DRAFT REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: Mimic 240 SC

Product name(s): Mimic 240 SC

Chemical active substance:

Tebufenozide 240 g/L

Central Zone

Zonal Rapporteur Member State: Poland

NATIONAL ADDENDUM Poland

(extension of use)

Applicant: Nisso Chemical Europe GmbH

Submission date: 02/06/2022

MS Finalisation date: 26/03/2026

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Version history

When	What
02.06.2022	First version
March 2023	National assessment

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

This document summarises the information related to the efficacy of the plant protection product Mimic 240 SC. The formulation of this product is suspension concentrate (SC) and it comprises active substance tebufenozide (240 g/l). Mimic 240 SC is an insecticide used for the control of forest insects in forest. Tebufenozide is one of Insect Growth Regulators (IGRs) and controls only Lepidopteran pests.

This document summarises the information related to forest pests such as: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) controlled in forest.

MIMIC 240 SC was registered in Poland in 1997-2007 (authorization MRiGŻ no 221/97 of 27.10.1997).

Appendix 1 of this document contains the list of references included in this document for support of the evaluation.

Information on the detailed composition of Mimic 240 SC be found in the confidential dossier of this submission (Registration Report - Part C).

Description of the active substance and mode of action

The product Mimic 240 SC comprises active substance tebufenozide (240 g/L). Tebufenozide belongs to the Insect Growth Regulators (IGRs) group of insecticides. Tebufenozide controls only Lepidopteran pests. This active substance is safe for non-target organisms, including mammals, aquatic organisms and beneficial insects. The mode of action tebufenozide are ecdysone agonists moulting disruptors. Organism effect is accelerate insect moulting. Tebufenozide binds with the ecdysone receptor and mimics the insect molting hormone ecdysone. Feeding is stopped within 24 hours. A premature, lethal molt is initiated. Disruption of the normal molt cycle prevents larvae from studding old cuticle. First comes starvation, then dehydration and finally death.

Table 3-1: Details of the active substance(s) in Mimic 240 SC

Active substance	Tebufenozide
g/L	240
Chemical group	Diacylhydrazines (IRAC Group 18)
Mode of action	Ecdysone receptor agonists

Description of the plant protection product

The GAP table of intended uses for Mimic 240 SC is shown in table 6-1. The formulation of this product is a suspension concentrate (SC) and it comprises active substance tebufenozide (240 g/L). Mimic 240 SC is an insecticide used for the control of forest insects in forest. It works on the surface of the plant.

Abstract

This document summarises the information related to the efficacy of the plant protection product Mimic 240 SC. The formulation of this product is suspension concentrate (SC) and it comprises active

substance tebufenozide (240 g/l). Mimic 240 SC is an insecticide used for the control of forest insects in forest. Tebufenozide is one of Insect Growth Regulators (IGRs) and controls only Lepidopteran pests.

This document summarises the information related to forest pests such as: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) controlled in forest. Trials were conducted in different regions in Poland in North East EPPO Climatic Zone, where forest is grown naturally.

The efficacy trials were designed, conducted and reported according to the following EPPO guidelines PP 1/135(4) Phytotoxicity assessment, PP 1/152(4) Design and analysis of efficacy evaluation trials, PP 1/181(4) Conduct and reporting of efficacy evaluation trials including good experimental practice, PP 1/210(1) Defoliators of forest trees.

Tested insecticide was applied at the following rates and timing:

Crop	Rate of Mimic 240SC L/ha + adjuvant Ikar 95 EC	Timing of application	Nomber of application	Spray volume L/ha
Forest trees– Scots pine *Pinus sylvestris*	0,3; 0,4 and 0,5 + adjuvant Ikar 95 EC 1,0 L/ha	after the appearance of the pest	1	3,0-3,6

The following products were used as a standard products:

Crop	Reference standard	Country 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.			
Forest trees Scots pine *Pinus sylvestris*	Dimilin 480 SC	PL	MRiRW no R-5/2008 22.01.2008	Diflubenzuron	SC	480 g a.s/l	0,05 - 0,1 L/ha	0,1 L/ha	n.a.

