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2020/235 New data on quarantine pests and pests of the EPPO Alert List

By searching through the literature, the EPPO Secretariat has extracted the following new data concerning quarantine pests and pests included (or formerly included) on the EPPO Alert List, and indicated in bold the situation of the pest concerned using the terms of ISPM no. 8.

- **New records**

Bactrocera latifrons (Diptera: Tephritidae – EPPO A1 List) was detected for the first time in Burundi in 2016. A study conducted in 2016-2017 showed that *B. latifrons* is present in all agro-ecological zones of Burundi (Ndayizeye *et al.*, 2019). **Present, widespread**.

Recent surveys conducted in Bhutan detected '*Candidatus* Liberibacter asiaticus' (EPPO A1 List) and citrus tristeza virus (*Closterovirus*, CTV – EPPO A2 List), either singly or as mixed infections in declining citrus trees. The pathogens were recorded in all four major citrus-growing districts of Bhutan, i.e. Tsirang, Dagana, Zhemgang and Sarpang. CTV isolates from Bhutan were found to be closely related to the severe VT strain. The EPPO Secretariat previously had no data on the occurrence of CTV in Bhutan (Ghosh *et al.*, 2020). **Present, only in some areas**.

The presence of *Halyomorpha halys* (Hemiptera: Pentatomidae – formerly EPPO Alert List) has now been confirmed in Portugal. The presence of the pest had been reported in 2019 but without any indication of localities. A recent paper confirms that the first specimen had been collected in November 2018 in the municipality of Pombal. Additional specimens were subsequently found in Pombal, as well as in the municipalities of Braga, Coimbra and Lisbon. Some of these findings were made in the framework of an awareness campaign initiated by the Portuguese Kiwifruit producers Association and the University of Coimbra (Grosso-Silva *et al.*, 2020). **Present, only in some areas.**

High Plains wheat mosaic virus (Emaravirus, HPWMoV - formerly EPPO Alert List) was first detected in Canada (Abdullahi *et al.*, 2020). It was detected during surveys in 2017 in Alberta on wheat (*Triticum aestivum)* and foxtail barley *(Hordeum jubatum)* plants. **Present, restricted distribution.**

Leptoglossus occidentalis (Hemiptera: Coreidae – formerly EPPO Alert List) occurs in Andorra. The first adult specimen was observed in October 2020 in the village of 'Les Escaldes' (van der Heyden, 2020). **Present, no details.**

Stephanitis takeyai (Hemiptera: Tingidae – formerly EPPO Alert List) occurs in the Iberian Peninsula. In Spain, it was first reported in 2012 on *Pieris japonica* in an ornamental nursery in Tomiño (Pontevedra province, Galicia) (Pérez-Otero and Mansilla, 2012). In Portugal, *S. takeyai* was first found in September 2019 in the Porto Botanical garden on *Pieris japonica* (Grosso-Silva *et al.*, 2020). **Present, only in some areas.**

Teratosphaeria zuluensis (formerly EPPO Alert List) is reported for the first time in Paraguay (Silva *et al.*, 2020). Surveys were conducted in 2014-2016 in 3 out of 4 provinces in the Eastern Region, and *T. zuluensis* was detected causing stem cankers on *Eucalyptus urophylla* × *grandis, E. grandis, E. grandis* × *camaldulensis, Corymbia citriodora*. This is the first report of this pathogen in South America. **Present.**

Xylosandrus crassiusculus (Coleoptera: Curculionidae: Scolytinae - EPPO Alert List) and its fungal symbiont *Ambrosiella roeperi* are reported for the first time from South Africa. Their

identity was confirmed by morphological and molecular analyses. The ambrosia beetle was found in 3 provinces (Kwazulu-Natal, Limpopo and Northern Cape) in traps and in stressed trees of avocado (*Persea americana*) and macadamia (*Macadamia integrifolia x M. tetraphylla*) (Nel *et al.*, 2020). **Present**.

- **Detailed records**

Dryocosmus kuriphilus (Hymenoptera: Cynipidae - EPPO A2 List) is first recorded from the eastern Black Sea Region in Turkey on chestnut trees (*Castanea sativa*) (Azmaz & Katılmış, 2020). It had been first reported in the Western part of Turkey in 2014 (EPPO RS 2014/104).

- **Denied record**

The NPPO of Australia recently informed the EPPO Secretariat that *Clavibacter insidiosus* (EPPO A2 List) is absent from Western Australia. Earlier records were based on a misinterpretation of an old publication (Anon., 1974) which referred to New South Wales and not to Western Australia. The NPPO confirmed that the bacterium has never been found in Western Australia (NPPO of Australia, 2020).
The pest status of *Clavibacter insidiosus* in **Western Australia** is officially declared as: **Absent, no pest record.**

- **Epidemiology**

Tomato leaf curl New Delhi virus (*Begomovirus*, ToLCNDV – EPPO Alert List) was shown to be transmitted from infested courgette (*Cucurbita pepo*) seed to young plants germinating from them (Kil *et al.*, 2020).

- **New pests and taxonomy**

Bursaphelenchus juglandis n. sp. (Nematoda: Aphelenchoididae), is a new species of nematode described as being associated with the walnut twig beetle, *Pityophthorus juglandis* (Coleoptera: Curculionidae: Scolytinae, EPPO A2 List), the vector of thousand cankers disease. This species was isolated from *P. juglandis* and from walnut trees with symptoms of thousand cankers disease, in California, USA (hybrid walnut trees, *Juglans hindsii* × *(J. nigra* × *J. hindsii*/*J. californica*), as well as from *J. major*, and *J. californica*). A PCR test with a species-specific primer was developed for detection of *B. juglandis* n. sp. (Ryss *et al.*, 2020).

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Additional key words: denied record, detailed record, epidemiology, new pest, new record, taxonomy

Computer codes: AMBRRO, CORBIN, CTV000, HALYHA, LEPLOC, LIBEAS, PITOJU, STEPTA, TOLCND, XYLBCR, AD, AU, BT, ES, PT, PT, US, ZA

2020/236 Update on the situation of quarantine pests in Armenia

The Coordinating Plant Quarantine Council of the Commonwealth of Independent States prepared a report gathering information on the situation of quarantine pests in their member countries as of January 1st, 2020. The EPPO Secretariat summarized the relevant information below for Armenia and the associated data has been updated into EPPO Global Database. The country is divided in 10 provinces. For each pest, the number of provinces where it is present and the surface of the infested area are given. When the occurrence of a pest in the country was not previously known to the EPPO Secretariat, this is indicated by an asterisk (*).

Insects

- *Comstockaspis perniciosa** (Hemiptera: Diaspididae – EPPO A2 List): present in 7 provinces (1751 ha).
- *Daktulosphaira vitifoliae* (Hemiptera: Phylloxeridae - EPPO A2 List): present in 3 provinces.
- *Grapholita molesta* (Lepidoptera: Tortricidae – formerly A2 EPPO List, EAEU A2 List): present in 7 provinces (87 770 ha).

- *Pseudococcus comstocki* (Hemiptera: Pseudococcidae - formerly A2 EPPO List, EAEU A2 List): present in 5 provinces (59 ha).
- *Tuta absoluta** (Lepidoptera: Gelechiidae - EPPO A2 List): present in 2 provinces (2.4 ha).

Pathogens

- *Erwinia amylovora* (fireblight – EPPO A2 List): present in 9 provinces (841 ha).
- *Globodera rostochiensis* (EPPO A2 List): present in 2 provinces (56 ha).
- *Synchytrium endobioticum* (EPPO A2 List): present in 2 provinces (35 ha).

Plants

- *Acroptilon repens* (Asteraceae, EPPO List of Invasive Alien Plants): present in 7 provinces (14 046 ha).
- *Cuscuta* sp. (Convolvulaceae, EAEU A2 List): present in 6 provinces (13 605 ha).

