Appendix to:
EFSA (European Food Safety Authority), 2021. Conclusion on the peer review of the pesticide risk assessment of the active substance *Spodoptera exigua* multicapsid nucleopolyhedrovirus (SeMNPV). EFSA Journal 2021;19(7):6848, 13 pp. doi:10.2903/j.efsa.2021.6848
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**Appendix A - List of end points for the active substance and the representative formulation**

**Identity, Biological properties, Details of uses, further information, and Proposed Classification and Labelling**

| Active microorganism | *Spodoptera exigua* multicapsid nucleopolyhedrovirus (SeMNPV) isolate BV-0004 |
|----------------------|--------------------------------------------------------------------------------|
| Function             | Control of *Spodoptera exigua*, insecticide                                    |

| Rapporteur Member State | Spain                              |
|-----------------------|------------------------------------|
| Co-rapporteur Member State |                                    |

**Identity of the Microbial Pest control Agent / Active substance (Regulation (EU) No 283/2013, Annex Part B, point 1)**

| Name of the organism | *Spodoptera exigua* multiple nucleopolyhedrovirus or multicapsid nucleopolyhedrovirus (SeMNPV). In the literature, and historical dossiers the term *Spodoptera exigua* nucleopolyhedrovirus (SeNPV) is also used and refers to the same species. |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Taxonomy            | Domain: Virus Order: Unassigned Family: Baculoviridae Genus: Alfabaculovirus Species: *Spodoptera exigua* multiple nucleopolyhedrovirus Isolate: reference number: BV-0004 |
| Species, subspecies, strain | *Spodoptera exigua* multicapsid nucleopolyhedrovirus (SeMNPV), isolate BV-0004 |
| Identification detection | Genotypic identification: Restriction fragment analysis. Isolate specific method submitted is not fully acceptable. Phenotypic identification: Biotest |
| Culture collection | *Spodoptera exigua* multicapsid nucleopolyhedrovirus (SeMNPV) pool of isolates BV-0004 is deposited in the German Collection of Micro-organisms and Cell Cultures Leibniz-Institute (DSMZ) GmbH, with reference number: - BV-0004 (SeMNPV) |
| Minimum and maximum concentration of the MPCA used for manufacture of the formulated product | The content of pure virus SeMNPV in the TGAI, produced as an isolated technical material, is set up to be at least $2.0 \times 10^{11}$ OB/g and max $2.20 \times 10^{11}$ OB/g. |
SPEXIT end use product contains a min of 3.0x 10^{12} OB/L of SeMNPV up to a maximum of 7.5x 10^{13} OB/L.

Identity and content of relevant impurities, additives, contaminating organisms in the technical grade of MPCA:

- BVs are rod-shaped and enveloped and contain a circular double-stranded DNA genome
- Confidential information, please refer to Volume 4.
- The composition of the artificial diet has been submitted. The specific content of faeces, larval tissue and artificial diet varies and is considered irrelevant. Importantly, microbial contaminations, which are relevant for human safety, are measured as an integral part of the quality control.
  - No metabolites are produced by SeMNPV
  - Contaminating microorganisms are determined by ISO standard methods.

Is the MCPA genetically modified; if so provide type of modification

Spodoptera exigua multicapsid nucleopolyhedrovirus (SeMNPV), isolate pool BV-0004 is natural wild type microorganisms.

### Biological properties of the microorganism (Regulation (EU) No 283/2013, Annex Part B, point 2)

#### Origin and natural occurrence

Spodoptera exigua multicapsid nucleopolyhedrovirus (SeMNPV), isolate pool BV-0004 has been isolated from S. exigua larvae in a green pepper field in Huaian China in 2000.

The isolate was characterised and its biological properties further studied.

#### Background level

Background levels are not known, but the virus replicates in Spodoptera exigua lepidoptera insects and can survive in the environment (soil, air or water). Duration of viability varies depending on presence of the host.

#### Target organism(s)

Restricted to Spodoptera exigua (armyworm) insects belongs to the lepidopteran family.

There are no specific studies with the isolate SeMNPV-BV0004 on the effect in non-target related arthropods (S. litura, Agrotis ipsilon, A. segetum, Bombyx mori, Hyphantria cunea, or Stilpnotia salicis).

There is no scientific evidence to confirm SeMNPV-BV-0004 only infects the larvae of S. exigua.

It has been confirmed that the host specificity of SeMNPV-BV-0004 is quite high.

#### Mode of action

Following ingestion the virus multiplies inside the insect’s body leading to death.

