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2024/123 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 Bhutan, faunistic surveys conducted in 2017 reported 23 fruit fly species (Diptera: Tephritidae) for the first time**.** This includes *Bactrocera latifrons* **(**EPPO A1 List), *Ptilona confinis* (EU A1 quarantine pest), *Acanthonevra dunlopi* (EU A1 quarantine pest), *Bactrocera divenderi, Zeugodacus diversus* (Korneyev *et al.*, 2023).

Bipolaris maydis (formerly EPPO A2 List) has been first detected in 2023 in Algeria in imported maize seeds (*Zea mays*) available from seed stores used by farmers (Zibani & Benslimane, 2024).

Gonipterus platensis (Coleoptera: Curculionidae), one of the species of the *Gonipterus scutellatus* species complex (EPPO A2 List), is first reported from Ecuador. It was identified in the city of Quito in 2023 (Crespo-Pérez *et al.*, 2023).

- **Detailed records**

In California (US), *Cryptostroma corticale* (sooty bark disease of sycamore) was first observed in 2022 in Sacramento County on 3 silver maples (*Acer saccharinum*) and one *A. platanoides*. This is the first time that *A. saccharinum* is mentioned as a host (Garbelotto *et al.*, 2024).

In Brazil *Gonipterus platensis* (Coleoptera: Curculionidae), one of the species of the *Gonipterus scutellatus* species complex (EPPO A2 List), is first reported from Minais Gerais damaging eucalyptus plantations. *G. platensis* had also been reported in 2022 from Bahia state (Ribeiro *et al.*, 2023).

In Estonia, tomato brown rugose fruit virus (*Tobamovirus fructirugosum*, ToBRFV – EPPO A2 List) was first detected in May 2021 and eradicated (EPPO RS 2021/176, RS 2022/086). ToBRFV was found again during the official survey in June 2024 in two small greenhouses in Southern Estonia: one producing tomato fruit (*Solanum lycopersicum*) in Valga parish and one producing tomato plants for planting in Mustvee parish. Plants did not show any symptoms. Official measures are being applied.
The pest status of tomato brown rugose fruit virus in Estonia is officially declared as: **Present, only in some parts of the Member State concerned, at low prevalence, under eradication.**

- **Denied record**

The NPPO of Argentina recently informed the EPPO Secretariat that *Stenoma catenifer* (Lepidoptera: Oecophoridae), a major pest of avocado (*Persea americana*), is absent from its territory. Its presence had been erroneously quoted in two scientific publications. A thorough analysis of the literature confirmed that these records were not substantiated by detailed observations or studies. In addition, recent consultations with entomologists and growers confirmed that *S. catenifer* has never been observed in Argentina (NPPO of Argentina, 2024).

- **Host plants**

Apple stem grooving virus (*Capillovirus mali*, ASGV, EU RNQP) and citrus leaf blotch virus (*Citrivirus citri*, CLVB, EU RNQP) are recorded for the first time on carambola (*Averrhoa carambola*) (Yang *et al.*, 2024).

In Michigan (US) *Bretziella fagacearum* (EPPO A1 List) is widespread on oak trees causing oak wilt. It was first reported causing the death of chestnut trees (*Castanea sativa x C. crenata*) in a commercial orchard in 2021 (Chahal et *al.*, 2024).

In inoculation experiments, the pinewood nematode *Bursaphelenchus xylophilus* (EPPO A2 List) could survive and reproduce in logs of silver birch (*Betula pendula*) although both survival rate and reproduction levels were much lower than in pine (*Pinus sylvestris*) (Kulinich *et al.*, 2024).

In Vietnam, the root-knot nematode *Meloidogyne enterolobii* (EPPO A2 List) was known to occur on guava (*Psidium guajava*). It was recently recorded as causing damage on mulberry (*Morus alba*) in Lam Dong (Nguyen *et al.*, 2024). Le *et al.* (2024) also report the first finding worldwide on a citrus species (*C. maxima*).