On the basis of submitted trials it is possible to state that product Mimic 240 SC at the rates of 0,3; 0,4 and 0,5 l/ha in mixture with adjuvant Ikar 95 EC at the rate 1,0 L/ha, effectively controls the following insects: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) on Scots pine *Pinus sylvestris L*

Mimic 240 SC demonstrated excellent crop tolerance to forest trees in all trials. Therefore, concluded that Mimic 240 SC is safe usage at proposed rate and this support the label claim for the use in forest.
Undesirable effects are not expected on crop, quality and quantity of yield and part of plants used for propagating purposes, on succeeding crops, adjacent crops and non-target organisms.

Table 3.2- 1: Zonal rapporteur member state (zRMS) and concerned member states (cMS)

zRMS	Poland	PL
	Poland	PL

Comments of zRMS:	

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

Abstract

This document summarises the information related to the efficacy of the plant protection product Mimic 240 SC. The formulation of this product is suspension concentrate (SC) and it comprises active substance tebufenozide (240 g/l). Mimic 240 SC is an insecticide used for the control of forest insects in forest. Tebufenozide is one of Insect Growth Regulators (IGRs) and controls only Lepidopteran pests.

This document summarises the information related to forest pests such as: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) controlled in forest. Trials were conducted in different regions in Poland in North East EPPO Climatic Zone, where forest is grown naturally.

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On the basis of submitted trials it is possible to state that product Mimic 240 SC at the rates of 0,3; 0,4 and 0,5 l/ha in mixture with adjuvant Ikar 95 EC at the rate 1,0 L/ha, effectively controls the following insects: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) on Scots pine *Pinus sylvestris L.*

Mimic 240 SC demonstrated excellent crop tolerance to forest trees in all trials. Therefore, concluded that Mimic 240 SC is safe usage at proposed rate and this support the label claim for the use in forest.
Undesirable effects are not expected on crop, quality and quantity of yield and part of plants used for propagating purposes, on succeeding crops, adjacent crops and non-target organisms.

Comments of zRMS:	

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)	g 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	Forest trees Scots pine *Pinus sylvestris*		*Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.)	Aerial treatment Agricultural aircraft	the appearance of the pest	a) 1 b) 1	Not applicable	a) 0,4	a) 96 b) 96	2,6 – 3,2	n.a.		A

* 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 summarises the information related to the efficacy of the plant protection product Mimic 240 SC. The formulation of this product is suspension concentrate (SC) and it comprises active substance tebufenozide (240 g/l). Mimic 240 SC is an insecticide used for the control of forest insects in forest. Tebufenozide is one of Insect Growth Regulators (IGRs) and controls only Lepidopteran pests.

This document summarises the information related to forest pests such as: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.) controlled in forest.

Description of the active substance and mode of action

The product Mimic 240 SC comprises active substance tebufenozide (240 g/L). Tebufenozide belongs to the Insect Growth Regulators (IGRs) group of insecticides. Tebufenozide controls only Lepidopteran pests. This active substance is safe for non-target organisms, including mammals, aquatic organisms and beneficial insects. The mode of action tebufenozide are ecdysone agonists moulting disruptors. Organism effect is accelerate insect moulting. Tebufenozide binds with the ecdysone receptor and mimics the insect molting hormone ecdysone. Feeding is stopped within 24 hours. A premature, lethal molt is initiated. Disruption of the normal molt cycle prevents larvae from studding old cuticle. First comes starvation, then dehydration and finally death.

Description of the plant protection product

The GAP table of intended uses for Mimic 240 SC is shown in table 6-1. The formulation of this product is a suspension concentrate (SC) and it comprises active substance tebufenozide (240 g/L). Mimic 240 SC is an insecticide used for the control of forest insects in forest. It works on the surface of the plant.

