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2022/143 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 8.

- **New records**

In Brazil, tomato fruit blotch virus (*Blunervirus*, ToFBV) was identified as the cause of severe chlorotic blotches in tomato (*Solanum lycopersicum*) fruits grown in a greenhouse in an organic farm in Distrito Federal. No symptoms were observed on leaves (Nakasu *et al.*, 2022).

Tetranychus evansi (Acari: Tetranychidae – EPPO A2 List) occurs in Burkina Faso where it is considered to be a serious threat to tomato production (Drabo *et al.*, 2022).

- **Detailed records**

In Québec, Canada, *Agrilus planipennis* (Coleoptera: Buprestidae – EPPO A2 List) has been found outside the regulated area. In July 2022, its presence was confirmed on a private property in the Regional County Municipality (RCM) of Avignon, in the Gaspésie-Îles-de-la-Madeleine region. Phytosanitary measures including surveys and restrictions on the movements of ash material (e.g. logs, branches, woodchips) and firewood are being taken to prevent any further spread (CFIA, 2022).

In the USA, *Agrilus planipennis* (Coleoptera: Buprestidae – EPPO A2 List) has been found for the first time in Oregon, in Washington County in July 2022. It is considered that the infestation has been there for at least 3-5 years. Infestations have now been detected in in 36 states and the District of Columbia. This is the first record on the west coast (USDA, 2022)

In Argentina, '*Candidatus* Liberibacter asiaticus' (associated with huanglongbing – EPPO A1 List) had previously only been detected in plant material. Badaracco et *al.* (2022) detected the pathogen in three specimens of the vector *Diaphorina citri* (Hemiptera: Liviidae, EPPO A1 List) in the North-East of Argentina (Corrientes).

In the USA, beech leaf disease (associated with *Litylenchus crenatae mccannii* – EPPO Alert List) is reported for the first time from Michigan. The disease was confirmed in July 2022 in a small, private wood in southern St. Clair county (Government of Michigan, 2022).

In the USA, *Lycorma delicatula* (Hemiptera: Fulgoridae – EPPO A1 List) is reported for the first time in North Carolina. In June 2022, the presence of an established population was confirmed in Kernesville (Forsyth county), covering an area of approximately 8 km radius. Surveys are ongoing (North Carolina State, 2022).

In Portugal, the root-knot nematode *Meloidogyne luci* (EPPO Alert List) was first found in 2013 near Coimbra (in the continental part of Portugal) in a potato field (EPPO RS 2017/217) and in 2019 in the Azores on Pico Island (EPPO RS 2020/171). As a result of the 2021 survey programme on *Meloidogyne fallax* and *M. chitwoodi*. (both EPPO A2 List) *M. luci* was found for the first time in another Azores island: Ilha Terceira. It was detected in a plot of ware potatoes (*Solanum tuberosum*) grown for personal consumption in the municipality of Agualva. Eradication measures are applied (NPPO of Portugal, 2022-06).
The pest status of *Meloidogyne luci* in Portugal is officially declared as**: Present, under eradication, only in some parts of the Member State concerned, at low prevalence**.

In Bulgaria, tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) was first detected in June 2021 and eradicated in December 2021 (EPPO RS 2021/146). In June 2022, new outbreaks were confirmed in two tomato production sites in Smolyan oblast, and in one in Pazardzhik oblast. Eradication measures are applied.
The pest status of tomato brown rugose fruit virus in Bulgaria is officially declared as: **Present, only in some parts of the Member State concerned, under eradication**.

In Bangladesh, *Xylosandrus crassiusculus* (Coleoptera: Curculionidae: Scolytinae - formerly EPPO Alert List) is reported for the first time. It was found during a faunistic survey on Coleoptera and its identity was confirmed by DNA barcoding (Mazumdar *et al.*, 2021).

- **Eradication**

In Spain, several outbreaks of *Xylella fastidiosa* (EPPO A2 List) have occurred (EPPO RS 2022/112). The NPPO of Spain recently informed the Secretariat that the outbreak of *Xylella fastidiosa* subsp. *multiplex* in Villarejo de Salvanés has been eradicated. After the eradication measures were applied, the surveys carried out in 2018-2021 did not detect any infected plants or insect vectors (NPPO of Spain, 2022-06).
The pest status of *Xylella fastidiosa* subsp. *multiplex* in mainland Spain is officially declared as: **Transient, actionable, under eradication.**

Sources:

Badaracco A, Redes FJ, Bustamente KM, Bloch N, Schapovaloff ME, Agostini JP (2022) First detection of positive '*Candidatus* Liberibacter asiaticus' *Diaphorina citri* in Argentina. *Australasian Plant Pathology* **51**(1), 9-12.
Drabo E, Waongo A, Traoré F, Dabiré-Binso LC, Sanon A (2022) Effectiveness of combining bioacaricides with sprinkler irrigation to control the red spider mite, *Tetranychus evansi* Baker and Pritchard (Acari: Tetranychidae), in irrigated tomato crops in Burkina Faso, West Africa. *Journal of Entomological and Acarological Research* **54**, 10055. https://doi.org/10.4081/jear.2022.10055
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CFIA (2022-07-11) Emerald ash borer confirmed in the Gaspésie. https://www.canada.ca/en/food-inspection-agency/news/2022/07/emerald-ash-borer-confirmed-in-the-gaspesie.html
Government of Michigan. Michigan.gov (accessed 2022-07-06
- Invasive species: beech leaf disease. https://www.michigan.gov/invasives/id-report/disease/beech-leaf-disease
- Invasive beech leaf disease found in Michigan (2022-07-05). https://www.michigan.gov/invasives/news/2022/07/05/invasive-beech-leaf-disease-found-in-michigan
North Carolina State. Extension (2022-06-29) Spotted lanternfly confirmed in North Carolina. https://forestry.ces.ncsu.edu/2022/06/spotted-lanternfly-confirmed-in-north-carolina/
USDA (2022-07-15) USDA statement of confirmation of emerald ash borer in Oregon. https://www.aphis.usda.gov/aphis/newsroom/stakeholder-info/stakeholder-messages/plant-health-news/eab-or
Mazumdar S, Hebert PDN, Bhuiya BA (2021) Survey of coleopterans in Bangladesh by DNA barcoding of malaise trap collection. *Munis Entomology & Zoology* **16**(1), 275-282.
Nakasu EY, Nagata T, Inoue-Nagata AK (2022) First report of tomato fruit blotch virus infecting tomatoes in Brazil. *Plant Disease*. Early view https://doi.org/10.1094/PDIS-07-21-1392-PDN
NPPO of Bulgaria (2022-07).
NPPO of Spain (2022-06).
NPPO of Portugal (2022-06).

Additional key words: absence, eradication, detailed record, new record

Computer codes: AGRLPL, DIAACI, LIBEAS, LITYMC, LYCMDE, MELGLC, TETREV, TOBRFV, TOFBV0, XYLBCR, XYLEFA, XYLEFM, AR, BD, BF, BG, BR, CA, ES, PT, US, US

2022/144 Recent additions to the quarantine lists of the Eurasian Economic Union (EAEU)

The quarantine lists of the Eurasian Economic Union (EAEU) which is composed of Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia were first published in November 2016 (EPPO RS 2017/146) and revised in March 2018 (RS 2019/050). They were further amended in August 2019 and May 2021. As a result two pests were added to the 'A1 List of quarantine pests which are absent from the EAEU territory' and two to the 'A2 List of quarantine pests which are of limited distribution in the EAEU territory'. This Regulation entered into force on the 2 January 2022.

Additions to the List of quarantine pests which are absent from the EAEU territory (A1)

- pepino mosaic virus,
- tomato brown rugose fruit virus.

Additions to the List of quarantine pests which are of limited distribution in the EAEU territory (A2)

- *Tilletia controversa*,
- tomato spotted wilt virus.

In the A2 List, *Carposina niponensis* is replaced by *Carposina sasakii*.

These lists have been updated in the EPPO Global Database (https://gd.eppo.int/rppo/EAEU/categorization).

Source: Единый перечень карантинных объектов Евразийского экономического союза (в ред. Решений Совета Евразийской экономической комиссии от 30.03.2018 № 25, от 08.08.2019 № 74 и от 18.05.2021 № 54) [Single list of quarantine objects of the Eurasian Economic Union (as amended by the Decisions of the Council of the Eurasian Economic Commission dated 30.03.2018 No. 25, dated 08.08.2019 No. 74 and dated 05.18.2021 No. 54)]
Справочник карантинных объектов Евразийского экономического союза [Directory of Quarantine Objects of The Eurasian Economic Union] https://portal.eaeunion.org/sites/odata/redesign/Pages/QuarantineObjectClassifier.aspx

Additional key words: regulation, quarantine lists

Computer codes: EAEU, CARSSA, PEPMV0, TILLCO, TOBRFV, TSWV00

2022/145 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 2022/120), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Anthonomus quadrigibbus*. https://gd.eppo.int/taxon/TACYQU/datasheet
- '*Candidatus* Phytoplasma ulmi'. https://gd.eppo.int/taxon/PHYPUL/datasheet
- *Haplaxius crudus*. https://gd.eppo.int/taxon/MYNDCR/datasheet
- Peach yellows phytoplasma. https://gd.eppo.int/taxon/PHYP29/datasheet
- Potato latent virus. https://gd.eppo.int/taxon/POTLV0/datasheet
- Potato virus T. https://gd.eppo.int/taxon/PVT000/datasheet
- *Scirtothrips citri*. https://gd.eppo.int/taxon/SCITCI/datasheet

Source: EPPO Secretariat (2022-07).