Source: Anonymous (2020) Справочник по карантинному фитосанитарному состоянию территорий государств - участников СНГ на 01.01.2020 г. [Handbook of quarantine phytosanitary conditions in the territories of the CIS Member States as of 2020-01-01]. All-Russian Plant Quarantine Center. 92pp. Available at https://vniikr.ru/today/intercoll/inter-coord

Additional key words: detailed record, new record

Computer codes: 1CVCG, CENRE, ERWIAM, GNORAB, HETDRO, LASPMO, PSECCO, QUADPE, SYNCEN, VITEVI, AM,

2020/237 Update on the situation of quarantine pests in Belarus

The Coordinating Plant Quarantine Council of the Commonwealth of Independent States prepared a report gathering information on the situation of quarantine pests in their member countries as of January 1st, 2020. The EPPO Secretariat summarized the relevant information below for Belarus and the associated data has been updated into EPPO Global Database. The country is divided in 6 regions. For each pest, the number of provinces where it is present and the surface of the infested area are given. When the occurrence of a pest in the country was not previously known to the EPPO Secretariat, this is indicated by an asterisk (*).

Insects

- *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae - EPPO A2 List): present in 2 regions (353 ha).
- *Frankliniella occidentalis** (Thysanoptera: Thripidae – EPPO A2 List): present in 3 regions (11 ha).
- *Hyphantria cunea* (Lepidoptera: Erebidae - formerly EPPO A2 List, EAEU A2 List): present in one region (17 963 ha), see EPPO RS 2020/144.

Pathogens

- *Erwinia amylovora* (fireblight – EPPO A2 List): present in 2 regions (496 ha).
- *Globodera rostochiensis* (EPPO A2 List): present in 5 regions (2 867 ha)
- *Synchytrium endobioticum* (EPPO A2 List): present in 2 regions (0.36 ha).

Plants

- *Ambrosia artemisiifolia* (EPPO List of Invasive Alien Plants): present in 2 regions (172 ha).
- *Cuscuta* sp. (Convolvulaceae, EAEU A2 List): present in 6 regions (540 ha).

Source: Anonymous (2020) Справочник по карантинному фитосанитарному состоянию территорий государств - участников СНГ на 01.01.2020 г. [Handbook of quarantine phytosanitary conditions in the territories of the CIS Member States as of 2020-01-01]. All-Russian Plant Quarantine Center. 92pp. Available at https://vniikr.ru/today/intercoll/inter-coord

Additional key words: detailed record, new record

Computer codes: 1CVCG, AMBEL, DIABVI, ERWIAM, FRANOC, HETDRO, HYPHCU, SYNCEN, BY

2020/238 Update on the situation of quarantine pests in Kazakhstan

The Coordinating Plant Quarantine Council of the Commonwealth of Independent States prepared a report gathering information on the situation of quarantine pests in their member countries as of January 1st, 2020. The EPPO Secretariat summarized the relevant information below for Kazakhstan and the associated data has been updated into EPPO Global Database. The country is divided in 14 regions. For each pest, the number of provinces where it is present and the surface of the infested area are given. When the occurrence of a pest in the country was not previously known to the EPPO Secretariat, this is indicated by an asterisk (*).

Insects

- *Comstockaspis perniciosa** (Hemiptera: Diaspididae – EPPO A2 List): present in 3 regions (686 ha)
- *Grapholita molesta* (Lepidoptera: Tortricidae – formerly A2 EPPO List, EAEU A2 List): present in 3 regions (587 ha)
- *Hyphantria cunea* (Lepidoptera: Erebidae - formerly EPPO A2 List, EAEU A2 List): present in 1 region (14 ha)
- *Lymantria dispar* (Lepidoptera: Lymantriidae): present in 3 regions (595 ha).
- *Monochamus galloprovincialis* (Coleoptera: Cerambycidae (vector of *Bursaphelenchus xylophilus*), EAEU A2 List): present in 2 regions (40 ha).
- *Myiopardalis pardalina* (Diptera: Tephritidae, formerly EPPO Alert List): present in 5 regions (3 442 ha)
- *Pseudococcus comstocki* (Hemiptera: *Pseudococcidae* - formerly A2 EPPO List, EAEU A2 List): present in 1 region, Mangystau (0.2 ha).
- *Tuta absoluta* (Lepidoptera: Gelechiidae - EPPO A2 List): present in 4 regions (126 ha).

Pathogens

- *Erwinia amylovora* (fireblight – EPPO A2 List): present in 3 regions (782 ha).
- *Globodera rostochiensis** (EPPO A2 List): present in 3 regions (252 ha)

Plants

- *Acroptilon repens* (EPPO List of Invasive Alien Plants): present in 14 regions (67 757 ha)
- *Ambrosia artemisiifolia* (EPPO List of Invasive Alien Plants): present in 2 regions (103 ha).
- *Ambrosia psilostachya* (Asteraceae, EAEU A2 List): present in 1 region, East Kazakhstan (48 ha).
- *Cuscuta* sp. (Convolvulaceae, EAEU A2 List): present in 14 regions (1 177 ha).

Source: Anonymous (2020) Справочник по карантинному фитосанитарному состоянию территорий государств - участников СНГ на 01.01.2020 г. [Handbook of quarantine phytosanitary conditions in the territories of the CIS Member States as of 2020-01-01]. All-Russian Plant Quarantine Center. 92pp. Available at https://vniikr.ru/today/intercoll/inter-coord

Additional key words: detailed record, new record

Computer codes: 1CVCG, AMBEL, AMBPS, CARYPA, CENRE, ERWIAM, GNORAB, HETDRO, HYPHCU, LASPMO, LYMADI, LYMADI, MONCGA, PSECCO, QUADPE, KZ

2020/239 Update on the situation of quarantine pests in Kyrgyzstan

The Coordinating Plant Quarantine Council of the Commonwealth of Independent States prepared a report gathering information on the situation of quarantine pests in their member countries as of January 1st, 2020. The EPPO Secretariat summarized the relevant information below for Kyrgyzstan and the associated data has been updated into EPPO Global Database. The country is divided in 7 regions including 40 districts in total. For each pest, the number of regions and districts where it is present and the surface of the infested area are given. When the occurrence of a pest in the country was not previously known to the EPPO Secretariat, this is indicated by an asterisk (*).

Insects

- *Comstockaspis perniciosa* (Hemiptera: Diaspididae – EPPO A2 List): present in 7 regions (28 districts, 159 ha).
- *Grapholita molesta* (Lepidoptera: Tortricidae – formerly A2 EPPO List, EAEU A2 List): present in 7 regions (33 districts, 393 ha).
- *Hyphantria cunea* (Lepidoptera: Erebidae - formerly EPPO A2 List, EAEU A2 List): present in 1 region (Chuy) in 8 districts (515 ha).
- *Monochamus galloprovincialis** (Coleoptera: Cerambycidae (vector of *Bursaphelenchus xylophilus*), EAEU A2 List): present in 1 region (Chuy) in 1 district (2.8 ha).
- *Pseudococcus comstocki* (Hemiptera: Pseudococcidae - formerly A2 EPPO List, EAEU A2 List): present in 5 regions (20 districts, 87 ha).

Pathogens

- *Erwinia amylovora* (fireblight – EPPO A2 List): present in 2 regions (10 districts, 51 ha).
- *Globodera rostochiensis** (EPPO A2 List): present in 3 regions (3 districts, 21 ha).

Plants

- *Acroptilon repens* (EPPO List of Invasive Alien Plants, EAEU A2 List): present in 5 regions (24 districts, 3 092 ha).
- *Cuscuta* sp. (Convolvulaceae, EAEU A2 List): present in 5 regions (23 districts, 1 054 ha).