Table 6.0-1: Presentation of trials (efficacy trials)

Crop	Number of trials	Timing	Season			Kind of trials	Country	North East EPPO Climatic Zone
			2015	2016	2019		Poland	
Scots pine *Pinus sylvestris*	4	Growing season	2	1	1	Efficacy	4	4
Total	**4**						**4**	**4**

Table 6.0-2: Presentation of reference standards used in trials (efficacy trials)

Crop(s)	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate(3)	Application rate in trials (per treatment)	Remark(4)
					Type(2)	Concentration of a.s.			
Forest trees Scots pine *Pinus sylvestris*	Dimilin 480 SC	PL	MRiRW no R-5/2008 22.01.2008	Diflubenzuron	SC	480 g a.s/l	0,05 - 0,1 L/ha	0,1 L/ha	n.a.

(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.).

3.2.1 Preliminary tests (KCP 6.1)

Materials and methods

In 1997 experiment was conducted in the Forest Research Institute, on the insecticidal activity of the Mimic 240 LV and Mimic 240 SC against the pine moth *Dendrolimus pini* L., the pine looper moth *Bupalus piniarius* L. Both insect species belong to the group of defoliating insects occurring in cyclical outbreaks in Poland.

Site

In 1997 the studies were conducted in the Scots pine stand (age 60 years) located in the Garwolin Forest District (Regional Directorate of State Forests in Warsaw), where mass appearance of the pine moth was recorded. The abundance of the pest was estimated on the 15th April and it was found about 120 larvae per tree (the average number of individuals found under the 105 sticky barrier band). The population of the *Dendrolimus pini* consisted of the L3 and L4 instars larvae.
The pine looper moth control study area was situated in the Tychowo Forest District (Regional Directorate of State Forests in Szczecinek). The experimental plot of 45 hectares was located in 50 years old Scots pine stand where the average number of the pine looper moth larvae before treatment was 1800 individuals per 1 tree (the data from 10th August). The population of the *Bupalus piniarius* consisted of L2 and L3 instars larvae.

Applications rates

Dendrolimus pini
The sprays were carried out on the 30th April with the use of the aircraft AN-2 equipped with the atomizers AU 5000. The treatments consisted of following variants: Mimic 240 LV at a dose of 0,4 l + 0,8 l Ikar 95 EC + 1,8 l water/ha, over an area of 117 ha, Mimic 240 LV at a dose of 0,4 l + 2,6 l water/ha, over an area of 258 ha and Dimilin 480 SC (as a standard) at a dose of 0,2 l + 0,8 l Ikar 95 EC + 1 l water/ha, over an area of 117 ha.

Bupalus piniarius
The treatment was performed on the 18th August with the use of helicopter equipped with the electric-driven atomisers. Mimic 240 LV was used at a dose of 0,4 l + 2,6 l water/ha.

Experimental methods

In 1997, the boundaries of the experimental plots were marked with flags. Before the treatment, the linen cloths 1sq. m in size were placed beneath 4 randomly selected check trees at each experimental plot. The dead larvae dropped after treatment were counted every 3-5 days for the period of 4 weeks. The check trees were felled on the sheets and the pest mortality was assessed.

Results

In table 1and 2 the mortality of the pine moth and the pine looper moth larvae in the control treatments is given. Mimic 240 LV caused 98,4- 98,9% mortality of the pine moth and 94,9% mortality of the pine looper moth larvae. The mortality of the pine moth treated with Dimilin 480 SC was similar and reached 97,8%.