#### Host specificity

Restricted to arthropod belongs to the lepidopteran family.

#### Life cycle

The virus is ingested by the feeding larva and the protective virus protein matrix is dissolved in the insect's midgut, releasing the virus particles still enclosed in their protein coats. These pass through the peritrophic membrane and invade midgut cells by fusion with the microvilli. The virus particles invade the cell nuclei where they are uncoated and replicated. Initial replication produces non-occluded virus particles to hasten the invasion of the host insect. Later the virus particles are produced with protein matrices and remain infective when released from the dead insects.

#### Infectivity, dispersal and colonization ability

Not related to any plant or human pathogen, all baculoviruses are specific for arthropods.

SeMNPV is not able to infect any organism except few species of the genus Spodoptera. Multiplication only occurs in the species S. exigua.

SeMNPV is highly specific to S. exigua larvae in lepidopteran family. SeMNPV might survive or replicate also other genera arthropod from same family without causing adverse effects. Data unknown.

Infectivity: The presence or absence of specific virulence factors are not indicated.

It is clearly established baculovirus can NOT cause food poisoning in humans or
animals. SeMNPV is not able to infect any organism except few species of the genus Spodoptera. Multiplication only occurs in the species *S. exigua*.

**Dispersal:** SeMNPV OB are suggested to be rather immobile after their introduction into the environment. It is unclear whether or not the OB and virions can multiply in the target organism, and hence be a potential source of dispersal. No information concerning optimum environmental conditions for SeMNPV, e.g. temperature range at which the microorganism grows, pH, nutrient requirements etc. OB of SeMNPV are significantly more resistant to UV-B than OB of other baculovirus.

**Colonisation ability:** Information on colonisation ability is scarce. According to two studies (presented in Vol 3, B.8), SeMNPV is not found in-out of the target organisms for extended periods of time. The specific mechanism of virus transmission in SeMNPV isolate BV-0004 is unknown.

| Pathogenicity: | There are indications that OB proliferation into the haemocoel of the target organisms may result in septicaemia, contributing to mortality of the insect larvae. |
|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| Genetic stability | Stability during the production process, the stored period and under application conditions is not reported. There is no information whether or not genetic transfer may occur in soil, however this cannot be excluded under favourable environmental conditions, since is a virus. |
| Information on the production of relevant metabolites (especially toxins) | Viruses do not produce metabolites, as they do not have metabolism of their own. The SeMNPV complete viral genome sequence of other isolate is known and the encoded typical proteins are well understood. None of these proteins shows any homology to known human or animal toxins. It can therefore be stated with certainty that SeMNPV does not produce toxins, not even after infecting the insect host cell. SeMNPV does not have the potential to form toxins or metabolites of human health or environmental concern after release into the environment. |
| Resistance/sensitivity to antibiotics/ antimicrobial agents used in human or veterinary medicine | Not relevant for baculovirus. Viruses are not metabolically active and cannot produce antimicrobial substances; they are not sensitive to antibiotics and therefore cannot become resistant to these substances or spread resistance. |

**Classification and proposed labelling (Symbol, Indication of danger, Risk phrases, Safety phrases)**

| with regard to physical/chemical data: | Not relevant |
|--------------------------------------|-------------|
| with regard to toxicological data:    | Based on a precautionary approach, the product has to be labelled with the phrase: “Contains *Spodoptera exigua* multicapsid nucleopolyhedrovirus. Microorganisms may have the potential to provoke sensitizing reactions.” |
| with regard to fate and behavior:     | Not relevant |
| with regard to ecotoxicological data: | Not relevant |
Appendix II.2: Chapter 2 (Methods of analysis) (Regulation (EU) N° 283/2013, Annex Part B, point 4 and Regulation (EU) N° 284/2013, Annex Part B, point 5)

Analytical methods for the microorganism (MA 4.1 & MP 5.1)

