FINAL REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: MEZOT 100 SC

Product name(s): Mezot 100 SC

Chemical active substance:

Mesotrione, 100 g/L

Central

Zonal Rapporteur Member State: POLAND

CORE ASSESSMENT

(authorization)

Applicant: Elvita Sp. z o.o.

Submission date: 28/01/2021

MS Finalisation date: 02/2022; 12/2023

Version history

When	What
February 2022	ZRMs evaluated dRR submitted by Applicant
December 2023	The final Registration Report

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3 Efficacy Data and Information (including Value Data) on the Transformation of the dRR (applicant version) into the RR (zRMS version)

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:	The commenting boxes are filled-in by the zRMS. They are usually placed at the end of each chapter. Commenting boxes should be understandable alone and refer very precisely to the text commented. The main advantage of their use is to distinguish easily between the applicant and the zRMS text.

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.

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)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g 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	Maize	F	~~*Anthemis arvensis, Elymus repens, Amaranthus retroflexus,*~~ *Capsella bursa-pastoris, Chenopodium album, Echinochloa crus-galli,* ~~*Falconeria, Fumaria officinalis,*~~ *Galium aparine, Galium palustre, Lamium purpureum,* ~~*Tripleurospermum inodorum,*~~ *Fallopia convolvulus, Sinapis arvensis,* ~~*Solanum nigrum,*~~ *Stellaria media, Thlaspi arvense, Viola arvensis.*	Foliar spraying; small drops	BBCH 12-18	1	-	a) 1,5 b) 1,5	Mesotrione - 150	200-300	-	Herbicide for use with field sprayers	Acceptable

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1.

** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

Column 15: zRMS conclusion.

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

3.2 Efficacy data (KCP 6)

Introduction

This document reviews the environmental fate and behaviour for the product Mezot 100 SC con-taining Mesotrione as active substance which was included into Annex I of Directive 91/414 (current legislation – regulation 540/2011) by Directive 2003/68/EC (July, 11th 2003) and renewed by Regulation (EU) 2017/725 of April, 24th 2017.
A full risk assessment according to Uniform Principles is provided which demonstrates that the product is safe for the environment.

Where appropriate this document refers to the conclusions of the EU review of Mesotrione. This will be where:
- the protection of operators,
- the protection of groundwater in vulnerable regions,
- the protection of mammals, aquatic and non-target plants..

Note: this Part B document only reviews data (Annex II or Annex III) and additional information that has not previ-ously been considered within the EU review process, as part of the Annex I inclu-sion decision. New annex II data must only be included if they are considered essential for the evaluation and in this case a full study summary must be provided.

Mezot 100 SC as formulation has not been previously evaluated in Poland according to Uniform Principles.

EFSA Journal 2016;14(3):4419 conclusion on the peer review of the pesticide risk assessment of the active sub-stance Mesotrione are considered to provide the relevant review information or a ref-erence to where such infor-mation can be found.

The Annex I Directive 2003/68/EC (July, 11th 2003) and Regulation (EU) 2017/725 of April, 24th 2017 provide specific provisions under Part B which need to be considered by the applicant in the preparation of their submission and by the MS prior to granting an authorisation.

For the implementation of the uniform principles of Annex VI, the conclusions of the review report on the Mesotri-one and in particular Appendices thereof, as finalised in the Standing Committee on the Food Chain and Animal Health on 23 March 2017 (SANTE/11654/2016) shall be taken into account.

Description of active substances

Active substance is not a new substance. Active substance is the ISO common name:
- Mesotrione: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1-3-cyclohexanedione; CAS: 104206-82-8; CIPAC: 625

Mode of action

Mesotrione is a herbicide being developed for the selective pre- and post-emergence control of a wide range of broad-leaved and grass weeds in maize (Zea mays). It is a member of the benzoylcyclohexane-1,3-dione family of herbicides, which are chemically derived from a natural phytotoxin obtained from the Californian bottlebrush plant, Callistemon citrinus. The compound acts by competitive inhibition of the enzyme 4-hydroxyphenylpyruvate dioxygenase (HPPD), a component of the biochemical pathway that converts tyrosine to plastoquinone and alpha-tocopherol. Mesotrione is an extremely potent inhibitor of HPPD from Arabidopsis thaliana, with a Ki value of c 6-18 pM. It is rapidly taken up by weed species following foliar application, and is distributed within the plants by both acropetal and basipetal move-ment. Maize is tolerant to mesotrione as a consequence of selective metabolism by the crop plant.

Table 3.2-1: Details of the active substances

Active substance	Mesotrione
Concentration (Unit: g/kg or g/L...)	100 g/L
Chemical name	2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1-3-cyclohexanedione
Group of pesticides	Herbicide

Description of the plant protection product

This document summarises the information related to the efficacy of the plant protection product Mezot 100 SC. The formulation of this product is a suspension concentrate (SC) and it comprises one active substance Mesotrione (100 g/L). Mezot 100 SC is a selective herbicide used for the control of the many important weeds in maize.
Mezot 100 SC is used for foliar application.

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)			
Maize	*Anthemis arvensis, Elymus repens, Amaranthus retroflexus, Capsella bursa-pastoris, Chenopodium album, Echinochloa crus-galli, Falconeria, Fumaria officinalis, Galium aparine, Galium palustre, Lamium purpureum, Tripleurospermum inodorum, Fallopia convolvulus, Sinapis arvensis, Solanum nigrum, Stellaria media, Thlaspi arvense, Viola arvensis.*	Poland	0,75 – 1,5 l/ha	-

Description of the target pests

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

EPPO code	Scientific name
ANTAR	Anthemis arvensis
AGRRE	Elymus repens
AMARE	Amaranthus retroflexus
CAPBP	Capsella bursa-pastoris
CHEAL	Chenopodium album
ECHCG	Echinochloa crus-galli
FALCO	Falconeria
FUMOF	Fumaria officinalis
GALAP	Galium aparine

GALPA	Galium palustre
LAMPU	Lamium purpureum
MATIN	Tripleurospermum inodorum
POLCO	Fallopia convolvulus
SINAR	Sinapis arvensis
SOLNI	Solanum nigrum
STEME	Stellaria media
THLAR	Thlaspi arvense
VIOAR	Viola arvensis

ANTAR (Anthemis arvensis: family Asteraceae)
This winter and spring annual weed is spread all over Europe. Tt mainly occurs on rich, but lime-deficient loamy and sandy soils. Germination occurs at a maximum depth of 5-6 cm. Plants produce up to 4000- 5000 seeds per plant of 2-3 mm. Flowering is usually from June to September.
Anthemis arvensis was observed in 1 trial.

AGRRE (Elymus repen). It occurs in Europe and Asia, in areas with a continental and subcontinental climate. In Poland, the plant is very common throughout the lowlands and in the lower mountain locations. Erect or rising stems, bare and smooth, with nodes and internodes. They reach a height of 20–150 cm. They grow in a straight line on the stem, are vivid green or blue-green, flat, even, 4–15 mm wide. At the top of the stalk, gathered into flattened spikes about 10 cm long.
Elymus repen was observed in 1 trial.

AMARE (Amaranthus retroflexus), true to one of its common names, forms a tumbleweed. It is native to the tropical Americas, but is widespread as an introduced species on most continents in a great number of habitats. This is an erect, annual herb reaching a maximum height near 3 m (9.8 ft). The leaves are nearly 15 cm (5.9 in) long on large individuals, the ones higher on the stem having a lance shape and those lower on the plant diamond or oval in shape.
AMARE was observed in 9 trials.

CAPBP (Capsella bursa-pastoris; family Brassicaceae)
This winter and spring annual weed shows a high reproduction rate, with 70000 seeds per plant. Therefore, it is widely spread all over the world, except for tropical regions. It arouses yield losses as well in winter as in spring cereals. Propagation occurs generatively. germination is possible nearly the whole year, but mainly in autumn. CAPBP blooms nearly the whole year. Direct harm to the crop is regarded low, but transmission of club root (Plasmodiophora brassicae) is possible.
CAPBP occurred in 4 trials.

CHEAL (Chenopodium album; famity Amaranthaceae)
This cosmopolitan plant can be found in all parts of the world. The species is very heterogeneous. It grows on all soil types. but prefers fertile soils. The plants can achieve heights of 5-300 cm and roots can reach depths of 1 m. Flowering begins between May and August, depending on the climatic conditions. Seed germination is possible between early spring and autumn. The seeds remain viable up to 10 years and also pass unharmed through the digestive system of animals.
Chenopodium album was reported in 12 trials.

ECHCG (Echinochloa crus-galli). Stem - violet flaky stems rising up and at the bottom, 30-70 (90) cm high. Leaves - wide, slightly wavy. Leaf blades with rough edges, leaf sheaths slightly flattened and without a tongue. Flowers - gathered in a dense, lobed and one-sided panicle (this is where the plant's name comes from). The panicle has rough and hairy twigs. The egg-elliptical, single-flowered and densely clustered spikelets are light green with a purple tinge. They grow 3-6 on one side on one twig of the panicle.
It grows on roadsides, water shores, in gardens and farmlands. Weed mainly maize and root crops, prefers loamy, slightly moist, fertile soils rich in nitrogen and calcium. The harmfulness threshold is 3-6 plants per 1 m².
Echinochloa crus-galli was reported in 11 trials.

FUMOF (Fumaria officinalis: family Papaveraceae)
Fumaria officinalis mainty infests grain and tilled crops, fodder grasses and flax. This weed prefers friable, nutrient-rich loams, usually low in lime. The plants produce up to 15 000 seeds that maintain germinability in soil for 3-5 years. Optimum temperatures are between 18-20 ^{0}C.
FUMOF was reported in 1 trial.

GALAP (Galium aparine; family Rubiaceae)
Galium aparine 1s an early spring annual plant: its propagation occurs generatively. It germinates mainly in autumn and spring and blooms during May to October. This weed can germinate in darkness and light as well as in depths of O to 10 cm and a broad range of temperatures. It prefers moist loam and clay soils with a high content of organic matter and nitrogen. The ability of GALAP to climb on the crops leads to problems at harvest. Especially in moist years, yield losses can be high.
GALAP occurred in 3 trials.

GALPA (Galium palustre). Stem - thin and slender, lying down and lifting up, smooth or slightly rough-weathered. Reaches a length of 15–35 (55) cm. The whole plant turns black after drying. Leaves - thin, narrow-oblong or obovate-lanceolate, 0.5–1.2 cm long. They grow in whorls, usually 4, less often 5–6. Flowers - gathered in a loose panicle growing at the top of the stem. Flowers 2.5–3.5 mm in diameter, usually 4-fold, with white petals and red anthers. Perennial, hemicryptophyte. It blooms from May to August. It occurs on the banks of water, wet meadows and in swamps.
Galium palustre occurred in 4 trials.

LAMPU (Lamium purpureum)
Lamium purpureum grows with square stems to 5–20 cm (rarely 30 cm) in height. The leaves have fine hairs, are green at the bottom and shade to purplish at the top; they are 2–4 cm long and broad, with a 1–2 cm petiole (leaf stalk), and wavy to serrated margins.
LAMPU occurred in 3 trials.

MATIN(Tripleurospermum inodorum)
Historically included the genus Matricaria, Tripleurospermum inodorum has been the subject of some controversy, with many revisions in recent years. The Flora Europaea uses Matricaria perforata for this species. Synonyms/other scientific names include Tripleurospermum perforatum (Mérat) Lainz, Tripleurospermum maritimum subsp. Inodorum. 1 trial was observed.

POLCO (Fallopia convolvulus; family Polygonaceae)
Fallopia convolvulus is a climbing, annual weed, germinating mainly in spring. It has no special requirements on the soil, but prefers sandy, loamy or humic soils. The stems can grow up to 1 m by climbing or crouching on the soil.
POLCO was reported in 5 trials.

SINAR (Sinapis arvensis)
Sinapis arvensis reaches on average 20–80 centimetres (7.9–31.5 in) of height, but under optimal conditions can exceed one metre. The stems are erect, branched and striated, with coarse spreading hairs especially near the base.The leaves are petiolate (stalked) with a length of 1–4 centimetres (0.39–1.57 in). The basal leaves are oblong, oval, lanceolate, lyrate, pinnatifid to dentate, 4–18 centimetres (1.6–7.1 in) long, 2–5 centimetres (0.79–1.97 in) wide. SINAR was reported in 2 trials.

SOLNI (Solanum nigrum)
Black nightshade is a common herb or short-lived perennial shrub, found in many wooded areas, as well as disturbed habitats. It reaches a height of 30 to 120 cm (12 to 47 in), leaves 4.0 to 7.5 cm (1.6 to 3.0 in) long and 2 to 5 cm (1 to 2 in) wide; ovate to heart-shaped, with wavy or large-toothed edges; both surfaces hairy or hairless; petiole 1 to 3 cm (0.5 to 1 in) long with a winged upper portion. The flowers have petals greenish to whitish, recurved when aged and surround prominent bright yellow anthers. The berry is mostly 6 to 8 mm (0.24 to 0.31 in) in diam., dull black or purple-black. In India, another strain is found with berries that turn red when ripe. SOLNI was reported in 1 trials.

STEME (Stellaria media: family Caryophyllaceae)
Common chickweed is common in most field cultures, but prefers rich soils with high content of organic matter and nutrients. It is a winter annual weed; the propagation is generative. The seeds are able to germinate the whole year; bloom is possible nearly the whole year.
STEME was assessed in 4 trials.

THLAR (Thłaspi arvense: family Brassicaceae)
THLAR is a winter and spring annual weed, with generative propagation. The plant achieves heights of 10 to 40 cm. Germination occurs in autumn and spring, blooming during May to October. It prefers fertile, humid and loamy soils. THLAR is common in nearly whole Europe.
THLAR occurred in 7 trials.