Tab. 1. Mortality of the pine moth treated with Mimic 240 LV

Product	Number of tree	Total number of fallen dead larvae	Number of larvae in a crown		Mortality %
			dead	live	
Mimic 240 LV + water	1	30	38	1	
	2	-	4	1	
	3	-	-	1	98,4
	4	48	48	-	
Mimic 240 LV + Ikar 95 EC + water	5	72	2	1	
	6	60	1	-	98,9
	7	30	2	1	
	8	18	-	-	
Dimilin 480 SC + Ikar 95 EC + water	9	180	10	9	
	10	168	5	4	97,8
	11	204	6	2	
	12	114	-	-	

Tab. 2. Mortality of the pine looper moth treated with Mimic 240 LV

Product	Number of tree	Total number of fallen dead larvae	Number of larvae in a crown		Mortality %
			dead	live	
Mimic 240 LV + water	1	72	-	24	
	2	168	-	22	
	3	108	-	1	94,9
	4	432	-	2	

The obtained results prove that Mimic 240 LV applied at the dose 0,4 l/ha to the stands with an aircraft, as well as helicopter caused a high (94,9-98,9%) mortality of the pine moth and the pine looper moth larvae. These results are 7 comparable to the mortality (97,8%) of the pine moth treated with Dimilin 480 SC.

Comments:	The applicant claims that the active substance tebufenozide contained in Mimic 240 SC have been authorized for use in different European countries for several decades as insecticide used for the control of forest insects in forest as such the insecticide activity of tebufenozide is well known. The presented results demonstrated that tebufenozide was active on Lepidopteran larvae.

3.2.2 Minimum effective dose tests (KCP 6.2)

Mimic 240 SC has been registered since 1997 and has been widely used for many years in the practice of forest protection against pests, therefore there is no additional data on the minimum effective dose.

Comments:	No specific MED trials were provided. Presented data in section 3.2.2 *"Efficacy tests"* suggest that rate of 0,4/ha Mimic 240 SC in mixture with adjuvant Ikar 95 EC at the rate 1,0 L/ha is necessary to control of *Dendrolimus pini, Bupalus piniarius and Lymantria monacha*. The effectiveness of the dose rate of 0,4 l/ha will be discussed in detail under section 3.2.3.

3.2.3 Efficacy tests (KCP 6.2)

Materials and methods

This document summarises the results with 4 reports (tab. 6.2-1). The trials were carried out in seasons 2015 (2 trials), 2016 (1 trial) and 2019 (1 trial) in forest trees against following insects: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) and *Bupalus piniarius* (L.)

In 2015 and 2016, the insecticide Mimic was tested in the LV formulation. Mimic 240 LV contains exactly the same amount of active substance tebufenozide (240 g/L) as Mimic 240 SC. In 2019, studies were conducted to compare the effectiveness of the insecticides Mimic 240 LV and Mimic 240 SC at the rate 0,4 L/ha. (List of these reports is contained in Appendix 1).

Site

Trials were conducted in different regions in Poland in North East EPPO Climatic Zone, where forest is grown naturally (table 6.2-2). Trials were carried out in different regions of the country. According to the above, the insecticide was tested under different soil - climatic, environmental and agronomic conditions characteristics of forest trees.

Table 6.2-2. Number of trials carried out in forest

Crop	Number of trials	Timing	Season			Kind of trials	Country	North East EPPO Climatic Zone
			2015	2016	2019		Poland	
Scots pine *Pinus sylvestris*	4	Growing season	2	1	1	Efficacy	4	4
Total	**4**						**4**	**4**

Testing units

The field experiments of the insecticide Mimic 240 SC were carried out by Forest Research Institute; Department of Forest Protection; Laboratory of Biological and Chemical Methods; Braci Leśnej 3, Sękocin Stary; 05-090 Raszyn, Poland.

The testing unit have been 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 (Good Experimental Practice) recognised.

Experimental methods

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

- PP 1/135(4) Phytotoxicity assessment;
- PP 1/152(4) Design and analysis of efficacy evaluation trials;
- PP 1/181(4) Conduct and reporting of efficacy evaluation trials including good experimental practice.

They were carried out in the field in the conditions of natural insects infestation. The efficacy trials were conducted according to the EPPO standard PP 1/210(1) Defoliators of forest trees.