| Manufactured microorganism (principle of method) | The content of SeMNPV TCA is determined in a biotest. There are several scientifically validated methods to identify and quantify baculoviruses such as: Nucleotide sequencing Molecular hybridization RT-qPCR Bioassay The method to identify and fully discriminate SeMNPV at isolate level needs to be verified by testing variants of SeMNPV as well as other viruses, viroid, bacterium, fungi and oomycetes. |
| Impurities and contaminating microorganism in manufactured material (principle of method) | - Mutants or genetic modifications are verified by REA analysis of viral DNA. Spontaneous changes would be reflected in changes of infectivity, thus modifications are verified by bioassay test. - Microbial contaminants and pathogens: ISO guidelines methods ISO 4833, ISO 7932, ISO 6888-2, ISO 16649-2, ISO 6579 - The virus does not produce metabolites. - Rest of insect and insect feed materials are not evaluated. - Other microorganism contaminates (viruses, viroids, bacteria and fungi) need to be determine by molecular hybridization or PCR test. |
| Microbial pest control product (principle of method) | Scientifically validated and published methods are used, such as: RT-qPCR Molecular hybridization Bioassay The method to identify and fully discriminate SeMNPV isolate level need to be verified by testing variants of SeMNPV as well as other viruses, viroid, bacterium, fungi and oomycetes. |

Analytical methods for residues (viable and non-viable) in exposed compartments and organisms (MA 4.2 & MP 5.2)

| Of the active microorganism (principle of method) | Not necessary |
| Of relevant impurities (principle of method) | Not necessary (no metabolites) Rest of insect and insect feed materials are not evaluated. |
Appendix II.3: Chapter 3 (Further information, Efficacy)

Effectiveness (Regulation (EU) N° 284/2013, Annex Part A, point 6.2)

Effectiveness

Biological insecticide for the control of the Lepidoptera S. exigua in horticulture crops products based on S. exigua multipolyhedrovirus.

Efficacy data provided by the applicant covers the use in greenhouse for pepper with 3 assays in greenhouse, documents MP3/10.3-01, MP3/10.3-02 and MP3/10.3-03.

Mode of action

For open field uses the applicant have included one assay in lettuce, document MP3/10.3-04.

SPEXIT is applied by foliar spraying: tractor drawn motor sprayers and knapsack sprayer.

Application of SeMNPV should be timed at hatching of larvae so that early-instar larvae come in contact with the virus. The early instar larval stages of the insect life cycle are the most susceptible to infection with SeMNPV.

SeMNPV is a baculovirus: SeMNPV is ingested by feeding larvae. OB dissolve in the alkaline midgut and after infection of the midgut epithelium, other tissues are invaded, e.g. fat body, epidermis, and tracheal matrix as well as the Malpighian tubules. Rapid virus multiplication within the host cells finally results in cell destruction and at the end leads to lysis of the whole organism.

The intended target insect is exclusively the beet armyworm Spodoptera exigua. S. exigua is a polyphagous pest feeding on over 200 different crops amongst which there are: sugar beet, cabbage, lettuce, soybeans, cotton, maize, tomato, potato, legumes, citrus, strawberry, melon, leek, garlic, onion, rice, flax, and tobacco.

Adverse effects on field crops (Regulation (EU) N° 284/2013, Annex Part A, point 6.4)

Adverse effects on field crops

No adverse effects on field crops have been observed.

SPEXIT risk of phytotoxicity is considered as negligible for lettuces and peppers at these doses, number of applications and interval between applications.

To date, no resistance development against baculoviruses have been found.

Because of the long existence of the disease-viruses relation, the probability of resistance appearance or development is considered as low. A resistance management strategy is not considered necessary.

Observations on other undesirable or unintended side-effects (Regulation (EU) N° 284/2013, Annex Part A, point 6.5)

Observations on other undesirable or unintended side effects

-Non target organisms: see Ecotoxicology Section.
### Appendix II.4: Impact on Human and Animal Health

(Regulation (EU) N° 283/2013, Annex Part B, point 5 and Regulation (EU) N° 284/2013, Annex Part B, point 7)

