuron, iodosulfuron-methyl-Na, foramsulfuron	Golf courses
	11	2009	*Apera spica-venti*	Austria	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	isoproturon, iodosulfuron-methyl-Na	Cereals
	12	2019	*Apera spica-venti*	Belgium	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, foramsulfuron, mesosulfuron-methyl	Wheat
	13	2004	*Parthenium hysterophorus*	Brazil	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	imazethapyr, chlorimuron-ethyl, cloransulam-methyl, iodosulfuron-methyl-Na, foramsulfuron	Soybean
	14	2006	*Bidens subalternans*	Brazil	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	atrazine, iodosulfuron-methyl-Na, foramsulfuron	Corn (maize)
	15	2010	*Lolium perenne ssp. multiflorum*	Brazil	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na	Wheat

	16	2013	*Raphanus raphani-strum*	Brazil	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	imazapyr, chlorimuron-ethyl, metsulfuron-methyl, sulfometuron-methyl, cloransulam-methyl, iodosulfuron-methyl-Na, imazapic	Spring Barley, Wheat
	17	2016	*Lolium perenne ssp. multiflorum*	Brazil	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clethodim, iodosulfuron-methyl-Na	Wheat
	18	2017	*Lolium perenne ssp. multiflorum*	Brazil	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	glyphosate, iodosulfuron-methyl-Na, pyroxsulam	Corn (mai-ze), Soybe-an, Wheat
	19	2002	*Lolium perenne ssp. multiflorum*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	glyphosate-trimesium, glyphosate, iodosulfuron-methyl-Na, flucarbazone-Na	Wheat
	20	2003	*Lolium rigidum*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	haloxyfop-methyl, clodinafop-propargyl, diclofop-methyl, clethodim, iodosulfuron-methyl-Na, flucarbazone-Na, tepraloxydim, pinoxa-den	Wheat
	21	2005	*Lolium perenne ssp. multiflorum*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, diclofop-methyl, clethodim, iodosulfuron-methyl-Na, flucarbazone-Na, tepraloxydim, pinoxa-den	Wheat, Lupins, Canola
	22	2007	*Lolium perenne ssp. multiflorum*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), Inhibition of Enolpy-ruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	haloxyfop-methyl, clethodim, glyphosate, iodosulfuron-methyl-Na, flucarbazone-Na, tepra-loxydim, pinoxaden	Spring Barley
	23	2010	*Raphanus sativus*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	imazapyr, metsulfuron-methyl, triasulfuron, imazamox, iodosulfuron-methyl-Na, flucarbazone-Na, pyroxsulam	Wheat
	24	2010	*Anthemis cotula*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	metsulfuron-methyl, iodosulfuron-methyl-Na, pyroxsulam	Wheat
	25	2010	*Anthemis arvensis*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
	26	2012	*Silene gallica*	Chile	Inhibition of Aceto-lactate Synthase HRAC Group 2	imazapyr, metsulfuron-methyl, imazamox, iodosulfuron-methyl-Na,	Wheat

					(Legacy B)	pyroxsulam	
	27	2005	*Apera spica-venti*	Czech Republic	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	sulfosulfuron, chlorsulfuron, isoproturon, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Cereals, Winter wheat
	28	1991	*Stellaria media*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	chlorsulfuron, tribenuron-methyl, florasulam, iodosulfuron-methyl-Na	Spring Barley, Wheat
	29	2001	*Alopecurus myosuroides*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), Inhibition of Microtubule Assembly 2 HRAC Group 3 (Legacy K1)	clodinafop-propargyl, fenoxaprop-ethyl, cycloxydim, flupyrsulfuron-methyl-Na, pendimethalin, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Winter wheat
	30	2003	*Papaver rhoeas*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, florasulam, iodosulfuron-methyl-Na	Wheat
	31	2010	*Lolium perenne ssp. multiflorum*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Winter wheat
	32	2010	*Tripleurospermum perforatum (=T. inodorum)*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, florasulam, iodosulfuron-methyl-Na	Spring Barley, Winter wheat
	33	2011	*Apera spica-venti*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	sulfosulfuron, iodosulfuron-methyl-Na	Winter wheat
	34	2016	*Lolium perenne*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, iodosulfuron-methyl-Na	Wheat
	35	2016	*Apera spica-venti*	Denmark	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	fenoxaprop-ethyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden	Wheat
	36	2003	*Alopecurus myosuroides*	France	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, diclofop-methyl, fenoxaprop-ethyl, sethoxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	37	2003	*Lolium perenne ssp. multiflorum*	France	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC	haloxyfop-methyl, clodinafop-propargyl, diclofop-methyl, sethoxydim, flupyrsulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-	Wheat

					Group 1 (Legacy A)	methyl, propoxycarba-zone-Na	
	38	2006	*Apera spica-venti*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
	39	2006	*Avena sterilis*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
	40	2006	*Avena fatua*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
	41	2006	*Alopecurus myosu-roides*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	imazamethabenz-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	42	2006	*Lolium rigidum*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	flupyrsulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, propoxycarbazone-Na	Wheat
	43	2007	*Papaver rhoeas*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	metsulfuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	44	2009	*Bromus sterilis*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam, propoxycar-bazone-Na	Wheat
	45	2009	*Senecio vulgaris*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, prosul-furon, metsulfuron-methyl, flazasulfuron, imazamox, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, thiencarbazone-methyl	Grapes, Wheat
	46	2012	*Stellaria media*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, metsulfuron-methyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	47	2012	*Poa trivialis*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	48	2015	*Poa annua*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	49	2016	*Papaver rhoeas*	France	Auxin Mimics HRAC Group 4 (Legacy O), Inhibi-tion of Acetolactate Synthase HRAC Group 2 (Legacy B)	metsulfuron-methyl, MCPA, 2,4-D, iodosulfu-ron-methyl-Na, mesosul-furon-methyl, aminopyra-lid	Cereals
	50	2016	*Conyza sumatrensis*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	flazasulfuron, iodosulfu-ron-methyl-Na, mesosul-furon-methyl, penoxsulam	Grapes
	51	2016	*Conyza sumatrensis*	France	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	flazasulfuron, glyphosate, iodosulfuron-methyl-Na, mesosulfuron-methyl, penoxsulam	Grapes
	52	2005	*Apera spica-venti*	Germany	Inhibition of Aceto-	sulfosulfuron, chlorsulfu-	Wheat

					lactate Synthase HRAC Group 2 (Legacy B)	ron, flupyrsulfuron-methyl-Na, sulfometuron-methyl, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	
	53	2008	*Lolium perenne*	Germany	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	iodosulfuron-methyl-Na, pinoxaden, pyroxsulam	Wheat
	54	2009	*Apera spica-venti*	Germany	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	fenoxaprop-ethyl, sulfosulfuron, isoproturon, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, pyroxsulam	Spring Barley, Winter wheat
	55	2011	*Stellaria media*	Germany	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, amidosulfuron, triflusulfuron-methyl, tribenuron-methyl, nicosulfuron, imazamox, florasulam, iodosulfuron-methyl-Na, tritosulfuron, mesosulfuron-methyl, pyroxsulam	Spring Barley, Wheat, Rapeseed
	56	2002	*Papaver rhoeas*	Greece	Auxin Mimics HRAC Group 4 (Legacy O), Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	2,4-D, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	57	2013	*Phalaris minor*	India	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	58	2014	*Rumex dentatus*	India	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
	59	2009	*Sinapis arvensis*	Iran	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	sulfosulfuron, tribenuron-methyl, metsulfuron-methyl, iodosulfuron-methyl-Na	Winter wheat
	60	2009	*Avena sterilis*	Iran	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	61	2009	*Avena sterilis ssp. ludoviciana*	Iran	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	62	2010	*Avena sterilis ssp. ludoviciana*	Iran	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, iodosulfuron-methyl-Na, mesosulfuron-methyl	Winter wheat
	63	2017	*Galium aparine*	Iran	Auxin Mimics HRAC Group 4 (Legacy O), Inhibition of Acetolactate Synthase HRAC	sulfosulfuron, tribenuron-methyl, MCPA, 2,4-D, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat

				Group 2 (Legacy B)		
64	2021	*Alopecurus myosuroides*	Ireland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	propaquizafop, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
65	2021	*Lolium perenne ssp. multiflorum*	Ireland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	propaquizafop, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden	Wheat
66	2007	*Lolium rigidum*	Israel	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), Inhibition of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	clodinafop-propargyl, imazapyr, chlorsulfuron, tribenuron-methyl, sulfometuron-methyl, flumetsulam, metosulam, glyphosate, florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, propoxycarbazone-Na	Wheat
67	2008	*Amaranthus palmeri*	Israel	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	pyrithiobac-sodium, rimsulfuron, iodosulfuron-methyl-Na, foramsulfuron, trifloxysulfuron-Na, mesosulfuron-methyl	Corn (maize), Cotton, Watermelon
68	2013	*Lolium rigidum*	Israel	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	haloxyfop-methyl, clodinafop-propargyl, clethodim, cycloxydim, sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden, propoxycarbazone-Na	Carrots, Wheat
69	1998	*Papaver rhoeas*	Italy	Auxin Mimics HRAC Group 4 (Legacy O), Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, 2,4-D, iodosulfuron-methyl-Na	Wheat
70	1998	*Papaver rhoeas*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, florasulam, iodosulfuron-methyl-Na	Durum wheat
71	2002	*Lolium perenne ssp. multiflorum*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, diclofop-methyl, sethoxydim, tralkoxydim, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden	Durum wheat
72	2004	*Avena sterilis*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, cycloxydim, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden	Durum wheat
73	2005	*Lolium perenne ssp. multiflorum*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Durum wheat
74	2006	*Sinapis arvensis*	Italy	Inhibition of Acetolactate Synthase	tribenuron-methyl, florasulam, iodosulfuron-	Durum wheat