Assessment methods

The evaluation of insecticide effectiveness was carried out according to EPPO guidelines. The study was carried out in Scots pine stand *Pinus sylvestris* infested with forest insects. Evaluation of pest

numbers was carried out in April 2015. The numbers of larvae observed under glue rings on several random trees. There were 100 m wide buffer zones between the experimental areas.

Aerial treatments of stands were carried out with the use of AN-2R aircraft equipped with atomizers Micronair AU 5000. Right before spraying 6 representative (model) trees were selected within each experimental area and $1m^2$ canvas sheets were placed under their crowns in order to collect and count dropping down larvae. After 5 weeks these trees were cut down and fallen onto 4x5 m sheets. Alive and dead larvae found in crowns were counted on these sheets and mortality of pine lappet was calculated.

After observations the average radius (r) of each representative tree crown was estimated and crown projection (m^2) was calculated using the formula Πr2. The numbers of alive and dead pine lappet larvae in tree crowns were estimated when the representative trees were cut down onto 4x5m canvas sheets. The total number of larvae per representative tree crown was calculated by summing up the values obtained from multiplication of crown projection estimates by the numbers of dead larvae dropped down onto respective $1m^2$ sheets and the numbers of dead and alive larvae collected after cutting the representative trees down.

Percent mortality of pine lappet larvae was estimated based on the results obtained for the representative trees in 3 variants of the experiment (tested, standard and untreated areas).

On the basis of these results, the percent of effectiveness of insecticides was calculated according to Abbott's formula.

$$\text{Efficacy \%} = \left(1 - \frac{\text{n in T after treatment}}{\text{n in Co after treatment}}\right) * 100$$

where: n – proportion of plants infested with pathogen; T – treated field , Co- Control field

Applications rates

In 2015 and 2016, the insecticide Mimic was tested in the LV formulation. Mimic 240 LV contains exactly the same amount of active substance tebufenozide (240 g/L) as Mimic 240 SC. In 2019, studies were conducted to compare the effectiveness of the insecticides Mimic 240 LV and Mimic 240 SC at the rate 0,4 L/ha.

Tested insecticide was applied at the following rates and timing:

Crop	Rate of Mimic 240SC (LV) L/ha + adjuvant Ikar 95 EC	Timing of application	Nomber of application	Spray volume L/ha
Forest trees– Scots pine *Pinus sylvestris*	0,3 or 0,4 + adjuvant Ikar 95 EC 1,0 L/ha	after the appearance of the pest	1	3,0-3,4

The following products were used as a standard products:

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.			
Forest trees Scots pine *Pinus sylvestris*	Dimilin 480 SC	PL	MRiRW no R-5/2008 22.01.2008	Diflubenzuron	SC	480 g a.s/l	0,05 - 0,1 L/ha	0,1 L/ha	n.a.

6.2.1 The efficacy of Mimic 240 SC in control of *Dendrolimus pini* (L.) on *Pinus sylvestris*

This document summarises the results with 4 reports (tab. 6.2-1). The trials were carried out in seasons 2015 (2 trials), 2016 (1 trial) and 2019 (1 trial) in forest trees against following insects: *Dendrolimus pini* (L.), *Lymantria monacha* (L.) (see table 6.2.1.1 below).

Table 6.2.1-1. List of supporting trials conducted in Poland in forest trees.

Crop	Pest	Trial Code	Year	Remarks
Pinus sylvestris Scots pine Sosna zwyczajan	*Dendrolimus pini (L.)* Pine lapped Barczatka sosnówka	INS/2015/01	2015	
		INS/2016/01	2016	
	Brudnica mniszka Nun moth Brudnica mniszka	INS/2015/02	2015	
		INS/2019/01, INS/2019/02	2019	

6.2.1-1 The efficacy of Mimic 240 SC/LV against *Dendrolimus pini L.* on Scots pine

The efficiency of Mimic 240 SC/LV against *Dendrolimus pini L.* was investigated in 2 trials. The tested product was applied at the rate of 0,4 and 0,5 L per ha. Efficacy was assessed for a month, dead larvae were counted every 2-3 days. The number of larvae before application fluctuated from 21 to 160 larvae per glue rings. The results showed high level of efficacy in these trials, irrespective of used dose. After product used at the lowest rate (0,4 L/ha) effectiveness amounted 90,4%. Mimic 240 SC/LV at the rate of 0,5 L/ha controlled *Dendrolimus pini L.* at the very high level of efficacy – 97,2%. The efficacy of the tested insecticide was comparable to Dimilin 480 SC (table 6.2.1-4).