| Medical data: (including medical surveillance on manufacturing plant personnel) (MA 5.1.1) | SeMNPV does not affect any organism except moth larvae of the genus Spodoptera. No replication in mammalian cell lines takes place. No production of toxins. Toxic metabolites or degradation products do not occur. Medical surveillance reports from baculovirus (including SeMNPV) production sites confirm that no adverse effects on the health of manufacturing plant personnel were observed. |
|---|---|
| Sensitisation: (MA 5.2.1 & MP 7.2.3) | No indications of sensitisation by baculovirus agents/products were observed in manufacturing personnel or field operators, workers, bystanders, or consumers. Following Regulation (EC) 283/2013, all microorganisms should be considered potential sensitizers. |
| Acute oral infectivity, toxicity and pathogenicity: (MA 5.2.2.1 & MP 7.1.1) | LD₅₀ oral rat > 3 × 10⁹ PIB *Prodenia litura* NPV /kg bw LD₅₀ oral rat > 5 × 10⁹ PIB *Autographa californica* NPV /kg bw |
| Acute intratracheal/inhalation infectivity, toxicity and pathogenicity: (MA 5.2.2.2 & MP 7.1.2) | Available studies with limitations (doses tested lower than the limit test dose level, very short times of exposures (5-15 min)). Nevertheless, the OECD Consensus document on information used in the assessment of environmental applications involving baculovirus (ENV/JM/MONO (2002)1) reports that baculoviruses are naturally occurring pathogens of arthropods and their host range is exclusively restricted to arthropods; no member of this virus family is infective to plants or vertebrates. The family Baculoviridae is also included in the qualified presumption of safety (QPS) list since the baculoviruses are not considered pathogenic or virulent for humans (EFSA 2009 and 2021). Taking into account this information and the results of the literature search, no further data is required to address the acute inhalation infectivity toxicity and pathogenicity of SeMNPV. |
| Acute intravenous/intraperitoneal infectivity: (MA 5.2.2.3) | Intraperitoneal injection in mice: NOAEL > 1 x 10¹¹ granules/animal of CpGV > 5 x 10⁸ PIB/animal of *M. brassicae* > 1.5 x 10⁹ PIB/kg bw of *O. pseudotsugata* NPV |
| Genotoxicity: (MA 5.2.3, MA 5.2.4) | Baculoviruses, based on numerous cell culture studies, do not replicate in mammalian cell lines. All *in vitro* and *in vivo* studies with other baculoviruses resulted in negative reactions. Bacterial reverse mutation test was not carried out and can be waived based on the available weight of evidence (OECD Consensus Document, QPS status and literature review). |
| Information on short-term toxicity and pathogenicity: (MA 5.2.5) | All short-term toxicity results indicate that baculoviruses applied by oral, subcutaneous or inhalation administration over a period up to 180 days were not toxic to mammals (rats, mice, guinea pigs, dogs), e.g. LOAEL, mice: > 34 doses, each 1.5 x 10¹⁰ granules CpGV applied as nutrient baits in 3 days intervals for a period of 99 days. |
Dermal toxicity: (MP 7.1.3)  No dermal studies conducted. However, 10 succeeding intracutaneous injections of undiluted Hoe 08 3311 (equivalent to the product Granupom containing CpGV) did not produce systemic toxicity. This indicates that less severe dermal applications similarly are without systemic toxicity.  
Skin irritation of Granupom: not irritating  
Eye irritation of Granupom: not irritating

Specific toxicity, pathogenicity and infectivity: (MA 5.3)  Not carcinogenic (*H. zea* NPV and *L. dispar* NPV)  Not teratogenic (*H. zea* NPV)

Genotoxicity – *in vivo* studies in germ cells: (MA 5.5)  No indication of genotoxicity was obtained from *in vitro* studies (MA 5.2.3) and *in vivo* studies in somatic cells (MA 5.4). Therefore, studies in germ cells are not considered necessary.

### Reference values

| Parameter | Value |
|-----------|-------|
| AOEL:     | Not applicable |
| ADI:      | Not applicable |
| ARfD:     | Not applicable |

**Exposure (operator, worker, resident and bystander):** (MA 6.1 & MP 7.3, 8.0)  
ADL, ARfD and AOEL are not necessary due to the low toxicological concern related to baculoviruses, so the quantitative risk assessment has not been performed.
Appendix II.5: Chapter 4 (Residues)

Residues in or on treated products, food and feed (Annex IIM 6; IIIM 8)

| Viable residues | Non-viable residues |
|-----------------|--------------------|
| Not relevant because of no concern for dietary exposure. | Viruses do not produce metabolites, they can only modify host cell metabolism, as they self-replicate within host organisms. It is considered that no further information is required at EU level since a qualified presumption of safety has been found to be applicable to the family Baculoviridae such as SeMNPV (EFSA BIOHAZ Panel, 2009 and 2021). |
Appendix II.6: Chapter 5: Fate and behavior in the environment (Regulation (EU) N\º 283/2013, Annex Part B, point 7 and Regulation (EU) N\º 284/2013, Annex Part B, point 9)

### Persistence and multiplication (competitiveness) in soil, water and air

Baculoviruses are broken down by UV light, pH and bacteria in the environment. The initial PEC for SPEXIT is 5.57 mg/kg dry weight in soil, corresponding to $1.8 \times 10^7$ OB/kg dry weight soil; and 87.14 µg/L ($2.83 \times 10^5$ OB/L) in a water depth of 30 cm after max. Application of 3.6 L SPEXIT /ha (0.2 L/ha field dose rate, 18 applications, assuming no degradation between applications as a worst case). SeMNPV is not expected to persist in air.