Source: Anonymous (2020) Справочник по карантинному фитосанитарному состоянию территорий государств - участников СНГ на 01.01.2020 г. [Handbook of quarantine phytosanitary conditions in the territories of the CIS Member States as of 2020-01-01]. All-Russian Plant Quarantine Center. 92pp. Available at https://vniikr.ru/today/intercoll/inter-coord

Additional key words: detailed record, new record

Computer codes: 1CVCG, CENRE, ERWIAM, HETDRO, HYPHCU, LASPMO, MONCGA, PSECCO, QUADPE, KG

2020/240 Update on the situation of quarantine pests in Moldova

The Coordinating Plant Quarantine Council of the Commonwealth of Independent States prepared a report gathering information on the situation of quarantine pests in their member countries as of January 1st, 2020. The EPPO Secretariat summarized the relevant information below for Moldova and the associated data has been updated into EPPO Global Database. The country is divided in in 32 districts and 2 autonomous regions in total. For each pest, the number of districts where it is present and the surface of the infested area are given. When the occurrence of a pest in the country was not previously known to the EPPO Secretariat, this is indicated by an asterisk (*).

Insects

- *Grapholita molesta* (Lepidoptera: Tortricidae – formerly A2 EPPO List, EAEU A2 List): present in 10 districts (255 ha).
- *Phthorimaea operculella* (Lepidoptera: Gelechiidae, formerly EPPO A2 List, EAEU A2 List): present in 1 district (1 ha).
- *Pseudococcus comstocki* (Hemiptera: Pseudococcidae - formerly A2 EPPO List, EAEU A2 List): not found in 2019 (surveys in 14 districts).
- *Trogoderma* sp.: not found in 2019 (surveys in 14 districts).

Pathogens

- *Cochliobolus heterostrophus* (formerly A2 EPPO List): not found in 2019 (surveys in 11 districts).
- *Erwinia amylovora* (fireblight – EPPO A2 List): not found in 2019 (surveys in 15 districts).
- *Globodera pallida** (EPPO A2 List): not found in 2019 (surveys in 8 districts).
- *Globodera rostochiensis** (EPPO A2 List): not found in 2019 (surveys in 8 districts).
- Grapevine flavescence dorée phytoplasma (EPPO A2 List): not found in 2019 (surveys in 12 districts).
- plum pox virus (*Potyvirus*, PPV – EPPO A2 List): found in 4 districts (53 ha).

Plants

- *Cenchrus spinifex* (syn. *C pauciflorus*) (Poaceae, EPPO Observation list of Invasive Alien Plants): present in 2 districts (4.5 ha).
- *Cuscuta* sp. (Convolvulaceae, EAEU A2 List): present in 33 districts (154 ha).
- *Euphorbia dentata* (Euphorbiaceae): not detected in 2019 (surveys in 10 districts).

Source: Anonymous (2020) Справочник по карантинному фитосанитарному состоянию территорий государств - участников СНГ на 01.01.2020 г. [Handbook of quarantine phytosanitary conditions in the territories of the CIS Member States as of 2020-01-01]. All-Russian Plant Quarantine Center. 92pp. Available at https://vniikr.ru/today/intercoll/inter-coord

Additional key words: detailed record, new record, absence

Computer codes: 1CVCG, 1TROGG, CCHPA, COCHHE, EPHDE, ERWIAM, HETDPA, HETDRO, LASPMO, PHYP64, PPV000, PSECCO, MD

2020/241 New and revised dynamic EPPO datasheets are available in the EPPO Global Database

The EPPO Secretariat is in the process of revising the EPPO datasheets on pests recommended for regulation and creating new datasheets. This project is also supported by an EU grant agreement. This revision provides the opportunity to create dynamic datasheets in the EPPO Global Database in which the sections on pest identity, host range and geographical distribution are automatically generated by the database. It is planned that these dynamic datasheets will progressively replace the PDF documents that are currently stored in the database. Since the previous report (EPPO RS 2020/211), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Anoplophora chinensis*. https://gd.eppo.int/taxon/ANOLCN/datasheet
- *Anoplophora glabripennis*. https://gd.eppo.int/taxon/ANOLGL/datasheet
- *Anthonomus eugenii*. https://gd.eppo.int/taxon/ANTHEU/datasheet
- *Arceuthobium abietinum*. https://gd.eppo.int/taxon/AREAB/datasheet
- *Aromia bungii*. https://gd.eppo.int/taxon/AROMBU/datasheet
- *Ceratothripoides claratris*. https://gd.eppo.int/taxon/CRTZCL/datasheet
- *Cryphonectria parasitica*. https://gd.eppo.int/taxon/ENDOPA/datasheet
- *Elsinöe australis*. https://gd.eppo.int/taxon/ELSIAU/datasheet
- *Elsinöe fawcettii*. https://gd.eppo.int/taxon/ELSIFA/datasheet
- *Eotetranychus lewisi*. https://gd.eppo.int/taxon/EOTELE/datasheet
- *Epitrix subcrinita*. https://gd.eppo.int/taxon/EPIXSU/datasheet
- *Geosmithia morbida*. https://gd.eppo.int/taxon/GEOHMO/datasheet
- *Helicoverpa armigera*. https://gd.eppo.int/taxon/HELIAR/datasheet
- *Ips hauseri*. https://gd.eppo.int/taxon/IPSXHA/datasheet
- *Monilinia fructicola*. https://gd.eppo.int/taxon/MONIFC/datasheet
- *Phytophthora ramorum*. https://gd.eppo.int/taxon/PHYTRA/datasheet

Source: EPPO Secretariat (2020-11).

Additional key words: publication

Computer codes: ANOLCN, ANOLGL, ANTHEU, AREAB, AROMBU, CRTZCL, ELSIAU, ELSIFA, ENDOPA, EOTELE, EPIXSU, GEOHMO, HELIAR, IPSXHA, MONIFC, PHYTRA

2020/242 Recommendations from Euphresco projects

The following research project has recently been carried out in the framework of Euphresco (network for phytosanitary research coordination and funding - hosted by EPPO). A report presenting the main objectives and results of this project, as well as recommendations made can be viewed on the Internet.

Interlaboratory test performance studies for identification of *Ralstonia solanacearum* and molecular confirmation of its virulence

The EU directive 2006/63/EC describes a detailed protocol for the official testing of *Ralstonia solanacearum* that is internationally recognized and has been implemented in many diagnostic laboratories across Europe and beyond. In this protocol, the confirmation of the identity of the bacterium is performed by a laborious, time-consuming and expensive pathogenicity test. The aim of this project was to develop and evaluate molecular diagnostic methods for the detection and identification of *Ralstonia solanacearum,* as well as for the verification of its virulence, that would be faster, more specific, and robust.

The consortium was not successful in the identification of virulence genes to be considered for the development of the diagnostic test. A comparison of a real-time LAMP test, a real-time PCR test, a conventional PCR test and an Immunofluorescence Antibody Staining (IFAS) test was undertaken. Real-time LAMP was shown to be the most sensitive diagnostic method. The test also offers numerous advantages: it is rapid, cost-efficient, user-friendly and less influenced by inhibitors derived from culture medium, plant tissues and soil compared to PCR. In addition, it requires less stringent DNA extraction procedures than those for conventional PCR and real-time PCR. It was concluded that the LAMP test could be a valuable tool for the testing of *Ralstonia solanacearum* and should be recommended in international standards. More work is needed to improve the DNA extraction methods.

Duration of the project: 2018-05-01 to 2020-10-29.

Authors: Tjou-Tam-Sin, Napoleon; Vogelaar, Martijn; Li, XIang; Čermák, Vaclav; Fornefeld, Eva; van der Wolf, Jean Martin; Valentini, Franco; Fraser, Karen; Cara, Magdalena; Yildiz, Nilufer; Yuzbasioglu, Eda; Karahan, Aynur; Ustun, Nursen; Kreuze, Jan.