Additional key words: publication

Computer codes: MYNDCR, PHYP29, PHYPUL, POTLV0, PVT000, SCITCI, TACYQU

2022/146 Eradication of *Euwallacea fornicatus sensu lato* in Italy

In Italy, the ambrosia beetle *Euwallacea fornicatus sensu lato* (Coleoptera: Scolytinae, EPPO A2 List) was first found in April 2020 in a greenhouse in a botanical garden in the municipality of Merano (Trentino-Alto Adige region) (EPPO RS 2020/094). Following this finding, intense monitoring was conducted inside the greenhouse and in the surrounding area (with pheromone traps and logs used as traps). Training courses were organized for the staff of the botanical garden. A demarcated area was established. All the plants in the greenhouse were removed and destroyed under official control; 28 plants presented signs of the pest's presence (boreholes and ejection of wooden debris). Solarisation was also applied in the greenhouse for a period of 6 months. The last finding of an adult specimen was on May 29th, 2020 in a trap log inside the infested greenhouse. No *E. fornicatus* were detected outside the greenhouse during the monitoring with bait traps and visual inspections. The growing media in the greenhouse was replaced before replanting new plants in spring 2021. After two years without any findings, the outbreak is considered to be eradicated. Nevertheless, surveys will still take place in the future.

The pest status of *Euwallacea fornicatus sensu lato* in Italy is officially declared as: **Absent, pest eradicated**.

Source: NPPO of Italy (2022-07).

Pictures: *Euwallacea fornicatus sensu lato*. https://gd.eppo.int/taxon/XYLBFO/photos

Additional key words: eradication, absence **Computer codes:** XYLBFO, IT

2022/147 First records of the ambrosia beetles *Anisandrus maiche* and *Cnestus mutilatus* in Italy

In the framework of a citizen science project, a monitoring programme for ambrosia beetles was carried out in spring 2021 and traps were installed in high schools throughout the Veneto region. On 9 June 2021, 2 females of *Cnestus mutilatus* and one of *Anisandrus maiche* (both Coleoptera: Curculionidae: Scolytinae, regulated by the EU as 'non-European Scolytinae') were caught. The authors noted that regular monitoring of ambrosia beetles is conducted in Veneto and that these species had not been detected before. This strongly suggest that both species are of recent introduction. During the survey, no symptoms or evident damage were observed on the potential host plants located around the traps where the specimens were found.

C. mutilatus is native to Asia. It was first reported in from the USA in 2002 in Mississippi (EPPO RS 2005/180) and then spread to 17 states in Eastern USA. The species mainly attacked stressed trees but it was also found in tree nurseries. This record is the first record for the western part of the EPPO region: it had been first reported in 2017 from the Russian Far East. A map of current geographical distribution is available in the EPPO Global Database: https://gd.eppo.int/taxon/XYLSMU/distribution.

A. maiche is native to Asia (including the Russian Far East). It was trapped in 2005 in Pennsylvania (USA) and later in other states in North-Eastern USA. It had already been found in the EPPO region: in Ukraine in 2007 (EPPO RS 2013/030) and later in European Russia. However it seems that this species mainly attacks stressed trees. A map of current geographical distribution is available in the EPPO Global Database: https://gd.eppo.int/taxon/ANIDMA/distribution.

The situation of *Cnestus mutilatus* in Italy can be described as: **Present: at low prevalence**.
The situation of *Anisandrus maiche* in Italy can be described as: **Present: at low prevalence.**

Source: Colombari F, Martinez-Sañudo I, Battisti A (2022) First report of the alien ambrosia beetle *Cnestus mutilatus* and further finding of *Anisandrus maiche* in the European part of the EPPO region (Coleoptera: Curculionidae: Scolytinae: Xyleborini). *EPPO Bulletin*. Early view. https://doi.org/10.1111/epp.12840

EPPO (2020) EPPO Technical Document No. 1081, EPPO Study on the risk of bark and ambrosia beetles associated with imported non-coniferous wood. EPPO, Paris. Available at https://www.eppo.int/RESOURCES/eppo_publications

Pictures: *Cnestus mutilatus*. https://gd.eppo.int/taxon/XYLSMU/photos
Anisandrus maiche. https://gd.eppo.int/taxon/ANIDMA/photos

Additional key words: new record **Computer codes:** ANIDMA, XYLSMU, IT

2022/148 First record of the ambrosia beetle *Anisandrus maiche* in Switzerland

The NPPO of Switzerland recently informed the Secretariat of the first finding of *Anisandrus maiche* (Coleoptera: Scolytinae, regulated by the EU as 'non-European Scolytinae') on its territory. In the context of a study on ambrosia beetles, 27 individuals of *A. maiche* were found in traps in two locations of South-East Switzerland (canton of Ticino) at the end of June 2022. Additional traps are being set up in the canton of Ticino in order to estimate the size of the infestation. No symptoms or damages have been observed on trees.
A. maiche is a species native to Asia. It was also recently trapped in Italy (EPPO RS 2022/147).