- **Regulations**

In the USA, tomato brown rugose fruit virus (*Tobamovirus fructirugosum*, ToBRFV – EPPO A2 List) is no longer regulated on tomato and pepper fruits for consumption. This allows US growers to market fruit grown at facilities where ToBRFV virus is detected, rather than having to destroy the fruit. The restrictions on import of host propagative material, including seed remain in force (APHIS, 2024).

- **New pests and taxonomy**

Phlyctinus callosus (Coleoptera: Curculionidae, EPPO Alert List) was recently showed to be a species complex of approximately eight to ten species, six of which have been named. In a recent review, Hansen *et al.* (2024) clarified that among all these species, only *Phlyctinus callosus sensu stricto* and *Phlyctinus xerophilus sensu lato* are crops pests. *P. callosus* is mostly distributed along the southern coast of South Africa, while *P. xerophilus* is distributed in inland valleys. The two species show similar biology, physiology and ecology in agro-ecosystems, and can be controlled using the same management measures.

Melon chlorotic spot virus (*Mechlorovirus cucumeris*, MeCSV) is a recently described virus (2019). It was first isolated from a melon plant (*Cucumis melon*) in France. In 2020, it was detected in Belgium in symptomatic tomatoes (*Solanum lycopersicum*), and in 2022 in cultivated sorrel (*Rumex acetosa*) that had been cultivated in the same greenhouse as the tomatoes (Temple *et al.*, 2024).

Sources:

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Additional key words: absence, denied record, detailed record, host plant, new record, regulations

Computer codes: ACNVDU, ASGV00, BCTRDV, BURSXY, CERAFA, CLBV00, COCHHE, CRPSCO, DACUDI, DACULA, GONPPL, GONPSC, MECSV0, MELGMY,PHLYCA, PHLYXE, PTIOCO, STENCA, TOBRFV, AR, BE, BR, BT, DZ, EC, EE, US, VN

2024/124 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 2024/098), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Byakushincecis eppoi*. https://gd.eppo.int/taxon/ASCXEP/datasheet
- '*Candidatus* Phytoplasma mali'. https://gd.eppo.int/taxon/PHYPMA/datasheet
- Palm lethal yellowing type syndromes. https://gd.eppo.int/taxon/PHYP56/datasheet

In addition to these datasheets prepared in the framework of the EU/EPPO project, two new datasheets have been published in the EPPO Bulletin and in the EPPO Global Database.

- *Chrysobothris femorata*. https://gd.eppo.int/taxon/CHRBFE/datasheet
- *Chrysobothris mali*. https://gd.eppo.int/taxon/CHRBMA/datasheet

Source: EPPO Secretariat (2024-06).

Additional key words: publication **Computer codes:** ASCXEP, CHRBFE, CHRBMA, PHYP56, PHYPMA

2024/125 Binomial nomenclature for virus species (continued)

For many years, proposals to use binomial names to name virus species have been debated among the virology community. In 2021, the International Committee on Taxonomy of Viruses (ICTV) approved a uniform system of formal virus names which follows the binomial 'genus-species' format with or without Latinized species epithets. For example, the virus species which is causing rose rosette is now called emaravirus rosae. This new rule is being implemented and new names are gradually being proposed by ICTV.