VIOAR (Viola arvensis)
Viola arvensis is a common field weed. The annual, sometimes biennial plants of the genus Viola can achieve growth heights up to 30 cm. Flowering occurs from April until September, germination from April to May. Seeds keep their germination ability up to six years. The weed prefers fertile soils.
Species of the genus Viola were observed in 6 trials.

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
Maize	PL	-	*Anthemis arvensis, Elymus repens, Amaranthus retroflexus, Capsella bursa-pastoris, Chenopodium album, Echinochloa crus-galli, Falconeria, Fumaria officinalis, Galium aparine, Galium palustre, Lamium purpureum, Tripleurospermum inodorum, Fallopia convolvulus, Sinapis arvensis, Solanum nigrum, Stellaria media, Thlaspi arvense, Viola arvensis.*	PL

Information on trials submitted (3.1 Efficacy data)

Table 3.2-5.1: Presentation of trials (efficacy)

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)
					Poland	-		
Maize	*Anthemis arvensis, Elymus repens, Amaranthus retroflexus, Capsella bursa-pastoris, Chenopodium album, Echinochloa crus-galli, Falconeria, Fumaria officinalis, Galium aparine, Galium palustre, Lamium purpureum, Tripleurospermum inodorum, Fallopia convolvulus, Sinapis arvensis, Solanum nigrum, Stellaria media, Thlaspi arvense, Viola arvensis.*	Poland	2019 2020	E	12	-	GEP	The study was conducted in Poland under different climate and soil for different varieties of rape winter
TOTAL					**12**			

Table 3.2-6.2: Presentation of trials (selectivity)

Crop(s) *	Country	Years	Type of trial	Number of trials (number of valid trials)		GEP, non-GEP, official***	Comments (any other relevant information)
				Poland	-		
Maize	Poland	2019 2020	E	8	-	GEP	The study was conducted in Poland under different climate and soil for different varieties of rape winter
TOTAL				**8**			

Table 3.2-7.1: Presentation of reference standards used in trials (efficacy)

Crop(s)	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
					Type(2)	Concentration of a.s.			
Maize	Juzan 100 SC	Poland	R-45/2018	Mesotrion	SC	100 g/L	1,5 L/ha	1,5 L/ha	Foliar spraying. Recommended medium drops spraying. Used agricultural sprayers.

(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.).

Table 3.2-8.1: Presentation of reference standards used in trials (selectivity)

Crop(s)	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
					Type(2)	Concentration of a.s.			
Maize	Juzan 100 SC	Poland	R-45/2018	Mesotrion	SC	100 g/L	1,5 L/ha 3,0 l./ha	1,5 L/ha 3,0 L/ha	Foliar spraying. Recommended medium drops spraying. Used agricultural sprayers.

(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 Mezot 100 SC (product code: Mezot 100 SC). The formulation of this product is a suspension concentrate (SC) and it is containing one active substance: mesotrione (100 g/L). For now, this active compound is on the list of approved active substance. Products based on this compound (mesotrione) are known for years and are described in some publications. In Poland 51 herbicides with mesotrione are registered and used to control weeds in crops. Mezot 100 SC is a selective herbicide used for the control of the many important weeds in maize. Mezot 100 SC is used for foliar application. The product – Mezot 100 SC by Elvita Sp. zo.o. has not been previously evaluated in any country according to Uniform Principles. Poland is a ZRMs.

3.2.1 Preliminary tests (KCP 6.1)

Preliminary studies on product Mezot 100 SC were not carried out because this herbicide contains active substance which is a well-known active substance that has been used for many years in agricultural practice. Preliminary studies have not been conducted because the active substance is known and has long been used in maize. The active substance of Mezot 100 SC – are registered and has been commonly used in agricultural practice for many years. The effect of the active substanc is well known and sufficient large scale efficacy trials are available to evaluate the effectiveness of Mezot 100 SC. The performance of active substance is known to the authorities and it is used as a reference standard in official efficacy trials. Therefore, preliminary tests are not described and not required.

Comments of zRMS:	The active substance of Mezot 100 SC (product code: Mezot 100 SC) – mesotrione is registered and have been commonly used in agricultural practice for many years. Large scale efficacy trials are available to evaluate the effectiveness of products containing this active compound. ZRMs agree with Applicant that preliminary tests are not described and not required.

3.2.2 Minimum effective dose tests (KCP 6.2)

To demonstrate the minimum effective dose rate, Mezot 100 SC was applied at 0,75 l/ha; 1,0 l/ha; 1,20 l/ha; 1,25 l/ha; 1,5 l/ha. These rates reflect 50%, 60-80% and 100% of the full recommended rate of active substances, in accordance with the EPPO guideline PP 1/225(1) “Minimum effective dose”.
The proposed dose is selected on the basis of its efficacy performance, product safety parameters and environmental limitations. To fully challenge the product efficacy was tested under a range of environmental conditions.In the appropriate researches of efficacy were tested several doses and to register was chosen the lowest effective.

Comments of zRMS:	Statement accepted. To provide information to establish the minimum effective dose, some of the trials conducted to demonstrate efficacy should include at least one lower dose(s) (for example 60–80% of the recommended dose) to that which would be recommended. It is utilized to achieve the desired effect. During field tests Applicant used different doses of herbicide – Mezot 100 SC (product code: Mezot 100 SC). So, 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). Efficacy was tested under a range of environmental conditions to fully challenge the product. Data are presented from trials conducted in the North-East EPPO zone in Poland. Different doses were studied during trials: 0,75 l/ha; 1,0 l/ha; 1,2 l/ha; 1,25 l/ha and 1,5 l/ha. MED results were presented in chapter of efficacy tests. **Based on results achieved on weeds in maize trials, it can be concluded that to consistently control frequently occurring weeds in maize, Mezot 100 SC should be applied early post-emergence (BBCH 12-18) at dose 0,75 - 1,5 l/ha.** Higher dose (1,5 l/ha) should be used at higher level of infestation.

3.2.3 Efficacy tests (KCP 6.2)

The tables below provide details of the efficacy studies for all applied uses.

Study: SGS/2019/047/PL01

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	18,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Ambrosini
	Planting Date:	May-1-2019
Application	Crop stage (BBCH)* at application	BBCH 14
	Timing Pest stage at application (1)	Post-emergence AGRRE – BBCH 14 CHEAL – BBCH 12 ECHCG – BBCH 12 POLCO – BBCH 12 VIOAR – BBCH 12
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	10 DAA, 28 DAA, 46 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	sandy loam, Organic Matter – 1,8 %
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	Chojnice, Pomorskie
	Application date	May-27-2019

Results:

AGRRE Elymus repens		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	46 DA-A
Juzan 100 SC	1,5	95,8	88,8	90,0
Mezot 100 SC	1,5	94,5	90,0	87,5
Mezot 100 SC	1,2	70,0	85,0	76,3
Mezot 100 SC	0,75	50,0	50,0	50,0

CHEAL Chenopodium album		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	46 DA-A
Juzan 100 SC	1,5	99,0	99,0	92,5
Mezot 100 SC	1,5	99,0	98,0	88,8
Mezot 100 SC	1,2	99,0	99,0	83,8
Mezot 100 SC	0,75	99,0	91,3	72,5

ECHCG Echinochloa crus-galli		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	46 DA-A
Juzan 100 SC	1,5	96,0	93,8	88,8
Mezot 100 SC	1,5	97,0	90,0	86,3
Mezot 100 SC	1,2	95,0	85,0	75,0
Mezot 100 SC	0,75	83,8	72,5	65,0

POLCO Fallopia convolvulus		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	46 DA-A
Juzan 100 SC	1,5	99,0	96,0	99,0
Mezot 100 SC	1,5	95,8	90,0	92,5
Mezot 100 SC	1,2	96,8	87,5	90,0
Mezot 100 SC	0,75	92,3	80,0	81,3

VIOAR Viola arvensis		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	46 DA-A
Juzan 100 SC	1,5	99,0	99,0	99,0
Mezot 100 SC	1,5	99,0	98,0	92,5
Mezot 100 SC	1,2	99,0	99,0	90,0
Mezot 100 SC	0,75	99,0	91,3	81,3

Objectives and conclusions:

1. To evaluate the efficacy of Mezot 100 SC when applied postemergence in maize.

Mezot 100 SC had good efficacy at dose rates 1,2-1,5 l/ha against VIOAR (90,0 - 92,5%) and POLCO (85,0 - 90,0%). Good efficacy at 1,5 l/ha against ECHCG (86,3%), AGRRE (87,5%), CHEAL 88,8%

2. To compare the efficacy of Mezot 100 SC with reference Juzan 100 SC.

Efficacy of Mezot 100 SC in dose 1,5 l/ha on POLCO, CHEAL, VIOAR, AGRRE and ECHCG is very similar as efficacy of Juzan 100 SC in dose 1,5 l/ha.

3. To determine the minimum effective dose of Mezot 100 SC.

Minimum effective dose of Mezot 100 SC is1,5 l/ha.

4. To evaluate the effect on crop safety in maize.

Minor symptoms of clorosis were observed at first assessment. Crop recovered after this and no symptoms were visible at later stages.

5. No effects on non-target organisms were observed during this trial.

Study: SGS/2019/047/PL02

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	18,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Farmfire
	Planting Date:	May-4-2019
Application	Crop stage (BBCH)* at application	BBCH 12
	Timing Pest stage at application (1)	Post-emergence CHEAL – BBCH 11 ECHCG – BBCH 11

		GALAP – BBCH 11 POLCO – BBCH 12 SINAR – BBCH 12 THLAR – BBCH 12 VIOAR – BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	200 L/ha
Assessment	Assessment	14 DAA, 28 DAA, 56 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	sandy loam, Organic Matter – 1,8 %
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	Chojnice, Pomorskie
	Application date	May-24-2019

Results:

CHEAL Chenopodium album		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	96,5	98,0	99,0
Mezot 100 SC	1,5	98,0	99,0	99,0
Mezot 100 SC	1,2	92,5	91,3	94,3
Mezot 100 SC	0,75	88,8	86,3	81,3

ECHCG Echinochloa crus-galli		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	98,5	99,0	99,0
Mezot 100 SC	1,5	97,5	99,0	99,0
Mezot 100 SC	1,2	91,3	92,5	92,5
Mezot 100 SC	0,75	88,8	86,3	81,3

GALAP Galium aparine		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	95,5	98,0	99,0
Mezot 100 SC	1,5	95,0	97,5	99,0
Mezot 100 SC	1,2	88,8	90,0	88,8
Mezot 100 SC	0,75	83,8	83,8	78,8

POLCO Fallopia convolvulus		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	95,3	98,5	99,0
Mezot 100 SC	1,5	96,0	98,5	99,0
Mezot 100 SC	1,2	91,3	91,3	93,8
Mezot 100 SC	0,75	88,8	87,5	78,8

SINAR Sinapis arvensis		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	96,0	98,5	99,0
Mezot 100 SC	1,5	95,5	98,5	99,0
Mezot 100 SC	1,2	91,3	90,0	93,0
Mezot 100 SC	0,75	83,8	81,3	81,3

THLAR Thlaspi arvense		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	96,0	98,0	99,0
Mezot 100 SC	1,5	95,5	98,0	99,0
Mezot 100 SC	1,2	90,0	90,0	92,5
Mezot 100 SC	0,75	91,3	91,3	87,5

VIOAR Viola arvensis		Assesment		
Product	Dose (ltr/ha)	14 DA-A	28 DA-A	56 DA-A
Juzan 100 SC	1,5	98,0	99,0	99,0
Mezot 100 SC	1,5	95,5	97,5	98,5
Mezot 100 SC	1,2	92,5	92,5	92,5
Mezot 100 SC	0,75	87,5	86,3	82,5

Objectives and conclusions:
1. To evaluate the efficacy of Mezot 100 SC when applied postemergence in maize.
Efficacy of Mezot 100 SC is on high level: 81,3 - 99,0% against ECHCG, 81,3 - 99,0% against CHEAL, 78,8 - 99,0% against POLCO, 82,5 - 98,5% against VIOAR, 81,3 - 99,0% against SINAR, 87,5 - 99,0% against THLAR and 78,8 - 99,0% against GALAP.
2. To compare the efficacy of Mezot 100 SC with reference Juzan 100 SC.
Mezot 100 SC in dose 1,5 l/ha has the same high level of efficacy as Juzan 100 SC in dose 1,5 l/ha
3. To determine the minimum effective dose of Mezot 100 SC.
Minimum effective dose of Mezot 100 SC is 1,2 l/ha
4. To evaluate the effect on crop safety in maize.
No visible symptoms of phytotoxicity.
5. No effects on non-target organisms were observed during this trial.