Link: https://zenodo.org/record/4153357#.X5qfk4hKiUk

Source: Euphresco (2020-11). https://www.euphresco.net/projects/

Additional key words: research **Computer codes:** RALSSO

2020/243 Questionnaire for the Euphresco project 'Systems for awareness, early detection and notification of organisms harmful to plants'

The Euphresco project 2019-D-311 'Systems for awareness, early detection and notification of organisms harmful to plants' aims to analyze existing surveillance and notification systems (e.g. professional and citizen-based), to explore opportunities for inter-linking these systems, and to improve communication actions of NPPOs. In the framework of this Euphresco project, an online questionnaire on 'Systems and tools for monitoring organisms harmful to plants' has just been launched. The target group of this survey are all persons involved in the development and maintenance of digital systems/tools for pest surveillance programmes (general and pest specific). The questionnaire contains 30 questions and takes approximately 10 to 15 minutes to be completed. It is important to note that the questionnaire needs to be completed in one session as answers will not be saved between two distinct sessions. Collected answers will form the basis for many work packages within the project and will also be discussed during a video conference in March 2021.

To access the online questionnaire, click on the following link:
https://forms.gle/mx5hWwqLHW3EdaER8

Deadline: 31 December 2020.

Source: Euphresco (2020-11).

Euphresco project 2019-D-311 'Systems for awareness, early detection and notification of organisms harmful to plants'.
https://zenodo.org/record/3763065#.X7Y1smhKiM-

2020/244 Compendium on the Plant Health research priorities for the Mediterranean region

As a contribution of Euphresco to the International Year of Plant Health (IYPH 2020), a 'Compendium on the Plant Health research priorities for the Mediterranean region' has recently been published by Euphresco and CIHEAM and is freely available from the Internet: **https://zenodo.org/record/4107123#.X7zi6GhKjIV**

This Compendium results from the collaboration of experts from the Mediterranean region and the following organizations: the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), the Euphresco network for phytosanitary research coordination and funding (Euphresco), the Arab Society for Plant Protection (ASPP), the European and Mediterranean Plant Protection Organization (EPPO), the Food and Agriculture Organization (FAO), the Mediterranean Phytopathological Union (MPU) and the Near East Plant Protection Organization (NEPPO). The Compendium summarizes the results of a survey on plant health research priorities organised among NPPOs and research organizations. Information on the most threatening pests, as well as on the research priorities and needs for the Mediterranean region are presented.

Source: Euphresco (2020-10).

Additional key words: publication

2020/245 First report of *Eotetranychus lewisi* in Germany

The NPPO of Germany recently informed the EPPO Secretariat of the first findings of *Eotetranychus lewisi* (Acari: Tetranychidae - EU Annexes) on its territory. The pest was found in 2 nurseries producing poinsettias (*Euphorbia pulcherrima*) under greenhouses in Schleswig-Holstein in August 2020. The identity of the pest was confirmed by morphological identification. Many plants of the plot showed symptoms: yellowish brightening and spotting of the leaves. Official eradication measures are being applied and include destruction of infested and suspicious plants and treatment with plant protection products against spider mites. Official inspections in the nurseries are ongoing. The source of the outbreaks is not known exactly: in both cases, the young plants had been delivered from a nursery in another Member State, but trace-back studies are not yet complete.

The pest status of *Eotetranychus lewisi* in Germany is officially declared as: **Transient, actionable, under eradication**.

Source: NPPO of Germany (2020-11).

Pictures: *Eotetranychus lewisi*. https://gd.eppo.int/taxon/EOTELE/photos

Additional key words: new record **Computer codes:** EOTELE, DE

2020/246 Update on the situation of *Eotetranychus lewisi* in Madeira (Portugal)

In Portugal, *Eotetranychus lewisi* (Acari: Tetranychidae - EU Annexes) is only recorded from Madeira. This pest was first found in Madeira Island in 1988, on poinsettia (*Euphorbia pulcherrima)*, and on *Vitis* sp. in 1990. During the following ten years there was only one detection of this mite in *Annona* trees. Since then no findings were recorded, although this species was part of annual official surveys conducted for quarantine pests of citrus. In September and October 2017, *E. lewisi* was detected in Madeira Island (municipality of Câmara De Lobos and Ribeira Brava) in poinsettia plants growing wild on the side of rural roads, as a result of the national official survey in place. Following these new detections, phytosanitary measures have been implemented aiming at eradication. Those included destruction of the infested plants, preventive treatments of the surrounding areas, restrictions of movement of host plants originating in the county where the pest was found, and intensification of the official survey program. The pest was detected again on *E. pulcherrima:* 1) in June and July 2018 on plants growing in small gardens in 3 different municipalities (Funchal, Ponta Do Sol and Santa Cruz), and 2) in May 2019 in Funchal in a garden, and in Câmara De Lobos on poinsettias growing on the side of road. Eradication measures have been applied in all cases.

The pest status of *Eotetranychus lewisi* in Portugal is officially declared as: **Present, only in some parts of the Member State concerned, under eradication**.

Source: NPPO of Portugal (2020-08, 2018-07, 2018-03).

Pictures: *Eotetranychus lewisi*. https://gd.eppo.int/taxon/EOTELE/photos

Additional key words: detailed record **Computer codes:** EOTELE, PT

2020/247 First report of *Stigmaeopsis longus* in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of the first record of *Stigmaeopsis longus* (Acari: Tetranychidae) on its territory. This spider mite was found during an official inspection in a nursey on a *Phyllostachys aurea* (Poaceae: Bambusoideae) plant on 2020-08-26. The pest was subsequently detected in gardens at two other locations on bamboo plants including *Sasa* sp. According to the Dutch NPPO, this is the first finding of *S. longus* in the EPPO region.

S. longus is present in Japan (Hokkaido, Honshu, Shikoku and Kyushu) (Saito *et al.*, 2004). In 1999, its presence was recorded in the Willamette Valley in Oregon (US) on bamboos (Pratt and Croft, 1999), but both the pest identification and its establishment have not been further confirmed. The host range of *S. longus* includes several *Sasa* species, such as *Sasa kurilensis*, *S. senanensis* and *S. veitchii* (Migeon and Dorkel, 2020). However, the current finding on *Phyllostachys aurea* indicates that the host plant range is not restricted to the genus *Sasa*. *S. longus* creates dense nests on the underside of leaves. Feeding activity of the mites results in large yellow spots which turn brown over time. Damaged leaves persist on the plants which is detrimental to their aesthetic value.

A preliminary pest risk analysis has been completed in the Netherlands. Considering the native range of the pest which occurs from Northern to Southern Japan, it is hypothesized that most of Europe is likely to be suitable for its establishment. In the EPPO region, two other Asian *Stigmaeopsis* species feeding on bamboos (*S. celarius* and *S. nanjingensis)* have been introduced and are already present in several countries (Pellizzari and Duso, 2009). *S. longus* causes similar damage, but is adapted to cooler climates. Its presence may lead to more pesticide applications in nurseries and loss of bamboo aesthetic value in gardens. The three current findings made in the Netherlands are not connected and concern different geographic locations. The extent of the damage on the plants suggests that the introduction is not recent. It is therefore assumed that *S longus* is already established in the Netherlands and no official phytosanitary measures are taken.

The pest status of *Stigmaeopsis longus* in the Netherlands is officially declared as: **Present**.

Source: NPPO of the Netherlands (2020-11).

Netherlands Food and Consumer Product Safety Authority.
- Pest report (2020-11-05) First finding of *Stigmaeopsis longus* on *Phyllostachys aurea* and *Sasa* plants - November 2020.
https://english.nvwa.nl/documents/plant/plant-health/pest-reporting/documents/pest-report---first-finding-of-stigmaeopsis-longus
- *Stigmaeopsis longus* quick scan (2020-10-26)
https://english.nvwa.nl/documents/plant/plant-health/pest-risk-analysis/documents/quick-scan-stigmaeopsis-longus

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Pellizzari G, Duso C (2007) Occurrence of *Stigmaeopsis nanjingensis* in Europe. *Bulletin of Insectology* **62**(2): 149-151. http://www.bulletinofinsectology.org/pdfarticles/vol62-2009-149-151pellizzari.pdf

Pratt PD, Croft BA (1999) Expanded distribution of the bamboo spider mite, *Schizotetranychus longus* (Acari: Tetranychidae), and predation by *Neoseiulus fallacis* (Acari: Phytoseiidae). *Acarologia* **40**, 191-197.