					HRAC Group 2 (Legacy B)	methyl-Na	
	75	2007	*Avena sterilis*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Durum wheat
	76	2012	*Lolium perenne ssp. multiflorum*	Italy	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Enolpyruvyl Shikimate Phosphate Synthase HRAC Group 9 (Legacy G)	glyphosate, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat
	77	2015	*Apera spica-venti*	Latvia	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na	Wheat, Winter wheat
	78	2013	*Apera spica-venti*	Lithuania	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na	Winter wheat
	79	2010	*Alopecurus myosuroides*	Netherlands	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	florasulam, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Winter wheat
	80	2014	*Lolium perenne*	New Zealand	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, iodosulfuron-methyl-Na, pyroxsulam	Wheat
	81	2002	*Stellaria media*	Norway	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, metsulfuron-methyl, iodosulfuron-methyl-Na	Cereals
	82	2006	*Tripleurospermum perforatum (=T. inodorum)*	Norway	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, iodosulfuron-methyl-Na	Winter wheat
	83	2006	*Sonchus asper*	Norway	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, iodosulfuron-methyl-Na	Spring Barley, Spring wheat
	84	2019	*Capsella bursa-pastoris*	Norway	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na	Wheat
	85	2005	*Apera spica-venti*	Poland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	sulfosulfuron, chlorsulfuron, iodosulfuron-methyl-Na, procarbazone-Na	Winter wheat
	86	2010	*Alopecurus myosuroides*	Poland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl	Winter wheat
	87	2011	*Avena fatua*	Poland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl, propoxycarbazone-Na	Spring Barley, Spring wheat
	88	2011	*Avena fatua*	Poland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	fenoxaprop-ethyl, metsulfuron-methyl, sulfometuron-methyl, iodosulfuron-methyl-Na, pinoxaden, propoxycarbazone-Na	Spring Barley, Spring wheat
	89	2012	*Alopecurus myosuroides*	Poland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibi-	fenoxaprop-ethyl, sulfometuron-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl,	Winter wheat

					tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	pinoxaden	
	90	1986	*Avena fatua*	South Africa	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	clodinafop-propargyl, diclofop-methyl, fluazi-fop-butyl, fenoxaprop-ethyl, sethoxydim, tralkoxydim, sulfosulfu-ron, imazamox, iodosulfu-ron-methyl-Na	Wheat
	91	1997	*Raphanus raphani-strum*	South Africa	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, metsulfuron-methyl, triasulfuron, iodosulfuron-methyl-Na	Spring Barley, Wheat
	92	1999	*Phalaris minor*	South Africa	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	haloxyfop-methyl, clodinafop-propargyl, diclofop-methyl, propaquizafop, quizalo-fop-ethyl, fenoxaprop-ethyl, sulfosulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl	Pastures, Wheat
	93	2007	*Sinapis alba*	Spain	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, iodosulfuron-methyl-Na	Winter wheat
	94	2011	*Sinapis arvensis*	Spain	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, iodosulfuron-methyl-Na	Cereals
	95	2015	*Alopecurus myosu-roides*	Spain	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	clodinafop-propargyl, cloransulam-methyl, isoproturon, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl, pinoxaden	Wheat, Canola, Peas, Winter barley, Faba beans
	96	2018	*Rapistrum rugosum*	Spain	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	tribenuron-methyl, iodosulfuron-methyl-Na	Winter wheat, Winter barley
	97	2010	*Apera spica-venti*	Sweden	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	sulfosulfuron, iodosulfu-ron-methyl-Na, pyroxsu-lam	Winter wheat
	98	2011	*Papaver rhoeas*	Sweden	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	amidosulfuron, iodosulfu-ron-methyl-Na, propoxy-carbazone-Na	Winter wheat
	99	2014	*Alopecurus myosu-roides*	Sweden	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	fenoxaprop-ethyl, cy-cloxydim, flupyrsulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Spring wheat, Winter wheat, Winter barley
	100	2018	*Lolium perenne ssp. multiflorum*	Switzerland	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)	quizalofop-ethyl, iodosul-furon-methyl-Na, meso-sulfuron-methyl	Sugar beets, Triticale
	101	2018	*Lolium perenne ssp. multiflorum*	Switzerland	Inhibition of Aceto-lactate Synthase	chlorotoluron, iodosulfu-ron-methyl-Na, mesosul-	Peas

					HRAC Group 2 (Legacy B), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	furon-methyl	
	102	2019	*Alopecurus myosuroides*	Switzerland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	quizalofop-ethyl, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl	Wheat, Winter barley
	103	2020	*Lolium perenne ssp. multiflorum*	Switzerland	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A), PSII inhibitors - Serine 264 Binders HRAC Group 5 (Legacy C1 C2)	quizalofop-ethyl, chlorotoluron, iodosulfuron-methyl-Na, mesosulfuron-methyl	Sugar beets, Peas, Triticale
	104	2008	*Galium aparine*	Turkey	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, triasulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl	Winter wheat
	105	2008	*Bifora radians*	Turkey	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, triasulfuron, iodosulfuron-methyl-Na, mesosulfuron-methyl	Winter wheat
	106	2020	*Amaranthus retroflexus*	Ukraine	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	imazethapyr, thifensulfuron-methyl, tribenuron-methyl, flumetsulam, imazamox, florasulam, iodosulfuron-methyl-Na, foramsulfuron, thiencarbazone-methyl	Corn (maize), Sunflower
	107	2022	*Chenopodium album*	Ukraine	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, tribenuron-methyl, flumetsulam, imazamox, florasulam, iodosulfuron-methyl-Na, thiencarbazone-methyl	Corn (maize), Soybean, Wheat, Sunflower
	108	2023	*Ambrosia artemisiifolia*	Ukraine	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B), Inhibition of Protoporphyrinogen Oxidase HRAC Group 14 (Legacy E)	imazapyr, amidosulfuron, nicosulfuron, flazasulfuron, flumetsulam, carfentrazone-ethyl, imazamox, iodosulfuron-methyl-Na, foramsulfuron, thiencarbazone-methyl	Sunflower
	109	1984	*Alopecurus myosuroides*	United Kingdom	Inhibition of Acetolactate Synthase HRAC Group 2 (Legacy B)	imazamethabenz-methyl, chlorsulfuron, flupyrsulfuron-methyl-Na, iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam, propoxycarbazone-Na	Wheat
	110	1993	*Avena sterilis*	United Kingdom	Antimicrotubule mitotic disrupter HRAC Group 0 (Legacy Z), Inhibition of Acetolactate Synthase HRAC	fluazifop-butyl, fenoxaprop-ethyl, tralkoxydim, imazamethabenz-methyl, flamprop-methyl, iodosulfuron-methyl-Na, mesosulfuron-methyl	Cereals, Wheat

				Group 2 (Legacy B), Inhibition of Acetyl CoA Carboxylase HRAC Group 1 (Legacy A)		
111	2020	*Bromus diandrus*	United Kingdom	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
112	2020	*Bromus sterilis*	United Kingdom	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
113	2020	*Bromus commuta-tus*	United Kingdom	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	iodosulfuron-methyl-Na, mesosulfuron-methyl, pyroxsulam	Wheat
114	2005	*Ambrosia artemisii-folia*	United States (Delaware)	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B), Inhibi-tion of Protoporphy-rinogen Oxidase HRAC Group 14 (Legacy E)	imazethapyr, imazapyr, imazaquin, pyrithiobac-sodium, chlorimuron-ethyl, metsulfuron-methyl, halosulfuron-methyl, primisulfuron-methyl, cloransulam-methyl, oxyfluorfen, fomesafen, lactofen, acifluorfen, flumioxazin, flumiclorac-pentyl, carfentrazone-ethyl, sulfentrazone, imazamox, pyraflufen-ethyl, iodosulfuron-methyl-Na, trifloxysulfu-ron-Na	Soybean
115	2011	*Conyza canadensis*	United States (Kansas)	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	thifensulfuron-methyl, chlorsulfuron, tribenuron-methyl, metsulfuron-methyl, rimsulfuron, iodosulfuron-methyl-Na, thiencarbazone-methyl	Corn (maize), Cotton, Soybean, Wheat
116	2004	*Rottboellia cochin-chinensis (=R. exaltata)*	Venezuela	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	nicosulfuron, iodosulfu-ron-methyl-Na, foramsul-furon	Corn (maize)
117	2010	*Sorghum halepense*	Venezuela	Inhibition of Aceto-lactate Synthase HRAC Group 2 (Legacy B)	nicosulfuron, iodosulfu-ron-methyl-Na, foramsul-furon	Corn (maize)

Iodosulfuron-methyl-sodium is a broad spectrum, post-emergence herbicide used throughout the world for treating wheat and other cereals. It is classified as an imidazolinone herbicide. Iodosulfuron-methyl-sodium inhibits the acetohydroxy acid synthase (AHAS) enzyme which is responsible for the synthesis of the branched chain amino acids valine, leucine, and isoleucine. When applied, Iodosulfuron-methyl-sodium halts weed growth which eventually kills the weed or causes the weed to die due to its incapability to compete with surrounding vegeta-tion.

- **2,4-D**

Auxinic herbicides such as 2,4-D – one of the first widely used herbicides – have been used as effective weed control agents since the introduction of 2,4-D herbi-cides in 1945 (Smith, 1989). Despite its decades-long worldwide use, resistance against 2,4-D has been found in only 28 different weed species, although the first cases had already been reported in wild carrot (*Daucus carota*) and spreading dayflower (*Commelina diffusa*) in 1957 (Switzer, 1957; Hilton, 1957; Heap, 2016).

	The herbicidal mechanism of action of 2,4-D is considered to be activation of the auxin receptor system (TIR1 and related receptor proteins), which results in permanent up-regulation of auxin responses in plants. These include changes in the actin cytoskeleton, followed by up-regulation of the plant hormones ABA and ethylene, and high production levels of reactive oxygen species (ROS). In the end, 2,4-D treatment results in cell wall reorganization, membrane leakage and cell death. In most cases of resistance to 2,4-D and auxinic herbicides, details of the mechanisms of resistance are not known. Increased absorption of 2,4-D (Kohler et al., 2004), reduced translocation (Weinberg et al., 2006), increased metabolism of 2,4-D (Hagin et al., 1970) and differential binding to auxin-binding proteins (Webb and Hall, 1995) have all been implicated with herbicide resistance. However, reading the published 2,4-D resistance literature with an eye on possible auxin transport impairment shows that similar mechanisms to that described by Goggin et al. (2016) might also be the cause of 2,4-D resistance in other cases (Riar et al., 2011; Rey-Caballero et al., 2016). The claim that 2,4-D resistance is unlikely to evolve because of the complex and essential functions that auxin plays in plants is unsubstantiated. In many cases where resistance has evolved to synthetic auxins, the biochemical mechanism is unknown. However, in at least two cases (*Kochia scoparia* and *Sinapis arvensis*), resistance is conferred by a single dominant allele, indicating that resistance could develop and spread quite rapidly. ZRMs agree with Aplicant that due to the different mode of action of both active substances iodosulfuron-methyl-sodium and 2.4 D, the occurrence of resistance to this herbicide is minimal. Worth noting is the fact that the application of the mixture of active substance from sulfonylurea group and 2,4-D has been widely adopted for weed control in winter cereals to manage ALS resistant weeds. **<u>For the use of Jockey 387 OD (product code: JMD-HER 387 OD) against target weeds it can be concluded, that:</u>** • The product has a low to medium inherent and agronomical risk for resistance weed development. • To decrease the risk of selecting resistant weeds, the application of an additional herbicide belonging to a different mode of action and having high efficacy on the species to be controlled is recommendable. • It is recommended to use the product in alternation or in combinations with compounds having a different mode of action. • To avoid the selection of resistance it is recommended to perform one application of Jockey 387 OD at the recommended dose(s) per season. **In order to minimize the risk of occurrence and development of herbicide weed resistance we should follow Good Agricultural Practice:** • follow strictly the directions provided in the plant protection product label, • plant protection product should been used at the recommended dose in the recommended time to ensure optimum weed control • use integrated weed control practices covering fields such as history crop rotation, herbicides used and various tillage (mechanical, cultural, biological and chemical) • use rotation of herbicides (active substances) with different mechanisms of action,

