FINAL REGISTRATION REPORT

Part B

Section 0

Product Background, Regulatory Context and GAP information

Product code: CHR/H/ETO 500 SC

Product name(s): BITT 500 SC, BETRON 500 SC, ETONAL 500 SC

Chemical active substance(s):

Ethofumesate, 500 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Applicant: Innvigo Sp. z o.o.

Submission date: June 2021

MS Finalisation date: 14/01/2022

Version history

When	What
06/2021	Dossier sent for evaluation to Merit Mark (PL)
11/2021	zRMS finalised evaluation
01/2022	Final version prepared by zRMS after Commenting period

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Evaluator comments:
The text highlighted in grey was provided by the evaluator.

0 Product background, regulatory context and GAP information

0.1 Introduction

This document describes the acceptable use conditions required for zonal registration of CHR/H/ETO 500 SC (BITT 500 SC, BETRON 500 SC, ETONAL 500 SC) containing ethofumesate in POLAND (ZRMS).

The risk assessment conclusions are based on the information, data and assessments provided in Registration Report, Part B Sections 0-10 and Part C. The information, data and assessments provided in Registration Report, Parts B includes assessment of further data or information as required by the EU review. It also includes assessment of data and information relating to CHR/H/ETO 500 SC where that data has not been considered in the EU review. Otherwise assessments for the safe use of CHR/H/ETO 500 SC have been made using endpoints agreed in the EU review of ethofumesate.

This document describes the specific conditions of use and labelling required for the registration of (BITT 500 SC, BETRON 500 SC, ETONAL 500 SC), product code CHR/H/ETO 500 SC.

In the following document, data for active substance ethofumesate was described during its renewal process in 2016. Where reference to active substance data in the current risk assessment has been made, it was based on the data presented by Bayer.
In June 14th, 2018r Kemiron Koncentrat 500SC product has been renewed in Poland thus according to the art. 59 reg. 1107/2009, data protection for mentioned data expired 30 months from date of first renewal of authorisation of product containing that active substance (in this case December, 14th 2020).
Considering analogous arguments (art. 59 reg 1107/2009) – data protection of studies presented by UPL for renewal of product Bettix Combi 500 SC (renewal of authorisation granted in Poland 14.02.2019 r.) expires August 14th, 2021.
Taking into account that some data was presented by others Notifiers, Applicant would like to emphasise that unprotected Bayer's endpoints and input parameters accepted during renewal of active substance, should be treated as an equivalent matching data in cases where any of endpoints might be protected.

0.1.1 Reason for application

This application follows the data requirements for the active substance laid down in Regulation (EC) No. 283/2013 and the data requirements for the plant protection product laid down in Regulation (EC) No. 284/2013.

In addition to the submission of studies as listed in section(s) B0-10, exemption from the submission of studies is requested in accordance with Article 34 of Regulation (EC) No. 1107/2009.

0.1.2 Details of zRMS(s) and concerned MS

Table 0.1-1: Overview of zRMS and cMS

	zRMS, product name and authorization no. (if relevant)	**(if relevant) Concerned MS, MS' product name and authorization number (if applicable)**
Central zone	Poland CHR/H/ETO 500 SC BITT 500 SC, BETRON 500 SC, ETONAL 500 SC	NR

0.1.3 Regulatory history of the active(s)

0.1.3.1 Ethofumesate

Table 0.1-2: Summary of regulatory history of CAS No: 26225-79-6

Status	
Approved in EU	Y
Original Inclusion Directive or Commission Implementing Regulation	COMMISSION IMPLEMENTING REGULATION (EU) 2016/1426 of 25 August 2016
RMS	AT
Date of Approval (or most recent renewal) of Active Substance (date of Regulation to be applied)	01.11.2016
Date of first Commission (re-registration) deadline (Step 1) or date of deadline for renewal of authorization (renewal)	31.10.2031
Date of final Commission (re-registration) deadline (Step 2)	31.10.2031
Current expiration of approval	31.10.2031
Low risk substance or Candidate for Substitution?	N/A

Issues that need to be considered as part of the EU approval are listed below.

In this overall assessment Member States must pay particular attention to:

- the risk to aquatic organisms.

The SANCO report for ethofumesate (SANTE/10119/2016 Rev. 3 - 12 July 2016) is considered to provide the relevant information on the evaluation or a reference to where such information can be found. An EFSA Scientific Report was made available on 19.01.2016.