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Additional key words: new record **Computer codes:** STIMLO, NL

2020/248 Update on the situation of *Anoplophora glabripennis* in France

In France *Anoplophora glabripennis* (Coleoptera: Cerambycidae – EPPO A1 List) was first found in 2003 in Gien (Centre-Val de Loire region) (see EPPO RS 2003/114). Since then 4 other outbreaks were found in different parts of France; 2 of them have been successfully eradicated (Strasbourg and Sainte-Anne-sur-Brivet) and eradication measures following EU Decision 2015/893 are being applied in 3 remaining locations (EPPO RS 2009/045, 2010/125, 2013/139, 2017/005, 2019/233). An update on these outbreaks since October 2019 is provided below.

- In the outbreak of Gien (Loiret department, Centre-Val de Loire region), surveys detected 13 infested trees (10 *Acer* spp., 2 *Populus* spp. and 1 *Betula* spp.) in 2019. The demarcated area covers 42 km^2 in the municipalities of Gien, Nevoy, Poilly-lez-Gien, Saint-Martin-sur-Ocre and Saint-Gondon. All infested trees were felled and destroyed. Preventative felling of host trees (as specified in EU Decision 2015/893) in an area of 100 m around the infested trees was partially done. Some host trees in this area have not been felled ('derogatory trees'), because of their high cultural, social or environmental value but are being intensively monitored. An awareness campaign is also being conducted.

- In Corsica, *A. glabripennis* was first detected in the department of Haute-Corse (Corse region) in 2013 (RS 2013/139). Official surveys are conducted annually in the municipalities of Furiani, Bastia and Biguglia. No infested trees were detected in 2020, for the third consecutive year. Derogatory trees are being intensively monitored.

- In Divonne-les-bains (Ain department, Auvergne-Rhône-Alpes region), the pest was first found in 2016 (RS 2017/005). In 2019 a total of 9 infested trees (5 *Acer*, 2 *Salix* and 2 *Aesculus*) were detected (1 being found in November 2019), which led to the extension of the delimited zone partly located in Switzerland. All the infested trees were destroyed and preventing felling of host plants in an area of 100 m around the infested trees was partially done. Derogatory trees are being intensively monitored.

The pest status in France is officially declared as: **Transient (only in 3 locations), actionable, under eradication**.

Source: NPPO of France (2020-10).
EU (2015) Commission Implementing Decision (EU) 2015/893 of 9 June 2015 as regards measures to prevent the introduction into and the spread within the Union of *Anoplophora glabripennis* (Motschulsky). OJL 146, 16–28. http://data.europa.eu/eli/dec_impl/2015/893/oj
A map of the demarcated area around Gien is available at http://draaf.centre-val-de-loire.agriculture.gouv.fr/IMG/pdf/Annexe1_AP2020_VF_cle08244c.pdf

Pictures: *Anoplophora glabripennis*. https://gd.eppo.int/taxon/ANOLGL/photos

Additional key words: detailed record **Computer codes:** ANOLGL, FR

2020/249 *Lycorma delicatula* continues to spread in the USA

In the USA, *Lycorma delicatula* (Hemiptera: Fulgoridae - EPPO A1 List) was first found in Pennsylvania in 2014 (EPPO RS 2013/023). As of October 2020, infestations have been confirmed in Delaware, Maryland, New Jersey, Virginia, West Virginia, and more recently in Connecticut (Fairfield county) and Ohio (Jefferson county) (Cornell University, 2020). Isolated findings or interceptions have also been reported from New York state, Maine, Massachusetts and Oregon, but for the moment no established populations are reported from these states. Information campaigns are being carried out in the USA, and members of the public are generally invited to report any signs of the pest.

In Maine, the detection of egg masses of *L. delicatula* was reported in September 2020. Egg masses were found on trees which had been introduced from Pennsylvania, a state where the pest is established. For the moment, only egg masses have been observed therefore there is currently no evidence that *L. delicatula* is established in Maine (Maine.gov, 2020).

In Massachusetts, 2 dead specimens of *L. delicatula* were found in the towns of Milford and Norwood in autumn 2020. It is recalled that a dead specimen had previously been found near Boston in December 2018, but repeated surveys did not find the pest (Massachusetts Introduced Pests Outreach Project, 2020).

In Oregon, a dead female specimen of *L. delicatula* was found by a nursery near Corvallis in a shipment of planters and ceramic pots sent to Oregon from Pennsylvania (Oregon Department of Agriculture, 2020).

Source: INTERNET
- Cornell University. New York State Integrated Pest Management (2020-10-29). Spotted lanternfly. Confirmed spotted lanternfly locations. https://nysipm.cornell.edu/environment/invasive-species-exotic-pests/spotted-lanternfly/
- Maine.gov. Department of Agriculture, Conservation and Forestry (2020-09-29) Invasive spotted lanternfly egg masses found in Maine. https://www.maine.gov/dacf/about/news/news.shtml?id=3382574
- Massachusetts Introduced Pests Outreach Project (2020-09-25). State agricultural officials urge residents to report signs of invasive spotted lanternfly. https://massnrc.org/pests/blog/?p=2623
- Oregon Department of Agriculture. News Release (2020-10-08) Oregon nursery finds destructive spotted lanternfly, first ever reported in Oregon. https://odanews.wpengine.com/oregon-nursery-finds-destructive-spotted-lanternfly-first-ever-reported-in-oregon/

Pictures: *Lycorma delicatula*. https://gd.eppo.int/taxon/LYCMDE/photos

Additional key words: detailed record **Computer codes:** LYCMDE, US

2020/250 First report of tomato leaf curl New Delhi virus in France

The NPPO of France recently informed the EPPO Secretariat of the first detections of tomato leaf curl New Delhi virus (*Begomovirus,* ToLCNDV – EPPO Alert List) on its territory. The virus was detected in 3 locations in Bouches-du-Rhône department (Provence-Alpes-Côte d'Azur region) in September 2020 and in 1 location is Gard department (Occitanie region):

- in 2 companies producing and trading seed in an outdoor plot of courgette (*Cucurbita pepo)* (7400 m² and 1500 m² respectively) not intended for commercial seed production.
- in 2 outdoor plots for fruit production of *Cucurbita pepo* (4000 m² and 4800 m²).

Symptoms (leaf mosaic) were observed in 30-50% of plants in the plots for fruit production. All plants in the infested plots were uprooted and destroyed. Insecticide treatments against the vector were applied. Investigations to trace back the origin of the outbreaks are underway.

The pest status of tomato leaf curl New Delhi virus in France is officially declared as: **Transient, actionable, under eradication**.

Source: NPPO of France (2020-10).

Pictures: *Tomato leaf curl New Delhi virus*. https://gd.eppo.int/taxon/TOLCND/photos

Additional key words: new record **Computer codes:** TOLCND, FR

2020/251 Further spread of *Lonsdalea populi* in Europe: first records in Portugal and Serbia

Lonsdalea populi was first described in 2013 in Hungary from oozing bark cankers on *Populus x euramericana* trees. This bacterium was also identified in China on poplar trees (*Populus x euramericana*) in the provinces of Henan and Shandong (EPPO RS 2015/057) and in Northern Spain on poplar hybrids (*Populus* × *interamericana*, and *Populus* × *euramericana*) during summer 2002, 2014, and 2015 (EPPO RS 2016/182).