Study: SGS/2019/047/PL03

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	21,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Faraday
	Planting Date:	Apr-26-2019
Application	Crop stage (BBCH)* at application	BBCH 14
	Timing	Post-emergence

	Pest stage at application (1)	CHEAL – BBCH 12 ECHCG – BBCH 12 LAMPU – BBCH 12 POLCO – BBCH 12 THLAR – BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	200 L/ha
Assessment	Assessment	10 DAA, 28 DAA, 42 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	sandy loam, Organic Matter – 2,9 %
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	Ludów Śląski, Dolnośląskie
	Application date	May-27-2019

Results:

CHEAL Chenopodium album		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	42 DA-A
Juzan 100 SC	1,5	99,0	99,0	92,5
Mezot 100 SC	1,5	99,0	98,0	88,8
Mezot 100 SC	1,2	99,0	99,0	83,8
Mezot 100 SC	0,75	99,0	91,3	72,5

ECHCG Echinochloa crus-galli		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	42 DA-A
Juzan 100 SC	1,5	96,0	93,8	88,8
Mezot 100 SC	1,5	96,0	90,0	86,3
Mezot 100 SC	1,2	95,0	85,0	75,0
Mezot 100 SC	0,75	83,8	72,5	65,0

LAMPU Lamium purpureum		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	42 DA-A
Juzan 100 SC	1,5	99,0	99,0	99,0
Mezot 100 SC	1,5	99,0	98,0	92,5
Mezot 100 SC	1,2	99,0	99,0	90,0
Mezot 100 SC	0,75	99,0	91,3	81,3

POLCO Fallopia convolvulus		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	42 DA-A
Juzan 100 SC	1,5	99,0	96,0	96,0
Mezot 100 SC	1,5	95,8	90,0	90,0
Mezot 100 SC	1,2	96,8	87,5	85,0
Mezot 100 SC	0,75	92,3	80,0	77,5

THLAR Thlaspi arvense		Assesment		
Product	Dose (ltr/ha)	10 DA-A	28 DA-A	42 DA-A
Juzan 100 SC	1,5	95,8	88,8	90,0
Mezot 100 SC	1,5	94,5	90,0	87,5
Mezot 100 SC	1,2	70,0	85,0	76,3
Mezot 100 SC	0,75	50,0	50,0	50,0

Objectives and conclusions:

1. To evaluate the efficacy of Mezot 100 SC when applied postemergence in maize.

Efficacy of Mezot 100 SC is good against ECHCG, THLAR, CHEAL, LAMPU, POLCO (86,3 - 92,5%).

2. To compare the efficacy of Mezot 100 SC with reference Solis 100 SC.

Efficacy is comparable to reference product.

3. To determine the minimum eff5ctive dose of Mezot 100 SC.

Minimum effective dose rate is 1,2 L/ha.

4. To evaluate the effect on crop safety in maize.

Product is safety for the crop.

5. No effects on non-target organisms were observed during this trial.

Study: SGS/2019/047/PL04

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	15,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Kosmal
	Planting Date:	Apr-17-2019
Application	Crop stage (BBCH)* at application	BBCH 13

	Timing Pest stage at application (1)	Post-emergence CHEAL – BBCH 12 ECHCG – BBCH 11 POLCO – BBCH 11 VIOAR – BBCH 13
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	200 L/ha
Assessment	Assessment	13 DAA, 28 DAA, 49 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	sandy loam, Organic Matter – 1,1 %
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	Żnin, Kujawsko-pomorskie
	Application date	May-23-2019

Results:

CHEAL Chenopodium album		Assesment		
Product	Dose (ltr/ha)	13 DA-A	28 DA-A	49 DA-A
Juzan 100 SC	1,5	96,3	98,3	98,5
Mezot 100 SC	1,5	97,5	98,8	98,8
Mezot 100 SC	1,2	94,0	96,5	97,3
Mezot 100 SC	0,75	90,8	94,0	94,0

ECHCG Echinochloa crus-galli		Assesment		
Product	Dose (ltr/ha)	13 DA-A	28 DA-A	49 DA-A
Juzan 100 SC	1,5	97,5	98,0	98,8
Mezot 100 SC	1,5	96,8	97,5	98,5
Mezot 100 SC	1,2	92,8	94,0	95,0
Mezot 100 SC	0,75	87,5	90,8	93,0

POLCO Fallopia convolvulus		Assesment		
Product	Dose (ltr/ha)	13 DA-A	28 DA-A	49 DA-A
Juzan 100 SC	1,5	91,8	95,5	97,8
Mezot 100 SC	1,5	92,0	96,5	96,5
Mezot 100 SC	1,2	90,8	92,3	93,5
Mezot 100 SC	0,75	87,5	90,0	90,0

VIOAR Viola arvensis		Assesment		
Product	Dose (ltr/ha)	13 DA-A	28 DA-A	49 DA-A
Juzan 100 SC	1,5	97,5	99,0	99,0
Mezot 100 SC	1,5	95,5	98,8	98,8
Mezot 100 SC	1,2	94,0	96,5	97,0
Mezot 100 SC	0,75	91,5	95,5	96,0

Objectives and conclusions:

1. To evaluate the efficacy of Mezot 100 SC when applied postemergence in maize.

Mezot 100 SC achieved high efficacy at all dose rates tested: 90,0 - 96,5% against POLCO, 94,0 - 98,5% against CHEAL, 96,0 - 98,8% against VIOAR and 93,0 - 98,5% against ECHCG.

2. To compare the efficacy of Mezot 100 SC with reference Juzan 100 SC.

Efficacy of Mezot 100 SC in dose 1,5 l/ha on POLCO, CHEAL, VIOAR and ECHCG is the same as efficacy of Juzan 100 SC in dose 1,5 l/ha.

3. To determine the minimum effective dose of Mezot 100 SC.

Minimum effective dose of Mezot 100 SC is 0,75 l/ha.

4. To evaluate the effect on crop safety in maize.

Not observed phytotoxicity symptoms.

5. No effects on non-target organisms were observed during this trial.

Study: SGS/2019/047/PL05

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	15,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Isigni
	Planting Date:	Apr-22-2019

Application	Crop stage (BBCH)* at application	BBCH 12
	Timing Pest stage at application (1)	Post-emergence CHEAL – BBCH 12 ECHCG – BBCH 11 POLCO – BBCH 13 VIOAR – BBCH 12
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	200 L/ha
Assessment	Assessment	12 DAA, 26 DAA, 48 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	sandy loam, Organic Matter – 1,0 %
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	Żnin, Kujawsko-pomorskie
	Application date	May-24-2019

Results:

CHEAL Chenopodium album		Assesment		
Product	Dose (ltr/ha)	12 DA-A	26 DA-A	48 DA-A
Juzan 100 SC	1,5	99,0	98,5	98,8
Mezot 100 SC	1,5	99,0	99,0	99,0
Mezot 100 SC	1,2	98,8	99,0	99,0
Mezot 100 SC	0,75	99,0	98,3	98,5

ECHCG Echinochloa crus-galli		Assesment		
Product	Dose (ltr/ha)	12 DA-A	26 DA-A	48 DA-A
Juzan 100 SC	1,5	87,5	73,8	82,5
Mezot 100 SC	1,5	98,8	75,0	81,3
Mezot 100 SC	1,2	96,5	65,0	72,5
Mezot 100 SC	0,75	78,8	42,5	47,5

POLCO Fallopia convolvulus		Assesment		
Product	Dose (ltr/ha)	12 DA-A	26 DA-A	48 DA-A
Juzan 100 SC	1,5	98,8	95,5	96,5
Mezot 100 SC	1,5	99,0	98,5	98,8
Mezot 100 SC	1,2	98,8	98,8	98,3
Mezot 100 SC	0,75	94,5	88,8	78,8

VIOAR Viola arvensis		Assesment		
Product	Dose (ltr/ha)	12 DA-A	26 DA-A	48 DA-A
Juzan 100 SC	1,5	99,0	99,0	99,0
Mezot 100 SC	1,5	99,0	99,0	99,0
Mezot 100 SC	1,2	99,0	99,0	99,0
Mezot 100 SC	0,75	99,0	99,0	99,0

Objectives and conclusions:

1. To evaluate the efficacy of Mezot 100 SC when applied postemergence in maize.

Mezot 100 SC after post-emergence application at a dose of 1.5 l / ha showed very high effectiveness in the case of broadleaf weeds (78,8 - 98,8% against POLCO, 98,5 - 99,0% against CHEAL and 99,0% against VIOAR) and good effectiveness in the case of grass weeds (81,3% at highest dose rate).

2. To compare the efficacy of Mezot 100 SC with reference Juzan 100 SC.

The effectiveness of Mezot 100 SC at 1,5 l/ha and Juzan 100 SC at 1,5 l/ha was at the same level.

3. To determine the minimum effective dose of Mezot 100 SC.

The minimum effective dose of Mezot 100 SC is 1.5 l / ha for ECHCG, 1,2 l/ha for POLCO and 0,75 l/ha for CHEAL and VIOAR..

4. To evaluate the effect on crop safety in maize.

No phytotoxicity observed.

5. No effects on non-target organisms were observed during this trial.

Study: NUZ 02/19 Raport I

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	27,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	ZORION
	Planting Date:	26.04.2019
Application	Crop stage (BBCH)* at	BBCH 13

	application	
	Timing Pest stage at application (1)	Post-emergence CHEAL – BBCH 16 ECHCG – BBCH 14 SINAR – BBCH 14 SOLNI – BBCH 13 STEME – BBCH 13 VIOAR – BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Kępa, Puławy, woj. lubelskie
	Application date	May-27-2019

Results:

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	98
Mezot 100 SC	1,50	88	100
Mezot 100 SC	1,25	82	88
Mezot 100 SC	1,00	88	80

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	82	86
Mezot 100 SC	1,50	86	86
Mezot 100 SC	1,25	80	82
Mezot 100 SC	1,00	70	75

SINAR Sinapis arvensis		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	88
Mezot 100 SC	1,50	86	90
Mezot 100 SC	1,25	82	86
Mezot 100 SC	1,00	70	80

SOLNI Solanum nigrum		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	86	90
Mezot 100 SC	1,25	80	86
Mezot 100 SC	1,00	70	80

STEME Stellaria media		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	86	88
Mezot 100 SC	1,25	80	86
Mezot 100 SC	1,00	70	80

VIOAR Viola arvensis		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	86	90
Mezot 100 SC	1,25	80	84
Mezot 100 SC	1,00	70	75

Conclusions:
1) Mezot 100 SC in the dose of 1.25 l / ha was effective against STEME, SOLNI, SINAR and CHEAL, and the ECHCG and VIOAR to an average degree.

2) Mezot 100 SC in the dose of 1.5 l / ha was effective in destroying ECHCG, STEME, VIOAR, SOLNI, SINAR and CHEAL.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 02/19 Raport II

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	27,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	ZORION
	Planting Date:	29.04.2019

Application	Crop stage (BBCH)* at application	BBCH 15
	Timing Pest stage at application (1)	Post-emergence AMARE – BBCH 15 CAPBP – BBCH 16 CHEAL – BBCH 16 FUMOF – BBCH 13 GALPA – BBCH 16 STEME – BBCH 16 THLAR – BBCH 16
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Sadłowice, Puławy, woj. lubelskie
	Application date	May-27-2019

Results:

AMARE Amaranthus retroflexus		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	90
Mezot 100 SC	1,50	86	92
Mezot 100 SC	1,25	80	89
Mezot 100 SC	1,00	78	82

CAPBP Capsella bursa-pastoris		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	96
Mezot 100 SC	1,50	86	96
Mezot 100 SC	1,25	80	89
Mezot 100 SC	1,00	78	82

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	96
Mezot 100 SC	1,50	86	96
Mezot 100 SC	1,25	80	90
Mezot 100 SC	1,00	78	82

FUMOF Fumaria officinalis		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	80
Mezot 100 SC	1,50	78	82

Mezot 100 SC	1,25	80	80
Mezot 100 SC	1,00	78	80

GALPA Galium palustre		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	96
Mezot 100 SC	1,50	86	96
Mezot 100 SC	1,25	80	89
Mezot 100 SC	1,00	78	82

STEME Stellaria media		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	82	90
Mezot 100 SC	1,25	80	89
Mezot 100 SC	1,00	78	82

THLAR Thlaspi arvense		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	90
Mezot 100 SC	1,50	84	92
Mezot 100 SC	1,25	80	89
Mezot 100 SC	1,00	78	82

Conclusions:

1) Mezot 100 SC at a dose of 1.25 and 1.5 l / ha was effective against CHEAL, STEME, GALPA, AMARE, CAPBP and THLAR, and moderate FUMOF.

2) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

3) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

4) No undesirable or unforeseen side effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 02/19 Raport III

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	27,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays
	Varieties per crop	Ambrosini

	Planting Date:	29.04.2019
Application	Crop stage (BBCH)* at application	BBCH 15
	Timing Pest stage at application (1)	Post-emergence CAPBP – BBCH 13 CHEAL – BBCH 14 ECHCG – BBCH 14 GALAP – BBCH 13 GALPA – BBCH 14 MATIN – BBCH 12 THLAR – BBCH 13
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Kępa, Puławy, woj. lubelskie
	Application date	May-27-2019

Results:

CAPBP Capsella bursa-pastoris		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	86	90
Mezot 100 SC	1,00	80	82

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	86	89
Mezot 100 SC	1,00	80	82

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	84	86
Mezot 100 SC	1,00	80	80

GALAP Galium aparine		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95

Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	86	89
Mezot 100 SC	1,00	80	82

GALPA Galium palustre		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	86	89
Mezot 100 SC	1,00	80	82

MATIN Tripleurospermum inodorum		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	84	89
Mezot 100 SC	1,00	80	82

THLAR Thlaspi arvense		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	90	95
Mezot 100 SC	1,50	90	95
Mezot 100 SC	1,25	86	89
Mezot 100 SC	1,00	80	82

Conclusions:
1) Mezot 100 SC at the dose of 1.25 l / ha was effective in destroying CAPBP, MATIN, CHEAL, GALAP, GALPA and THLAR, and the ECHCG was moderately damaged.