	• use a mixture of herbicides (active substances) with different mechanisms of action, • use herbicides acting on several life processes in rotation and / or a mixture weeds (with different mechanisms of action). **<u>Following entry should be added to Polish label in the opinion of ZRMs:</u>** *Resistance management strategy:* To minimize the risk of occurrence and development of weed resistance to herbicides, according to Good Agricultural Practice: – follow closely the directions on the label of the crop protection product – apply the product at the recommended dose, at the recommended date to ensure optimal weed control, – adjust the selection of the herbicide and the decision to carry out the treatment to the prevailing (possibly potential) weed infestation, taking into account the dominant species and pest thresholds, – use a rotation of herbicides (active substances) with different mechanisms of action, – use a mixture of herbicides (active substances) with different mechanism of action, – use in rotation and/or mixture herbicides acting on several vital processes of weeds (with different mechanism of action), – apply an herbicide with a given mechanism of action only once during the growing season of the crop, – adjust tillage operations to the conditions in the field, especially to the type and strength of the weeds, – use various methods of weed control, including crop rotation, etc.., – use certified seed – clean agricultural machinery to prevent the transfer of weed propagating material to other sites, – inform the permit holder of unsatisfactory weed control, – contact your advisor, permit holder or permit holder's representative for more information. **In the opinion of Evaluator each of cMS can change or adjust risk assessment considering the national requirements and may designate additional measures relating to resistance prevention on the national level.** Where there is evidence of changed sensitivity of the target organisms to this product then the cMS should review the effectiveness of the product against these targets.

3.4 Adverse effects on treated crops (KCP 6.4)

The applicant carried out:
-10 selectivity trials in winter wheat.
-4 selectivity trials in winter triticale
-4 selectivity trials in winter rye
-6 selectivity trials in spring wheat
-4 selectivity trials in spring triticale

And additionally, in SE EPPO zone:
-8 selectivity trials in winter wheat

EPPO PP 1/226(3) standard states - it is required to conduct at least 8 phytotoxicity trials per major crop, usually within 2 years/2 growing seasons. However, national addendum of Poland demands 4-5 selectivity trials conducted within 1 season – for known substances, and 5-8 selectivity trials for new substance/new use of known substance/new composition, conducted during 2 growing seasons. There is also need to mention about the Poland's extrapolation tables for PPP registratrion purposes, which allow extrapolations between different winter cereal species and extrapolations between different spring cereal species. In case of use of such extrapolations, the applicant is obligated to conduct 3-4 selectivity trials for each of the species which is requested in the application.
8 results from SE EPPO zone (Bulgaria, Hungary, Romania), were performed on winter wheat.

All the trials have been presented in point 3.4 – 1.

Table 3.4-1: Presentation of trials (selectivity trials, transformation trials...)

Crop*	Country	Type of trial**	Number of trials (North-East zone)	Years	GEP, non-GEP, official***	Comments (any other relevant information)
Winter wheat	Poland	S	~~20~~ 10	2020; 2021	GEP	
		S + Y	10			
		S + Y + Q	10			
Winter triticale	Poland	S	~~5~~ 4	2020; 2021	GEP	
		S + Y	4			
		S + Y + Q	4			
Rye	Poland	S	~~5~~ 4	2020; 2021	GEP	
		S + Y	4			
		S + Y + Q	4			
Spring wheat	Poland	S	~~16~~ 6	2020; 2021	GEP	
		S + Y	6			
		S + Y + Q	6			
Spring triticale	Poland	S	~~5~~ 4	2020; 2021	GEP	
		S + Y	4			
		S + Y + Q	4			
Winter wheat	Bulgaria	S	~~5~~ 1	2021,	GEP	
		S + Y	1			
		S + Y + Q	1			
Winter wheat	Hungary	S	~~6~~ 2	2021,	GEP	
		S + Y	2			
		S + Y + Q	2			
Winter wheat	Romania	S	~~9~~ 5	2020, 2021	GEP	
		S + Y	~~4~~ 5			
		S + Y + Q	~~4~~ 5			
TOTAL	-	S	**~~71~~ 36**	-	-	
		S + Y	**~~35~~ 36**			
		S + Y + Q	**~~35~~ 36**			

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 trials (selectivity trials, transformation trials...)

Trial	Crop(s)	Reference standards	Country(ies) where the product is registered(1)	Authorization number	Active substance(s) (a.s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
						Type(2)	Concentration of a.s.			
III 6.2.1/01 (S-WW-PL-2020-S20-03778-01) III 6.2.1/02 (S-WW-PL-2020-S20-03778-02) III 6.2.1/03 (S-WW-PL-2020-S20-03778-03) III 6.2.1/04 (S-WW-PL-2020-S20-03778-04) III 6.2.1/15 (S-WW-PL-2021-S21-03829-01) III 6.2.1/16 (S-WW-PL-2021-S21-03829-02) III 6.2.1/17 (S-WW-PL-2021-	Winter wheat	Huzar Active Plus	Poland	R-107/2018	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	

Trial	Crop(s)	Reference standards	Country(ies) where the product is registered(1)	Authorization number	Active substance(s) (a.s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
						Type(2)	Concentration of a.s.			
S21-03829-03)										
III 6.2.1/26 (S-WW-DE-2021-S21-03829-18) III 6.2.1/27 S-WW-DE-2021-S21-03829-19)	Winter wheat	Husar OD	Germany	006209-00/00-001	Iodosulfuron	OD	93.197 g/L	0.1 L/ha	0.1-0.2 L/ha	
III 6.2.1/28 S-WW-CZ-2021-S21-03829-22)	Winter wheat	Sekator Plus	Czech Republic	5586-0	2,4-D EHE, Iodosulfuron-methyl-natrium, amidosulfuron	OD	287 g/L (2,4-D EHE) 6.25 g/L (iodosulfuron-methyl-natrium) 25 g/L (amidosulfuron)	0.45-0.6 L/ha	0.5-1 L/ha	
III 6.2.1/05 (S-M-PL-2020-S20-03778-05) III 6.2.1/06 (S-M-PL-2020-S20-03778-06) III 6.2.1/18 (S-M-PL-2021-S21-03829-04) III 6.2.1/19 (S-M-PL-2021-S21-03829-05)	Wtinter triticale	Huzar Active Plus	Poland	R-107/2018	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	

Trial	Crop(s)	Reference standards	Country(ies) where the product is registered(1)	Authorization number	Active substance(s) (a.s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
						Type(2)	Concentration of a.s.			
III 6.2.1/07 (S-M-PL-2020-S20-03778-09) III 6.2.1/08 (S-M-PL-2020-S20-03778-10) III 6.2.1/20 (S-M-PL-2021-S21-03829-09)	Rye	Huzar Active Plus	Poland	R-107/2018	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	
III 6.2.1/09 (S-M-PL-2020-S20-03778-11) III 6.2.1/10 (S-M-PL-2020-S20-03778-12) III 6.2.1/11 (S-M-PL-2020-S20-03778-13) III 6.2.1/12 (S-M-PL-2020-S20-03778-14) III 6.2.1/21 (S-M-PL-2021-S21-03829-10)	Spring wheat	Huzar Active Plus	Poland	R-107/2018	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	

Trial	Crop(s)	Reference standards	Country(ies) where the product is registered[(1)]	Authorization number	Active substance(s) (a.s)	Formulation		Registered application rate[(3)]	Application rate in trials (per treatment)	Remark[(4)]
						Type[(2)]	Concentration of a.s.			
III 6.2.1/22 (S-M-PL-2021-S21-03829-11) III 6.2.1/23 (S-M-PL-2021-S21-03829-12)										
III 6.2.1/13 (S-M-PL-2020-S20-03778-15) III 6.2.1/14 (S-M-PL-2020-S20-03778-16) III 6.2.1/24 (S-M-PL-2021-S21-03829-13) III 6.2.1/25 (S-M-PL-2021-S21-03829-14)	Spring triticale	Huzar Active Plus	Poland	R-107/2018	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	
III 6.2.1/29 S-WW-BG-2021-S21-03829-24)	Winter wheat	Secator OD	Bulgaria	1907/2006	Amidosulfuron, Iodosulfuron-methyl-sodium	OD	100 g/L (amidosulfuron) 25 g/L (iodosulfuron-methyl-sodium)	0.15 L/ha	0.15-0.3 L/ha	
III 6.2.1/30 S-WW-HU-2021-S21-	Winter wheat	Huszar Active Plusz	Hungary	04.2/1437	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tien-	1 L/ha	1-2 L/ ha	

Trial	Crop(s)	Reference standards	Country(ies) where the product is registered(1)	Authorization number	Active substance(s) (a.s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
						Type(2)	Concentration of a.s.			
03829-28) III 6.2.1/31 S-WW-HU-2021-S21-03829-29)					diethyl		carbazon) 30 g/L (mefenpyr-diethyl)			
III 6.2.1/32 S-WW-RO-2020-S20-03778-21) III 6.2.1/33 S-WW-RO-2020-S20-03778-22) III 6.2.1/33 S-WW-RO-2021-S21-03829-25) III 6.2.1/34 S-WW-RO-2021-S21-03829-26) III 6.2.1/35 S-WW-RO-2021-S21-03829-27)	Winter wheat	Hussar Activ Plus OD	Romania	Nr. 521PC	2,4-D EHE Iodosulfuron-methyl-sodium, Tiencarbazon, Mefenpyr-diethyl	OD	300 g/L (2,4-D EHE) 10 g/L (iodosulfuron-methyl-sodium) 7.5 g/L (tiencarbazon) 30 g/L (mefenpyr-diethyl)	1 L/ha	1-2 L/ ha	

(1) only on use(s) applied for (with the test product)
(2) e.g.WP (wettable 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)

Table 3.4-3: Phytotoxicity of product to winter wheat

Number of trials with…		Selectivity trials (10 trials)				Efficacy trials (15 trials)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	9	9	9	9	15	15
	>5% to 10%	1	0	1	1	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	1	0	0	0	0
Level of symptoms at the last assessments	0% to 5%	10	10	9	9	15	15
	>5% to 10%	0	0	1	1	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

17 trials were carried out on winter wheat in Poland, in years 2020 and 2021 on a wide range of commercially grown varieties.