The NPPO of Portugal informed the Secretariat of the first finding of *Lonsdalea populi* on its territory. In October 2019, symptoms of the disease were observed in 65 trees of *Populus* sp. within a forest stand in Lisboa e Vale do Tejo Region. Eradication measures were applied. These included the insecticide treatment of the trees to prevent spread of inoculum by insects, and uprooting and incineration of the infected trees. Further surveys will be carried out in this area.
The pest status of *Lonsdalea populi* in Portugal is officially declared as: **Present, at low prevalence, under eradication**.

The pathogen was also recently reported from Serbia. In September 2019, cankers were observed on stems and branches of *Populus* × *euramericana* clone 'I-214' trees in a two-year-old poplar plantation in the province of Vojvodina. This is the most widely grown poplar clone in the country. The authors consider that this is the first report of *Lonsdalea populi* in Southeastern Europe.
The situation of *Lonsdalea populi* in Serbia can be described as: **Present, restricted distribution.**

Source: NPPO of Portugal (2019-12).

Zlatković M, Tenorio-Baigorria I, Lakatos T, Tóth T, Koltay A, Pap P, Marković M, Orlović S (2020) Bacterial canker on *Populus* ×*euramericana* caused by *Lonsdalea populi* in Serbia. *Forests* **11**, 1080. https://doi.org/10.3390/f11101080

Additional key words: new record **Computer codes:** LNSDQP, PT, RS

2020/252 First report of tomato mottle mosaic virus in the Czech Republic

In the Czech Republic, tomato mottle mosaic virus (*Tobamovirus*, ToMMV) was first detected in September 2020 during a pre-export inspection in seed crops in Southern Moravia. ToMMV was detected in 2 tomato (*Solanum lycopersicum*) fields and 1 capsicum (*Capsicum annuum*) field. No symptoms of virus infection were observed in any of these fields. Tracing-back studies have shown that in all cases, plants had been grown from seeds produced from the same area in 2015 and 2016. These seed crops had been inspected and had not shown any symptoms. Further tracing back studies are ongoing to identify the source of infection. No phytosanitary measures were taken.

The pest status of tomato mottle mosaic virus in the Czech Republic is officially declared as follows: **Present, only in some parts of the Member State concerned.**

Source: NPPO of the Czech Republic (2020-09).

Additional key words: new record **Computer codes:** TOMMV0, CZ

2020/253 Tomato mottle mosaic virus: addition to the EPPO Alert List

Why: Tomato mottle mosaic virus (*Tobamovirus*, ToMMV) was first described in 2013 infecting tomato crops in Mexico. It was subsequently found in the Americas, Asia and Europe causing infections on tomato and capsicum crops. As ToMMV is an emerging virus which present similarities with another emerging tobamovirus, tomato brown rugose fruit virus (ToBRFV - EPPO A2 List), and as capsicum and tomato are important crops in the EPPO region, the EPPO Panel on Phytosanitary Measures recommended that ToMMV should be added to the EPPO Alert List.

Where: Although being a distinct species, ToMMV is closely related to tomato mosaic virus (ToMV) and cross-reactions have been observed when using serological tests. It is noted that before ToMMV was characterized in 2013 in Mexico, several isolates deposited in GenBank as ToMV corresponded in fact to ToMMV (e.g. isolates from Brazil (2003), China and Iran previously attributed to ToMV have now been re-attributed to ToMMV). The distribution below shows the countries where ToMMV has been detected using molecular tests, but it cannot be excluded that some past records of ToMV should be attributed to ToMMV and that its distribution might be wider than shown below.
EPPO region: Czech Republic (detected in 2020 in 3 asymptomatic seed crops), Israel (detected in 2014 in a tomato glasshouse), Spain (detected in 2015 in a research glasshouse).
Asia: China (Gansu, Hainan, Hunan, Liaoning, Neimenggu, Shaanxi, Xizhang, Yunnan), Iran, Israel.
North America: Mexico, USA (California, Florida, New York, South Carolina).
South America: Brazil (Sao Paulo).

On which plants: Natural infections have only been reported on tomato and capsicum (*C. annum, C. frutescens*) grown in the field and under glasshouses. However, laboratory experiments have shown that the host range of ToMMV might be wider, as the virus could be mechanically transmitted to other Solanaceae (*Nicotiana* spp., *Petunia hybrida*, *Physalis* spp.) and Brassicaceae (*Brassica* spp., *Raphanus sativus*). The presence of ToMMV has also been detected by metagenomics in *Cicer arietinum* (Fabaceae) in Italy but this has not been confirmed by further studies. In China, mixed infections of ToMMV with tobacco mild green mosaic virus have been observed on aubergine (*Solanum melongena*) causing symptoms and yield losses, but the host status of *S. melongena* for ToMMV remains to be clarified.

Damage: Affected tomato plants show leaf distortion, mosaic, mottle and necrosis. During inoculation experiments, susceptible tomato cultivars were seriously stunted, flowers aborted and no fruit was produced. Outbreaks on capsicum crops have been reported from China (Tibet and Yunnan) where affected plants showed foliar mottle, shrinking, and necrosis. As is the case for other *Tobamovirus*, it has been observed that disease symptoms rapidly spread within infected crops. During experiments carried out on several tomato cultivars in China, it has been shown that ToMMV could overcome the resistance to ToMV in some cultivars.

Transmission: Further studies are needed on the transmission of ToMMV, but observations suggest that as other tobamoviruses, it is a highly contagious virus which is mechanically transmitted from plant to plant through common cultural practices. Like tomato brown rugose fruit virus, ToMMV might also be spread by bumblebees. Most tobamoviruses contaminate the seed coat (but not necessarily the embryo) of their host plants. So far, seed transmission has not been clearly demonstrated, but observations suggest that seeds could play a role in the rapid spread of the virus at global level. For example, ToMMV was detected in 2019 by the Australian NPPO in an imported seed lot of *C. annuum* and emergency measures are currently taken to prevent any further entry of the virus in Australia.

Pathways: Plants for planting, fruit?, seeds? of *S. lycopersicum* and *Capsicum* spp. from countries where ToMMV occurs.

Possible risks: Tomato and capsicum are important crops for the EPPO region, either grown under glasshouses (across the EPPO region) or in the field (Southern part of the region). For many years, tobacco mosaic virus (TMV) and tomato mosaic virus (ToMV) have been the main tobamoviruses infecting tomatoes, but they were managed by the use of resistant cultivars and virus-tested seed lots. However, the recent emergence of new tobamoviruses such as ToMMV and Tomato brown rugose fruit virus (EPPO A2 List) which are able to overcome cultivar resistance could represent a serious threat to the tomato industry. An Express PRA conducted in Germany concluded that ToMMV could present a high risk to tomato and pepper production in Germany and in other EU member states. In a Dutch express PRA (quick scan), the absence of symptoms observed so far on the EU territory and the lack of data on resistance of cultivars used in Europe against ToMMV raised uncertainties about the potential impact of this virus. Further studies on ToMMV are necessary to better determine its geographical distribution, host range, epidemiology and economic impact, but in the meantime, it seems desirable to avoid its further spread within the EPPO region.

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Questions and Answers. https://www.agriculture.gov.au/import/goods/plant-products/seeds-for-sowing/emergency-measures-tommv-qa#what-evidence-exists-for-tommv-spread-through-the-movement-of-tomato-and-capsicum-seed

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EPPO RS 2020/252, 2020/253

Panel review date – Entry date 2020-11

Additional key words: Alert List **Computer codes:** TOMMV0

2020/254 *Solanum sisymbriifolium* in the EPPO region: addition to the EPPO Alert List

Why
Solanum sisymbriifolium is native to South America and has been introduced into the EPPO region for ornamental purposes. In Sardinia (IT), the first observation was made in 1983 (accidental introduction) and the plant has since significantly increased its distribution range in coastal regions.

