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Swedish University of Agricultural Sciences

SLU Risk Assessment of Plant Pests

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Feedback on a list of plant pests with candidates for risk assessments – Batch 6

Background

During the period July to August 2022 five of the plant pests that were found in EFSA's media and literature horizon scanning were evaluated with EFSA's PeMoScoring tool (EFSA 2022a, b unpublished). Based on the PeMoScoring the pests were either rated as above a threshold value (= positive) or below it (= negative), where further actions are proposed for the former group of pests.

The five pests were:

- *Attacus atlas* (negative)
- *Eremothecium coryli* (positive)
- *Neospermospora avenae* (negative)
- Pepper yellow mosaic virus (positive)
- Sweet potato feathery mottle virus (positive)

SLU Risk Assessment of Plant Pests was requested by the Swedish Board of Agriculture to provide feedback in terms of (i) whether any of these pests are present in Sweden and (ii) whether there are some special reasons to exclude or prioritize any of the pests for further pest categorizations (i.e., in addition to those provided by an EFSA PeMoScoring evaluation of these species (EFSA 2022b, unpublished)). This report is the 6th of similar reports provided on the topic.

Methods

A broad approach was used to find information about observations of the pests in Sweden. Searches were performed in: Web of Science (2022) (filtering for “Sweden”), the search engine Google (restricting the search to Swedish webpages and the top 100 hits), Google Scholar (including “Sweden” in the search string and restricting the review to the top 100 hits), and in different specific databases, i.e., CABI Crop Protection Compendium (CABI 2022),

Descriptions of Plant Viruses (DPVweb.net 2022), EPPO Global Database (EPPO 2022a), EPPO Platform on PRAs (EPPO 2022b), EUROPHYT (2020) (at the species level), TRACES NT (2022), Fauna Europaea (2022), SLU Artfakta (SLU Swedish Species Information Center 2022), iNaturalist (2022), GBIF (2022), UK Plant Health Risk Register (FERA 2022), and USDA Fungal databases (Farr & Rossman 2022).

The searches included, in addition to the preferred names (according to EPPO Global Database), also the following synonyms (CABI 2022a; EPPO 2022; Farr & Rossman 2022; International Committee on Taxonomy of Viruses (ICTV 2022)):

- *Attacus atlas* [ATTCAT] = *Samia atlas*, *Phalaena arcuata vitrea* Perry, *Samia atlas* Kawada, *Saturnia silhetica* Helfer
- *Eremothecium coryli* [NMATCO] = *Nematospora coryli*, *Nematospora lycopersici*, *Nematospora nagpuri*, *Nematospora phaseoli*
- *Neospermospora avenae* [SPRSAV] = *Pseudodiscosia avenae*, *Spermospora avenae*
- Pepper yellow mosaic virus [PEPYMV] = Pepper yellow mosaic potyvirus, PepYMV
- Sweet potato feathery mottle virus [SPFMV0] = SPFMV, Sweet potato chlorotic leaf spot virus, Sweet potato feathery mottle potyvirus, Sweet potato internal cork virus, Sweet potato leaf spot virus, Sweet potato ringspot virus, Sweet potato russet crack virus, Sweet potato vein mosaic virus, Sweet potato virus A

Information about the viruses was also obtained from a Swedish expert on viruses (see Acknowledgement).

Results and discussion

- ***Attacus atlas* [ATTCAT] (Insecta) Negative PeMoScoring**
Adults of the moth *Attacus atlas* have been found two times outdoors in Stockholm according to a newspaper article (VK 2022). The specimens had escaped from the home of a private person who had illegally imported some ten specimens to Sweden (TV4 2022). One adult of *Attacus atlas* has also been found outdoors in Skåne (Aftonbladet 2022). This large moth is a popular terrarium species and there is even a Swedish name for it, i.e. “Atlasspinnare” (terrarietjur.se 2022). It has been a species kept at the Butterfly house Haga Ocean in Stockholm and for example reported to have hatched in 2014 (Facebook 2014). According to an advertisement, living specimens can be bought from a seller in Sweden for 50 SEK each (Facebook 2018). All findings outdoor in Sweden are or are likely to be of specimens that have escaped from captivity.

According to GBIF single observations of the pest has also been reported from the Netherlands and Belgium (GBIF 2022).

An assessment of the likelihood of establishment for this pest has been performed for Australia based on a Self Organising Map (SOM) analysis (Paini et al. 2010).

- ***Eremothecium coryli* [NMATCO] (Fungi) Positive PeMoScoring**
No reports of observations of *Eremothecium coryli* in natural environments in Sweden were found. The species has been used in laboratory studies and is part of a collection at Lund University (Hagman et al. 2014). According to EFSA (2022b unpublished), this pest is established in Italy and Bulgaria. However it may also be noted that, according to GBIF (2022), single recordings have also been made in Spain (isolate from pistachio; <https://www.ebi.ac.uk/ena/browser/api/embl/MK034974>), and in Netherlands and France, but in the latter two it was found in human gut and feces, respectively. Importantly, from a regulatory perspective, this pest is native to Europe according to Santini et al. (2012) (see Table S1 where they cite another source for this statement. Note that they use the synonymous name *Nematospora coryli*).

EFSA (2022b unpublished) states that transmission occurs through feeding of Hemiptera insects but according to Santini et al. (2012) this pest also spread by trade of seeds.

- ***Neospermospora avenae* [SPRSAV] (Fungi) Negative PeMoScoring**
No reports of observations of *Neospermospora avenae* in Sweden were found.
- **Pepper yellow mosaic virus [PEPYMV] (Viruses and viroids) Positive PeMoScoring**
No reports of observations of Pepper yellow mosaic virus in Sweden were found.
- **Sweet potato feathery mottle virus [SPFMV0] (Viruses and viroids) Positive PeMoScoring**
No reports of observations of Sweet potato feathery mottle virus in natural environments in Sweden were found. The only observations that were found were from experiments in glasshouses in Sweden (Mukasa et al. 2006).

Since sweet potatoes are propagated vegetatively there is a high likelihood that the virus is spread with tubers, e.g. through uncontrolled import of tubers, or tubers for consumption, that are planted after arrival to Sweden (A. Kvarnheden, pers. comm. 2022). It could be noted that a recent study indicate that the increasing introduction of new exotic crops in Europe, e.g. sweet potato, may be an important pathway for new viruses to Europe and thus that trade may constitute a high phytosanitary risk (De Jonghe et al. 2021). Not only due to the damage these pathogens may cause to the exotic crop but also due to the risk that these viruses constitute to traditional crops (De Jonghe et al. 2021).

Conclusion

The search procedure described in the Methods section above did not reveal any information indicating that any of the species are established in Sweden.

Some further relevant information was found for some of the pests, e.g. that *E. coryli* may be native in Europe and that the Sweet potato feathery mottle virus is highly likely to spread via seed tubers of sweet potato. No other reasons were found to exclude or prioritize these pests for further pest categorizations beyond those provided by the EFSA PeMoScoring evaluations (EFSA 2022b, unpublished).

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