3 trials were carried out on winter wheat in Germany, in 2021 on a wide range of commercially grown varieties.

2 trials were carried out on winter wheat in Czech Republic, in 2021 on a wide range of commercially grown varieties.

Small phytotoxicity symptoms caused by 2N dose of JMD-HER 387 OD at the proposed dose rate of 1 L/ha, were observed in two (one in PL, one in CZ) selectivity trial performed on winter wheat, however they were transient and no phytotoxicicty symptoms were visible during last assessments, on these trails.

Table 3.4-4: Phytotoxicity of product to winter triticale

Number of trials with…		Selectivity trials (4 trials)				Efficacy trials (1 trials)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	4	4	4	4	1	1
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0
Level of symptoms at the last assessments	0% to 5%	4	4	4	4	1	1
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

5 trials were carried out on winter triticale in Poland, in years 2020 and 2021 on a wide range of commercially grown varieties.
No phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were rec-

orded in all trials.

Table 3.4-5: Phytotoxicity of product to rye

Number of trials with…		Selectivity trials (4 trials)				Efficacy trials (1 trials)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	4	4	4	4	1	1
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0
Level of symptoms at the last assessments	0% to 5%	4	4	4	4	1	1
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

5 trials were carried out on rye in Poland, in years 2020 and 2021 on a wide range of commercially grown varieties.
No phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in all trials.

Table 3.4-6: Phytotoxicity of product to spring wheat

Number of trials with…		Selectivity trials (6 trials)				Efficacy trials (10 trials)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	6	4	5	4	10	10
	>5% to 10%	0	2	1	1	0	0
	>10% to 15%	0	0	0	1	0	0
	>15 %	0	0	0	0	0	0
Level of symptoms at the last assessments	0% to 5%	6	5	6	4	10	10
	>5% to 10%	0	1	0	2	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

16 trials were carried out on spring wheat in Poland, in years 2020 and 2021 on a wide range of commercially grown varieties.
Small phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in trials performed in 2021, it has to be also said that, by the time of the last assessment, the signs of phytotoxicity have vanished on plots where 1N (1 L/ha of tested product) was used, and did not exceeded 6% where 2N of the proposed 1L/ha dose was used. Also reference product caused higher phytotoxicity symptoms which were more visible at the time of last assessment, even in 1N rate. Worth mentioning is the fact that severe weather conditions in the 2nd quart of 2021, (periods of temperatures below 5ºC have occured in days after the application was done) might have had an impact on phytotoxicity occurrence.

Table 3.4-6: Phytotoxicity of product to spring triticale

Number of trials with…		Selectivity trials (4 trials)				Efficacy trials (1 trials)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	~~6~~ 4	~~4~~ 2	~~5~~ 3	~~4~~ 2	1	1
	>5% to 10%	0	2	0	1	0	0
	>10% to 15%	0	0	1	0	0	0
	>15 %	0	0	0	1	0	0
Level of symptoms at the last assessments	0% to 5%	~~6~~ 4	~~6~~ 4	~~6~~ 4	~~6~~ 4	1	1
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

5 trials were carried out on spring wheat in Poland, in years 2020 and 2021 on a wide range of commercially grown varieties.
Small phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in trials performed in 2021. By the time of the last assessment, the signs of phytotoxicity have vanished on plots where both 1N and 2N of the proposed label dose of 1 L/ha were used. Also reference product caused higher phytotoxicity symptoms (over 15% for 2N dose) which were even slightly visible at the time of last assessment. Worth mentioning is the fact that severe weather conditions in the 2^{nd} quart of 2021, (periods of temperatures below 5°C have occured in days after the application was done) might have had an impact on phytotoxicity occurrence.

Table 3.4-7: Phytotoxicity of product to winter wheat in SE EPPO zone

Number of trials with…		Selectivity trials (8 trials)				Efficacy trials (13 trial)	
		Test product		Standard 1		Test product	Standard 1
		N	2N (or other)	N	2N (or other)	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	8	8	8	8	13	13
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0
Level of symptoms at the last assessments	0% to 5%	8	8	8	8	13	13
	>5% to 10%	0	0	0	0	0	0
	>10% to 15%	0	0	0	0	0	0
	>15 %	0	0	0	0	0	0

~~8~~ 21 (8 selectivity and 13 efficacy) trials were carried out on winter wheat in SE EPPO zone countries (Bulgaria, Hungary, Romania), in growing seasons 2020 and 2021 on a wide range of commercially grown varieties.

Tiny phytotoxicity symptoms caused by target dose of both JMD-HER 387 OD and Huszar Active (reference product), were observed in one efficacy trial in Hungary (S21-03828-26). Symptoms were really small (0.3%) and were observed only during first assessment (13 days after application). This symptoms were not only minor, they were also transient and were not visible in next assessments (26 DA-A, 39 DA-A and 76 DA-A).

<table>
<tr>
<td>Comments of zRMS:</td>
<td>
In the evaluation process the fact that the active ingredients – iodosulfuron-methyl-sodium and 2,4-D EHE are used in many plant protection products and has been commonly used in crop protection were taken into consideration by Evaluator. However, in Poland – no PPP with both of those a.s. is already registered.
The Applicant submitted in total 36 selectivity studies carried out on winter cereals (26 trials) and spring cereals (10 trials). Those trials were carried out in two growing seasons (2020 and 2021). Trials carried out on winter cereals were carried out in three different EPPO zones: Maritime (3 trials: 2 DE and 1CZ), N-E (15 trials: PL) and S-E (8 trials: RO-5, BG-1, HU-2). Trials performed on spring cereals were conducted only in one EPPO zone – N-E in Poland (10 trials: 6 on spring wheat and 4 on spring triticale). In the opinion of ZRMs submitted documentation is sufficient for N-E and S-E in line to GAP table.
The selectivity evaluation of the herbicide is to be performed according to listed below EPPO guidelines. The evaluation of herbicide selectivity was carried out 4-5 per season. Results were described in percent of destruction of plant for herbicides treatment compared to plant for untreated, where 0% means no phytotoxicity and 100% - complete destruction.
Phytotoxicity assessment was carried out with the use of different cultivars (commercially grown varieties). Dosages N (recommended) and 2N (doubled recommended) were studied during selectivity trials. Experimental details and assessments methods were in accordance to EPPO standards. Detailed information’s are presented by Applicant in BAD.
<u>Assessment for Poland:</u>
✓ <u>Winter cereals:</u>
– winter wheat - Applicant submitted in total 25 trials valid for PL. 15 of them were efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 10 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in PL, DE and CZ. Small phytotoxicity symptoms caused by 2N dose of JMD-HER 387 OD at the proposed dose rate of 1 L/ha, were observed in two (one in PL, one in CZ) selectivity trial performed on winter wheat, however they were transient and no phytotoxicicty symptoms were visible during last assessments, on these trails.
– winter triticle - Applicant submitted in total 5 trials valid for PL. 1 of them was efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 4 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in PL. No phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in all trials.
– winter rye – Applicant submitted in total 5 trials valid for PL. 1 of them was efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 4 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in PL. No phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in all trials.
✓ <u>Spring cereals:</u>
</td>
</tr>
</table>

	– ***spring wheat –*** Applicant submitted in total 16 trials valid for PL. 10 of them were efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 6 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in PL. Small phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded, by the time of the last assessment, the signs of phytotoxicity have vanished on plots where 1N (1 L/ha of tested product) was used, and did not exceeded 6% where 2N of the proposed 1L/ha dose was used. Also reference product caused higher phytotoxicity symptoms which were more visible at the time of last assessment, even in 1N rate. Worth mentioning is the fact that severe weather conditions in the 2nd quart of 2021, (periods of temperatures below 5ºC have occured in days after the application was done) might have had an impact on phytotoxicity occurrence. – ***spring triticle -*** Applicant submitted in total 5 trials valid for PL. 1 of them was efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 4 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in PL. Small phytotoxicity symptoms caused by JMD-HER 387 OD at the proposed dose rate of 1 L/ha were recorded in trials performed in 2021. By the time of the last assessment, the signs of phytotoxicity have vanished on plots where both 1N and 2N of the proposed label dose of 1 L/ha were used. Also reference product caused higher phytotoxicity symptoms (over 15% for 2N dose) which were even slightly visible at the time of last assessment. Worth mentioning is the fact that severe weather conditions in the 2nd quart of 2021, (periods of temperatures below 5ºC have occured in days after the application was done) might have had an impact on phytotoxicity occurrence. **Assessment for Belgium:** ✓ ***Winter cereals:*** – ***winter wheat -*** Applicant submitted in total 21 trials valid for PL. 13 of them were efficacy trials in which phytotoxic effect was assessed at dose recommended (1.0 L/ha) and 8 – selectivity trials in which N and 2N dose was studied. Those trials were carried out on in BG, RO and HU. Tiny phytotoxicity symptoms caused by target dose of both JMD-HER 387 OD and Huzar Active (reference product), were observed in one efficacy trial in Hungary (S21-03828-26). Symptoms were really small (0.3%) and were observed only during first assessment (13 days after application). This symptoms were not only minor, they were also transient and were not visible in next assessments (26 DA-A, 39 DA-A and 76 DA-A). **In most of the assessments no phytotoxicity symptoms were observed for any tested dosage for all tested cereals (both, winter and spring). In addition, the crop developed normally and did not involve a loss in yield at harvest. The same phytotoxicity symptoms were observed at standard referenece treatment. So, in the opinion of ZRMs it can be concluded that Jockey 387 OD is safe for use on winter cereals (wheat, triticale and rye) and spring cereals (wheat, triticale) at recommended dose.**

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

Table 3.4-4: Relationship between phytotoxicity and yield

28 trials were carried out on winter and spring cereals in Poland, Czech Republic and Germany, in 2020

and 2021 seasons, on a range of commercially grown varieties. Additional 8 trials were carried out on winter wheat in SE EPPO zone (Bulgaria, Hungary, Romania) in seasons 2020 and 2021. Trials were performed on a range of locally grown varieties.