Table 0.1-3: Information on minimum purity of ethofumesate

EU agreed minimum purity from Inclusion Directive or Implementing regulation	**(if different) Minimum purity of active substance used in the product / information on available equivalency report *, **
~~960~~ 970 mg/kg	For the purity of active substance, please refer to PART C- confidantial information Equivalence report available: please refer to LoA RMS: please refer to LoA

* Since EU approval new studies on the active substance have been performed (e.g. new manufacturing site, new specification) and as a result the purity of the active substance has changed (see Part C).

**. If the specification of the active substance is different to that used as reference specification for EU approval then please refer to the equivalency document from the RMS.

The following table provides the endpoints used in the evaluation in the case that they deviate from EU endpoints.

0.1.4 Regulatory history of the product (if relevant)

Not relevant as the product has not yet been authorised

0.2 zRMS conclusion

Physical-chemical section:

Data gap: The shelf-life study is on-going. One-year conditional registration of the product is possible and proposed.

Section 3. Efficacy
The presented document is prepared in accordance with the Regulation (EC) No 1107/2009, article 33 and concerns a herbicide **CHR/H/ETO**, product name(s): Bitt 500 SC, Betron 500 SC, Etonal 500 SC, chemical active substances: Etofumesate 500 g/L. This Report is based on proper documentation and contains comprehensive description of tested herbicide. **CHR/H/ETO** is intended to control the dicotyledonous weeds in sugar beet. 8 trials conducted in 2020 on a dozen weed species in 2 climate EPPO zones confirmed the effectiveness of this herbicide. Trials were conducted in the North-Eastern EPPO zone: Poland (5 trials) and the Maritime EPPO zone (3 trials) in the Czech Republic-within the Central registration zone. 8 trials is a sufficient number for registration of a known active substance in Poland. Ethofumesate has been used in practice for many years and the experimental results of 2020 are consistent. This allows to confirm its appropriate effectiveness. *Amaranthus retroflexus* is one of the most burdensome species in sugar beet cultivation in Poland. The **CHR/H/ETO** showed a high control efficiency for this species of 93%.

The herbicide was applied at the proposed label rate 1.0 L/ha of twice applications per season and three applications at a dose 0,6l/ha at the growth stage of sugar beet BBCH 12-18 and next after 5-10 days.

The data obtained in the experiments confirm the proposed uses. **CHR/H/ETO** is effective in the controlling a cumbersome weed species: *Galium aparine* (GALAP) 95%, *Amaranthus retroflexus (AMARE)* 93%, *Stellaria media* (STEME) 99% but less limited are *Thlaspi arvense* (THLAR) 60% and *Chenopodium album* (CHEAL) 55-59%.

The effectiveness of the studied herbicide obtained in the experiments confirms the correctness of the information in the label. It is appropriate to divide the weeds into susceptible or not susceptible weeds to the **CHR/H/ETO.**

The applicant has presented in the label appropriate elements of the anti-immune policy.

CHR/H/ETO, product name(s): Bitt 500 SC, Betron 500 SC, Etonal 500 SC shows high selectivity towards sugar beet. No adverse plant symptoms or negative effects of the herbicide on sugar beet yield were observed. The data obtained in the experiments confirm these features.

The results obtained in the experiments justify the needed for registration of the studied agent for weed control in sugar beet in Poland. The data provided in RR confirm the above applications and authorize the registration of CHR/H/ETO, product name(s): Bitt 500 SC, Betron 500 SC, Etonal 500 SC(chemical active substance: Etofumesate 500 g/L) in Poland. The presented data complies with the GAP table and the label and uniform principles. The dRR is drafted correctly and contains appropriate and sufficient data on the performance of the herbicide tested. These data provide the basis for registration of the studied agent in Poland.

Section 5. Analytical Methods
The analytical methods are accepted.

Section 6. Mammalian Toxicology
Based on the calculation method taking into consideration valid data available on each of the components in the mixture, CHR/H/ETO 500 SC is not classified for human health.
No unacceptable risk for operators, workers, bystanders and residents was identified when the product is used as intended. No specific PPE is necessary.
Section 10: Assessment of the relevance of metabolites in groundwater
No metabolites exceeded trigger value 0.1 µg/L, therefore the relevance assessment of the metabolites is not re-quired.