2) Mezot 100 SC at a dose of 1.5 l / ha was effective in destroying CAPBP, MATIN, CHEAL, GALAP, GALPA, THLAR, and ECHCG.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 01/20 Raport I

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	24,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays

	Varieties per crop	Anovi
	Planting Date:	24.04.2020
Application	Crop stage (BBCH)* at application	BBCH 15
	Timing Pest stage at application (1)	Post-emergence CHEAL – BBCH 13 ECHCG - BBCH 13 GALPA - BBCH 13 LAMPU – BBCH 14 STEME – BBCH 13 THLAR - BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Osiny, Puławy, woj. lubelskie
	Application date	May-22-2020

Results:

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	90
Mezot 100 SC	1,50	88	90
Mezot 100 SC	1,25	83	90
Mezot 100 SC	1,00	76	80

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	88
Mezot 100 SC	1,50	90	90
Mezot 100 SC	1,25	82	84
Mezot 100 SC	1,00	76	70

GALPA Galium palustre		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	90
Mezot 100 SC	1,50	90	90
Mezot 100 SC	1,25	84	88
Mezot 100 SC	1,00	74	80

LAMPU Lamium purpureum		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	90

Mezot 100 SC	1,50	88	94
Mezot 100 SC	1,25	83	90
Mezot 100 SC	1,00	76	80

STEME Stellaria media		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	82	90
Mezot 100 SC	1,50	90	90
Mezot 100 SC	1,25	83	88
Mezot 100 SC	1,00	76	80

THLAR Thlaspi arvense		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	90
Mezot 100 SC	1,50	88	94
Mezot 100 SC	1,25	84	89
Mezot 100 SC	1,00	76	80

Conclusions:

1) Mezot 100 SC at a dose of 1.25 l / ha was effective against STEME, CHEAL, LAMPU, THLAR, GALAP, and moderate ECHCG.

2) Mezot 100 SC in the dose of 1.5 l / ha was effective in destroying all weeds present in the canopy: ECHCG, STEME, CHEAL, LAMPU, THLAR, GALAP.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 01/20 Raport II

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	24,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays

	Varieties per crop	Batisti
	Planting Date:	23.04.2020
Application	Crop stage (BBCH)* at application	BBCH 14
	Timing Pest stage at application (1)	Post-emergence CAPBP – BBCH 12 CHEAL – BBCH 14 ECHCG – BBCH 13 LAMPU – BBCH 12 STEME – BBCH 12 THLAR – BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Kępa, Puławy, woj. lubelskie
	Application date	May-22-2020

Results:

CAPBP Capsella bursa-pastoris		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	92
Mezot 100 SC	1,50	84	94
Mezot 100 SC	1,25	80	90
Mezot 100 SC	1,00	78	84

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	84	90
Mezot 100 SC	1,25	80	90
Mezot 100 SC	1,00	76	84

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	74	86
Mezot 100 SC	1,50	84	98
Mezot 100 SC	1,25	72	82
Mezot 100 SC	1,00	70	82

LAMPU Lamium purpureum		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	90

Mezot 100 SC	1,50	88	90
Mezot 100 SC	1,25	80	90
Mezot 100 SC	1,00	78	82

STEME Stellaria media		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	90
Mezot 100 SC	1,50	84	92
Mezot 100 SC	1,25	80	86
Mezot 100 SC	1,00	72	80

THLAR Thlaspi arvense		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	82	96
Mezot 100 SC	1,50	84	94
Mezot 100 SC	1,25	80	90
Mezot 100 SC	1,00	76	84

Conclusions:

1) Mezot 100 SC at a dose of 1.25 l / ha was effective against STEME, LAMPU, CHEAL, CAPBP, THLAR, and moderate ECHCG.

2) Mezot 100 SC in the dose of 1.5 l / ha was effective in destroying all weeds present in the canopy, ie STEME, LAMPU, CHEAL, CAPBP, THLAR and ECHCG.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 01/20 Raport III

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	24,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays

	Varieties per crop	Amisti
	Planting Date:	24.04.2020
Application	Crop stage (BBCH)* at application	BBCH 14
	Timing Pest stage at application (1)	Post-emergence ANTAR – BBCH 13 AMARE – BBCH 13 CHEAL – BBCH 14 ECHCG – BBCH 13 GALAP – BBCH 12 GALPA – BBCH 13
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Osiny, Puławy, woj. lubelskie
	Application date	May-22-2020

Results:

ANTAR Anthemis arvensis		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	90
Mezot 100 SC	1,50	80	96
Mezot 100 SC	1,25	70	90
Mezot 100 SC	1,00	68	78

AMARE Amaranthus retroflexus		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	88
Mezot 100 SC	1,50	80	96
Mezot 100 SC	1,25	74	90
Mezot 100 SC	1,00	70	78

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	88
Mezot 100 SC	1,50	80	92
Mezot 100 SC	1,25	74	90
Mezot 100 SC	1,00	68	78

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	88

Mezot 100 SC	1,50	80	96
Mezot 100 SC	1,25	70	90
Mezot 100 SC	1,00	68	78

GALAP Galium aparine		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	70	80
Mezot 100 SC	1,50	80	90
Mezot 100 SC	1,25	74	80
Mezot 100 SC	1,00	68	76

GALPA Galium palustre		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	84	88
Mezot 100 SC	1,50	78	96
Mezot 100 SC	1,25	70	90
Mezot 100 SC	1,00	66	76

Conclusions:

1) Mezot 100 SC at a dose of 1.25 l / ha was effective against GALPA, ATAR, ECHCG, CHEAL, AMARE and GALAP to an average degree.

2) Mezot 100 SC in the dose of 1.5 l / ha was effective in destroying all weeds present in the canopy, ie GALPA, ATAR, ECHCG, CHEAL, AMARE and GALAP.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Study: NUZ 01/20 Raport IV

Guidelines	Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Experimental design	Plot design	Randomized Complete Block (RCB)
	Plot size	24,0 m^2
	Number of replications	4
Crop	Trials per crop	Zea mays

	Varieties per crop	Anovi
	Planting Date:	24.04.2020
Application	Crop stage (BBCH)* at application	BBCH 15
	Timing Pest stage at application (1)	Post-emergence CAPBP – BBCH 13 CHEAL – BBCH 14 ECHCG – BBCH 11 FALCO – BBCH 12 THLAR – BBCH 14 VIOAR – BBCH 14
	Number of applications Intervals between applications	1 Not applicable
	Spray volumes	300 L/ha
Assessment	Assessment	14 DAA, 28 DAA
Other relevant information	e.g. Soil type, pH (in case of soil active substance …)	loamy sand
	e.g. Natural / artificial innoculation…	Natural conditions
	e.g. Field / Greenhouse...	RZD Kępa, Sadłowice, Puławy, woj. lubelskie
	Application date	May-22-2020

Results:

CAPBP Capsella bursa-pastoris		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	82	92
Mezot 100 SC	1,50	90	96
Mezot 100 SC	1,25	88	86
Mezot 100 SC	1,00	88	80

CHEAL Chenopodium album		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	86	90
Mezot 100 SC	1,50	90	96
Mezot 100 SC	1,25	88	86
Mezot 100 SC	1,00	84	72

ECHCG Echinochloa crus-galli		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	90
Mezot 100 SC	1,50	90	96
Mezot 100 SC	1,25	88	88
Mezot 100 SC	1,00	86	78

FALCO Falconeria		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	82	92

Mezot 100 SC	1,50	90	96
Mezot 100 SC	1,25	88	86
Mezot 100 SC	1,00	86	78

THLAR Thlaspi arvense		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	80	92
Mezot 100 SC	1,50	90	88
Mezot 100 SC	1,25	86	86
Mezot 100 SC	1,00	88	80

VIOAR Viola arvensis		Assesment	
Product	Dose (ltr/ha)	14 DA-A	28 DA-A
Juzan 100 SC	1,50	76	86
Mezot 100 SC	1,50	80	86
Mezot 100 SC	1,25	80	84
Mezot 100 SC	1,00	76	74

Conclusions:

1) Mezot 100 SC at a dose of 1.25 l / ha was effective against CHEAL, ECHCG, THLAR, CAPBP, FALCO and VIOAR to an average degree.

2) Mezot 100 SC in the dose of 1.5 l / ha was effective in destroying all weeds present in the canopy, ie CHEAL, ECHCG, THLAR, CAPBP, FALCO and VIOAR.

3) The effectiveness of the Mezot 100 SC preparation in the dose of 1.5 l / ha and the standard preparation Juzan 100 SC in the same dose was similar.

4) Regardless of the dose, no symptoms of phytotoxicity were observed in the preparations included in the studies.

5) No undesirable or unforeseen side-effects of the test product on beneficial organisms or other non-target organisms were observed.

Efficacy of Mezot 100 SC against concrete weeds – use in Maize:

ANTAR				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	84.0	90.0	87.0
Mezot 100 SC	1.5	80.0	96.0	88.0
Mezot 100 SC	1.2/1.25	70.0	90.0	80.0

Mezot 100 SC	1.0	68.0	78.0	73.0
1-Assess DA-A	14			
2-Assess DA-A	28			

AMARE				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	84.0	88.0	86.0
Mezot 100 SC	1.5	80.0	96.0	88.0
Mezot 100 SC	1.2/1.25	74.0	90.0	82.0
Mezot 100 SC	1.0	70.0	78.0	74.0
1-Assess DA-A	14			
2-Assess DA-A	28			

AGRRE					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	95.8	88.8	90.0	91.5
Mezot 100 SC	1.5	94.5	90.0	87.5	90.7
Mezot 100 SC	1.2/1.25	70.0	85.0	76.3	77.1
Mezot 100 SC	0.75	50.0	50.0	50.0	50.0
1-Assess DA-A	10				
2-Assess DA-A	28				
3-Assess DA-A	46				

CAPBP				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	85.5	93.8	89.6
Mezot 100 SC	1.5	87.5	95.3	91.4
Mezot 100 SC	1.2/1.25	83.5	88.8	86.1
Mezot 100 SC	1.0	81.0	82.0	81.5
1-Assess DA-A	14			
2-Assess DA-A	28			

CHEAL					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	90.5	95.0	96.3	93.9
Mezot 100 SC	1.5	91.5	96.0	94.9	94.1
Mezot 100 SC	1.2/1.25	88.0	92.3	91.6	90.7

Mezot 100 SC	1.0	78.6	79.7	83.8	80.7
Mezot 100 SC	0.75	95.3	92.2		93.8
1-Assess DA-A	10-14				
2-Assess DA-A	26-28				
3-Assess DA-A	42-56				

ECHCG					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	87.8	90.1	91.6	89.8
Mezot 100 SC	1.5	91.5	92.0	90.3	91.3
Mezot 100 SC	1.2/1.25	86.1	84.9	82.0	84.3
Mezot 100 SC	1.0	75.0	77.2	70.4	74.2
Mezot 100 SC	0.75	84.5	72.9		78.7
1-Assess DA-A	10-14				
2-Assess DA-A	26-28				
3-Assess DA-A	42-56				

FALCO				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	82.0	92.0	87.0
Mezot 100 SC	1.5	90.0	96.0	93.0
Mezot 100 SC	1.2/1.25	88.0	86.0	87.0
Mezot 100 SC	1.0	86.0	78.0	82.0
1-Assess DA-A	14			
2-Assess DA-A	28			

FUMOF				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	80.0	80.0	80.0
Mezot 100 SC	1.5	78.0	82.0	80.0
Mezot 100 SC	1.2/1.25	80.0	80.0	80.0
Mezot 100 SC	1.0	78.0	80.0	79.0
1-Assess DA-A	14			
2-Assess DA-A	28			

GALAP					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	85.2	91.0	99.0	91.7
Mezot 100 SC	1.5	88.3	94.2	99.0	93.8
Mezot 100 SC	1.2/1.25	82.9	86.3	88.8	86.0

Mezot 100 SC	1.00	74.0	79.0	-	76.5
Mezot 100 SC	0.75	83.8	83.8	78.8	82.1
1-Assess DA-A	14				
2-Assess DA-A	28				
3-Assess DA-A	56				

GALPA				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	85.0	92.3	88.6
Mezot 100 SC	1.5	86.0	94.3	90.1
Mezot 100 SC	1.2/1.25	80.0	89.0	84.5
Mezot 100 SC	1.0	74.5	80.0	77.3
1-Assess DA-A	14			
2-Assess DA-A	28			

LAMPU					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	88.3	93.0	99.0	93.4
Mezot 100 SC	1.5	91.7	94.0	92.5	92.7
Mezot 100 SC	1.2/1.25	87.3	93.0	90.0	90.1
Mezot 100 SC	1.00	77.0	81.0	-	79.0
Mezot 100 SC	0.75	99.0	91.3	81.3	90.5
1-Assess DA-A	10-14				
2-Assess DA-A	28				
3-Assess DA-A	42				

MATIN				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	90.0	95.0	92.5
Mezot 100 SC	1.5	90.0	95.0	92.5
Mezot 100 SC	1.2/1.25	84.0	89.0	86.5
Mezot 100 SC	1.0	80.0	82.0	81.0
1-Assess DA-A	14			
2-Assess DA-A	28			

POLCO					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	96.8	96.3	97.7	96.9
Mezot 100 SC	1.5	95.7	94.7	95.4	95.3
Mezot 100 SC	1.2/1.25	94.9	91.5	92.1	92.8

Mezot 100 SC	0.75	91.1	85.3	81.3	85.9
1-Assess DA-A	10-14				
2-Assess DA-A	26-28				
3-Assess DA-A	46-56				

SINAR					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	91.0	93.3	99.0	94.4
Mezot 100 SC	1.5	90.8	94.3	99.0	94.7
Mezot 100 SC	1.2/1.25	86.7	88.0	93.0	89.2
Mezot 100 SC	1.00	70.0	80.0	-	75.0
Mezot 100 SC	0.75	83.8	81.3	81.3	82.1
1-Assess DA-A	14				
2-Assess DA-A	28				
3-Assess DA-A	56				

SOLNI				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	84.0	90.0	87.0
Mezot 100 SC	1.5	86.0	90.0	88.0
Mezot 100 SC	1.2/1.25	80.0	86.0	83.0
Mezot 100 SC	1.0	70.0	80.0	75.0
1-Assess DA-A	14			
2-Assess DA-A	28			