Test report	Variety	Maximum phyto. at 1N rate (%) (DAA)		Maximum phyto. at 2N (or other) rate (%) (DAA)		Yield in the untreated control	Yield at 1N as % of untreated		Yield at 2N (or other) rate as % of untreated	
		Test product	Standard 1	Test product	Standard 1	Absolute figures (unit)	Test product	Standard 1	Test product	Standard 1
III 6.2.1/02 (S-WW-PL-2020-S20-03778-02) Winter wheat	Arkadia	n.a.	n.a.	5% (57 DAA)	9% (57 DAA)	6.14 t/ha	100.4%	101.9%	99.5%	98.8%
III 6.2.1/28 (S-WW-CZ-2021-S21-03829-22) Winter wheat	Virato	3% (7 DAA)	n.a.	28% (7 DAA)	n.a.	11.03 t/ha	97.5%	99.8%	98.7%	99.1%
III 6.2.1/12 (S-SW-PL-2020-S20-03778-14) Spring wheat	Goplana	n.a.	n.a.	5% (7 DAA)	5% (7 DAA)	5.28 t/ha	106.1%	105.4%	98.9%	104.8%
III 6.2.1/22 (S-SW-PL-2021-S21-03829-11) Spring wheat	Rusałka	3% (14 DAA)	7% (14 DAA)	7% (20 DAA)	12% (20 DAA)	4.98 t/ha	100.1%	99.8%	97.4%	95.6%
III 6.2.1/23 (S-SW-PL-2021-S21-03829-12) Spring wheat	Goplana	2% (14 DAA)	5% (14 DAA)	7% (22 DAA)	10% (20 DAA)	4.23 t/ha	103.4%	101.8%	100.4%	100.1%
III 6.2.1/24 (S-ST-PL-2021-S21-03829-13) Spring triticale	DKC 3969	4% (7 DAA)	4% (7 DAA)	6% (7 DAA)	9% (7 DAA)	4.55 t/ha	100.6%	98.1%	98.9%	88.8%

In 6 field selectivity trials of JMD-HER 387 OD, listed in the table above, phytotoxicity symptoms have occurred.
Please see the agronomist comment below. It is from the S20-03778-02 trial report, where most plausible explanation of phytotoxicity symptoms occurrence in this trial is described.
"The application of the products (tested and the reference one) was finished at 19:30. After next few hours the air temperature was decreased from 12ºC to -1ºC. In the next day there was noted the minus temperature as well.
The crop height reduction might be caused of the crop physiological stress which was a combination of the herbicide applied and unfavourable weather conditions just after the application of the products (the minus air temperature)."
In S21-03829-22 trial, performed in Czech Republic, phytotoxicity symptoms (slower growing pace of plants) occurred on plots treated with JMD-HER 387 OD. However symptoms were transient (no symptoms during last assessment), and they had no influence on yield and its quality.
It is suspected that in growing season 2021, severe weather conditions (periods of temperatures below 5ºC have occurred in days after the application was done) might have caused the phytotoxicity symptoms to occur, in the trials listed above. However, those symptoms were small (ca. 5%, but mostly below in rate 1N so max. label rate of 1 L of product per hectare) and according to statistical analysis, they did not have any impact on the yield quantities and its parameters.

In all trials performed in SE EPPO zone, no phytotoxicity have occurred. According to the statistical analysis, JMD-HER 387 OD treatments did not have any negative impact on yield and its quality, both in 1N (1 L/ha) dose and 2N (2 L/ha).

Comments of zRMS:

Effects of JMD-HER 387 OD on yield of winter and spring wheat, winter and spring triticale and winter rye were assessed during selectivity trials. In those studies yield was assessed after application of single, highest rate (1 L/ha for JMD-HER 387 OD) of above product as well as twice the highest rate. Statistical analysis of yield and its parameters was done.

Yield data was assessed using Levene's Test If this test indicated no homogeneity of variance the transformed values were used for analysis of variance. If still no homogeneity of variance was obtained by the transformation the statistical analysis should be treated with caution. If no homogeneity on a data column is observed this is indicated with a * in the results tables.

Assessment data were then analysed using a two-way analysis of variance (ANOVA) on untransformed and transformed data. The probability of no significant differences occurring between treatment means is calculated as the F probability value (p(F)).
A mean comparison test was only performed when the treatment probability of F that is calculated during analysis of variance was significant at the observed significance level specified for the mean comparison test. The mean separation letter "a" is assigned to each treatment mean in an assessment data column when a non-significant treatment P(F) is detected.

Student Newman-Keuls' multiple comparison test was applied to separate any treatment differences that may be implied by the ANOVA TEST and these are indicated by a letter test; treatment means with no letters in common are significantly different according to the test initiated at the 95% confidence level.

No significant adverse effect on all of the cereals species was observed after application of JMD-HER 387 OD in comparison to the control.

Below, ZRMS presented detailed results for yield:

– ***winter wheat***

Report No.		III 6.1.4/01 S-WW-PL-2020-S20-03778-01	III 6.1.4/02 S-WW-PL-2020-S20-03778-02	III 6.1.4/03 S-WW-PL-2020-S20-03778-03	III 6.1.4/04 S-WW-PL-2020-S20-03778-04	III 6.1.4/15 S-WW-PL-2021-S20-03829-01	III 6.1.4/16 S-WW-PL-2021-S20-03829-02	III 6.1.4/17 S-WW-PL-2021-S20-03829-03
Application date		23.04.2020	20.04.2020	15.04.2020	20.04.2020	13.05.2021	19.04.2021	19.04.2021
Crop BBCH on app. day		29	31	29	30	31	29	27
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	10,9	6.14	7.11	6.7	6.81	4.72	5.67
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g - Iodosulfuron;	10.86	6.17	7.61	7	6.78	4,99	6.02
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g - Iodosulfuron;	10.73	6.11	7.66	7.17	6.79	4.65	5.75
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g - Iodosulfuron; 7.5g – Thien-carbazone; 30g - Mefenpyr-diethyl	10.72	6.26	7.21	6.74	6.76	4.18	5.76
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -	10,91	6.07	7.45	7.24	6.78	4.69	5.73

	Iodosulfuron; 15g – Thien-carbazone; 60g - Mefenpyr-diethyl								

Report No.		III 6.1.4/26 S-WW-DE-2021-S21-03829-18	III 6.1.4/27 S-WW-DE-2021-S21-03829-19	III 6.1.4/28 S-WW-CZ-2021-S21-03829-22
Application date		23.04.2020	20.04.2020	15.04.2020
Crop BBCH on app. day		29	31	29
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	8	8.24	11.03
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	7.75	8.31	10.76
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	8.13	8.24	10.89
Huzar OD 1N	93.197g -Iodosulfuron;	7.84	8.3	-
Huzar OD 2N	186.394g -Iodosulfuron;	7.77	8.2	-
Sekator Plus 1N	287g - 2,4-D EHE; 6.25g -Iodosulfuron; 25g - Amidosulfuron	-	-	11.01
Sekator Plus 2N	574g - 2,4-D EHE; 12.5g -Iodosulfuron; 50g - Amidosulfuron	-	-	10,93

Report No.		III 6.2.1/29 (S-WW-RO-2020-S20-03778-21)	III 6.2.1/30 (S-WW-RO-2020-S20-03778-22)	III 6.2.1/31 (S-WW-BG-2021-S21-03829-24)	III 6.2.1/32 (S-WW-RO-2021-S21-03829-25)	III 6.2.1/33 (S-WW-RO-2021-S21-03829-26)	III 6.2.1/34 (S-WW-RO-2021-S21-03829-27)	III 6.2.1/35 (S-WW-HU-2021-S21-03829-28)	III 6.2.1/36 (S-WW-HU-2021-S21-03829-29)
Application date		16.04.2020	17.04.2020	13.04.2021	13.04.2021	13.04.2021	14.04.2021	29.04.2021	30.04.2021
Crop BBCH on app. day		29	29	29	29	29	29	29	29
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	3.82	5.19	4.47	6.56	7.55	7.75	5.83	5.21
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g - Iodosulfuron;	3.77	5.03	4.44	6.59	7.53	7.79	6.07	5.35
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g - Iodosulfuron;	3.57	5.05	4.17	6.64	7.52	7.77	6.5	5.47
Hussar Active Plus 1N	300g - 2,4-D EHE; 10g - Iodosulfuron; 7.5g – thiencarba-zone 30g – mefenpyr-diethyl	3.71	5.05	-	6.58	7.41	7.85	-	-
Hussar Active Plus 2N	600g - 2,4-D EHE; 20g - Iodosulfuron; 15g – thien-carbazone 60g – mefenpyr-diethyl	3,9	5.01	-	6.59	7.56	7.77	-	-
Sekator OD 1N	100g - amidosulfu-ron; 25g - Iodosulfuron;	-	-	4.36	-	-	-	-	-
Sekator OD 2N	200g - amidosulfu-ron; 50g - Iodosulfuron;	-	-	4.09	-	-	-	-	-

HuszarActive Plusz 1N	300g - 2,4-D EHE; 10g - Iodosulfuron; 7.5g – thiencarba-zone 30g – mefenpyr-diethyl	-	-	-	-	-	-	6.39	5.34
HuszarActive Plusz 2N	600g - 2,4-D EHE; 20g - Iodosulfuron; 15g – thien-carbazone 60g – mefenpyr-diethyl	-	-	-	-	-	-	6.4	5.3

In 7 field trials on winter wheat JMD-HER 387 OD was used in single rate of 1 L/ha and doubled rate of 2 L/ha did not have significant adverse effect on yield. Phytotoxicity effects were observed in only one trial, (S20-03778-02), on the plots where double rate was used. It has to be said that these effects were transient, and did not have any influence on yield and its parameters (statistically insignificant). No statistical differences in yield were observed between plots treated with JMD-HER 387 OD as well as on control plots.

– ***winter triticale***

Report No.		III 6.1.4/05 S-WT-PL-2020-S20-03778-05	III 6.1.4/06 S-WT-PL-2020-S20-03778-06	III 6.1.4/18 S-WT-PL-2021-S21-03829-04	III 6.1.4/19 S-WT-PL-2021-S21-03829-05
Application date Crop BBCH on app. day		16.04.2020 29	15.04.2020 31	19.04.2021 29	19.04.2021 30
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	6.37	4.11	5.44	5.72
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	6.68	4.18	5.36	5.25
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	6.45	4.13	5.34	5.59
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethyl	6.37	4.14	5.74	5.62
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	6.53	4.09	5.53	5.22

In field trials on winter triticale JMD-HER 387 OD was used in single rate of 1 L/ha and doubled rate of 2 L/ha, did not have significant adverse effect on yield. Phytotoxicity effects were not observed, even on the plots where double rate was used. No statistical differences in yield were observed between plots treated with JMD-HER 387 OD as well as on control plots.