Table 6.2.1-4. Efficacy of insecticid Mimic 240 SC/LV in protection of Scots pine against *Dendrolimus pini L*.

Treatment	**rate [l,kg/ha]**	**% of efficacy was calculated by Abbott formula**			
		Test report			
				INS/2016/1	
Date of assessment	**-**	**Number of dead larvae**	**% of efficacy**	**Number of dead larvae**	**% of efficacy**
Untreated*	**-**	3	-	2	-
Mimic 240 LV + Ikar 95 EC	**0,4 + 1,0**	**227**	**90,4**		
Mimic 240 LV + Ikar 95 EC	**0,5 + 1,0**			**660**	**97,2**
Dimili 480 SC	0,1	171	96,5	484	98,1

6.2.1-2. The efficacy of Mimic 240 SC/LV against *Lymantria monacha L.* on Scots pine

The efficiency of Mimic 240 SC/LV against *Lymantria monacha L.* was investigated in 2 trials. The tested product was applied at the rate of 0,3 and 0,4 L per ha. Efficacy was assessed for a month, dead larvae were counted every 2-3 days. The number of larvae before application fluctuated from 73 to 415 larvae per glue rings. The results showed high level of efficacy in these trials, irrespective of used dose. After product used at the lowest rate (0,3 L/ha) effectiveness amounted 98,69%. Mimic 240 LV at the rate of 0,4 L/ha controlled *Lymantria monacha L.* at the very high level of efficacy – 91,6% and Mimic 240 SC at the rate 0,4 L/ha in 80,2%. The efficacy of the tested insecticide was comparable to Dimilin 480 SC (table 6.2.1-5).

Table 6.2.1-5. Efficacy of insecticid Mimic 240 SC/LV in protection of Scots pine against *Lymantria monacha L.*

Treatment	**rate [l,kg/ha]**	**% of efficacy was calculated by Abbott formula**			
		Test report			
		INS/2015/2		**INS/2016/1**	
Date of assessment	**-**	**Number of dead larvae**	**% of efficacy**	**Number of dead larvae**	**% of efficacy**
Untreated*	-	23	-	21	-
Mimic 240 LV + Ikar 95 EC	**0,3 + 1,0**	**1026**	**98,69**	**-**	**-**
Mimic 240 LV + Ikar 95 EC	**0,4 + 1,0**			**1566**	**91,6**
Mimic 240 SC + Ikar 95 EC	**0,4 + 1,0**			**4322**	**80,2**
Dimili 480 SC	0,1	1510	98,47	1822	91,4

The tested product Mimic 240 LV at the rate 0,4 L/ha controlled *Lymantria monacha L.* in 91,6% during 21 days after application. This efficacy was comparable to reference product Dimilin 480 SC – 91,4%. Mimic 240 SC at the rate 0,4 L/ha controlled *Lymantria monacha L.*in 80,2%. The slightly lower effectiveness was due to the high intensity of the pest in the stands protected with this insecticide. In the protected plots of Mimic 240 SC, three times more pests were found than in other plots (over 1000 pests per tree).

Summary and conclusion

Mimic 240 SC comprises active substance tebufenozide (240 g/l) and the formulation of this product is suspension concentrate (SC). Mimic 240 SC is an insecticide used for the control of forest insects in forest. Tebufenozide is one of Insect Growth Regulators (IGRs) and controls only Lepidopteran pests.