As a user of taxonomy, the EPPO Secretariat has started to implement these changes for virus names (mainly plant viruses) in the EPPO Global Database. In 2022, the first changes were made for a number of genera (EPPO RS 2022/207) and continued in 2023 and 2024 (RS 2023/177 and 2024/031). In May 2024, ICTV released an updated list, and as a consequence, changes were made in the EPPO Global Database for the virus species belonging to families and genera listed below:

Family	Genus	EPPO Code
Alphaflexiviridae	Allexivirus	1ALLVG
Alphaflexiviridae	Botrexvirus	1BOXVG
Alphaflexiviridae	Lolavirus	1LOLVG
Alphaflexiviridae	Platypuvirus	1PLAVG
Alphaflexiviridae	Potexvirus	1POTXG
Alphaflexiviridae	Sclerodarnavirus	1SCLVG
Benyviridae	Benyvirus	1BENYG
Betaflexiviridae	Capillovirus	1CAPLG
Betaflexiviridae	Carlavirus	1CARLG
Betaflexiviridae	Chordovirus	1CHOVG
Betaflexiviridae	Citrivirus	1CTRIG
Betaflexiviridae	Divavirus	1DIVVG
Betaflexiviridae	Foveavirus	1FOVVG
Betaflexiviridae	Prunevirus	1PRUVG
Betaflexiviridae	Robigovirus	1ROBIG
Betaflexiviridae	Sustrivirus	1SUSVG
Betaflexiviridae	Tepovirus	1TEPOG
Betaflexiviridae	Trichovirus	1TRCVG

Family	Genus	EPPO Code
Betaflexiviridae	Vitivirus	1VITVG
Betaflexiviridae	Vitivirus	1VITVG
Betaflexiviridae	Wamavirus	1WAMVG
Bromoviridae	Alfamovirus	1ALFAG
Bromoviridae	Anulavirus	1ANUVG
Bromoviridae	Bromovirus	1BROMG
Bromoviridae	Cucumovirus	1CUCMG
Bromoviridae	Ilarvirus	1ILARG
Bromoviridae	Oleavirus	1OLEVG
Closteroviridae	Ampelovirus	1AMPVG
Closteroviridae	Bluvavirus	1BLVVG
Closteroviridae	Closterovirus	1CLOTG
Closteroviridae	Crinivirus	1CRIVG
Closteroviridae	Menthavirus	1MENVG
Closteroviridae	Olivavirus	1OLVVG
Closteroviridae	Velarivirus	1VELVG
Deltaflexiviridae	Deltaflexivirus	1DFLXG
Endornaviridae	Alphaendornavirus	1AEDVG
Endornaviridae	Betaendornavirus	1BEDVG
Gammaflexiviridae	Mycoflexivirus	1MYFXG
Geminiviridae	Becurtovirus	1BECVG
Geminiviridae	Begomovirus	1BEGOG
Geminiviridae	Capulavirus	1CAPVG
Geminiviridae	Citlodavirus	1CITVG
Geminiviridae	Curtovirus	1CUTVG
Geminiviridae	Eragrovirus	1ERAVG
Geminiviridae	Grablovirus	1GRAVG
Geminiviridae	Maldovirus	1MALVG
Geminiviridae	Mastrevirus	1MASVG
Geminiviridae	Topocuvirus	1TOPVG
Geminiviridae	Turncurtovirus	1TURVG
Nanoviridae	Babuvirus	1BABUG
Nanoviridae	Nanovirus	1NANOG
Potyviridae	Bevemovirus	1BEVVG
Potyviridae	Bevemovirus	1BEVVG
Potyviridae	Brambyvirus	1BRBVG
Potyviridae	Bymovirus	1BYMOG
Potyviridae	Ipomovirus	1IPOMG
Potyviridae	Macluravirus	1MCLUG
Potyviridae	Poacevirus	1POAVG
Potyviridae	Potyvirus	1POTYG
Potyviridae	Roymovirus	1ROYVG
Potyviridae	Rymovirus	1RYMOG
Potyviridae	Tritimovirus	1TRTVG
Reoviridae	Fijivirus	1FIJIG
Reoviridae	Oryzavirus	1ORYVG

Family	Genus	EPPO Code
Reoviridae	Phytoreovirus	1PREOG
Virgaviridae	Furovirus	1FUROG
Virgaviridae	Goravirus	1GORVG
Virgaviridae	Hordeivirus	1HORDG
Virgaviridae	Pecluvirus	1PECLG
Virgaviridae	Pomovirus	1POMVG
Virgaviridae	Tobamovirus	1TOBAG
Virgaviridae	Tobravirus	1TOBRG

Source: EPPO Secretariat (2024-06).