– ***winter rye***

Report No.		III 6.1.4/07 S-WR-PL-2020-S20-03778-09	III 6.1.4/08 S-WR-PL-2020-S20-03778-10	III 6.1.4/20 S-WR-PL-2021-S21-03829-09	III 6.1.4/21 S-WR-PL-2021-S21-03829-10
Application date Crop BBCH on app. day		15.04.2020 31	21.04.2020 32	20.04.2021 23	21.04.2021 23
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	73.68	78.71	76.82	76.02
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	74.69	78.71	76,9	75.67
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	74.48	78,93	76.77	76.02

Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethyl	73.56	78.83	76.89	75.69
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	74.8	79	76,94	75.18

In field trials on winter rye JMD-HER 387 OD was used in single rate of 1 L/ha and doubled rate of 2 L/ha, did not have significant adverse effect on yield. Phytotoxicity effects were not observed, even on the plots where double rate was used. No statistical differences in yield were observed between plots treated with JMD-HER 387 OD as well as on control plots.

– ***spring wheat***

Report No.		III 6.1.4/09 S-SW-PL-2020-S20-03778-11	III 6.1.4/10 S-SW-PL-2020-S20-03778-12	III 6.1.4/11 S-SW-PL-2020-S20-03778-13	III 6.1.4/12 S-SW-PL-2020-S20-03778-14	III 6.1.4/22 S-SW-PL-2021-S21-03829-11	III 6.1.4/23 S-SW-PL-2021-S21-03829-12
Application date Crop BBCH on app. day		08.05.2020 26	08.05.2020 32	12.05.2020 29	27.05.2020 29	21.05.2021 24	19.05.2021 25
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	5.24	3.68	4.85	5.28	4,98	4.23
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	5.35	3.81	4.79	5.6	4,99	4.38
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	5.29	3.63	5.15	5.22	4.85	4.25
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thien-carbazone; 30g - Mefenpyr-diethyl	5.54	3.82	4,97	5.57	4,97	4.31
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarba-zone; 60g - Mefenpyr-diethyl	5.39	3.77	5.23	5.53	4.76	4.23

In field trials on spring wheat JMD-HER 387 OD was used in single rate of 1 L/ha and doubled rate of 2 L/ha, did not have significant adverse effect on yield. Phytotoxicity effects were not observed, even on the plots where double rate was used. No statistical differences in yield were observed between plots treated with JMD-HER 387 OD as well as on control plots.

– ***spring triticale***

Report No.		III 6.1.4/13 S-SW-PL-2020-S20-03778-15	III 6.1.4/14 S-SW-PL-2020-S20-03778-16	III 6.1.4/24 S-SW-PL-2021-S21-03829-13	III 6.1.4/25 S-SW-PL-2021-S21-03829-14
Application date Crop BBCH on app. day		12.05.2020 25	12.05.2020 29	24.05.2021 23	19.05.2021 23
Product	g a.s./ha	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
Control	-	3.25	5.15	4.55	5.47
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	3.42	5.25	4.58	5.32
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	3.22	5.35	4.5	5.41
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethyl	3.09	5.11	4.46	5.35
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	3.34	4.89	4.04	5.24

In field trials on spring triticale JMD-HER 387 OD was used in single rate of 1

	L/ha and doubled rate of 2 L/ha, did not have significant adverse effect on yield. Phytotoxicity effects were not observed, even on the plots where double rate was used. No statistical differences in yield were observed between plots treated with JMD-HER 387 OD as well as on control plots.

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

28 selectivity studies conducted in 2020 and 2021 seasons in Poland, Germany and Czech Republic, on winter and spring cereals revealed that the product JMD-HER 387 OD had no negative impact on quality of plants. Application of JMD-HER 387 OD in a dose of 1 L/ha, caused no adverse effects on yield quantity and quality (grain yield, the weight of thousand grain, moisture content of grain) in selectivity trials.
Moreover, in major number of the trials (22 out of 28) no phytotoxic effect (changes in growth, plant height, tillering, dates of succeeding growth stages, thinning out of plants, discolorations, necroses, deformations) of JMD-HER 387 OD, was recorded in efficacy trials.
In 8 selectivity trials performed in SE EPPO zone in Bulgaria, Hungary and Romania, no phytotoxicity was observed and statistical analysis of the yield (and its quality) showed that the product JMD-HER 387 OD had no negative impact on plants and its yield quantity (grain yield) and quality (the weight of thousand grain, moisture content of grain.

Comments of zRMS:

No significant adverse effect on all of the cereals species was observed after application of JMD-HER 387 OD in comparison to the control. **It can be concuded that Jockey 387 OD have no negative impact on quality of yield of winter (wheat, triticale, rye) and spring cereals (wheat, triticale).**

Below, ZRMS presented detailed results for quality of yield:

– ***winter wheat***

Report No.		III 6.1.4/01 S-WW-PL-2020-S20-03778-01			III 6.1.4/02 S-WW-PL-2020-S20-03778-02			III 6.1.4/03 S-WW-PL-2020-S20-03778-03			III 6.1.4/04 S-WW-PL-2020-S20-03778-04			III 6.1.4/15 S-WW-PL-2021-S20-03829-01			III 6.1.4/16 S-WW-PL-2021-S20-03829-02			III 6.1.4/17 S-WW-PL-2021-S20-03829-03		
Application date		23.04.2020			20.04.2020			15.04.2020			20.04.2020			13.05.2021			19.04.2021			19.04.2021		
Crop BBCH on app. day		29			31			29			30			31			29			27		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	13.4	41,96	82.06	13.2	37,95	76,94	12.7	39.61	81.11	12.8	45.6	82,9	13.3	39.44	77.42	12.4	25.35	72,98	11,9	40.62	82.37
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	13.3	41.82	82.19	13.3	36,92	77.05	12.8	39.53	81.11	12,9	44.3	83.1	13.3	38.64	77.37	12.4	25.14	73,93	12.1	40.63	82.81
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	13.2	42.07	82.16	13.4	37.4	77,9	12.8	39.78	80,98	12.8	43.7	83.7	13.4	38.86	77.13	12.4	24.86	74.12	12	40.59	82.38
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethyl	13.3	41.46	82.29	13.4	37.07	76	12.8	39.52	81.01	12.8	42,9	83.7	13.4	38.01	76.88	12.4	24.22	72.04	12.1	40.09	82.71
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	12.2	40,92	82.49	13.3	36.19	77.69	12.8	40.01	81.23	12.8	45.6	83.5	13.3	37.82	76.61	12.3	26.13	73,95	11,9	40.53	82.45

Report No.		III 6.1.4/26 S-WW-DE-2021-S21-03829-18			III 6.1.4/27 S-WW-DE-2021-S21-03829-19			III 6.1.4/28 S-WW-CZ-2021-S21-03829-22		
Application date		23.04.2020			20.04.2020			15.04.2020		
Crop BBCH on app. day		29			31			29		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	13.1	40.15	72.13	12,9	43.78	82.1	10.2	42.12	82.68
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	13	39.33	73,96	12.8	44.15	82.4	10	43.3	83.51
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	13	39.13	74.59	12.8	43.41	82.22	10	42.69	83.32

Huzar OD 1N	93.197g -Iodosulfuron;	13.2	40.59	73.58	13.1	43.79	81,94	-	-	-
Huzar OD 2N	186.394g -Iodosulfuron;	13.2	40.56	75.19	12,9	43.6	82.23	-	-	-
Sekator Plus 1N	287g - 2,4-D EHE; 6.25g -Iodosulfuron; 25g - Amidosulfuron	-	-	-	-	-	-	10	43.04	-83.86
Sekator Plus 2N	574g - 2,4-D EHE; 12.5g -Iodosulfuron; 50g - Amidosulfuron	-	-	-	-	-	-	9,9	42.7	-82.67

Report No.		III 6.2.1/29 (S-WW-RO-2020-S20-03778-21)			III 6.2.1/30 (S-WW-RO-2020-S20-03778-22)			III 6.2.1/31 (S-WW-BG-2021-S21-03829-24)			III 6.2.1/32 (S-WW-RO-2021-S21-03829-25)			III 6.2.1/33 (S-WW-RO-2021-S21-03829-26)			III 6.2.1/34 (S-WW-RO-2021-S21-03829-27)			III 6.2.1/35 (S-WW-HU-2021-S21-03829-28)			III 6.2.1/36 (S-WW-HU-2021-S21-03829-29)		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	13.5	43.7	73.88	13.68	40.83	76.76	11.6	33.46	74.01	11.73	31.39	79.37	12,9	38.14	78.79	13.2	39.26	79.61	15.4	41,91	79.43	13.7	41.59	81,99
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g - Iodosulfuron;	13.5	43.67	74.25	13.48	40.62	77.04	11.2	33.42	74.07	12.08	31.13	78.82	13	38.25	78.35	13.23	39.05	79.56	13,9	42.21	79.53	13.2	42.42	81.42
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g - Iodosulfuron;	13.58	43.65	73.81	13.73	40.85	76.79	11.2	32.47	72,91	11.53	31.37	79.32	12.8	38.15	78.83	13.08	39.57	79.67	14.1	42,92	79.01	13.7	41.71	80.56
Hussar Active Plus 1N	300g - 2,4-D EHE; 10g - Iodosulfuron; 7.5g – thien-carbazone 30g – mefenpyr-diethyl	13.5	43,98	74.23	13.7	40.79	76.77	-	-	-	12.08	31.15	78.75	13.2	38.07	78.47	13.03	39.52	79.79	-	-	-	-	-	-
Hussar Active Plus 2N	600g - 2,4-D EHE; 20g - Iodosulfuron; 15g – thien-carbazone 60g – mefenpyr-diethyl	13.68	43.27	74.02	13.88	40.51	76.79	-	-	-	11.7	31.20	79.07	13	38.21	78.85	13.08	39.19	79.57	-	-	-	-	-	-
Sekator OD 1N	100g - amido-sulfuron; 25g - Iodosulfuron;	-	-	-	-	-	-	11.5	32,96	73.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sekator OD 2N	200g - amido-sulfuron; 50g - Iodosulfuron;	-	-	-	-	-	-	11.1	32.07	72.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
HuszarActive Plusz 1N	300g - 2,4-D EHE; 10g - Iodosulfuron; 7.5g – thien-carbazone 30g – mefenpyr-diethyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.2	42.31	79.75	13,9	41.27	79.55
HuszarActive Plusz 2N	600g - 2,4-D EHE; 20g - Iodosulfuron; 15g – thien-carbazone 60g – mefenpyr-diethyl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.1	41.40	81.34	13.6	41.15	82.83