The pest status of *Anisandrus maiche* in Switzerland is officially declared as: **Present, only in some parts of the country.**

Source: NPPO of Switzerland (2022-07).

Pictures: *Anisandrus maiche*. https://gd.eppo.int/taxon/ANIDMA/photos

Additional key words: new record **Computer codes:** ANIDMA, CH

2022/149 Update on the situation of *Scyphophorus acupunctatus* in Italy

Scyphophorus acupunctatus (Coleoptera: Dryophthoridae – formerly EPPO Alert List) is a pest of Agavaceae (e.g. *Agave, Beaucarnea, Dasylirion, Dracaena, Furcraea, Polianthes, Yucca*) originating from the Americas which has been introduced into several Mediterranean countries (e.g. Cyprus, France, Italy, Greece, Spain, Portugal). In the Mediterranean region, *S. acupunctatus* is now established and common in areas where its main host *Agave americana* has colonized natural areas or unmanaged semi-natural areas.

In Italy, incursions of *S. acupunctatus* were first noticed in 1998 in a glasshouse in Lombardia on *Beaucarnea recurvata* plants which had been imported from Nicaragua. In 2006/2007, the pest was first reported in Sicilia on *Agave americana* (EPPO RS 2002/046, 2008/179). Since then, observations of this insect in several Italian regions have been posted on a forum for entomologists (Forum Entomologi Italiani):

- Basilicata (2013, in Bosco Pantano di Policoro – 2015, in Policoro).
- Puglia (2014, in Marina di Ginosa).
- Lazio (2014, in Sperlonga).
- Toscana (2015, Monte Argentario).
- Liguria (2016, in Bordighera).

In Liguria, it is noted that since 2018, *S. acupunctatus* has been detected in several locations along the Ligurian Riviera from the French border to Imperia, in areas where *Agave americana* colonizes semi-natural coastal environments and slopes along roads and railways. In these habitats, attacked plants may present a danger to the public as leaves or other plant material may fall onto roadways. In 2019, S. *acupunctatus* was also observed in the Hanbury Botanical Gardens and in a private historical garden near Ventimiglia, both harbouring important collections of Agavaceae with century-old specimens. In these gardens, *S. acupunctatus* has been observed on several species of *Agave, Furcraea, Dasylirion,* and *Yucca*. A management programme is being implemented by the Hanbury Botanical Gardens (University of Genoa) and the CREA-San Remo (Consiglio per la ricerca in agricoltura e l'economia agraria) to contain the pest.

Source:

Boero F, Mariotti M, Zappa E, Ferrari S, Monroy F (2021) Lignes directrices pour la mise en place d'un plan de gestion du charançon noir dans le Jardin Botanique Hanbury. Les Rencontres de Thuret - Invasions biologiques végétales et animales en Méditerranée (Antibes, FR, 2021-09-29/30). INRAE. p. 27. https://www.lifesamfix.eu/wp-content/uploads/2022/01/Livret-des-re%CC%81sume%CC%81s.pdf

Monroy F, Von Schweinichen P, Boero F, Mariotti M, Zappa E, Ferracini C (2021) Caractéristiques du cycle biologique du charançon noir de l'agave *Scyphophorus acupunctatus* dans la zone d'invasion méditerranéenne. Invasions biologiques végétales et animales en Méditerranée. Les Rencontres de Thuret - Invasions biologiques végétales et animales en Méditerranée (Antibes, FR, 2021-09-29/30). INRAE. p. 33-34. https://www.lifesamfix.eu/wp-content/uploads/2022/01/Livret-des-re%CC%81sume%CC%81s.pdf

Forum Entomologi Italiani. http://www.entomologiitaliani.net/public/forum/phpBB3/search.php

Personal communication with Elena Zappa. Hanbury Botanical Gardens. Università degli Studi di Genova (2022-06).

Additional key words: detailed record

Computer codes: SCYPIN, IT

2022/150 *Scyphophorus acupunctatus* occurs in Portugal

In Portugal, *Scyphophorus acupunctatus* (Coleoptera: Dryophthoridae– formerly EPPO Alert List) was first reported in on the island of Porto Santo (Madeira archipelago) in November 2019. The pest was found in the garden of a hotel in Cabeço da Ponta, first on *Agave americana* and then on *Furcraea foetida*. On the mainland, *S. acupunctatus* was observed for the first time in 2019/2020 in Algarve, in Patacão (Faro) and Quarteira. However, it is probable that it was already present in 2018 in other localities of Algarve (Lagos, Moncarapacho and Cabanas de Tavira); as well as on the peninsula of Setúbal (in Verdizela).