The formulated product, Mimic 240 SC, is to be applied as aerial treatment with aircraft equipped on forest trees against forest insects at larval stage at a rates of 0,3; 0,4 and 0,5 L of product per hectare.

On the basis of submitted trials it is possible to state that product Mimic 240 SC at the rates of 0,3; 0,4 and 0,5 l/ha in mixture with adjuvant Ikar 95 EC at the rate 1,0 L/ha, effectively controls the following insects: *Dendrolimus pini* (L), *Lymantria monacha* (L) and *Bupalus piniarius* (L.) on Scots pine *Pinus sylvestris L.*

Mimic 240 SC demonstrated excellent crop tolerance to forest trees in all trials. Therefore, concluded that Mimic 240 SC is safe usage at proposed rate and this support the label claim for the use in forest.

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

Resistance is an issue in common with other diacylhydrazines. IRAC management guidelines will be applied; this should mean that there is no increase in resistance caused by the use of Mimic 240 SC.

Comments:	The presented data correspond with the requirements of the EPPO Standards PP 1/135(4), PP 1/152(4), PP 1/181(4), and PP 1/210(1). MIMIC was tested in the LV (Liquid vaporisers) formulation in some trials. Mimic 240 LV contains the same amount of active substance tebufenozide (240 g/L) as Mimic 240 SC. In this specific case, presented tests exceptionally are considered acceptable. For the evaluation of the efficacy against larval stage of *Dendrolimus pini,and Lymantria monacha* four trials from Poland belonging to north-east EPPO zone were presented by the applicant in the years 2015, 2016 and 2019. The applicant showed in these trials a good efficacy for a decrease of the population of *Lymantria monacha* (80,2%) and *Dendrolimus pini* (90,4%) in *Pinus sylvestris*. It should be highlighted, that before the application of MIMIC 240 SC, three times more caterpillars were observed than in stands sprayed with Dimilin and MIMIC 240 LV. No "new" data have been generated using Mimic 240 SC against *Bupalus piniarius*. These data can be extrapolated from *Dendrolimus pini and Lymantria monacha*, as the pests are closely related, and the crop structure and the dose applied 0,4 l/ha is identical. According to our national regulations, "forested areas" is considered a minor crop, therefore, it can be concluded to accept the data provided by the applicant to demonstrate the effectiveness against these primary insect pests in *Pinus sylvestris*. Based on efficacy results from four aerial treatments with Mimic 240 SC applied for control larvae of *Dendrolimus pini, Bupalus piniarius and Lymantria monacha* on Scots pine *Pinus sylvestris* the intended application rate of 0,4 in mixture with adjuvant Ikar 95 EC at the rate 1,0 L/ha can be justified for registration.

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

Information on the occurrence or possible occurrence of the development of resistance, refer to the document Biological Assessment Dossier Core Assessment.

Comments:	Based on the IRAC assessment the risk of resistance for tebufenozide as low to medium. Therefore, the risk of resistance development against Mimic 240 SC is considered to be low to medium if the product is used in adherence with the management strategy and label recommendations.

3.4 Adverse effects on treated crops (KCP 6.4)

Information on adverse effect on treated crops refer to the document Biological Assessment Dossier Core Assessment.

3.4.1 Phytotoxicity to host crop (KCP 6.4.1)

No significant phytotoxicity of any kind was observed following treatment of crops with Mimic 240 SC/LV. Overall, across 4 efficacy trials carried out in forest trees in Poland, no symptoms of phytotoxicity or any other adverse effects on crop growth and development were observed at any of the assessment timings following once application of Mimic 240 SC/LV at the proposed label rate of 0,4 L product/ha.

Overall, it is therefore concluded that there is no risk to forest trees following treatment with the test product, Mimic 240 SC.

Comments:	No phytotoxicity was observed in any efficacy trials. EPPO standard PP1/135(4) phytotoxicity assessment table 1 shows no specific selectivity trials are required. The case presented by the applicant is acceptable and no further data are required.