– ***winter triticale***

Report No.		III 6.1.4/05 S-WT-PL-2020-S20-03778-05			III 6.1.4/06 S-WT-PL-2020-S20-03778-06			III 6.1.4/18 S-WT-PL-2021-S21-03829-04			III 6.1.4/19 S-WT-PL-2021-S21-03829-05		
Application date Crop BBCH on app. day		16.04.2020 29			15.04.2020 31			19.04.2021 29			19.04.2021 30		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	12	34.8	76.15	12.8	45.67	76.17	13.5	38.73	76,91	13.4	39.35	73.55
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	12.1	33.66	75.55	12.7	45.75	75,98	13.4	39.03	76.91	13.5	39.41	73.45
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	12.1	35.11	75,98	12.8	45.79	75,92	13.6	38.78	77.35	13.4	38.25	72,93

Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethy	12	36.27	76.54	12.8	46.34	76.22	13.6	38.76	76.71	13.5	38.13	72.77
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	12	34,96	75.87	12.7	45.73	75.73	13.6	38.37	76,92	13.5	39.43	73.14

– ***winter rye***

Report No.		III 6.1.4/07 S-WR-PL-2020-S20-03778-09			III 6.1.4/08 S-WR-PL-2020-S20-03778-10			III 6.1.4/20 S-WR-PL-2021-S21-03829-09			III 6.1.4/21 S-WR-PL-2021-S21-03829-10		
Application date Crop BBCH on app. day		15.04.2020 31			21.04.2020 32			20.04.2021 23			21.04.2021 23		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	13.6	25.76	73.68	12.8	29.29	78.71	13.3	27.49	76.82	12.45	19.54	76.02
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	13.6	26.18	74.69	12.8	28.46	78.71	13.3	27.61	76,9	12.35	18.3	75.67
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	13.4	26.16	74.48	12.8	28.89	78,93	13.3	27.1	76.77	12.43	18.55	76.02
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethy	13.4	25.31	73.56	12.8	29.56	78.83	13.3	27.52	76.89	12.43	18.12	75.69
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	13.5	25.79	74.8	12.7	28.8	79	13.3	26.76	76,94	12.43	18.51	75.18

– ***spring wheat***

Report No.		III 6.1.4/09 S-SW-PL-2020-S20-03778-11			III 6.1.4/10 S-SW-PL-2020-S20-03778-12			III 6.1.4/11 S-SW-PL-2020-S20-03778-13			III 6.1.4/12 S-SW-PL-2020-S20-03778-14			III 6.1.4/22 S-SW-PL-2021-S21-03829-11			III 6.1.4/23 S-SW-PL-2021-S21-03829-12		
Application date Crop BBCH on app. day		08.05.2020 26			08.05.2020 32			12.05.2020 29			27.05.2020 29			21.05.2021 24			19.05.2021 25		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	13.2	43.1	74.6	12.5	45.24	81.55	12.7	43.12	70.32	12.7	44.85	66.64	13.3	34,91	80.35	14.1	35,91	74.74
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	13.1	43.5	74	12.5	44.23	82.16	12.7	42.46	69.85	12.6	45.47	66,91	13.2	35.35	80,92	13.7	36.86	76.12
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	13.2	43.3	73,9	12.4	45.41	82.49	12.7	42.45	69.79	12.6	45.1	66.82	13.2	34.08	80.14	13.7	35.48	75.86
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarba-zone; 30g - Mefenpyr-diethy	13.2	43.3	74.2	12.5	44.1	81.86	12.7	42.71	70.17	12.6	44,97	66.62	13.1	34.6	80.41	13.8	36,97	76.3
Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarba-zone; 60g - Mefenpyr-diethyl	13.2	42.3	74.1	12.4	43.89	82.17	12.7	73.14	70.26	12.6	45.27	67.01	13.1	34.76	80.76	13,9	36.53	75.81

– ***spring triticale***

Report No.		III 6.1.4/13 S-SW-PL-2020-S20-03778-15			III 6.1.4/14 S-SW-PL-2020-S20-03778-16			III 6.1.4/24 S-SW-PL-2021-S21-03829-13			III 6.1.4/25 S-SW-PL-2021-S21-03829-14		
Application date Crop BBCH on app. day		12.05.2020 25			12.05.2020 29			24.05.2021 23			19.05.2021 23		
Grain moisture, TGW and yield per plot		Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]	Grain moisture [%]	TGW³ [g]	HLW [kg]
Control	-	12.2	35,99	76.15	12.2	35.75	75.8	13.5	32.07	72.21	13,9	35.76	76.81
JMD-HER 387 OD 1N	377g - 2,4-D EHE; 10g -Iodosulfuron;	12.2	37.09	76.44	12.2	36.52	75.83	13.3	32.41	72.69	13.7	34.52	77.37
JMD-HER 387 OD 2N	754g - 2,4-D EHE; 20g -Iodosulfuron;	12.2	36.38	76.54	12.2	36.15	75.7	13.2	31.5	72.87	13.7	34.72	77.16
Huzar Activ Plus 1N	300g - 2,4-D EHE; 10g -Iodosulfuron; 7.5g – Thiencarbazone; 30g - Mefenpyr-diethy	12.3	36.61	76.2	12.2	36.36	76.03	13.2	32.62	72.59	13.6	34.77	77.46

	Huzar Activ Plus 2N	600g - 2,4-D EHE; 20g -Iodosulfuron; 15g – Thiencarbazone; 60g - Mefenpyr-diethyl	12.3	37.07	76.15	12.2	35.61	75.75	13.1	31.07	72.26	13.6	34.3	76.81

3.4.4 Effects on transformation processes (KCP 6.4.4)

According to the EPPO guideline PP 1/243(1) " […] regulation (e.g. Commission Regulation 284/2013, EU, 2013) may require investigation of possible adverse effects if there are indications that the use of a plant protection product could have an influence on transformation processes (e.g. use of plant growth regulators or fungicides close to harvest or after harvest), or where use of similar products has been found to have an adverse influence. [...] If the applicant can demonstrate that residues are undetectable, or that any residues will not affect yield, a reasoned case may be sufficient to address these requirements."
For JMD-HER 387 OD no processing trials were performed. There is no indication from agricultural practice that herbicides with the active substances 2,4-D EHE and iodosulfuron-methyl-sodium have affected the processing of harvested cereal grains in the past. Furthermore, the test product is intended for application in BBCH 23-31 of cereals and, not close to harvest or after harvest.

Comments of zRMS:	Despite the absence of specific data on Jockey 387 OD (product code: JMD-HER 387 OD) it may be considered that the proposed uses of Jockey 387 OD are unlikely to have a negative impact on the transformation processes. ZRMS accepted Applicant statement for lack of trials against transformation processes for winter and spring cereals. However, cMS should decide if this statement can be accepted.

3.4.5 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)

36 studies conducted in 2020 and 2021 seasons in Bulgaria, Czech Republic, Germany, Hungary, Poland and Romania on winter and spring cereals revealed no negative impact of JMD-HER 387 OD on propagation material – cereal seed.

Summary and conclusion

No adverse effects on treated plants such as phytotoxicity symptoms, negative impact on yield quality/ quantity and transformation processes were observed in efficacy and selectivity trials of JMD-HER 387 OD.

Comments of zRMS:	ZRMS accepted Applicant statement for lack of trials against propagation. However, cMS should decide if this statement can be accepted. Jockey 387 OD (product code: JMD-HER 387 OD), similarly, to the references products to which was compared, has shown to be selective to treated crops, showing negligible phytotoxicity symptoms and with no effect on yield at the N dose. Therefore, no further data is deemed to be necessary in the opinion of Evaluator.

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

3.5.1 Impact on succeeding crops (KCP 6.5.1)

JMD-HER 387 OD (containing 2,4-D EHE and iodosulfuron-methyl-sodium) is not harmful for succeeding plants since its active substance decomposes relatively quick (According to PPDB by University of

Hertfordshire[1], DT_{90} ranges between 54 and 195.5 days for 2,4-D EHE, and between 2.6 – 110 days for iodosulfuron-methyl-sodium-methyl-sodium). Consequently, the product decomposes within the growing season without making any damage to succeeding plants. It is concluded that after the appropriate application of JMD-HER 387 OD in winter and spring cereals, all the possible following crops can be grown when usual crop rotation and seedbed preparation is used.

Considering raised arguments and the fact that the literature does not say anything about the adverse impact on succeeding crops after application of herbicides containing this active substance, no specific plant-back restrictions related to JMD-HER 387 OD are required. However, in case of the need to sift the treated plantation (as a result of crop damage by frost, disease or pest), only spring cereals can be grown on the same field after the period of one month and after shallow seedbed preparation. Maize can also be grown on the same field but after performing ploughing, at least one month before planting the maize.

Comments of zRMS:	The EU requirements on plant protection products requires, that sufficient data must be reported to permit an evaluation of possible adverse effects of a treatment with the plant protection product on succeeding crops if studies and evaluations presented in the other part of the dossier, show that significant residues of the active substance, its metabolites or degradation products, which have or may have biological activity on succeeding crops, remain in soil or in plant materials up to sowing or planting time of possible succeeding crops. Therefore, the Applicant should present the assessment of the possible effect of Jockey 387 OD on crops grown as rotational or replacement crops following crops treated with that product, prepared in accordance to the EPPO Standard Efficacy evaluation of plant protection products. Effects on succeeding crops (PP 1/207 (2)). This standard is intended as a general standard on the methods used to examine whether the active substance of a plant protection product can cause negative effects on crops grown after a crop treated with that product. These crops can be grown as normal rotational crops as well as replacement crops in case of crop failure. Components of Jockey 387 OD are old active ingredients authorised for cereal production for long time ago. Restrictions on rotational crops are well-known. According to the scientific data half dissipation time (DT_{50}) of iodosulfuron is 2.6 – 110 days and DT_{50} for 2,4-D is 54 and 195.5 days. So, it can be assumed that the herbicide Jockey 387 OD (product code: JMD-HER 387 OD) is degraded in the soil during the growing season to a level that does not pose a risk to succeeding crops. The information in label regarding effects on succeeding crops is sufficient. In case of the need to sift the treated plantation (as a result of crop damage by frost, disease or pest), only spring cereals can be grown on the same field after the period of one month and after shallow seedbed preparation. Maize can also be grown on the same field but after performing ploughing, at least one month before planting the maize. This recommendations can be accepted by PL, but cMS should decribe recommendations on the national level in the opinion of ZRMs.