STEME				
	Dose [l/ha]	**1-Assess**	**2-Assess**	**Average**
Juzan 100 SC	1.5	84.0	90.0	87.0
Mezot 100 SC	1.5	85.5	90.0	87.8
Mezot 100 SC	1.2/1.25	80.8	87.3	84.0
Mezot 100 SC	1.0	74.0	80.5	77.3
1-Assess DA-A	14			
2-Assess DA-A	28			

THLAR					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	87.1	92.8	94.5	91.5
Mezot 100 SC	1.5	89.4	93.0	93.3	91.9
Mezot 100 SC	1.2/1.25	82.3	88.3	84.4	85.0

Mezot 100 SC	1.00	79.6	81.6	-	80.6
Mezot 100 SC	0.75	70.7	70.7	68.8	70.0
1-Assess DA-A	10-14				
2-Assess DA-A	28				
3-Assess DA-A	42-56				

VIOAR					
	Dose [l/ha]	**1-Assess**	**2-Assess**	**3-Assess**	**Average**
Juzan 100 SC	1.5	95.5	97.2	99.0	97.2
Mezot 100 SC	1.5	95.0	96.7	97.2	96.3
Mezot 100 SC	1.2/1.25	92.9	94.2	94.6	93.9
Mezot 100 SC	1.00	70.0	75.0	-	72.5
Mezot 100 SC	0.75	94.3	93.0	89.7	92.3
1-Assess DA-A	10-14				
2-Assess DA-A	26-28				
3-Assess DA-A	46-56				

Summary:

EPPO Code	Name	Identification of study	Average efficacy		Number of studies	Range of efficacy [%]	
			1,2/1,25 ltr/ha	1,5 ltr/ha		1,2/1,25 ltr/ha	1,5 ltr/ha
Maize							
ANTAR	Anthemis arvensis	NUZ 01/20 Raport III	80,0	88,0	1	80,0	88,0
AGRRE	Elymus repen	SGS/2019/047/PL01	77,1	90,7	1	77,1	90,7
AMARE	Amaranthus retro-flexus	NUZ 02/19 Raport II NUZ 01/20 Raport III	84,5 82,0	89,0 88,0	2	82,0 – 84,5	88,0 – 89,0
CAPBP	Capsella bursa-pastoris	NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport II NUZ 01/20 Raport IV	84,5 88,0 85,0 87,0	91,0 92,5 89,0 93,0	4	84,5 – 88,0	89,0 – 93,0
CHEAL	Chenopodium album	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL03 SGS/2019/047/PL04 SGS/2019/047/PL05 NUZ 02/19 Raport I NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport III NUZ 01/20 Raport IV	93,9 92,7 93,9 95,9 98,9 85,0 85,0 87,5 86,5 85,0 82,0 87,0	95,3 98,7 95,3 98,4 99,0 94,0 91,0 92,5 89,0 87,0 86,0 93,0	12	82,0 – 98,9	86,0 – 99,0
ECHCG	Echinochloa crus-	SGS/2019/047/PL01	85,0	91,1	11	77,0 – 93,9	85,0 – 98,5

	galli	SGS/2019/047/PL02 SGS/2019/047/PL03 SGS/2019/047/PL04 SGS/2019/047/PL05 NUZ 02/19 Raport I NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport III NUZ 01/20 Raport IV	92,1 85,0 93,9 78,0 81,0 85,0 83,0 77,0 80,0 88,0	98,5 90,8 97,6 85,0 86,0 92,5 90,0 91,0 88,0 93,0			
FALCO	Falconeria	NUZ 01/20 Raport IV	87,0	93,0	1	87,0	93,0
FUMOF	Fumaria officinalis	NUZ 02/19 Raport II	80,0	80,0	1	80,0	80,0
GALAP	Galium aparine	SGS/2019/047/PL02 NUZ 02/19 Raport III NUZ 01/20 Raport III	89,2 87,5 77,0	97,2 92,5 85,0	3	77,0 – 89,2	85,0 – 97,2
GALPA	Galium palustre	NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport III	84,5 87,5 86,0 80,0	91,0 92,5 90,0 87,0	4	84,5 – 87,5	87,0 – 92,5
LAMPU	Lamium purpureum	SGS/2019/047/PL03 NUZ 01/20 Raport I NUZ 01/20 Raport II	96,0 86,5 85,0	96,5 91,0 89,0	3	85,0 – 96,0	89,0 – 96,5
MATIN	Tripleurospermum inodorum	NUZ 02/19 Raport III	86,5	92,5	1	86,5	92,5
POLCO	Fallopia convolvulus	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL03 SGS/2019/047/PL04 SGS/2019/047/PL05	91,4 92,1 89,8 92,2 98,6	92,8 97,8 91,9 95,0 98,8	5	89,8 – 98,6	91,9 – 98,8
SINAR	Sinapis arvensis	SGS/2019/047/PL02 NUZ 02/19 Raport I	91,4 84,0	97,7 88,0	2	84,0 – 91,4	88,0 – 97,7
SOLNI	Solanum nigrum	NUZ 02/19 Raport I	83,0	88,0	1	83,0	88,0
STEME	Stellaria media	NUZ 02/19 Raport I NUZ 02/19 Raport II NUZ 01/20 Raport I NUZ 01/20 Raport II	83,0 84,5 85,5 83,0	87,0 86,0 90,0 88,0	4	83,0 – 85,5	86,0 – 90,0
THLAR	Thlaspi arvense	SGS/2019/047/PL02 SGS/2019/047/PL03 NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport IV	90,8 77,1 84,5 87,5 86,5 85,0 86,0	97,5 90,7 88,0 92,5 91,0 89,0 89,0	7	77,1 – 90,8	88,0 – 97,5
VIOAR	Viola arvensis	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL04 SGS/2019/047/PL05 NUZ 02/19 Raport I NUZ 01/20 Raport IV	96,0 92,5 95,8 99,0 82,0 82,0	96,5 97,2 97,7 99,0 88,0 83,0	6	82,0 – 99,0	83,0 – 99,0

EPPO Code	**Name**	**Identification of study**	**Average efficacy**	**Number of studies**	**Range of efficacy [%]**
			1,0 l/ha		**1,0 l/ha**
Maize					
ANTAR	Anthemis arvensis	NUZ 01/20 Raport III	73,0	1	73,0
AMARE	Amaranthus retroflexus	NUZ 02/19 Raport II NUZ 01/20 Raport III	80,0 74,0	2	74,0 – 80,0
CAPBP	Capsella bursa-pastoris	NUZ 02/19 Raport II NUZ 02/19 Raport III	80,0 81,0	4	80,0 – 84,0

		NUZ 01/20 Raport II NUZ 01/20 Raport IV	81,0 84,0		
CHEAL	Chenopodium album	NUZ 02/19 Raport I NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport III NUZ 01/20 Raport IV	84,0 80,0 81,0 78,0 80,0 73,0 78,0	7	73,0 – 84,0
ECHCG	Echinochloa crus-galli	NUZ 02/19 Raport I NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport III NUZ 01/20 Raport IV	72,5 80,0 73,0 76,0 73,0 82,0	6	72,5 – 82,5
FALCO	Falconeria	NUZ 01/20 Raport IV	82,0	1	82,0
FUMOF	Fumaria officinalis	NUZ 02/19 Raport II	79,0	1	79,0
GALAP	Galium aparine	NUZ 02/19 Raport III NUZ 01/20 Raport III	81,0 72,0	2	72,0 – 81,0
GALPA	Galium palustre	NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport III	80,0 81,0 77,0 71,0	4	71,0 – 81,0
LAMPU	Lamium purpureum	SGS/2019/047/PL03	78,0 80,0	2	78,0 – 80,0
MATIN	Tripleurospermum inodorum	NUZ 02/19 Raport III	81,0	1	81,0
POLCO	Fallopia convolvulus				
SINAR	Sinapis arvensis	NUZ 02/19 Raport I	75,0	1	75,0
SOLNI	Solanum nigrum	NUZ 02/19 Raport I	75,0	1	75,0
STEME	Stellaria media	NUZ 02/19 Raport I NUZ 02/19 Raport II NUZ 01/20 Raport I NUZ 01/20 Raport II	75,0 80,0 78,0 76,0	4	75,0 – 80,0
THLAR	Thlaspi arvense	NUZ 02/19 Raport II NUZ 02/19 Raport III NUZ 01/20 Raport I NUZ 01/20 Raport II NUZ 01/20 Raport IV	80,0 81,0 78,0 80,0 84,0	5	78,0 – 84,0
VIOAR	Viola arvensis	NUZ 02/19 Raport I NUZ 01/20 Raport IV	72,5 75,0	2	72,5 – 75,0

EPPO Code	**Name**	**Identification of study**	**Average efficacy**	**Number of studies**	**Range of efficacy [%]**
			0,75 l/ha		**0,75 l/ha**
Maize					
AGRRE	Elymus repen	SGS/2019/047/PL01	50,0	1	50,0
CHEAL	Chenopodium album	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL03 SGS/2019/047/PL04 SGS/2019/047/PL05	87,6 85,5 87,6 92,9 98,6	5	85,5 – 98,6
ECHCG	Echinochloa crus-galli	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL03 SGS/2019/047/PL04 SGS/2019/047/PL05	73,8 85,5 73,8 90,4 56,3	5	56,3 – 90,4
GALAP	Galium aparine	SGS/2019/047/PL02	82,1	1	82,1
LAMPU	Lamium purpureum	SGS/2019/047/PL03	90,5	1	90,5
POLCO	Fallopia convolvulus	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL03	84,5 85,0 83,3	5	83,3 – 89,2

		SGS/2019/047/PL04 SGS/2019/047/PL05	89,2 87,4		
SINAR	Sinapis arvensis	SGS/2019/047/PL02	82,1	1	82,1
THLAR	Thlaspi arvense	SGS/2019/047/PL02 SGS/2019/047/PL03	90,0 50,0	2	50,0 – 90,0
VIOAR	Viola arvensis	SGS/2019/047/PL01 SGS/2019/047/PL02 SGS/2019/047/PL04 SGS/2019/047/PL05	90,5 85,4 94,3 99,0	4	85,4 – 99,0

Comments:

The effectiveness of Mezot 100 SC is very close to the reference preparation Juzan 100 SC for each weed.

Comments of zRMS:	EPPO Standard PP 1/226 Number of efficacy trials provides guidance on the number of trials in target crops needed to demonstrate the efficacy of a plant protection product at the recommended dose. Where authorization is sought across a range of diverse conditions, such as across an authorization zone (PP 1/278 Principles of zonal data production and evaluation), then the number of trials conducted may need to increase. These trials should be done across the range of climatic and environmental conditions likely to be encountered, and over at least 2 years. The applicant was notified that according to PP 1/226 at least 6 trials are required. **Number of trials for efficacy and selectivity from North-East EPPO zone is sufficient.** In total Applicant submitted 12 efficacy trials conducted on maize in two growing seasons: 2019 and 2020. All details about efficacy methodology used during efficacy trials are presented above by Applicant. The reports 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. Submitted efficacy trials are correctly performed according to appropriate EPPO standards. 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. Data were presented correctly by Applicant in the tables. Results were comparable to standard reference product used during trials. All trials and weed species were characterized by sufficient level of infestation. Only trials with greater than 5 weeds/m^2 or over 2% ground cover have been included. For major weeds at least 4 studies should be presented and for minor- at least 2. Classification of weed species was done according to Polish requiremenets by ZRMs. <u>Below we present a list of studied weed species during trials:</u> • ***Dose 1,5 l/ha*** ANTAR – 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. AGREE– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. AMARE – 2 trials. Due to not enough of number trials this weed species should be deleted from GAP table and label project. AMARE is a major weed in maize so at least 4 trials are required. CAPBP – 4 trials. Number of trials is accepted. It can be concluded that CAPBP at

	recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. CHEAL – 12 trials. Number of trials is accepted. It can be concluded that CHEAL at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. ECHCG – 11 trials. Number of trials is accepted. It can be concluded that ECHCG at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. FALCO– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. FUMOF– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. GALAP– 3 trials. Number of trials is accepted. It can be concluded that GALAP at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. GALPA – 4 trials. Number of trials is accepted. It can be concluded that GALPA at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. LAMPU – 3 trials. Number of trials is accepted. It can be concluded that LAMPU at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. MATIN– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. POLCO – 5 trials. Number of trials is accepted. It can be concluded that POLCO at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. SINAR – 2 trials. Number of trials is accepted. It can be concluded that SINAR at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. SOLNI– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. STEME – 4 trials. Number of trials is accepted. It can be concluded that STEME at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. THLAR – 7 trials. Number of trials is accepted. It can be concluded that THLAR at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. VIOAR – 6 trials. Number of trials is accepted. It can be concluded that VIOAR at recommended dose (1,5 l/ha) is a susceptible weed against MEZOT 100 SC. In the opinion of ZRMs weed species which occurred only in 1 trial, should be excluded from label. Weeds excluded from GAP table and label project are: ANTAR, AGREE, FALCO, FUMOF, MATIN, SOLNI and AMARE. • ***Dose 0,75 l/ha*** ANTAR – lack of trials. This weed species should be deleted from GAP table and label project. AGREE– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. AMARE – lack of trials. This weed species should be deleted from GAP table and label project. CAPBP – lack of trials. This weed species should be deleted from GAP table and label project. CHEAL – 5 trials. Number of trials is accepted. It can be concluded that CHEAL at recommended dose (0,75 l/ha) is a susceptible weed against MEZOT 100 SC. ECHCG – 5 trials. Number of trials is accepted. It can be concluded that ECHCG