Additional key words: taxonomy

2024/126 New outbreak of *Aromia bungii* in Italy

In Italy, *Aromia bungii* (Coleoptera: Cerambycidae – EPPO A2 List) was first found in Campania region (province of Napoli) in 2012 (EPPO RS 2012/204) and in 2018 on the island of Procida (province of Napoli). It was also detected in 2013 in Lombardia region (RS 2013/187) and in 2020 in Lazio region (RS 2020/191). Official measures are applied (RS 2021/035, RS 2022/210).

In July 2023, a first outbreak was detected in Toscana region. *A. bungii* was found on 5 apricot trees (*Prunus armeniaca*) located in the municipality of Rosignano Marittimo (Livorno province). Further surveys were conducted to delimit the infested zone. In total 204 *Prunus* plants were found to be infested, and the infested area covers 54.94 ha. Eradication measures in accordance with Decision (EU) 2018/1503 are implemented.

The pest status of *Aromia bungii i*n Italy is officially declared as: **Present, only in some parts of the Member State concerned, under eradication or under containment, in case eradication is impossible.**

Source: NPPO of Italy (2024-04). https://www.regione.toscana.it/-/cerambicide-dal-collo-rosso-aromia-bungii-a-rosignano-marittimo-aggiornata-l-area-delimitata

EU (2018) Commission Implementing Decision (EU) 2018/1503 of 8 October 2018 establishing measures to prevent the introduction into and the spread within the Union of *Aromia bungii* (Faldermann). OJL 254, 9-18. ELI: http://data.europa.eu/eli/dec_impl/2018/1503/oj

Pictures *Aromia bungii*. https://gd.eppo.int/taxon/AROMBU/photos

Additional key words: detailed record **Computer codes:** AROMBU, IT

2024/127 Finding of *Psacothea hilaris* in Germany

Psacothea hilaris (Coleoptera: Cerambycidae – formerly EPPO Alert List) is a wood borer affecting mainly *Ficus carica* (fig) and *Morus* spp. (mulberries) which originates from Asia and is now established in Lombardia (Italy). In Germany, it was first reported in 2013 in Northern Bayern at a freight station in Neustadt, near Coburg (EPPO RS 2013/245). *P. hilaris* was found again recently in Rheinland-Pfalz in wood pallets from China.

An express PRA was conducted and concluded that the pest does not present a phytosanitary risk for Germany as its host plants are not widely grown in Germany, but may be a concern for Southern EU member states where figs are commercially produced.

The pest situation of *Psacothea hilaris* in Germany can be described as: **Absent, intercepted only.**

Source: JKI (2024) Express-PRA zu *Psacothea hilaris* – Auftreten und Beantandung – (in German). https://pflanzengesundheit.julius-kuehn.de/risikoanalysen.html or https://pra.eppo.int/pra/693c1a5b-9c1a-4e2f-ade6-52f5e0774070

Pictures *Psacothea hilaris*. https://gd.eppo.int/taxon/PSACHI/photos

Additional key words: interception **Computer codes:** PSACHI, DE

2024/128 Update of the situation of *Toumeyella parvicornis* in Italy

In Italy, the pine tortoise scale *Toumeyella parvicornis* (Hemiptera: Coccidae - EPPO Alert List) was first found in Campania region in 2014 and in 2018 in the city of Rome (Lazio region) (EPPO RS 2021/082). It was found in one locality in Abruzzo and Puglia region in 2021 (RS 2021/191) and in Firenze (Toscana region) in 2022 (RS 2022/083).