Source: Andrade MM (2022) The presence of the agave weevil *Scyphophorus acupunctatus* Gyllenhal, 1838 (Coleoptera: Dryophthoridae) in Madeira Archipelago. A new biological control opportunity or a new invasive species? *Weevil News* No. 98, 11 pp.

Naves P, Boavida C (2021) O escaravelho-do-agave *Scyphophorus acupunctatus* uma nova espécie exotica em Portugal. *Vida Rural* (abril), 70-76. https://www.iniav.pt/images/publicacoes/2021/O_escaravelho-do-agave.pdf

Additional key words: new record **Computer codes:** SCYPIN, PT

2022/151 First report of tomato chlorosis virus in Albania

In summer 2021, several tomato (*Solanum lycopersicum*) hybrids in greenhouse crops in Fier and Berat regions of Albania, showed foliar symptoms such as interveinal yellowing of the basal leaves, brittleness, and mild leaf curling. High populations of the whitefly *Trialeurodes vaporariorum* were observed. The presence of tomato chlorosis virus (*Crinivirus*, ToCV - EPPO A2 List) in symptomatic tomato plants was confirmed by RT-PCR.

The situation of *Tomato chlorosis virus* in Albania can be described as: **Present, not widely distributed.**

Source: Orfanidou CG, Cara M, Merkuri J, Katis NI, Maliogka VI (2022) First report of tomato chlorosis virus in tomato in Albania. *Journal of Plant Pathology*. early view https://doi.org/10.1007/s42161-022-01148-5

Pictures: *Tomato chlorosis virus*. https://gd.eppo.int/taxon/TOCV00/photos

Additional key words: new record **Computer codes:** TOCV00, AL

2022/152 Interception of tomato fruit blotch virus in the Netherlands

The NPPO of the Netherlands recently informed the Secretariat of a finding of tomato fruit blotch virus (*Blunervirus*, ToFBV) during import inspections on tomato (*Solanum lycopersicum*) fruits originating from the Canary Islands (ES). These fruits presented irregular chlorotic blotches. Sequencing of total RNA by High-Throughput Sequencing allowed an association with ToFBV to be established. In total, the virus was detected in fruits from eight lots that were imported between May 2019 and March 2022.

ToFBV affects the fruits, and no leaf symptoms have been reported to date. No vector has been described so far, although in Brazil the disease was associated with tomato russet mite (*Aculops lycopersici)*.

ToFBV is a recently described virus and its current distribution may not be fully known. Findings have recently been reported from Italy, Australia (EPPO RS 2020/184), and Brazil (RS 2022/143). So far, ToFBV has not been observed in the Netherlands and no official phytosanitary measures are being taken following these interceptions. Nevertheless, the NPPO considers that it is important for growers to be aware of this finding. Further studies on the disease epidemiology are needed in order to define appropriate control measures.

The pest status of tomato fruit blotch virus in the Netherlands is officially declared as: **Absent, intercepted only**.

Source: NPPO of the Netherlands (2022-07).

Nakasu EY, Nagata T, Inoue-Nagata AK (2022) First report of tomato fruit blotch virus infecting tomatoes in Brazil. *Plant Disease*. Early view https://doi.org/10.1094/PDIS-07-21-1392-PDN

Additional key words: interception **Computer codes:** TOFBV0, NL, ES

2022/153 First report and eradication of cotton leaf curl Gezira virus in the Netherlands

The NPPO of the Netherlands recently informed the Secretariat of the first findings of cotton leaf curl Gezira virus (*Begomovirus*, CLCuGV, EU A1 Quarantine pest as 'Begomovirus') on its territory.

During an export inspection in April 2022, potted plants of *Lavatera* sp. showing yellow spots were sampled and the presence of cotton leaf curl Gezira virus was confirmed by the National Reference Laboratory in May 2022 in three lots (1120 plants were destroyed). Trace-back studies showed that the potted plants had been grown in a nursery in the province of Zuid-Holland, but young plants had been received from two producers located in Zuid-Holland and Noord-Holland in 2021 and 2022. In June 2022 CLCuGV was identified in 7 lots of young plants of *Lavatera* (presenting no symptoms) at the producer in Zuid-Holland. All 135 000 *Lavatera* plants in the nursery were destroyed.

As no vectors (*Bemisia tabaci*) were found in the nurseries, no measures were applied on other plant species present there.

The origin of this incursion is unknown, but it is noted that the grower of the young plants imported unrooted cuttings from Israel and Kenya*. Post import inspections will be conducted in July and August 2022 for all imports of *Lavatera* plants and cuttings, to find out whether plants are traded with (symptomatic or asymptomatic) begomovirus infections.