	at recommended dose (0,75 l/ha) is a moderately susceptible weed against MEZOT 100 SC. FALCO– lack of trials. This weed species should be deleted from GAP table and label project. FUMOF– lack of trials. This weed species should be deleted from GAP table and label project. GALAP– 1 trial. Due to not enough of number trials this weed species should be deleted from GAP table and label project. GALPA – lack of trials. This weed species should be deleted from GAP table and label project. LAMPU – 1 trial. Due to not enough of number trials this weed species should be delet-ed from GAP table and label project. MATIN– lack of trials. This weed species should be deleted from GAP table and label project. POLCO – 5 trials. Number of trials is accepted. It can be concluded that POLCO at rec-ommended dose (0,75 l/ha) is a susceptible weed against MEZOT 100 SC. SINAR – 1 trial. Due to not enough of number trials this weed species should be delet-ed from GAP table and label project. SOLNI– lack of trials. This weed species should be deleted from GAP table and label project. STEME – lack of trials. This weed species should be deleted from GAP table and label project. THLAR – 2 trials. Number of trials is accepted. It can be concluded that THLAR at recommended dose (0,75 l/ha) is a moderately susceptible weed against MEZOT 100 SC. VIOAR – 4 trials. Number of trials is accepted. It can be concluded that VIOAR at recommended dose (0,75 l/ha) is a susceptible weed against MEZOT 100 SC. In the opinion of ZRMs weed species which occurred only in 1 trial, should be excluded from label. Weeds excluded from GAP table and label project are: ANTAR, AGREE, AMARE, CAPBP, FALCO, FUMOF, GALAP, GALPA, LAMPU, MATIN, SINAR, SOLNI, STEME. **SUMMARY:** Mezot 100 SC (product code: Mezot 100 SC) is an early post-emergence herbicide (BBCH 12-18) in maize to weeds. Crop: maize Growth stage of the crop: BBCH 12-18 Product dose rate: 1,5 l/ha 1x per crop Water: 200-300 L/ha **Accepted weed in Polish label:** **Dose 1,5 l/ha:** *susceptible*: weeds CAPBP, CHEAL, ECHCG, GALAP, GALPA, LAMPU, POLCO, SINAR, STEME, THLAR, VIOAR. **Dose 0,75 l/ha:** *susceptible weeds:* CHEAL, POLCO, VIOAR *moderately susceptible weeds:* ECHCG, THLAR

3.2.4 Crop safety studies (KCP 6.2)

Studies regarding crop safety were done in 2019 and 2020. There were 8 trials performed. All results indicate no symptoms of phytotoxicity, no differences observed between Mezot 100 SC and reference material (Juzan 100 SC), no differences observed between treatments in yield and grain quality, no effects on non-target organisms were observed during all trials.

3.2.5 Summary and conclusions on the biological efficacy (KCP 6.2)

Mesotrione is an active substance intended to control weeds in crops grown for agriculture. Active substance is of considerable economic and agronomic importance because of its efficacy and because of its special mode of action. By experiences from field testing it is proven that plant protection products containing active substances are highly effective and therefore may contribute to avoid severe crop loss, and do not cause phytotoxicity.

The obtained data in performed trials show that Mezot 100 SC can be used according to below proposed scheme:

Crop(s)	Target(s)	Dose of Mezot 100 SC
Maize	~~*Anthemis arvensis, Elymus repens, Amaranthus retroflexus, Capsella bursa-pastoris,*~~ *Chenopodium album, Echinochloa crus-galli,* ~~*Falconeria, Fumaria officinalis, Galium aparine, Galium palustre, Lamium purpureum, Tripleurospermum inodorum,*~~ *Fallopia convolvulus,* ~~*Sinapis arvensis, Solanum nigrum, Stellaria media,*~~ *Thlaspi arvense, Viola arvensis.*	0,75 ~~– 1,5~~ l/ha
Maize	*Capsella bursa-pastoris, Chenopodium album, Echinochloa crus-galli, Galium aparine, Galium palustre, Lamium purpureum, Fallopia convolvulus, Sinapis arvensis, Stellaria media, Thlaspi arvense, Viola arvensis.*	1,5 l/ha

Comments of zRMS:	**SUMMARY:** Mezot 100 SC (product code: Mezot 100 SC) is an early post-emergence herbicide (BBCH 12-18) in maize to weeds. Crop: maize Growth stage of the crop: BBCH 12-18 Product dose rate: 1,5 l/ha 1x per crop Water: 200-300 L/ha **Accepted weed in Polish label:** **Dose 1,5 l/ha:** *susceptible*: weeds CAPBP, CHEAL, ECHCG, GALAP, GALPA, LAMPU, POLCO, SINAR, STEME, THLAR, VIOAR. **Dose 0,75 l/ha:** *susceptible weeds:* CHEAL, POLCO, VIOAR *moderately susceptible weeds:* ECHCG, THLAR

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

Resistance is the naturally inherited ability of some weed biotypes within a popułation to survive an application of herbicides, which would control this weed population on normal application conditions effectively. Resistance is of great commercial relevance both for the operator and for the manufacturer. For the operator due to the fact that less efficacy represent yield losses of qualitative and quantitative nature and resulted in higher costs of weed control: for the manufacturer because development of resistance could ruin the return of investment in the development of an active substance.
The active substance is a competitive inhibitor of 4-hydroxyphenyl pyruvate dioxygenase (HPPD) in the plastoquinone biosynthesis pathway, which in turn disrupts carotenoid biosynthesis and leads to a disruption of chlorophyll synthesis. In susceptible species bleaching and death occurs.
The compound is classified by the Herbicide Action Committee in HRAC group F2.
According to the International Survey on Herbicide Resistant Weeds [www.weedscience.org], there are just two species that show resistance to mesotrione, world-wide (six reported cases); Amaranthus palmeri and Amaranthus tuberculatus (A. rudis). Both resistant species have occurred in maize 'corn' grown on continuous/extended rotations or where grown as seed crops (where alternative products are limited). The mechanism(s) of resistance for these biotypes is unknown and as yet unclassified. There are currently no reports of weed species resistant to mesotrione within the EU or Europe.

Comments of zRMS:

Mezot 100 SC contains mesotrione, a potent bleaching herbicide that belongs to the triketone herbicide family (HRAC Group F2). Mezot 100 SC is a post-emergence herbicide for the control of weeds in maize with one active substance - mesotrione.

The following table shows the current worldwide resistance weeds specifically to the herbicide mesotrione (according to http://www.weedscience.org):

Reported cases of resistance to mesotrione

#	Year	Species	Country	MOAs	Actives	Situations
1	2009	*Amaranthus tuberculatus (=A. rudis)*	United States (Illinois)	ALS inhibitors (B/2), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5)	imazethapyr, chlorimuron-ethyl, atrazine, mesotrione, tembotrione, topramezone	Seed corn
2	2016	*Amaranthus tuberculatus (=A. rudis)*	United States (Illinois)	ALS inhibitors (B/2), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5), PPO inhibitors (E/14), Synthetic Auxins (O/4)	imazethapyr, chlorimuron-ethyl, atrazine, fomesafen, lactofen, acifluorfen-sodium, 2,4-D, mesotrione, tembotrione, topramezone	Corn (maize), Soybean
3	2009	*Amaranthus tuberculatus (=A. rudis)*	United States (Iowa)	ALS inhibitors (B/2), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5)	thifensulfuron-methyl, rimsulfuron, atrazine, mesotrione, tembotrione, topramezone	Seed corn
4	2011	*Amaranthus tuberculatus (=A. rudis)*	United States (Iowa)	ALS inhibitors (B/2), EPSP synthase inhibitors (G/9), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5)	imazamethabenz-methyl, thifensulfuron-methyl, chlorimuron-ethyl, atrazine, isoxaflutole, glyphosate, mesotrione	Corn (maize), Soybean
5	2009	*Amaranthus palmeri*	United States (Kansas)	ALS inhibitors (B/2), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5)	thifensulfuron-methyl, atrazine, mesotrione, pyrasulfotole, tembotrione, topramezone	Corn (maize), Sorghum
6	2015	*Amaranthus palmeri*	United States (Kansas)	ALS inhibitors (B/2), EPSP synthase inhibitors (G/9), HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5), Synthetic Auxins (O/4)	chlorsulfuron, atrazine, glyphosate, 2,4-D, mesotrione	Sorghum
7	2011	*Amaranthus tuberculatus (=A. rudis)*	United States (Nebraska)	HPPD inhibitors (F2/27)	mesotrione, tembotrione, topramezone	Corn (maize)
8	2011	*Amaranthus*	United	HPPD inhibitors (F2/27)	mesotrione, tembotrione,	Corn

		palmeri	States (Nebraska)		topramezone	(maize)
9	2014	*Amaranthus palmeri*	United States (Nebraska)	HPPD inhibitors (F2/27), Photosystem II inhibitors (C1/5)	atrazine, mesotrione, tembotrione, topramezone	Corn (maize)
10	2016	*Amaranthus palmeri*	United States (North Carolina)	HPPD inhibitors (F2/27)	mesotrione	Corn (maize)

According to Mesotrione DAR case should be presented by the applicant with respect to the occurrence or possible occurrence of the development of resistance, including a resistance management strategy.

10 cases of resistance in two dicotyledonous weed speies (both *Amaranthus* spp.) have been reported to have developed resistance to mesotrione. All cases have been reported from the United States of America. The active substance is therefore classified as having a low inherent risk.

Mesotrione acts by the inhibition of 4-hydroxyphenyl-pyruvate-dioxygenase which in turn inhibits carotenoid biosynthesis. Due to its primary target site and its chemical family, in the HRAC mode of action classification, it is classi¬fied as group F2 herbicide (4-hydroxyphenyl-pyruvate-dioxygenase (4-HPPD) inhibition). In the WSSA resistance classification system, the callistemones are classified as group 27.

The mechanism for resistance in the two weed species is currently unknown. Based on the HRAC resistance classification, cross resistance should be expected to be likely between mesotrione and other HRAC group F2 herbicides. Thus, the analysis of the risk for the development of weed resistance to mesotrione is made under the assumption that cross resistance exists between all herbicides classified as HRAC group F2. No cross-resistance was observed between F2 herbicides in the ten cases reported from the US.

The mesotrione resistant *Amaranth* species (*Amaranthus tuberculatus* and *Amaranthus palmeri*) populations in Iowa, Illinois, Kansas and Nebraska (USA) mentioned in section 3.3.4 were reported to be cross-resistant to ALS inhibitors (HRAC group B/2), Photosystem II inhibitors (HRAC group C1/5), PPO inhibitors (HRAC group E/14), Synthetic Auxins (HRAC group 0/4) and/or EPSP synthase inhibitors (HRAC group G/9).

Mesotrione have been used as straight products as well as in mixtures for many years. Without any precautions, the resistance risk is unacceptable. However, taking the right precautions and following Good Agricultural Practise, the risk is acceptable. Should resistant populations arise, control could be achieved through use of alternative products.

Good Agricultural Practices and Good Plant Protection Practices (EPPO Standard 2/1 (2)) should be the followed in the weed management strategy. Uses of mixtures with herbicides with different modes of action and weed spectrum is recommended, to obtain a high degree of weed control and get rid of eventually resistant weeds in the field and prevent resistance build up.

Follow the label recommendations regarding application rate (max. 1 application per year), growth stage, doses etc.

Always follow HRAG guidelines for the prevention and managing herbicide resistant grass and broadleaved weeds.

3.3.1 Phytotoxicity to host crop (KCP 6.4.1)

In all trials conducted phytotoxicity was assessed. Phytotoxicity assessment of the tested product (Mezot 100 SC) was made in 8 trials. No case of significant adverse effects were recorded on any cultivars at the proposed dose rates of 1,5 L/ha.
No signs of phytotoxicity effects were observed in all trial. Phytotoxicity in tested samples was 0%.
No phytotoxicity for Mezot 100 SC and the reference standards was observed throughout the trials.
At any tested rate, Mezot 100 SC was perfectly safe for all crops and cultivars tested in the efficacy programme.

Summary:

Test report	NUZ 02/2019 Report I
Crop/Variety	Maize / ZORION
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(2)
Region	Puławy, RZD Kępa, Osiny (lubelskie)
Application	27.05.2019 (BBCH 15)
Remarks	sandy loam; Assessment of phytotoxicity on a scale of 1 - 9 (1 - no symptoms of phytotoxicity)

Results:

No.		Dose l /ha	Phytotoxicity													
			10.06.19 DAA - 14					17.06.19 DAA - 21					12.07.19 DAA - 46			
			Replications					Replications					Replications			
			1	2	3	4	Average	1	2	3	4	Average	1	2	3	4	Average
1	Control	-	1,0	1,0	1,0	1,0	1,00	1	1	1	1	1,00	1	1	1	1	1
2	Juzan 100SC	1,5	1,5	1,0	1,5	1,0	1,25	1	1	1	1	1,00	1	1	1	1	1
3	Juzan 100SC	3,0	3,0	3,0	2,5	2,5	2,75	1,5	2	1,5	1,5	1,63	1	1	1	1	1
4	Mezot 100SC	1,5	1,5	1,0	1,0	1,0	1,13	1	1	1	1	1,00	1	1	1	1	1
5	Mezot 100SC	3,0	2,5	2,5	3,0	3,0	2,75	1,5	1,5	1,5	1	1,38	1	1	1	1	1

Nr	Obiekt	Dose l/ha	Yield t/ha	Grain moisture (%)	Mass of a thou-sand grains (g)	Density of grain kg/hl	Protein content (%)
1	Control	-	7,93	24,4	365,0	78,68	9,3
2	Juzan 100SC	1,5	7,40	24,8	369,3	78,48	9,3
3	Juzan 100SC	3,0	7,20	24,9	356,5	76,15	9,4
4	Mezot 100SC	1,5	6,92	24,9	356,3	74,15	9,2
5	Mezot 100SC	3,0	7,78	24,0	369,8	77,25	9,2

Conclusions:
1) Mezot 100 SC at a dose of 1.5 l / ha did not show any phytotoxic effect on maize plants of the Zorion variety. Slight morphological changes (leaf discoloration) that appeared on maize plants in objects with such a dose disappeared completely after 20 days after the treatment.