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

None of the efficacy/crop safety trials reported any effects on adjacent crops or plants. Application of JMD-HER 387 OD, according to the requirements of “Good Agricultural Practice” excludes lapses, e.g. overspray of boundary stripes, overdose or applications in other than the registered crops or at other ap-

[1] http://sitem.herts.ac.uk/aeru/ppdb/en/Reports/484.htm

plication times. Furthermore, GAP rules say that to avoids spray drift to adjacent crops the wind speed, the droplet size and positioning of the spray boom have to be taken into account. As JMD-HER 387 OD is intended for control of mono and dicotyledonous weeds, the product may cause damages on mono (f.e. cereals) and dicotyledonous adjacent crops if it is misused.

Therefore, it is not expected that appropriate applications of JMD-HER 387 OD will lead to adverse effects on adjacent crops.

Comments of zRMS:	The Jockey 387 OD (product code JMD-HER 387 OD) is effective against some mono- and dicotyledonous weeds. In this situation, this plant protection product may also cause discoloration and damage to non-target foliage plants, including adjacent crops. The information in this registration report and label warns against overlapping and drift of the spray liquid should be presented. Therefore, warnings to avoid spray drift on adjacent crops should appear on the label. For example: *In order to protect plants and non-target arthropods, it is necessary to designate a protective zone with a width of 5 m from areas not used for agriculture.*

Tank cleaning

There are no special requirements for cleaning application equipment and protective clothing. Normal procedures should be followed for the cleaning and use of protective clothing and equipment.

Comments of zRMS:	ZRMs agree with Applicant.

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

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

In efficacy and phytotoxicity trials no adverse effects of JMD-HER 387 OD on beneficial organisms were observed. Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in Part B, Section 9 (Ecotoxicology).

3.5.4 Compatibility with current management practices including IPM

This is not an EC data requirement/not required by Regulation 1107/2009.

Summary and conclusion

Products which are containing 2,4-D EHE and iodosulfuron-methyl-sodium, has been used for many years, not only Poland but also in other European countries. According to current knowledge, JMD-HER 387 OD does not pose any unacceptable risk to other plants also there was no adverse impact on beneficial organisms.

Comments of zRMS:	Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in Ecotoxicology section. However, accordingly to documentation submitted by Applicant (efficacy and selectivity trials) – none negative effect was observed on non-target organisms during all trials.

3.6 Other/special studies

Not relevant.

Comments of zRMS:	Statement accepted.

3.7 List of test facilities including the corresponding certificates

Table 3.7-1: List of test facilities

Test facility	Address	Certificate (Yes or No)
Eurofins Agroscience Services Sp. z o.o.	ul. Parkowa 6 64-530 Kaźmierz	Yes

Appendix 1 Lists of data considered in support of the evaluation

Tables considered not relevant can be deleted as appropriate.

MS to blacken authors of vertebrate studies in the version made available to third parties/public.

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	Vertebrate study Y/N	Owner
KCP 3.2/01	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-01 GEP: Yes Published: No	N	Pestila*
KCP 3.2/02	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-02 GEP: Yes Published: No	N	Pestila*
KCP 3.2/03	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-03 GEP: Yes Published: No	N	Pestila*
KCP 3.2/04	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-04 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.2/05	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-05 GEP: Yes Published: No	N	Pestila*
KCP 3.2/06	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-06 GEP: Yes Published: No	N	Pestila*
KCP 3.2/07	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-07 GEP: Yes Published: No	N	Pestila*
KCP 3.2/08	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-08 GEP: Yes Published: No	N	Pestila*
KCP 3.2/09	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-09 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.2/10	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-10 GEP: Yes Published: No	N	Pestila*
KCP 3.2/11	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-11 GEP: Yes Published: No	N	Pestila*
KCP 3.2/12	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-12 GEP: Yes Published: No	N	Pestila*
KCP 3.2/13	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-13 GEP: Yes Published: No	N	Pestila*
KCP 3.2/14	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-14 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.2/15	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-15 GEP: Yes Published: No	N	Pestila*
KCP 3.2/16	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-16 GEP: Yes Published: No	N	Pestila*
KCP 3.2/17	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-17 GEP: Yes Published: No	N	Pestila*
KCP 3.2/18	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Poland. 2020; Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-18 GEP: Yes Published: No	N	Pestila*
KCP 3.2/19	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-01 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.2/20	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-02 GEP: Yes Published: No	N	Pestila*
KCP 3.2/21	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-03 GEP: Yes Published: No	N	Pestila*
KCP 3.2/22	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-04 GEP: Yes Published: No	N	Pestila*
KCP 3.2/23	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-05 GEP: Yes Published: No	N	Pestila*
KCP 3.2/24	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-06 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.2/25	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-07 GEP: Yes Published: No	N	Pestila*
KCP 3.2/26	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-08 GEP: Yes Published: No	N	Pestila*
KCP 3.2/27	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-09 GEP: Yes Published: No	N	Pestila*
KCP 3.2/28	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-10 GEP: Yes Published: No	N	Pestila*
KCP 3.2/29	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-12 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.2/30	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter barley. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-14 GEP: Yes Published: No	N	Pestila*
KCP 3.2/31	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter barley. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-15 GEP: Yes Published: No	N	Pestila*
KCP 3.2/32	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter barley. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-16 GEP: Yes Published: No	N	Pestila*
KCP 3.2/33	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Czech Republic 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-17 GEP: Yes Published: No	N	Pestila*
KCP 3.2/34	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter wheat. Czech Republic 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-18 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.2/35	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter barley. Czech Republic 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-19 GEP: Yes Published: No	N	Pestila*
KCP 3.2/36	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broad-leaved weeds in winter barley. Czech Republic 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03828-20 GEP: Yes Published: No	N	Pestila*
KCP 3.2/37	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-19 GEP: Yes Published: No	N	Pestila*
KCP 3.2/38	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-20 GEP: Yes Published: No	N	Pestila*
KCP 3.2/39	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-21 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.2/40	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-22 GEP: Yes Published: No	N	Pestila*
KCP 3.2/41	Głowacki G.	2020	Determination of efficacy of JMD-HER 387 OD applied once in spring 2020 against mono- and broad-leaved weeds in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03776-23 GEP: Yes Published: No	N	Pestila*
KCP 3.2/42	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Bulgaria 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-21 GEP: Yes Published: No	N	Pestila*
KCP 3.2/43	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Bulgaria 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-22 GEP: Yes Published: No	N	Pestila*
KCP 3.2/44	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Bulgaria 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-23 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.2/45	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Bulgaria 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-24 GEP: Yes Published: No	N	Pestila*
KCP 3.2/46	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-25 GEP: Yes Published: No	N	Pestila*
KCP 3.2/47	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-26 GEP: Yes Published: No	N	Pestila*
KCP 3.2/48	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-27 GEP: Yes Published: No	N	Pestila*
KCP 3.2/49	Głowacki G.	2021	Determination of efficacy of JMD-HER 387 OD applied once in spring 2021 against mono- and broadleaved weeds in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03828-28 GEP: Yes Published: No	N	Pestila*
KCP 3.4/01	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-01 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.4/02	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-02 GEP: Yes Published: No	N	Pestila*
KCP 3.4/03	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-03 GEP: Yes Published: No	N	Pestila*
KCP 3.4/04	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-04 GEP: Yes Published: No	N	Pestila*
KCP 3.4/05	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-05 GEP: Yes Published: No	N	Pestila*
KCP 3.4/06	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-06 GEP: Yes Published: No	N	Pestila*
KCP 3.4/07	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-09 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.4/08	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-10 GEP: Yes Published: No	N	Pestila*
KCP 3.4/09	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-11 GEP: Yes Published: No	N	Pestila*
KCP 3.4/10	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-12 GEP: Yes Published: No	N	Pestila*
KCP 3.4/11	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-13 GEP: Yes Published: No	N	Pestila*
KCP 3.4/12	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-14 GEP: Yes Published: No	N	Pestila*
KCP 3.4/13	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-15 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.4/14	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Poland. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S20-03778-16 GEP: Yes Published: No	N	Pestila*
KCP 3.4/15	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-01 GEP: Yes Published: No	N	Pestila*
KCP 3.4/16	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-02 GEP: Yes Published: No	N	Pestila*
KCP 3.4/17	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-03 GEP: Yes Published: No	N	Pestila*
KCP 3.4/18	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter triticale. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-04 GEP: Yes Published: No	N	Pestila*
KCP 3.4/19	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter triticale. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-05 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.4/20	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter rye. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-09 GEP: Yes Published: No	N	Pestila*
KCP 3.4/21	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter rye. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-10 GEP: Yes Published: No	N	Pestila*
KCP 3.4/22	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-11 GEP: Yes Published: No	N	Pestila*
KCP 3.4/23	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in spring wheat. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-12 GEP: Yes Published: No	N	Pestila*
KCP 3.4/24	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in spring triticale. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-13 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.4/25	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in spring triticale. Poland 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-14 GEP: Yes Published: No	N	Pestila*
KCP 3.4/26	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-18 GEP: Yes Published: No	N	Pestila*
KCP 3.4/27	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Germany 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-19 GEP: Yes Published: No	N	Pestila*
KCP 3.4/28	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Czech Republic 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-22 GEP: Yes Published: No	N	Pestila*
KCP 3.4/29	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: 20-03778-21 GEP: Yes Published: No	N	Pestila*

Data point	**Author(s)**	**Year**	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** Published or not	**Vertebrate study Y/N**	**Owner**
KCP 3.4/30	Głowacki G.	2020	Determination of selectivity of JMD-HER 387 OD applied once in spring 2020 in cereals. Romania. 2020. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: 20-03778-22 GEP: Yes Published: No	N	Pestila*
KCP 3.4/31	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Bulgaria 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-24 GEP: Yes Published: No	N	Pestila*
KCP 3.4/32	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Romania 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-25 GEP: Yes Published: No	N	Pestila*
KCP 3.4/33	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Romania 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-26 GEP: Yes Published: No	N	Pestila*
KCP 3.4/34	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Romania 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-27 GEP: Yes Published: No	N	Pestila*

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 3.4/35	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-28 GEP: Yes Published: No	N	Pestila*
KCP 3.4/36	Głowacki G.	2021	Determination of selectivity of JMD-HER 387 OD applied once in Spring 2021 in winter wheat. Hungary 2021. Eurofins Agroscience Services Sp. z o.o., Poland; Report No.: S21-03829-29 GEP: Yes Published: No	N	Pestila*

* Pestila Spółka z ograniczoną odpowiedzialnością

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

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

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

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