The pest status of Cotton leaf curl Gezira virus in the Netherlands is officially declared as: **Absent, pest eradicated**.

* Note of the EPPO Secretariat: CLCuGV is not known to occur in Israel or Kenya.

Source: NPPO of the Netherlands (2022-07).

Additional key words: incursion, eradication **Computer codes:** CLCUGV, NL

2022/154 Update of the situation of thousand cankers disease in Italy

In Italy, both the fungus *Geosmithia morbida* and its vector *Pityophthorus juglandis* (Coleoptera: Curculionidae: Scolytinae - walnut twig beetle) the causal agents of thousand cankers disease (EPPO A2 List), were recorded for the first time in the Veneto region in 2013 (EPPO RS 2014/001). They were subsequently found in Piemonte in 2015 (RS 2016/153), in Lombardia in 2016, in Toscana in 2018 (eradicated in 2020) and in Emilia-Romagna in 2019 (RS 2019/102). The NPPO of Italy informed the Secretariat of new outbreaks detected as a result of official surveys:

- In October 2021, a second outbreak was found in Emilia-Romagna region (municipality of Agazzano, province of Piacenza). *G. morbida* and its vector *P. juglandis* were detected in two walnut trees (*Juglans regia)* grown in a small plot with other tree species.
- In May 2022, *G. morbida* and its vector *P. juglandis* were detected in Toscana region, in a plantation of *J. regia* for wood production in the municipality of Reggello (province of Firenze).

- In June 2022, *G. morbida* and its vector *P. juglandis* were detected again in Toscana region, in two plants of *Juglans nigra* in a public park in the municipality of Firenze. The plants were 2 km apart.

In all cases, eradication measures have been applied.

The pest status of *Geosmithia morbida* in Italy is officially declared as: **Present, only in some parts of the Member State concerned**.

The situation of *Pityophthorus juglandis* in Italy can be described as: **Present, only in some parts of the Member State concerned**.

Source: NPPO of Italy (2022-01, 2022-06, 2022-07).

Pictures: *Geosmithia morbida*. https://gd.eppo.int/taxon/GEOHMO/photos

Additional key words: detailed record **Computer codes:** GEOHMO, PITOJU, IT

2022/155 Update of the situation of *Ralstonia solanacearum* in Poland

In Poland, *Ralstonia solanacearum* (EPPO A2 List) causing brown rot of potato (*Solanum tuberosum*) is under official control. Annual surveys are conducted, and the pathogen was so far found sporadically on ware potatoes and submitted to eradication measures according to EU regulation. In 2021, 3 ware potato lots tested positive and the fields where they had been grown were declared to be infested (in the municipalities of Piaseczno, Pomiechówek and Sieradz).
In June 2022, the pathogen was detected in a sample of water collected in the Widawa river in the municipality of Długołęka. This is the first detection of *R. solanacearum* in surface water in the territory of Poland.

The pest status of *Ralstonia solanacearum in Poland* is officially declared as: **Present, at low prevalence, under eradication.**

Source: NPPO of Poland (2021-12, 2022-06).

Pictures: *Ralstonia solanacearum*. https://gd.eppo.int/taxon/RALSSL/photos

Additional key words: detailed record **Computer codes:** RALSSL, RALSSO, PL

2022/156 Update on the situation of huanglongbing and *Diaphorina citri* in Japan

In a recent review, Iwanami (2022) presents the history of huanglongbing and its management in Japan. In Japan, the prevalent pathogen and vector are '*Candidatus* Liberibacter asiaticus' and *Diaphorina citri* (both EPPO A1 List), respectively. The vector, *D. citri*, is widespread in the subtropical islands that are located between Taiwan and Kyushu main island. On these subtropical islands, *Murraya paniculata*, a preferred host of *D. citri*, is widely planted as a hedge in residential areas.

Huanglongbing was not detected in Japan until the 1980s. Initial surveys conducted in citrus commercial orchards did not immediately detect the disease. In 1988, the disease was first found in 2 *Citrus depressa* trees (1 in a small orchard and 1 in a private garden) on Iriomote island (Okinawa prefecture, Ryūkyū archipelago) and these trees were subsequently destroyed. It is considered that if surveys had targeted private gardens, it is likely that the

disease would have been detected earlier. It is even hypothesized that huanglongbing was endemic in some of the subtropical islands of Japan before 1988. Later surveys detected huanglongbing on Iriomote (1993), Okinawa (1994) and 5 other islands in Okinawa prefecture. In Kagoshima prefecture, the disease was found in Yoron island (2003), and other islands located to the south of Oshima island.