2) Mezot 100 SC in the dose of 3.0 l / ha (twice the recommended dose) showed phytotoxic effect on maize plants of the Zorion cv. 2.75 on a 9-point scale. These changes after 3 weeks were already small (on average from 4 repetitions - 1.38, on a 9-point scale), and after 1 month after the procedure they completely disappeared.

3) Morphological changes resulting from the application of the tested herbicide did not affect the yield of the tested maize variety. The grain yield and its quality elements from the objects where the tested herbicide was applied were comparable to those obtained from the control object and the object with the standard preparation.

4) No undesirable or unforeseen side effects of the test product on beneficial organisms or other non-target organisms were observed.

Test report	NUZ 02/19 Report II
Crop/Variety	Maize / AMBROSINI
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(2)
Region	Puławy, RZD Kępa, Osiny (lubelskie)
Application	27.05.2019 (BBCH 16)
Remarks	sandy loam; Assessment of phytotoxicity on a scale of 1 - 9 (1 - no symptoms of phytotoxicity)

Results:

No.		Dose l /ha	Phytotoxicity													
			10.06.19 DAA - 14					17.06.19 DAA - 21					12.07.19 DAA - 46				
			Replications				Average	Replications				Average	Replications				Average
			1	2	3	4		1	2	3	4		1	2	3	4	
1	Control	-	1,0	1,0	1,0	1,0	1,00	1,0	1,0	1,0	1,0	1,00	1	1	1	1	1
2	Juzan 100SC	1,5	1,0	1,0	1,0	1,0	1,00	1,0	1,0	1,0	1,0	1,00	1	1	1	1	1
3	Juzan 100SC	3,0	2,0	2,0	2,0	2,5	2,13	2,0	1,5	1,5	2,0	1,75	1	1	1	1	1
4	Mezot 100SC	1,5	1,0	1,0	1,0	1,0	1,00	1,0	1,0	1,0	1,0	1,00	1	1	1	1	1
5	Mezot 100SC	3,0	2,0	2,0	2,0	1,5	1,88	1,5	1,5	2,0	1,5	1,63	1	1	1	1	1

Nr	Obiekt	Dose l/ha	Yield t/ha	Grain moisture (%)	Mass of a thousand grains (g)	Density of grain kg/hl	Protein content (%)
1	Control	-	8,96	24,9	370,7	70,60	9,2
2	Juzan 100SC	1,5	8,46	25,4	367,0	74,20	9,3
3	Juzan 100SC	3,0	8,08	25,7	377,2	70,30	9,1
4	Mezot 100SC	1,5	8,18	25,9	368,3	72,95	9,14
5	Mezot 100SC	3,0	7,74	25,0	369,4	69,70	9,14

Conclusions:

1) Mezot 100 SC at a dose of 1.5 l / ha did not show any phytotoxic effect against maize plants of Ambrosini variety.

2) Mezot 100 SC in the dose of 3.0 l / ha (twice the recommended dose) showed phytotoxic effect on maize plants of the Ambrosini cv. At the degree of 1.88 on a 9-point scale. These changes, after 3 weeks, clearly diminished, and after 1 month after the surgery, they completely disappeared.

3) The morphological changes resulting from the application of the tested herbicide did not affect the yield of the tested maize variety. The grain yield and its quality elements from the objects where the tested herbicide was applied were comparable to those obtained from the control object and the object with the standard preparation.

4) No undesirable or unforeseen side effect of the test product on beneficial organisms or other non-target organisms was observed.

Test report	NUZ 01/2020 Report I
Crop/Variety	Maize / Anovi
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(2)
Region	Puławy, RZD Kępa, Osiny (lubelskie)
Application	21.05.2020 (BBCH 14)
Remarks	sandy loam; Assessment of phytotoxicity on a scale of 1 - 9 (1 - no symptoms of phytotoxicity)

Results:

No.		Dose l /ha	Phytotoxicity													
			03.06.19 DAA - 13					12.06.19 DAA - 22					15.07.19 DAA - 55			
			Replications				Average	Replications				Average	Replications				Average
			1	2	3	4		1	2	3	4		1	2	3	4	
1	Control	-	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
2	Juzan 100SC	1,5	1,00	1,00	1,50	1,50	1,25	1,00	1,00	1,00	0,50	0,88	1,00	1,00	1,00	1,00	1,00
3	Juzan 100SC	3,0	3,00	3,00	3,50	2,50	3,00	1,50	2,00	1,50	2,00	1,75	1,00	1,00	1,00	1,00	1,00
4	Mezot 100SC	1,5	1,00	1,50	1,00	1,50	1,25	1,00	1,00	0,50	1,00	0,88	1,00	1,00	1,00	1,00	1,00
5	Mezot 100SC	3,0	2,00	2,50	2,00	3,00	2,38	2,00	1,50	1,50	1,00	1,50	1,00	1,00	1,00	1,00	1,00

Nr	Obiekt	Dose l/ha	Yield t/ha	Grain moisture (%)	Mass of a thousand grains (g)	Density of grain kg/hl	Protein content (%)
1	CONTROL	-	12,8	24,4	335,0	79,33	9,15
2	Juzan 100SC	1,5	13,1	24,8	340,1	79,00	9,15
3	Juzan 100SC	3,0	13,0	24,9	340,6	80,55	9,24
4	Mezot 100SC	1,0	12,7	24,9	339,4	78,03	9,21
5	Mezot 100SC	3,0	13,1	24,0	337,9	79,18	9,18

Conclusions:

1) Mezot 100 SC at a dose of 1.5 l / ha did not show any phytotoxic effect against maize plants of the Anovi variety. Slight morphological changes (leaf discoloration), which appeared after the treatment on maize plants in two repetitions, in objects with such a dose, disappeared completely after about 3 weeks after the treatment.

2) Mezot 100 SC in the dose of 3.0 l / ha showed phytotoxicity to maize plants cv. Anovi, to a degree of 2.0 to 3.0 depending on replication. Her symptoms did not exceed 1-2 degrees 3 weeks after the procedure, and in the following weeks they completely disappeared.

3) Morphological changes resulting from the application of the tested herbicide did not affect the yield of the tested maize variety. The grain yield and its quality elements from the objects where the tested herbicide was applied were comparable to those obtained from the control object and the object with the standard preparation.

4) No undesirable or unforeseen side effects of the test product on beneficial organisms or other non-target organisms were observed.

Test report	NUZ 01/2020 Report II
Crop/Variety	Maize / Batisti
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(2)
Region	Puławy, RZD Kępa, Osiny (lubelskie)
Application	22.05.2019 (BBCH 14)
Remarks	sandy loam; Assessment of phytotoxicity on a scale of 1 - 9 (1 - no symptoms of phytotoxicity)

Results:

No.		Dose l /ha	Phytotoxicity														
			03.06.19 DAA - 13					12.06.19 DAA - 22					15.07.19 DAA - 55				
			Replications				Average	Replications				Average	Replications				Average
			1	2	3	4		1	2	3	4		1	2	3	4	
1	Control	-	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
2	Juzan 100SC	1,5	2,00	2,00	1,50	1,50	1,75	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
3	Juzan 100SC	3,0	2,00	3,50	3,00	3,00	2,88	1,50	1,50	2,00	2,00	1,75	1,00	1,00	1,00	1,00	1,00
4	Mezot 100SC	1,5	1,50	1,00	1,00	1,00	1,13	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
5	Mezot 100SC	3,0	2,50	3,00	3,00	3,00	2,88	1,50	1,50	1,50	2,00	1,63	1,00	1,00	1,00	1,00	1,00

Nr	Obiekt	Dose l/ha	Yield t/ha	Grain moisture (%)	Mass of a thousand grains (g)	Density of grain kg/hl	Protein content (%)
1	CONTROL	-	12,1	26,18	312,0	78,9	9,23
2	Juzan 100SC	1,5	12,8	26,18	313,9	78,5	9,25
3	Juzan 100SC	3,0	12,8	25,90	320,2	78,4	9,25
4	Mezot 100SC	1,0	12,8	25,00	320,7	78,4	9,20
5	Mezot 100SC	3,0	12,3	24,93	316,9	77,6	9,27

Conclusions:

1) Mezot 100 SC at a dose of 1.5 l / ha did not show any phytotoxic effect against maize plants of the Batisti variety. Slight morphological changes (leaf discoloration) that appeared on maize plants in objects with such a dose disappeared completely after about 3 weeks after the treatment.

2) Mezot 100 SC in the dose of 3.0 l / ha showed phytotoxicity towards maize plants cv. Batisti, in the degree of 2.0 to 3.0 depending on replication. Her symptoms did not exceed 1-2 degrees 3 weeks after the procedure, and in the following weeks they completely disappeared.

3) Morphological changes resulting from the application of the tested herbicide did not affect the yield of the tested maize variety. The grain yield and its quality elements from the objects where the tested herbicide was applied were comparable to those obtained from the control object and the object with the standard preparation.

4) No undesirable or unforeseen side effects of the test product on beneficial organisms or other non-target organisms were observed.

Test report	NUZ 01/2020 Report III
Crop/Variety	Maize / Amisti
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(2)
Region	Puławy, RZD Kępa, Osiny (lubelskie)
Application	22.05.2019 (BBCH 15)
Remarks	sandy loam; Assessment of phytotoxicity on a scale of 1 - 9 (1 - no symptoms of phytotoxicity)

Results:

No.		Dose l /ha	Phytotoxicity														
			03.06.19 DAA - 13					12.06.19 DAA - 22					15.07.19 DAA - 55				
			Replications				Average	Replications				Average	Replications				Average
			1	2	3	4		1	2	3	4		1	2	3	4	
1	Control	-	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
2	Juzan 100SC	1,5	3,00	3,00	3,00	2,00	2,75	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
3	Juzan 100SC	3,0	2,00	3,50	3,00	3,00	2,88	2,00	2,00	2,00	2,00	2,00	1,00	1,00	1,00	1,00	1,00
4	Mezot 100SC	1,5	1,50	1,00	1,00	1,00	1,13	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
5	Mezot 100SC	3,0	3,00	3,00	2,00	2,00	2,50	2,00	1,50	2,00	2,00	1,88	1,00	1,00	1,00	1,00	1,00

Nr	Obiekt	Dose l/ha	Yield t/ha	Grain moisture (%)	Mass of a thousand grains (g)	Density of grain kg/hl	Protein content (%)
1	CONTROL	-	13,20	26,4	305,8	77,7	9,10
2	Juzan 100SC	1,5	13,18	25,6	309,1	78,5	9,09
3	Juzan 100SC	3,0	13,38	24,9	311,7	78,6	9,09
4	Mezot 100SC	1,0	13,39	25,9	311,4	78,6	9,17
5	Mezot 100SC	3,0	13,09	24,5	311,9	77,1	9,15

Conclusions:

1) Mezot 100 SC at a dose of 1.5 l / ha did not show any phytotoxic effects against maize plants of Amisti variety. Slight morphological changes (leaf discoloration) that appeared on maize plants in objects with such a dose disappeared completely after about 3 weeks after the treatment.

2) Mezot 100 SC in the dose of 3.0 l / ha showed phytotoxicity towards maize plants cv. Amisti, to the extent of 2.0 to 3.0 depending on replication. Her symptoms 3 weeks after the surgery did not exceed 1.5-2.0 degrees, and in the following weeks they completely disappeared.

3) Morphological changes resulting from the application of the tested herbicide did not affect the yield of the tested maize variety. The grain yield and its quality elements from the objects where the tested herbicide was applied were comparable to those obtained from the control object and the object with the standard preparation.

4) No undesirable or unforeseen side effects of the test product on beneficial organisms or other non-target organisms were observed.

Test report	SGS/2019/048/PL01
Crop/Variety	Maize / MAS 17G
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Region	Janowiec Wielkopolski, (Kujawsko-pomorskie)
Application	May-23-2019 (BBCH 13)
Remarks	sandy loam; Rating scale of 0 to 100 (e.g. % control or injury)

Results:

No.		Dose l /ha	Phytotoxicity			
			DAA - 13	DAA - 26	DAA - 42	DAA - 49
1	Control	-	0	0	0	0
2	Juzan 100SC	1,5	0	0	0	0
3	Juzan 100SC	3,0	0	0	0	0
4	Mezot 100SC	1,5	0	0	0	0
5	Mezot 100SC	3,0	0	0	0	0

Nr	Obiekt	Dose [l/ha]	Grain moisture (%)	Yield [t/ha]	Mass of a thousand grains (g)
1	Control	-	20,23	10,27	329,04
2	Juzan 100SC	1,5	20,33	10,40	327,74
3	Juzan 100SC	3,0	20,53	10,28	330,04
4	Mezot 100SC	1,5	20,28	10,18	327,32
5	Mezot 100SC	3,0	20,40	10,23	329,65

Objectives and conclusions:

1. To evaluate the selectivity of Mezot 100 SC when applied postemergence in maize.
Not observed phytotoxicity symptoms.

2. To compare the selectivity of Mezot 100 SC with reference Juzan 100 SC.
In all treatments not observed phytotoxicity symptoms.