Section 7. Metabolism and Residues
GAPs proposed for CHR/H/ETO 500 SC on sugar beets (max. 1 kg a.s./ha every three years):

1) 2 appl., BBCH 11-18, max application rate per treatment: 0.5 kg a.s/ha, PHI- not applicable

2) 3 appl., BBCH 11-18, max application rate per treatment: 0.3 kg a.s/ha, PHI- not applicable

EU GAPs on sugar beets (EFSA Journal 2016;14(1):4374):

For data presented by UPL: pre-emergence, 1 appl., max appl. rate 1 kg a.s./ha; Splitting application with a maximum total rate of 1 kg a.s./ha per season. Post-emergence until BBCH 18. *The maximum application rate per treatment is 0.33 kg a.s./ha. The critical GAP therefore is 3 applications of 0.33 kg a.s./ha. More applications (max.6) at a lower application rate are possible, but they do not represent the critical GAP. PHI covered by the vegetation period, max. 1 kg a.s./ha every three years.*

For data presented by Task Force ethofumesate: post-emergence BBCH 16-18, 1-3 appl., interval between appl. 5 days, appl. rate per treatment 0,2-1 kg a.s./ha. The maximum amount of active substance must not exceed 1.0 kg/ha every 3 years. PHI is covered by the normal vegetation period between last application and harvest.

GAP accepted by the Polish Authority for Bettix Combi 500 SC on sugar beets (the Applicant is referring to the study for this product): 3 appl. (interval between appl. 5-10 days), BBCH 11-31, max appl. per treatment 0.3 kg a.s./ha.

The Applicant did not provide any new studies. The dossier is based on studies assessed at Community level during the renewal of approval for ethofumesate as an active substance. The Applicant has informed that it has the right to use the studies assessed at the renewal stage. Authorities competent for authorization should verify whether the explanations provided by the Applicant in this regard are correct and sufficient.

Stability

According to the EFSA Journal 2016;14(1):4374 ethofumesate is stable under frozen storage conditions for at least 12 months in sugar beetroots (high starch content matrix) and sugar beet leaves (high water content matrix). In addition, data showing stability of the metabolite NC 20645 and conjugated NC 20645, analysed as NC 9607 for at least 24 month in sugar beet (roots and leaves) for not less than 24 months. In animal products, ethofumesate and its metabolites NC 9607, NC8493 and NC 20645 were found to be stable under frozen storage for up to 6 months.

Nature of residues in plants

According to the EFSA Journal 2016;14(1):4374:

Primary crop metabolism of 14C ethofumesate was investigated following pre-emergence application and post-emergence foliar application to sugar beet, post-emergence foliar application to ryegrass and tobacco (non GLP), and pre-emergence application to onions (non GLP). In addition, rotational crop metabolism was studied in radish, carrots, cabbage, spinach, wheat, ryegrass, and French beans, investigating different plant-back intervals upon soil application of 14C ethofumesate. Metabolic patterns in the different studies were similar, metabolism of ethofumesate leading to the metabolites ethofumesate-2-hydroxy (NC 8493), ethofumesate lactone (NC 9607) and ethofumesate carboxylic acid (NC 20645), recovered also in their conjugated form. NC 20645 is the open ring form of NC9607. Intra-molecular ring closure appeared to be conditioned by the pH i.e. primarily when acidic conditions are applied to release the aglycon of conjugated residues. The proportions observed of parent and metabolites and their conjugates varied depending on the time, mode and rate of application as well as on the crop studied. Commonly, until harvest of the mature primary crop, parent had been degraded to a significant extent, if not completely, into its metabolites, majorly present as conjugated compounds. The pertinent residue was identified as NC 20645, free and conjugated.

In a confined rotational crop study, parent ethofumesate was recovered in almost all commodities tested. Upon hydrolysis significant portions of conjugated residues were identified as NC9607 in most of the commodities, and in root crops also of NC 8493. The observation of residues of unchanged ethofumesate in rotational crops was presumably caused by the high persistence and low leaching potential of ethofumesate in some soils and likely increased availability in the root zone upon breaking up of the soil at planting of the following crop.

In view of the metabolic pathway in mammals EFSA considered that the plant metabolites NC 20645, NC 9607 and NC 8493 are covered by the toxicological endpoints of parent compound (see last paragraph in section 2).