In Okinawa prefecture, it was considered that the disease was too widespread to attempt eradication, but an eradication programme was launched in Kagoshima prefecture, as the disease was restricted to limited areas (southern subtropical islands). In 2012, the disease was successfully eradicated from the Kikaijima island. At present, the northern limit of huanglongbing in Japan is Tokunoshima island (Kagoshima prefecture). In Okinawa, the application of phytosanitary measures (e.g. control of *D. citri*, destruction of infected trees, restrictions on the movement of citrus planting material, surveys) allowed the establishment of a disease-free zone. In addition, an early warning system has been put into place in the coastal areas of Kyushu main island to protect citrus-growing areas.

Source: Iwanami T (2022) Occurrence and control of citrus greening (huanglongbing) in Japan. *Japan Agricultural Research Quarterly*: *JARQ* **56**(2), 105-120. https://doi.org/10.6090/jarq.56.105

Pictures: '*Candidatus* Liberibacter asiaticus'. https://gd.eppo.int/taxon/LIBEAS/photos

Additional key words: detailed record **Computer codes:** LIBEAS, JP

2022/157 *Pontederia cordata* in the EPPO region: addition to the EPPO Alert List

Why
Pontederia cordata (Pontederiaceae) is commonly utilised as a pond plant in the EPPO region. In some areas where the plant is grown it has shown invasive tendencies. The EPPO Panel on Invasive Alien Plants are seeking further information on the occurrence and behaviour of *P. cordata* in the EPPO region, outside of gardens and planted areas.

Geographical distribution
Africa: Kenya, Malawi, South Africa, Uganda, Zambia.
EPPO region: Belgium, France, Italy, Ireland, the Netherlands, Spain and Switzerland.
North America: Mexico, United States of America (Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Vermont, West Virginia, Wisconsin).
South and Central America: Argentina, Belize, Brazil, Colombia, Cuba, Honduras, Paraguay, Uruguay, Venezuela.
Oceania: Australia, New Zealand.

Morphology
Pontederia cordata is a long-lived rooted freshwater plant 1-2 m tall that grows in clusters and forms colonies. The stems are smooth, emerging above the water surface and branched, each bearing a leaf and a flower spike. The leaves are light or yellowish green, cordate in shape, 230 mm long by 70 mm wide. Leaves appear one per stem each with a long petiole that clasps the stem. The flowers of *P. cordata* are blue and appear at the terminal end of the stem. The flowers are on long spikes which are 50-150 mm long. Each flower is 15 mm long and the upper petal has a yellow blotch in the centre.

Biology and Ecology
Pontederia cordata is a perennial species that reproduces by seed and vegetatively from fragments of rhizome which can take root and form new infestations.

Habitats
Pontederia cordata grows in well saturated soils, at the interface between the aquatic and terrestrial environments, and in slow moving water bodies up to a depth of 40 cm. *Pontederia cordata* can grow either rooted to a substrate (pond margin) or free-floating. It can grow in marshes, streams with standing water, ponds and shallow lakes. *P. cordata* can be found in urban and semi-urban habitats where it has escaped or been dumped from gardens.

Pathways for movement
Pontederia cordata is a popular ornamental plant grown in gardens and parks. The species is widely traded in the horticultural industry.

Impacts
The invasive nature of *P. cordata* has been recorded in both the native and some of the introduced range. In South Africa, the species is recorded to compete with indigenous riverbank plant species and crop species when it encroaches in irrigated fields. *P. cordata* can form dense stands which can block drainage canals and obstruct access to the edges of water bodies. *P. cordata* can have a negative impact on local biodiversity by outcompeting native plant species and on ecosystem services.

Control

Controlling *P. cordata* can be difficult due to the habitat the species grows in. Physical control measures can be applied but to be successful, all parts of the plant must be removed. Chemical control can be effective against *P. cordata,* but herbicide use in or near waterbodies is often highly restricted.

Sources

Dana ED, García-de-Lomas J, Verloove F (2021) First record of *Pontederia cordata* L. (Pontederiaceae) in southern Spain and risk assessment for Europe. *BioInvasions Records* **10**(4), 775–788.

Duvigneaud J, Saintenoy-Simon J (1998) *Pontederia cordata* L. dans le département des Ardennes (France). *Adoxa* **18**, 3-5.