In July 2023, the presence of *T. parvicornis* was confirmed on several plants of *Pinus pinea* in public areas and private gardens located in Tirrenia (municipality of Pisa, Toscana region). In August, 178 pine trees were treated by endotherapy, and phytosanitary measures were applied.

Source: NPPO of Italy (2024-05).

Servizio Fitosanitario Nazionale. *Toumeyella parvicornis*. https://www.protezionedellepiante.it/emergenze-fitosanitarie/toumeyella-parvicornis/

Pictures *Toumeyella parvicornis*. https://gd.eppo.int/TOUMPA/photos

Additional key words: detailed record **Computer codes:** TOUMPA, IT

2024/129 Update of the situation of *Scirtothrips aurantii* in Spain

The South African citrus thrips *Scirtothrips aurantii* (Thysanoptera: Thripidae – EPPO A1 List) was first reported in the EPPO region in Spain in Andalucía (province of Huelva) in September 2020 (EPPO RS 2021/008, RS 2022/084) and eradication measures have been applied. The NPPO of Spain recently informed the EPPO Secretariat that *S. aurantii* has been detected in several plots located in several municipalities of Alicante and Valencia provinces, in the Autonomous Region of Comunidad Valenciana.

During May and June 2024, thrips damage was observed in fruits of persimmon (*Diospyros kaki*), pomegranate (*Punica granatum*), citrus (*Citrus reticulata, Citrus x aurantium* var. *clementina, Citrus x aurantium* var. *unshiu, Citrus x limon, Citrus x aurantium* var. *sinensis, Citrus x aurantium* var. *paradisi)* and table grape (*Vitis vinifera*). The affected plots were inspected, and samples were taken. The identification of *S. aurantii* was carried out by two official laboratories and the presence of the pest was confirmed in pomegranate (4 plots), citrus (15 plots), table grape (1 plot) and persimmon (3 plots) crops from Albatera, Benferri, Callosa de Segura, Orihuela, Elche and Crevillente (Alicante) and Alzira, Cotes, La Alcudia, Sellent, Benifairó de la Valldigna, Simat de la Valldigna and Tavernes de la Valldigna (Valencia). Demarcated areas have been established (including buffer zones of 100 m surrounding the infested areas) and eradication phytosanitary measures will be taken. In total, the infested area in Alicante and Valencia provinces covers 20.57 ha.

The pest status of *Scirtothrips aurantii* in Spain is officially declared as: **Present, only in some parts of the Member State concerned, under eradication.**

Source: NPPO of Spain (2024-06).

Pictures *Scirtothrips aurantii*. https://gd.eppo.int/taxon/SCITAU/photos

Additional key words: detailed record **Computer codes:** SCITAU, ES

2024/130 Update of the situation of *Eotetranychus lewisi* in Madeira (Portugal)

In Madeira (Portugal), *Eotetranychus lewisi (*Acari: Tetranychidae - EU A1 quarantine pest) was first observed in Madeira Island in 1988, on poinsettia (*Euphorbia pulcherrima)*, and on *Vitis* sp. in 1990, and found again in 2017-2019 on poinsettia plants in 3 different municipalities (Funchal, Ponta Do Sol and Santa Cruz) (EPPO RS 2020/246). Eradication measures have been applied, and regular surveillance is conducted.

During surveys conducted in 2023 on Madeira Island, the presence of *E. lewisi* was detected and confirmed in two public sites: one in the municipality of Machico (parish of Porto da Cruz) on the border of the municipality of Santa Cruz, where the pest had already been detected previously, and one in a new parish in the county of Ribeira Brava. Official phytosanitary measures are being implemented aiming at eradication. They include the destruction of the infested plants and preventive treatments in the surrounding areas, as well as the continuation of the restriction of movement of host plants originating in the counties where the pest was found.

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 (2024-06).

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

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

2024/131 First report of *Meloidogyne ethiopica* in Türkiye

In Türkiye, *Meloidogyne ethiopica* (EPPO A1 List) was first reported in 2013 from tomato and cucumber crops (EPPO RS 2014/007). However, it has been later clarified that this was a misidentification, and that the species present was in fact *M. luci* (EPPO A2 List).