Geographical distribution
EPPO region: Austria, Belgium, Czech Republic, Denmark, Ireland, Estonia, France, Italy, Latvia, Lithuania, Morocco, Netherlands, Norway, Portugal, Spain, Turkey, Ukraine.
Asia: China (Guangdong, Yunnan), India, Republic of Korea, Taiwan.
Africa: Benin, Kenya, South Africa.
North America: United States (Alabama, Arizona, California, Delaware, Florida, Georgia, Iowa, Louisiana, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Oregon, Pennsylvania, South Carolina, Texas).
South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru.
Oceania: Australia (New South Wales, Victoria, Western Australia).

Morphology
Erect annual or short-lived perennial herb 1 to 2 m tall, green, pubescent with glandular and stellate hairs; spines up to 13 mm long, abundant on most parts.
***Leaves*:** ovate-lanceolate; lamina 5-14 cm long, 4-10 cm wide, concolorous, lobed; lower lobes often forming leaflets; petiole up to 4 cm long.
***Inflorescence*:** up to 12-flowered; peduncle up to 45 mm long; rachis up to 15 cm long; pedicels 10-15 mm long, elongated slightly in fruit. Calyx 6-12 mm long, enlarged in fruit; lobes lanceolate, 4-7 mm long. Corolla stellate, 35-50 mm diameter, white or pale blue. Anthers 8-10 mm long.
***Fruit*:** globular berry, 15-20 mm diameter, bright red. Seeds 2-2.5 mm diameter.

Biology and Ecology
Solanum sisymbriifolium mainly spreads by seed. Each plant can produce up to 45 000 seeds each year in tomato-like fruit which can be spread by birds. It can grow in shade and full sunlight and in a variety of soil types.

Habitats
Solanum sisymbriifolium can occur in agricultural areas including irrigated crops and pastures. The species grows in ruderal and disturbed habitats and is found in urban and semi-urban areas. The species also grows in coastal areas. In the USA, it is found growing along the side of roads and in Australia, it is found growing in woodland dominated by eucalypts.

Pathways for movement
Solanum sisymbriifolium is used as a trap crop for potato cyst nematodes (PCN), such as *Globodera rostochiensis* and *G. pallida* because it stimulates the hatching of juvenile PCN from their cysts by root diffusates but it is resistant to infestation by the juveniles once they hatch, preventing reproduction of the nematodes. The species is also available in the horticultural trade for its aesthetic value and edible fruit. *S. sisymbriifolium* can also be spread as a contaminant of hay.

Impacts
In Sardinia (IT) *S. sisymbriifolium* is considered a threat for irrigated crops. It also has the potential to compete with native plant species, thereby reducing rangeland biodiversity and

pastoral value. However, there are no studies that have quantified the impact of the species on agriculture or the environment. *S. sisymbriifolium* has sharp spines covering the stems which can make them dangerous to livestock and humans.

Control

Mechanical control is difficult as the species can regrow after cutting. The leaf-feeding tortoise beetle *Gratiana spadicea* (Coleoptera: Chrysomelidae) has been released against *S. sisymbriifolium* in South Africa.

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Additional key words: invasive alien plant, alert list **Computer codes:** SOLSI

2020/255 Alien flora in Italy and new records for Europe

Field work conducted in Southern Italy (Calabria) has contributed to knowledge on the alien flora of the region. Table 1 below details 27 species of which 3 are new records for Italy, 1 for the Italian Peninsula and 3 are new records for Europe.

New records for Europe

Cascabela thevetia (Apocynaceae) was first observed in 2019 growing in a water drainage channel in Calabria. The species is an evergreen shrub which is native to tropical America and is commonly grown as a garden ornamental in the EPPO region. Numerous seeds were found beside the adult plants. *C. thevetia* is invasive in parts of Africa and Australia where it can invade natural areas and negatively affect native biodiversity.

Ipomoea setosa subsp. *pavonii* (Convolvulaceae) was recorded growing along a roadside in Calabria in 2019 though no further details are available. *I. setosa* subsp. *pavonii* is native to South America and is occasionally recorded in other regions (e.g. Jamaica and the USA).

Tecoma stans (Bignoniaceae) is native to southern USA, Mexico, the Caribbean and Peru and Ecuador. The species was observed in the Calabria region along a pavement where it most probably escaped from nearby gardens. *T. stans* is invasive in parts of Africa, Asia, Australia and parts of South America. It can form dense monocultures which outcompete native plant species.

Table 1. Alien flora in Calabria

Species	Family	Status	First record for
Araujia sericifera	Apocynaceae	casual	Calabria
Asparagus setaceus	Asparagaceae	casual	Calabria
Bassia scoparia	Chenopodiaceae	casual	Calabria
Bidens formosa	Asteraceae	casual	Calabria
Brugmansia aurea	Solanaceae	casual	Italy
Cascabela thevetia	Apocynaceae	casual	Europe
Casuarina equisetifolia	Casuarinaceae	casual	Calabria
Cedrus atlantica	Pinaceae	casual	Calabria
Cenchrus setaceus	Poaceae	invasive	----
Chlorophytum comosum	Asparagaceae	casual	Calabria
Dolichandra unguis-cati	Bignoniaceae	casual	Calabria
Fagopyrum esculentum	Polygonaceae	casual	Calabria
Freesia alba	Iridaceae	casual	Calabria
Ipomoea setosa subsp. *pavonii*	Convolvulaceae	casual	Europe
Kalanchoë delagoënsis	Crassulaceae	casual	Calabria
Luffa aegyptiaca	Cucurbitaceae	casual	Italian Peninsula
Narcissus 'Cotinga'	Amaryllidaceae	naturalised	Italy
Narcissus 'Erlicheer'	Amaryllidaceae	casual	Italy
Nothoscordum gracile	Amaryllidaceae	invasive	----
Oxalis stricta	Oxalidaceae	casual	----
Passiflora caerulea	Passifloraceae	casual	Calabria
Portulaca grandiflora	Portulacaceae	casual	Calabria
Salpichroa origanifolia	Solanaceae	invasive	----
Sesbania punicea	Fabaceae	invasive	----
Tecoma stans	Bignoniaceae	casual	Europe
Tradescantia sillamontana	Commelinaceae	casual	Calabria
Washingtonia filifera	Arecaceae	casual	Calabria

Source: Laface VLA, Musarella CM, Ortiz AO, Canas RQ, Cannavo S, Spampinato G (2020) Three new alien taxa for Europe and a chorological update on the alien vascular flora of Calabria (Southern Italy). *Plants*. http://dx.doi.org/10.3390/plants9091181

Additional key words: invasive alien plants

Computer codes: AJASE, ASPPL, BIGUC, CSUEQ, CFYCO, CEUAT, CMSBI, DATAU, FAGES, FREAL, LUFAE, KCHSC, NOTFR, OXAST, PAQCO, PESSA, PORGR, SAPOR, SEBPU, TECST, THVPE, TRASI, WATFI

2020/256 Biological control of *Acacia longifolia* in Portugal

Acacia longifolia (Fabaceae) is native to Australia and was introduced into the EPPO region between the late 19th and early 20th centuries. Since its introduction in Portugal, the species has become one of the most widespread invasive species. It forms extensive populations within coastal ecosystems which act to displace native plant communities. Due to similar negative impacts recorded throughout its introduced range, the species has been the target of a classical biological control using the Australian gall-forming wasp *Trichilogaster acaciaelongifoliae*. The biocontrol agent has previously been successfully released in South Africa and it was released in Portugal in 2015. To predict the effectiveness of *T. acaciaelongifoliae* over a larger area, species distribution models were built for the plant and the biocontrol agent and the niche overlap was compared. Niches of both the invasive plant and the biocontrol agent were found to be highly similar through the introduction process. Distribution models identify suitable climatic areas for *A. longifolia* in 19% of the Mediterranean Basin and predict successful establishment of *T. acaciaelongifoliae* in 41% of the suitable area for *A. longifolia*. These results can quantify the risk of future *A. longifolia* invasion and potential success of biocontrol, as well as establish a comparative framework for similar programs being considered in other regions of the world dealing with *A. longifolia* invasions.