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

Not applicable.

Comments:	No yield data has been supplied by the applicant. EPPO standard PP1/135(4) phytotoxicity assessment table 1 shows no specific selectivity trials for yield. The case presented by the applicant is acceptable and no further data are required.

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

Not applicable.

Comments:	No quality data has been supplied by the applicant. EPPO standard PP1/135(4) phytotoxicity assessment table 1 shows no specific selectivity trials for yield. The case presented by the applicant is acceptable and no further data are required.

3.4.4 Effects on transformation processes (KCP 6.4.4)

Not applicable.

Comments:	No phytotoxicity was observed in any of the trials. The case presented by the applicant is acceptable and no further data are required.

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

Not applicable.

Comments:	No phytotoxicity was observed in any of the trials. The case presented by the

	applicant is acceptable and no further data are required.

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

3.5.1 Impact on succeeding crops (KCP 6.5.1)

Not applicable.

Comments:	No phytotoxicity was observed in any of the trials. The case presented by the applicant is acceptable and no further data are required.

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

Not applicable.

Comments:	No phytotoxicity was observed in any of the trials. The case presented by the applicant is acceptable and no further data are required.

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

An adverse impact on beneficial organisms was not observed in the course of efficacy experiments. Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in Part B, Section 9 (Ecotoxicology).

Comments:	Specific attention should be paid on non-target Lepidoptera species. For more information please refer to the ecotoxical evaluation of the product on non-target arthropods.

Summary and conclusion

Undesirable effects are not expected on succeeding crops, adjacent crops and non-target organisms.

3.6 Other/special studies

Not applicable.

3.7 List of test facilities including the corresponding certificates

Table 3.7-1: List of test facilities

Test facility	Address	Certificate (Yes or No)
Forest Research Institute Department of Forest Protection Laboratory of Biological and Chemical Methods	Braci Leśnej 3, Sękocin Stary 05-090 Raszyn, Poland	No 19/2005

Appendix 1 Lists of data considered in support of the evaluation

Annex point	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Data protection claimed Y/N	Owner
6.1	Głowacka B. Skrzecz I.	1997	Insecticidal activity of Mimic 240 LV used against the pine moth *Dendrolimus Pini L*. and the pine looper moth *Bupalis piniarius L.* Forest Research Institute Department of Forest Protection GEP – no unpublished	Y	Sumi Agro Poland Sp. z o.o.
6.2	Głowacka B.	2015	Efficacy estimation of Mimic 240 LV in the protection of scots pine *Pine sylvestris L.* stands against pine lappet *Dendrolimus pini L.* Trial Code: **INS/2015/01** Forest Research Institute Department of Forest Protection GEP – yes unpublished	Y	Sumi Agro Poland Sp. z o.o.
6.2	Głowacka B.	2015	Efficacy estimation of Mimic 240 LV in the protection of scots pine *Pine sylvestris L.* stands against nun moth *Lymantria monachal L.* Trial Code: **INS/2015/02** Forest Research Institute Department of Forest Protection GEP – yes unpublished	Y	Sumi Agro Poland Sp. z o.o.
6.2	Głowacka B.	2016	Efficacy estimation of Mimic	Y	Sumi Agro

			240 LV in the protection of scots pine *Pine sylvestris L.* stands against pine lappet *Dendrolimus pini L.* in Nowa Sol forest district Trial Code: **INS/2016/01** Forest Research Institute Department of Forest Protection GEP – yes unpublished		Poland Sp. z o.o.
6.2	Skrzecz I.	2019	Efficacy estimation of insecticide Tebufenozide 240 Sc and Tebufenozide 240 LV in the protection of scots pine *Pine sylvestris L.* stands against nun moth *Lymantria monacha* Trial Code: **INS/2019/01 and INS/2019/02** Forest Research Institute Department of Forest Protection GEP – yes unpublished	Y	Sumi Agro Poland Sp. z o.o.