In residue trials in the primary crop and in rotational crops residues of ethofumesate and by turns of free NC 9607, free and conjugated NC 20645 and NC 8493 were determined. When the occurrence of residues in the primary or rotational crop (food and feed items) at harvesting stage is considered, ***the residue definition for risk assessment is appropriately defined as the sum of ethofumesate, NC 9607, NC20645 and its conjugate, expressed as ethofumesate. The same residue definition was proposed for monitoring purposes and MRL setting.*** *The proposal took into account the fact that a reliable determination of the relevant ethofumesate residues is only possible if NC 9607 is included in the residue definition as common moiety which comprises the determination of the metabolite NC 20645 (free and conjugated) plus metabolite NC 9607 itself due to occurring intra-molecular rearrangements. Therefore the previously proposed residue definition in the review under Directive 91/414/EEC as sum of ethofumesate and NC9607 was considered as not sufficiently precise and was amended accordingly. It is acknowledged that multi-component definitions for monitoring may not comply with the suggested marker compound concept, however in the specific case of ethofumesate the inclusion of NC9607 appears to be inseparable from NC 20645. Given the presence of parent ethofumesate above LOQ in rotational crop field trials at early plant-back intervals only, the exclusion of ethofumesate itself might be considered an option in case risk managers wish to simplify the proposed monitoring residue definition.*

Hydrolysis products were detected in a range between 0.7 and 2.1%. They were not further investigated, due to their low amount in the test solutions.

Metabolism in livestock

According to the EFSA Journal 2016;14(1):4374:

Metabolism in poultry and lactating ruminants was sufficiently investigated with 14C ethofumesate. ***The relevant residue definition for both enforcement and risk assessment in livestock was derived as the sum of ethofumesate, NC 9607, NC 20645, expressed as ethofumesate. Based on the metabolism studies, it is also concluded that significant residues in animal commodities are not expected, considering livestock exposure linked to the representative uses.***

Magnitude of residues

Residue data have been evaluated at Community level. The Applicant did not provide any additional data. Considering that the GAP proposed for CHR/H/ETO 500 SC on sugar beet is not more critical than accepted at Community level, the presented data should be considered sufficient. No exceedance of the MRL will occur.

Taking into account that the level of residues in sugar beet roots does not exceed 0.1 mg/kg and TMDI is below 10 % of the ADI (no ARfD derived), there is no need to investigate the effect of processing.

Residues in succeeding studies have been evaluated at Community level. In these studies after application of 1 kg a.s./ha on sugar beet residues of ethofumesate were detected in the crops of the first rotation (PBI 25-33 days). Replanting of root and leafy crops could lead to measurable residues in edible plant parts. Therefore it is proposed to set risk mitigation measures to avoid residues in succeeding crops in the case of crop failure. In the label, the Applicant proposed the following entry:

If it is necessary to liquidate a plantation treated with CHR/H/ETO 500 SC, as a result of damage to plants by frosts, diseases, pests (or for any other reason), in this field after 30 days and carrying out deep plowing (20 cm), beet can be grown. Winter cereals can be sown after at least 5 months. Other plants can be grown approximately 3 months after the last treatment.

None, apart from those specified by the Applicant, additional mitigation measures are required.

According to the Appendix II to SANTE/11956/2016 rev. 9 sugar beet should not be considered a melliferous crop unless it is grown for seed. The proposed use is not for seed production and therefore no residue studies in honey are required.

The consumer risk assessment (chronic) was calculated using EFSA PRIMo rev. 3.1 for all MRLs in for-

ce (Reg.(EU) 2017/1016) (overestimated). Results indicated the highest estimate of chronic dietary intake is 0.5 % of the ADI (NL toddler). As ARfD was not deemed necessary, acute risk assessment is not relevant.

The proposed uses of ethofumesate in the formulation CHR/H/ETO 500 SC do not represent unacceptable acute and chronic risks for the consumer.

Conclusion

Authorization can be granted.

For sugar beet, additional data are required in post-registration to confirm that a "no-residue" situation occurs in the worst case application: 2 application of 0.5 g ethofumesate/ha at growth stage BBCH 11-18.

The dossier is based on studies assessed at Community level during the renewal of approval for ethofumesate as an active substance. The Applicant has informed that it has the right to use the studies assessed at the renewal stage. Authorities competent for authorization should verify whether the explanations provided by the Applicant in this regard are correct and sufficient.

Section 8. Environmental Fate
In accordance with proposed pattern use, an exposure assessment for the formulation CHR/H/ETO/500 SC was submitted.