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

2022/158 Herbicide resistance in *Amaranthus palmeri*

Amaranthus palmeri (Amaranthaceae - EPPO A2 List) is a dioecious summer annual species native to North America. In its native range, it is a weed in agricultural fields and disturbed habitats. It has a high fecundity and a long-lived seed bank, which make management of the species difficult. In the EPPO region, it is established in a few countries and transient in several others. *A. palmeri* can develop resistance to herbicides which can complicate the management of the species (see EPPO RS 2021/095). In South Africa, *A. palmeri* is classified as naturalized. A population of *A. palmeri* was found in the Douglas district in South Africa and showed resistance to herbicides with different sites of action. Initially, this *A. palmeri* population was discovered in a glyphosate- tolerant cotton field, where it survived glyphosate treatment. Greenhouse experiments and molecular analyses indicated resistance to chlorimuron-ethyl and glyphosate, while <90% control was observed at the label rate for mesotrione, atrazine, saflufenacil, and S-metolachlor. However, glufosinate, tembotrione, acifluorfen, dicamba, 2,4-D, metribuzin, acetochlor, isoxaflutole, diflufenican, and pyroxasulfone were effective at controlling the population. This type of profiling of herbicide sensitivity can allow for the development of programmes to control and potentially minimize the spread of this weed.

Source: Reinhardt C, Vorster J, Küpper A, Peter F, Simelane A, Friis S, Magson J, Aradhya C (2022) A non native Palmer amaranth (*Amaranthus palmeri*) population in the Republic of South Africa is resistant to herbicides with different sites of action. *Weed Science*. https://doi.org/10.1017/wsc.2022.9

Pictures: *Amaranthus palmeri*. https://gd.eppo.int/taxon/AMAPA/photos

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

2022/159 Occurrence of *Phytolacca americana* in crop fields in the EPPO region

Phytolacca americana is native to North America and widespread in the EPPO region. Within the EPPO region, the species occurs in clear-cut areas, along hedgerows and wasteland, along field margins, canals and coastal areas. The species is found in forest plantations and in disturbed woodlands. In 2021, infestations of *P. americana* were surveyed in Southern Austria and included the municipalities of Gabersdorf and St. Veit am Vogau. The results of

the survey showed that *P. americana* colonized mainly the narrow strip between two crop fields and field margins, but it sometimes also occurred inside the crop field. The species infested predominately oil pumpkin and maize (comprising of > 90% of all records in crop fields), but also soybean and cereal crops. In this area, *P. americana* was frequently observed in the interspersed wooded areas, as well as in ruderal habitats (e.g. roadsides, wasteland), below power pylons and tree stands. Population sizes in these habitats ranged from a few (large) individuals to more than 100. The authors consider that *P. americana* will not become a significant invasive alien plant in Austria, but under certain conditions the species can be locally a problem. In Austria, tillage operations are widely adopted in agriculture. It is assumed that *P. americana* is not likely to establish and become weedy under such conditions as the taproot will most likely be destroyed.

Source: Follak S, Schwarz M, Essl F (2022) Notes on the occurrence of *Phytolacca americana* L. in crop fields and its potential agricultural impact. *BioInvasions Records* **11** (in press).

Pictures: *Phytolacca americana*. https://gd.eppo.int/taxon/PHTAM/photos

Additional key words: invasive alien plants **Computer codes:** PHTAM, AT

2022/160 Effects of *Rudbeckia laciniata* on the soil seed bank

Rudbeckia laciniata (Asteraceae) is a rhizomatous perennial originating from the Eastern USA and was introduced into the EPPO region as an ornamental plant at the beginning of the 17th century. It prefers moist habitats, rivers streams and drainage ditches, ruderal habitats along transportation networks. In invaded areas, it can form dense monocultures which can alter the species composition of the habitat. The study was conducted in Southern Poland in two types of abandoned meadows. The first location was outside a river valley in a fresh meadow, and the second was within a river valley in a wet meadow. In each meadow, the soil seed bank was sampled from sites dominated with *R. laciniata* (sites where it exceeds 70% of the vegetation cover), sites of intermediate invasion (less than 70% cover but greater than 0% cover), and sites where *R. laciniata* was absent. Soil samples were taken from each site from the upper soil layer (0-5 cm) and the lower layer (5-10 cm) in early spring. The soil seed bank was estimated using the seedling emergence method. Soil was placed on trays in a greenhouse and emerging seedlings were identified. In the wet meadow, the seed bank of *R. laciniata* in the invasion zone was 17 476 seeds/m^2, and in the fresh meadow, it was 4132 seeds/m^2. The majority of the *R. laciniata* seeds were located in the surface layer of soil. The results showed that 47 % (in fresh meadow) and 56 % (wet meadow) of recorded species occurred only in the soil seed bank, and were absent in aboveground vegetation. Emergence of native plants from the soil seed bank is low due to rapid shading of the soil surface by *R. laciniata* seedlings. However, as native seeds persist in the seed bank regular management may act to promote the restoration of the invaded sites.

Source: Jędrzejczak E, Klichowska E, Nobis M (2022) Effect of *Rudbeckia laciniata* invasion on soil seed banks of different types of meadow communities. *Nature Scientific Reports* https://doi.org/10.1038/s41598-022-14681-1

Additional key words: invasive alien plants **Computer codes:** RUDLA, PL