Source: Dinis M, Vicente JR, César de Sá N, López-Núñez FA, Marchante E, Marchante H (2020) Can niche dynamics and distribution modelling predict the success of invasive species management using biocontrol? Insights from *Acacia longifolia* in Portugal. *Frontiers in Ecology and Evolution*, https://doi.org/10.3389/fevo.2020.576667

Additional key words: invasive alien plants **Computer codes:** ACALO, TRLGAC, PT

2020/257 Alien plants with potential impacts in Cyprus

In 2019, a workshop of experts on invasive alien species, prioritised species that may cause a threat to Cyprus. In total, 89 plant species were prioritised for their potential negative impacts by scoring their potential of arrival, establishment and impacts on human health and economies using a five-point scale. Eighteen alien plants are predicted to have the potential to be invasive (Table 1). In total 14 pathways of entry were identified for invasive alien plants (e.g. horticulture, contaminant of seed). Three alien plants (*Ambrosia artemisiifolia, Delairea odorata* and *Parthenium hysterophorus*) were considered a high threat as these species can negatively impact on both human health and economies.

Table 1. Alien plant species that can threaten human health and economies on Cyprus

Species	Family	EPPO listing
Ambrosia artemisiifolia	Asteraceae	List Invasive Alien Plants
Ambrosia confertiflora	Asteraceae	A2 List
Ambrosia psilostachya	Asteraceae	----
Araujia sericifera	Apocynaceae	Observation list
Datura wrightii	Solanaceae	----
Delairea odorata	Asteraceae	List Invasive Alien Plants
Eichhornia crassipes	Pontederiaceae	A2 List
Myriophyllum aquaticum	Haloragaceae	List Invasive Alien Plants

Species	Family	EPPO listing
Myriophyllum heterophyllum	Haloragaceae	A2 List
Parthenium hysterophorus	Asteraceae	A2 List
Pistia stratiotes	Araceae	A2 List
Prosopis juliflora	Fabaceae	A2 List
Salvinia molesta	Salviniodeae	A2 List
Senecio inaequidens	Asteraceae	List Invasive Alien Plants
Solanum sisymbriifolium	Solanaceae	Alert List
Sphagneticola trilobata	Asteraceae	----
Tamarix ramosissima	Tamaricaceae	----
Verbesina encelioides	Asteraceae	List Invasive Alien Plants

Source: Peyton JM, Martinou AF, Adriaens T, Chartosia N, Karachle PK, Rabitsch W, Tricarico E, Arianoutsou M, Bacher S, Bazos I, Brundu G, Bruno-McClung E, Charalambidou I, Demetriou M, Galanidi M, Galil B, Guillem R, Hadjiafxentis K, Hadjioannou L, Hadjistylli M, Hall-Spencer JM, Jimenez C, Johnstone G, Kleitou P, Kletou D, Koukkoularidou D, Leontiou S, Maczey N, Michailidis N, Mountford JO, Papatheodoulou A, Pescott OL, Phanis C, Preda C, Rorke S, Shaw R,Solarz W, Taylor CD, Trajanovski S, Tziortzis I, Tzirkalli E, Uludag A, Vimercati G, Zdraveski K, Zenetos A and Roy HE (2020) Horizon scanning to predict and prioritise invasive alien species with the potential to threaten human health and economies on Cyprus. *Frontiers in Ecology and Evolution*, https://doi.org/10.3389/fevo.2020.566281

Additional key words: invasive alien plants

Computer codes: AMBEL, AMBPS, AJASE, DATWR, EICCR, FRSCO, MYPBR, MYPHE, PTNHY, PIIST, PRCJU, SAVMO, SENMI, SENIQ, SOLSI, TAAPE, WEDTR, VEEEN, CY

2020/258 *Amaranthus palmeri* and *A. tuberculatus* added to the EPPO A2 List

In 2020, an EPPO Expert Working Group (EWG) comprising of experts from the EPPO region and North America met at the EPPO Headquarters in Paris to conduct pest risk analysis on *Amaranthus palmeri* and *A. tuberculatus*. Following approval of the PRAs, both species are now included on the EPPO A2 list of pests recommended for regulation as a quarantine pest.

Amaranthus tuberculatus: overall outcome of the PRA is high risk with low uncertainty. The endangered area includes agricultural environments situated to the north and east of the Mediterranean Sea. The high frequency of maize and soybean in the crop rotation system in many EPPO countries is a factor that may facilitate the establishment of *A. tuberculatus* once the field has become contaminated. The likelihood of further establishment outdoors is very high with a low uncertainty. Establishment in protected conditions is medium with a high uncertainty. Protected conditions, such as in nurseries and polytunnels, may offer appropriate conditions for the development of the pest. The potential for spread within the EPPO region is very high with a moderate uncertainty. Seeds of *A. tuberculatus* can be moved via agricultural machinery and products (e.g. grains, seeds) within the EPPO region. The potential socio-economic impacts in the EPPO region are high with a moderate uncertainty.

***Amaranthus palmeri*:** overall outcome of the PRA high risk with low uncertainty. The endangered area includes agricultural environments in the Mediterranean area, Middle East area and central Asian area of the EPPO region. Within the EPPO region, the species mostly grows in managed habitats such as ruderal and agricultural environments. *A. palmeri* can invade many summer crops in particular late sowing crops like maize and soybean. The potential spread within the EPPO region is very high with a low uncertainty. *A. palmeri* can spread both naturally and via human assisted spread. Seeds of *A. palmeri* can be moved via agricultural machinery and plant products (e.g. grains, seeds) within the EPPO region. The impacts of *A. palmeri* in North America are primarily the reduction of crop yields and increased management costs. The potential socio-economic impacts in the EPPO region will be high with a moderate uncertainty.

Source: EPPO (2020a) Pest risk analysis for *Amaranthus palmeri*. EPPO, Paris. Available at: https://gd.eppo.int/taxon/AMAPA/documents
EPPO (2020b) Pest risk analysis for *Amaranthus tuberculatus*. EPPO, Paris. Available at: https://gd.eppo.int/taxon/AMATU/documents

Additional key words: invasive alien plants **Computer codes:** AMAPA, AMATU

2020/259 *Azolla filiculoides* negatively affects invaded environments

Azolla filiculoides (Azolloideae: EPPO Observation List of Invasive Alien Plants) is an invasive aquatic fern species native to North America and widespread in the EPPO region. It can have negative effects on the aquatic system when it forms dense mats over the surface of waterbodies preventing sunlight from penetrating the water. The effect of *A. filiculoides* mats on Mediterranean temporary waters was assessed using outdoor mesocosms with sediments from an invaded marsh and amphibian larvae from surrounding wetlands. *A. filiculoides* formed a dense mat over the water surface in the experimental tanks, which decreased pH and oxygen concentration, and increased nutrients, nitrogen and phosphorus compounds in the water compared to mesocosms without *A. filiculoides*. Macrophyte abundance and richness were reduced under the *A. filiculoides* mat. Invaded mesocosms also had higher phytoplankton abundance and different zooplankton composition, which was mainly characterized by higher abundance of juvenile copepods. For amphibian development, tadpoles required a longer developmental period and the western spadefoot toad, *Pelobates cultripes*, had significantly lower survival in the presence of *A. filiculoides* (4.8% compared to 60% survival in *Azolla* free mesocosms). The results show that *A. filiculoides* can have wide negative impacts and should be controlled in invaded habitats.

Source: Pinero-Rodriguez M, Fernandez-Zamudio R, Arribas R, Gomez-Mestre I, Diaz-Paniagua C (2020) The invasive aquatic fern *Azolla filiculoides* negatively impacts water quality, aquatic vegetation and amphibian larvae in Mediterranean environments. *Biological Invasions*, doi.org/10.1007/s10530-020-02402-6.

Additional key words: invasive alien plants **Computer codes:** AZOFI