Section 9. Ecotoxicology
Based on the risk assessment in section of ecotoxicology it can be concluded that the proposed use of CHR/H/ETO 500 SC as a herbicide on: sugar beet poses acceptable risk to non-target organisms, if applied according to the recommended use pattern.

For field use of CHR/H/ETO 500 SC and in greenhouses and as post-harvest treatment or for treatment of empty storage rooms authorisation can be granted.

Section 10. Assessment of the relevance of metabolites in groundwater
Based on PECgw assessment for metabolites, their concentration in groundwater was below the trigger value of 0.1 μg/L.

Uses to be considered safe on the basis of EU methodology:

1, 2

Uses to be considered non-safe on the basis of EU methodology:

None

Uses for which safety has been established only following additional risk mitigation at a national (non-core) level or for which the evaluation is to be confirmed by relevant cMS:

Particular precautions to reduce the environmental concentrations resulting from CHR/H/ETO 500 SC applications are required for:

- Non target plants

Appendix 1 ALL intended uses

GAP, date: 2020-07-27

PPP product name:		Formulation type:	SC [a, b]
product code:	CHR/H/ETO		
Active substance 1:	ethofumesate	Conc. of as 1:	500 g/l [c]
Active substance 2:	-	Conc. of as 2:	- [c]
Active substance 3:	-	Conc. of as 3:	-
Safener:	-	Conc. of safener:	- [c]
Synergist:	-	Conc. of synergist:	- [c]
Applicant:	Innvigo Sp. z o.o.	Professional use:	☒
Zone(s):	Central [d]	Non professional use:	☐

Verified by MS: ~~no~~yes

Field of use: herbicide

1	2	3	4	5	6	7	8	9	15	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn 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 [f]	ZRMs Conclusion
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	kg or L product / ha a) max. rate per appl. b) max. total rate per crop/season	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			

Zonal uses (field or outdoor uses, certain types of protected crops)														
1	PL,CZ	Sugar beet *Beta vulgaris* subsp. *vulgaris* var. *altissima* (BEAVA)	F	~~Dicotylenous~~ Dicotyledonous weeds	Spraying, medium sprayer LCTM	Spring BBCH ~~11~~12-18	a) 2 b) 2	5	a) 1.0 l/ha b) 2.0 l/ha	a) 0.5 kg a.s./ha b) 1.0 kg a.s./ha	200 - 300		PHI covered by the vegetation period, max. 1 kg a.s./ha every three years	A
2	PL, CZ	Sugar beet *Beta vulgaris* subsp. *vulgaris* var. *altissima* (BEAVA)	F	Dicotyledonous weeds	Spraying, medium sprayer LCTM	Spring BBCH 12-18	a) 3 b) 3	5	a) 0,6 l/ha b) 1,8 l/ha	a) 0,3 kg a.s/ha b) 0,9 kg a.s/ha	200 - 300		PHI covered by the vegetation period, max. 1 kg a.s./ha every three years	A
Interzonal uses (use as seed treatment, in greenhouses (or other closed places of plant production), as post-harvest treatment or for treatment of empty storage rooms)														
~~2~~	~~PL, CZ~~	~~Sugar beet *Beta vulgaris* subsp. *vulgaris* var. *altissima* (BEAVA)~~		~~Dicotylenous weeds~~	~~Spray, medium sprayer~~	~~Spring BBCH 11-18~~	~~a) 3 b) 3~~	~~5~~	~~a) 0,6 l/ha b) 1,8 l/ha~~	~~a) 0,3 kg a.s/ha b) 0,9 kg a.s/ha~~	~~200 - 300~~			
3														
Minor uses according to Article 51 (zonal uses)														
4														
5														
Minor uses according to Article 51 (interzonal uses)														
6														
7														

Remarks table heading:

(a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(b) Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008
(c) g/kg or g/l
(d) Select relevant
(e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
(f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use.

Remarks columns:

1 Numeration necessary to allow references
2 Use official codes/nomenclatures of EU Member States
3 For crops, the EU and Codex classifications (both) should be used; when relevant, the use situation should be described (e.g. fumigation of a structure)
4 F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application
5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.
6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated.
7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
8 The maximum number of application possible under practical conditions of use must be provided.
9 Minimum interval (in days) between applications of the same product
10 For specific uses other specifications might be possible, e.g.: g/m³ in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.
11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).
12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.
13 PHI - minimum pre-harvest interval
14 Remarks may include: Extent of use/economic importance/restrictions

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

The application every third was taken into consideration in PECgw assessment.