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Risk Assessment of the Biological Plant Protection Products Nemasys G and Nemasys H with the Active Organism Heterorhabditis Bacteriophora

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Authors' contributions

This work was carried out in collaboration between all authors. The opinion has been assessed and approved by the Panel on Plant Protection Products of VKM. All authors read and approved the final manuscript.

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Grey Literature

ABSTRACT

Nemasys G and Nemasys H with the nematode Heterorhabditis bacteriophora as the active organism is applied for as a plant protection product in Norway. Nemasys G is intended for use against the garden chafer (*Phyllopertha horticola*) in lawns and Nemasys H against black vine weevil (*Otiorhynchus sulcatus*) in strawberries and ornamentals.

VKM was requested by the Norwegian Food Safety Authority to consider the possible health and environmental risk related to the properties of Nemasys G and Nemasys H; in particular to evaluate if the nematode is naturally occurring in Norway, the potential for establishing and spreading under Norwegian conditions, possible taxonomic challenges and assessment of the health risk related to its use.

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The assessment was finalized in October 2014 by VKM's Panel on Plant Protection Products.

VKM's conclusions are as follows:

Natural occurrence of the nematode:

The nematode Heterorhabditis bacteriophora has not been observed in Norway, but is widespread world-wide in regions with continental and Mediterranean climates. In Europe it has been isolated in France, Germany, Hungary, Italy, Moldavia, Spain, Switzerland and the UK.

Potential for establishing and spreading of the nematode under Norwegian conditions:

The thermal preference of H. bacteriophora restricts its establishing. Short term establishment in the growing season is possible in parts of Norway. This nematode has however poor long term survival in soil, especially in the absence of suitable hosts, and the potential for long term establishment in Norway is considered to be low.

Taxonomic challenges:

There are no taxonomic challenges related to assessment of this nematode.

Human health risk for operators:

Exposure of user is considered to be low. The use of plant protection products containing Heterorhabditid nematodes against insects has not been associated with health effects on humans. The symbiotic bacteria Photorhabdus luminescens has not been linked to pathogenic effects in humans. It is therefore the view of VKM that the use of the nematode Heterorhabditis bacteriophora with the symbiotic bacteria Photorhabdus luminescens will have minimal health risk for operators.

Keywords: VKM; assessment; Norwegian Scientific Committee for Food Safety; Nemasys.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.