### Mobility

High absorptiveness in the top organic soil layers and very little capacity to leach to lower layers.

### PEC soil

| Microorganism | Method of calculation | Application data |
|---------------|-----------------------|------------------|
|               |                       | Crop interception 0% |
|               |                       | Depth of soil layer: 5cm |
|               |                       | Soil bulk density: 1.5g/cm³ |
|               |                       | % plant interception: no crop interception |
|               |                       | Number of applications: 18 |
|               |                       | Interval (d): 3 |
|               |                       | Application rate(s): 1.675 kg cry protein/ha (based on a crystalline protein content of 13.6%) |
|               |                       | DT\(_{50}\): 1000 days (default) |

### Initial PEC\(_{\text{soil}}\) (mg/kg; CFU/kg)

| | Multiple application | Plateau | Accumulation |
|--------------------------|----------------------|---------|--------------|
| Initial PEC\(_{\text{soil}}\) | Initial PEC\(_{\text{soil}}\)=Initial PEC\(_{\text{soil}}\) | 5.57 mg/kg soil | $3.6 \times 10^8$ OB/kg dry weight soil |

### PEC surface water

| Microorganism | Method of calculation | Application rate |
|---------------|-----------------------|-----------------|
|               |                       | 2.70 $\times 10^{14}$ OB/ha based on maximum content |

| Initial PEC\(_{\text{sw}}\) (µg/L) |  |
|------------------------------------|---------------------------------|
| 1 m 26.17                          | 30 cm 87.14 µg SPEXIT/L ($5.63 \times 10^6$ OB/L) |
Appendix II.7: Chapter 6 (Effects on non-target organisms)

Effects on non-target organisms (Regulation (EU) 283/2013, Annex Part B, point 8 and Regulation (EU) 284/2013 Annex Part B, point 10; OECD IIM point 8 & IIM point 10)

Effects on birds or other terrestrial invertebrates (MA 8.1 & MP 10.1; OECD IIM 8.1 & IIIM 10.1)
No ecotoxicological data were available for SeMNPV. Instead, data for other BVs were used for the ecotoxicological risk assessment. RMS considered that it was reasonable to extrapolate information on toxicity, infectivity and pathogenicity from other BV on the basis that BVs have similar modes of action, and in view of the information given in the OECD consensus document (OECD, 2002. Consensus document on information used in the assessment of environmental applications involving baculovirus. ENV/JM/MONO, 1, 1-90).

Effects on birds (MA 8.1 & MP 10.1)
No cases of viral toxicity or pathogenicity were observed in avian species. Birds are not at risk since SeMNPV is highly specific on larvae of the Lepidoperan species Spodoptera exigua. Information taken from open literature indicated that BVs will not infect birds and that the virus will pass through birds without causing any infection. Overall, on the basis of the information provided the risk to birds from toxicity, infectivity and pathogenicity of SeMNPV was assessed as low. Information on baculoviruses is applicable with regard to the evaluation of SPEXIT since the ingredients of the formulated preparations are inert (Volume 4).

Effects on other terrestrial vertebrates than birds (MA 8.2 & MP 10.2)
Information taken from open literature indicated that BVs will not infect terrestrial vertebrates and that the virus will pass through them without causing any infection. Information in the terrestrial vertebrate’s assessment indicated absence of toxicity, infectivity and pathogenicity. It was therefore possible to conclude a low risk to wild mammals from SeMNPV.

Effects on aquatic organisms (MA 8.3 & MP 10.3)
No studies provided on aquatic organisms for SeMNPV. Baculoviridae viruses are generally considered to be pathogenic towards insect species only and not towards other organisms.

Effects on bees (MA 8.3 & MP 10.3)
No studies provided on bees for SeMNPV. The virus is targeted at the larval stage of the target organism and Baculoviridae viruses are generally considered to be pathogenic towards insect species (Data gap for representative uses in open field and walk-in tunnels).