3. To evaluate the effect on crop yield in maize.
All treatments have very similar grain yield.

4. To assess grain quality.
All treatments have very similar grain quality.

Test report	SGS/2019/048/PL02
Crop/Variety	Maize / Faraday
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Region	Ludów Polski, (dolnośląskie)
Application	May-27-2019 (BBCH 14)
Remarks	sandy loam; Rating scale of 0 to 100 (e.g. % control or injury)

Results:

No.		Dose l /ha	Phytotoxicity			
			DAA - 10	DAA - 28	DAA - 36	DAA - 45
1	Control	-	0	0	0	0
2	Juzan 100SC	1,5	0	0	0	0
3	Juzan 100SC	3,0	0	0	0	0
4	Mezot 100SC	1,5	0	0	0	0
5	Mezot 100SC	3,0	0	0	0	0

Nr	Obiekt	Dose [l/ha]	Grain moisture (%)	Yield [t/ha]	Mass of a thousand grains (g)
1	Control	-	28,33	8,29	306,36
2	Juzan 100SC	1,5	28,13	8,50	305,47
3	Juzan 100SC	3,0	27,68	8,38	305,00
4	Mezot 100SC	1,5	27,83	8,36	306,53
5	Mezot 100SC	3,0	27,18	8,32	306,97

Objectives and conclusions:

1. To evaluate the selectivity of Mezot 100 SC when applied postemergence in maize.
Not observed phytotoxicity symptoms.

2. To compare the selectivity of Mezot 100 SC with reference Juzan 100 SC.
No visible symptoms of phytotoxicity from test and standard product.

3. To evaluate the effect on crop yield in maize.
No negative impact on the quantity of the yield.

4. To assess grain quality.
No negative impact on the quality the yield.

Test report	SGS/2019/048/PL03
Crop/Variety	Maize / Farmgigant
Guidelines	PP 1/225(2), PP 1/152(4), PP 1/181(4), PP 1/135(4), PP 1/50(3)
Region	Chojnice, (pomorskie)
Application	Jun-7-2019 (BBCH 16)
Remarks	sandy loam; Rating scale of 0 to 100 (e.g. % control or injury)

Results:

No.		Dose l /ha	Phytotoxicity			
			DAA - 14	DAA - 28	DAA - 46	DAA - 56
1	Control	-	0	0	0	0
2	Juzan 100SC	1,5	0	0	0	0
3	Juzan 100SC	3,0	0	0	0	0
4	Mezot 100SC	1,5	0	0	0	0
5	Mezot 100SC	3,0	0	0	0	0

Nr	Obiekt	Dose [l/ha]	Grain moisture (%)	Yield [t/ha]	Mass of a thousand grains (g)
1	Control	-	25,83	8,97	301,75
2	Juzan 100SC	1,5	25,80	8,90	302,25
3	Juzan 100SC	3,0	25,40	9,04	300,50
4	Mezot 100SC	1,5	25,13	9,38	299,00
5	Mezot 100SC	3,0	25,98	9,10	301,50

Objectives and conclusions:

1. To evaluate the selectivity of Mezot 100 SC when applied postemergence in maize.
Not observed phytotoxicity symptoms.

2. To compare the selectivity of Mezot 100 SC with reference Juzan 100 SC.
Selectivity of Mezot 100 SC is the same as Juzan 100 SC.

3. To evaluate the effect on crop yield in maize.
The products used in this trial didn't have any negative impact on the quantity of the yield.

4. To assess grain quality.
The products didn't have any negative impact on the quality of the yield.

Comments of zRMS:	In the evaluation process the fact that the active ingredient – mesotrione is used in many plant protection products and have been commonly used in crop protection for many years were taken into consideration by ZRMs. The Applicant submitted in total 8 selectivity studies conducted in different seasons (2019 and 2020) in Poland on herbicide (Mezot 100 SC) containing this active substance. 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 in all trials. Experimental details and assessments methods were in accordance to EPPO standards. Detailed information's are presented by Applicant in the tables above. Mezot 100 SC at a dose of 1.5 l/ha did not show any phytotoxic effects against maize plants. Slight morphological changes (leaf discoloration) that appeared on

	maize plants in objects with such a dose disappeared completely after about 3 weeks after the treatment in some trials. Mezot 100 SC in the dose of 3.0 l/ha showed phytotoxicity towards maize plants in some trials. Her symptoms 3 weeks after the surgery did not exceed 1.5-2.0 degrees, and in the following weeks they completely disappeared. **The warning should be put on the label: e.g. Phytotoxicity cannot be excluded. Sensitivity of varieties should be consulted with the authorization holder.**

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

In all trials conducted phytotoxicity was assessed. The biological assessment of the effectiveness of experiments estimated the effect on the yield.
The yield was evaluated on the basis of ~~24~~ 8 trials regarding crop safety assessment. In all studies Mezot 100 SC showed no phototoxic effects, additional grain yield and grain quality. No significant differences occurred. There was no statistically significant difference between the treatment objects and untreated samples.

Comments of zRMS:	Submitted trials are sufficient. Influence of Mezot 100 SC on yield was evaluated during selectivity research. Summary of the data on yield can be found in chapter-Phytotoxicity to host crop (KCP 6.4.1). Yield results were presented in tha tables from each selectivity trial. The Applicant submitted in 8 reports the results of yield, carried out in different growing seasons (2019 and 2020) in maize. The evaluation was carried out in accordance with EPPO guidelines. No significant differences occurred. There was no statistically significant difference between the treatment objects and untreated samples.

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

In all trials conducted phytotoxicity was assessed. The biological assessment of the effectiveness of experiments estimated the effect on the yield.
The yield was evaluated on the basis of ~~24~~ 8 trials regarding crop safety assessment. In all studies Mezot 100 SC showed no phototoxic effects, additional grain yield and grain quality. No significant differences occurred. There was no statistically significant difference between the treatment objects and untreated samples.

Comments of zRMS:	Submitted trials are sufficient. Influence of Mezot 100 SC on the quality of yield was evaluated during selectivity research. Summary of the data on yield can be found in chapter: Phytotoxicity to host crop (KCP 6.4.1). Quality of yield results were presented in tha tables from each selectivity trial. The Applicant submitted in 8 reports the results of quality of yield, carried out in different growing seasons (2019 and 2020) in maize. The evaluation was carried out in accordance with EPPO guidelines. Quality of yield of maize in recommended dose of tested product – Mezot 100 SC were similar to objects, which used standard reference product.

3.3.4 Effects on transformation processes (KCP 6.4.4)

For Mezot 100 SC no processing trials are available. There is no indication from agricultural practice that herbicides with the active substance Mesotrione have affected the processing of harvested cereal grains in the past. Furthermore, the test product is intended for application in spring and winter cereals (BBCH 12-18 of the crop). not close to harvest or after harvest.

Comments of zRMS:	The latest time of application for Mezot 100 SC is crop growth stage BBCH 18. Since applications of Mezot 100 SC are made at an early stage in the crop's devel-

	opment there is no risk that the actives would be translocated to the grain. The germination of maize seeds will be not negatively affected by the application of Mezot 100 SC, in the opinion of Evaluator.

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

In all trials conducted phytotoxicity was assessed. The biological assessment of the effectiveness of experiments estimated the effect on the yield.
The yield was evaluated on the basis of 8 trials regarding crop safety assessment. In all studies Mezot 100 SC showed no phototoxic effects, additional grain yield and grain quality. No significant differences occurred. There was no statistically significant difference between the treatment objects and untreated samples.

Comments of zRMS:	The active substance – mesotrione is commonly used for many years in many countries. No adverse effects on parts of plant used for propagating purposes were reported. No adverse effect on the yield and quality and no phytotoxicity symptoms were recorded in the field trials. Also, no information is available pointing to presence of any limitations to using of mesotrione in seed crops of maize. In the opinion of Evaluator, the product Mezot 100 SC may be used in seed crops of maize.

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

3.4.1 Impact on succeeding crops (KCP 6.5.1)

For a preliminary estimate of the impact on succeeding crops, a laboratory study on seedling emergence may by indicated. Positive assessment and details are described in dRR Section 9 this registration documentation.
Additionally it is concluded that after the appropriate application of Mezot 100 SC in cereals, all the possible following crops can be grown in the frame of usual crop rotation without ploughing. In case it is necessary to close down the plantation where the product was used (as a result of crop damage caused by frost, disease or pest), it is possible to grow maize and spring cereals at this field after seedbed preparation (at the depth of min. 5 cm).

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 Mezot 100 SC 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. The half-life (DT_{50}) for mesotrione in soil is short – about 16.4 days. Therefore, the impact on succeeding crops is unlikely to occur. No risk of phytotoxicity for succeeding crops is expected, in the opinion of Evaluator and lack of calculations of TER values submitted by the applicant based on ER_{10} values coming out from

	”Seedling Emergence and Seedling Growth test” can be accepted. Positive assessment and details are described in dRR Section 9 this registration documentation. Additionally, it is concluded that after the appropriate application of Mezot 100 SC in cereals, all the possible fol-lowing crops can be grown in the frame of usual crop rotation without ploughing. In case it is necessary to close down the plantation where the product was used (as a result of crop damage caused by frost, disease or pest), it is possible to grow maize.

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

None of the efficacy trials reported any effects on adjacent crops or plants. Application of Mezot 100 SC 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 application times. Furthermore, Good Agricultural Practice avoids spray drift to adjacent crops by taking into account the wind speed, the droplet size and positioning of the spray boom. As Mezot 100 SC is intended for control of dicotyledonous weeds, the product may cause damages on dicotyledonous adjacent crops if it is misused.

Comments of zRMS:	Generally, the product is a foliar herbicide effective on broadleaved weeds. Therefore, warnings to avoid spray drift on adjacent crops should appear on the label. ZRMS accepted following statement: *None of the efficacy trials reported any effects on adjacent crops or plants. Application of Mezot 100 SC 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 application times. Furthermore, Good Agricultural Practice avoids spray drift to adjacent crops by taking into account the wind speed, the droplet size and positioning of the spray boom. As Mezot 100 SC is intended for control of dicotyledonous weeds, the product may cause damages on dicotyledonous adjacent crops if it is misused.*

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

During the course of the effectiveness trials observations indicating any effects whatsoever on beneficial or other non-target organisms were not reported. Furthermore, the lack of observations of negative impacts on non-target organisms is in accordance with the results of toxicity tests in ecotoxicologically relevant indicator species. Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in Part B, Section 9 (Ecotoxicology).

Summary and conclusion

Mezot 100 SC is a herbicide without any unexpected action and to be harmful for any succeeding crop. There are no important phytotoxic effects on treated or on succeeding crops. There are no important phytotoxic effects on treated or on succeeding crops. Use of Mezot 100 SC in accordance with the proposed scope of use (GAP) and the Principles of Good Agricultural Practice does not pose a risk to neighboring plants. During the course of the effectiveness trials observations indicating any effects whatsoever on beneficial or other non-target organisms were not reported.

Comments of zRMS:	For detailed consideration of risks to beneficial organisms please see the ecotoxicology section B section 9.

3.5 Other/special studies

None available that could be considered relevant.

Comments of zRMS:	Statement accepted.

3.6 List of test facilities including the corresponding certificates

Table 3.6-1: List of test facilities

Test facility	Address	Certificate (Yes or No)
SGS Poland Sp. z o.o.; Poland	Ul. Jana Kazimierza 3, 01-248 Warszawa	Yes
Institute of Soil Science and Plant Cultivation - National Research Institute in Puławy	Ul. Czartoryskich 8, 24-100 Puławy	Yes

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
3.2.3	Grabiński, J.	2019	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 02/19, Report I GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2019	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 02/19, Report II GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2019	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 02/19, Report III GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2020	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/20, Report I GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2020	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/20, Report II GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2020	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/20, Report III GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Grabiński, J.	2020	Badanie skuteczności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/20, Report IV GEP/Unpublished	N	Elvita Sp.z o.o Różewo

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
3.2.3	Krawczuk, M.	2019	Field study to evaluate the efficacy of Mezot 100 SC when applied post emergence in maize for the control of weeds, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/047/PL01 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Krawczuk, M.	2019	Field study to evaluate the efficacy of Mezot 100 SC when applied post emergence in maize for the control of weeds, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/047/PL02 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Krawczuk, M.	2019	Field study to evaluate the efficacy of Mezot 100 SC when applied post emergence in maize for the control of weeds, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/047/PL03 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Krawczuk, M.	2019	Field study to evaluate the efficacy of Mezot 100 SC when applied post emergence in maize for the control of weeds, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/047/PL04 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.2.3	Krawczuk, M.	2019	Field study to evaluate the efficacy of Mezot 100 SC when applied post emergence in maize for the control of weeds, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/047/PL05 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.3.1.	Grabiński, J.	2019	Badanie selektywności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 02/2019, Report I GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.3.1.	Grabiński, J.	2019	Badanie selektywności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 02/2019, Report II		

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
			GEP/Unpublished		
3.3.1.	Grabiński, J.	2020	Badanie selektywności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/2020, Report I GEP/Unpublished		
3.3.1.	Grabiński, J.	2020	Badanie selektywności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/2020, Report II GEP/Unpublished		
3.3.1.	Grabiński, J.	2020	Badanie selektywności herbicydu Mezot 100 SC w uprawie kukurydzy. IUNG Puławy NUZ 01/2020, Report III GEP/Unpublished		
3.3.1.	Krawczuk, M.	2019	Field study to evaluate the selectivity of Mezot 100 SC when applied post emergence in maize, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/048/PL01 GEP/Unpublished		
3.3.1.	Krawczuk, M.	2019	Field study to evaluate the selectivity of Mezot 100 SC when applied post emergence in maize, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/048/PL02 GEP/Unpublished	N	Elvita Sp.z o.o Różewo
3.3.1.	Krawczuk, M.	2019	Field study to evaluate the selectivity of Mezot 100 SC when applied post emergence in maize, Poland 2019. SGS Poland Sp. z o.o. SGS/2019/048/PL03 GEP/Unpublished	N	Elvita Sp.z o.o Różewo