Effects on terrestrial arthropods other than bees (MA 8.4 & MP 10.4)
Infectivity and pathogenicity not reported in the studies with SeMNPV on non-target arthropods. The virus is targeted at the larval stage of the target organism and Baculoviridae viruses are generally considered to be pathogenic towards insect species (Data gap for representative uses in open field and walk-in tunnels).

| Species | Stage | Test material | Laboratory/Field | Route and Time-scale | Toxicity, infectivity and pathogenicity (endpoint, value or other description of effects) |
|---------|-------|---------------|------------------|----------------------|--------------------------------------------------------------------------------|

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| Species                  | Life stage | Dose (SeMNPV SC, 3.75 x 10^{12} OB/L) | Route | LD50 | Pathogenicity
|--------------------------|------------|--------------------------------------|-------|------|----------------
| Agrotis ipsilon Larvae   | Laboratory | SPEXIT                                | Oral/7days | 5 x 10^{5} OB/g diet | Infectivity and pathogenicity not investigated
| Cydia pomonella Larvae   | Laboratory | SPEXIT                                | Oral/7days | 5 x 10^{5} OB/g diet | Infectivity and pathogenicity not investigated
| Plutella xylostella Larvae| Laboratory | SPEXIT                                | Oral/7days | 5 x 10^{5} OB/g diet | Infectivity and pathogenicity not investigated

**Effects on other terrestrial invertebrates (MA 8.5 & MP 10.5)**

No studies provided on earthworms or other soil macro-organisms for SeMNPV. *Baculoviridae* viruses are generally considered to be pathogenic towards insect species only and not towards other organisms.

**Effects on soil micro-organisms (MA 8.6 & MP 10.6)**

No studies provided on soil micro-organisms for SeMNPV. *Baculoviridae* viruses are generally considered to be pathogenic towards insect species only and not towards other organisms.

**Additional studies**

No additional studies were submitted

**Analytical methods for residues (viable and non-viable) in exposed compartments and organisms (Regulation (EU) N° 283/2013, Annex Part A, point 4.2 and Regulation (EU) N° 284/2013, Annex Part A, point 5.2)**

| Analysis of the active microorganism (principle of method) | Bioassay
|------------------------------------------------------------|--------------------------------------------------
| Analysis of relevant metabolites (principle of method)     | No relevant metabolites are produced

Summary of uses supported by available data (Regulation (EU) N° 283/2013, Annex Part B, point 3; MA Section 3)

| Crop and/or situation | Membe or state or Country | Product name | F G Or I | Pest or Group of pests controlled | Preparation | Application | Application treatment | PHI (day s) | Remarks |
|-----------------------|---------------------------|--------------|----------|----------------------------------|-------------|------------|----------------------|------------|---------|
| (a)                   |                            |              |          |                                  |             |            |                      |            |         |
| Pepper (CPSAN)        | EU                         | SPEXIT       | F/ G     | Spodoptera exigua (LAPHEG)        | Spray       | 2 - 18     | 0.003 – 0.052        | 0.052 – 0.105 kg /ha | - 2 to 3 applications per pest generation, up to 6 generations (i.e. max. of 18 app.). -Interval between applications: min. of 6 sunny days; 2 partially sunny days = 1 sunny day |
| Leafy vegetables (lettuce crops) (3LET C) | EU | SPEXIT | F/ G | Spodoptera exigua (LAPHEG) | Spray | 2 - 18 | 0.003 – 0.052 | 0.052 – 0.105 kg /ha | - 2 to 3 applications per pest generation, up to 6 generations |
Peer review of the pesticide risk assessment of the active substance *Spodoptera exigua* multicapsid nucleopolyhedrovirus (SeMNPV)

| treatment just before hatching) | (0.1 – 0.2 L product/ha) |
|--------------------------------|--------------------------|
| (i.e. max. of 18 app.)         |                           |
| - Interval between applications: | min. of 6 sunny days;    |
| 2 partially sunny days         | = 1 sunny day            |

Abbreviations: SC = Suspension concentrate; OB = Occlusion bodies

(a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (e.g. fumigation of a structure).

(b) Outdoor or field use (F), walk-in tunnels and permanent greenhouses uses (G) or indoor application (I).

(c) *e.g.* biting and sucking insects, soil-borne insects, foliar fungi, weeds.

(d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR).

(e) Croplife International Technical Monograph no 2, 6th Edition. Revised May 2008.

(f) Catalogue of pesticide formulation types and international coding system.

(g) All abbreviations used must be explained.

(h) *Kind, e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plant - type of equipment used must be indicated.

(i) cfu = colony forming units and g/kg or g/L.

(j) Growth stage at 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.

(k) Indicate the minimum and maximum number of applications possible under practical conditions of use.

(l) PHI - minimum pre-harvest interval.

(m) Remarks may include: Extent of use/economic importance/restrictions.