In August 2022, during a survey on root-knot nematodes many galls in the roots of kiwifruit (*Actinidia deliciosa)* were discovered in the following provinces: Bursa and Yalova (Marmara region), and Rize (Black Sea region). The identity of the nematode was confirmed by morphological, morphometrical, and molecular studies. Bioassays in pots confirmed the pathogenicity of the pest to *A. deliciosa*.

The situation of *Meloidogyne ethiopica* in Türkiye can be described as follows: **Present, not widely distributed.**

Source: Felek AF, Akyazi F (2024) First report of root-knot nematode *Meloidogyne ethiopica* Whitehead, 1968 on kiwifruit *Actinidia deliciosa* (A. Chev.) CF Liang and AR Ferguson, 1984 in Türkiye. *Journal of Phytopathology* **172**(2), e13291.

Pictures *Meloidogyne ethiopica*.

Additional key words: new record **Computer codes:** MELGET, TR

2024/132 First report of tomato brown rugose fruit virus in Latvia

The NPPO of Latvia recently informed the EPPO Secretariat of the occurrence of tomato brown rugose fruit virus (*Tobamovirus fructirugosum*, ToBRFV – EPPO A2 List) on its territory. ToBRFV was first detected in June 2024 in Ropaži area (Stopiņi parish) as part of an official survey. The virus was detected in a greenhouse (1.22 ha) on asymptomatic tomato plants (*Solanum lycopersicum*) for fruit production. Phytosanitary measures according to EU Regulation 2023/1032 were applied. The production of tomato fruit in the greenhouse is allowed and plants will be destroyed afterwards ensuring that the virus does not spread.

The pest status of tomato brown rugose fruit virus in Latvia is officially declared as follows: **Present, at low prevalence, under eradication**.

Source: NPPO of Latvia (2024-06).

Commission Implementing Regulation (EU) 2023/1032 of 25 May 2023 establishing measures to prevent the introduction into and the spread within the Union territory of Tomato brown rugose fruit virus (ToBRFV) and amending Implementing Regulation (EU) 2020/1191, OJ L 139. http://data.europa.eu/eli/reg_impl/2023/1032/oj

Pictures Tomato brown rugose fruit virus. https://gd.eppo.int/taxon/TOBRFV/photos

Additional key words: new record **Computer codes:** TOBRFV, LV

2024/133 First report and eradication of tomato brown rugose fruit virus in Romania

The NPPO of Romania recently informed the EPPO Secretariat of the occurrence of tomato brown rugose fruit virus (*Tobamovirus fructirugosum*, ToBRFV – EPPO A2 List) on its territory. ToBRFV was first detected in March 2024 in the county of Arad (western part of Romania) as part of an official survey. The virus was detected in a greenhouse (200 m^2) in asymptomatic seedlings of aubergine (*Solanum melongena*) which had been grown from seeds originating in Thailand. Phytosanitary measures according to EU Regulation 2023/1032 were applied: all *S. melongena* plants were destroyed, and tools and other materials were disinfected. An investigation was conducted to determine the origin of the outbreak: seeds of the same batch were tested and were found to be negative. It is concluded that ToBRFV infection may be linked to the re-use of undisinfected plastic alveoli that had been used to produce *Solanum lycopersicum* seedlings in the previous year.

The pest status of tomato brown rugose fruit virus in Romania is officially declared as follows: **Absent, pest eradicated**.

EPPO note: The EPPO Secretariat notes that prior to this report *S. melongena* has been considered as a doubtful host of ToBRFV, as there were no reports of natural infection and several scientific articles reported failure in infesting aubergine plants in inoculation trials.

Source: NPPO of Romania (2024-04, 2024-05).

Commission Implementing Regulation (EU) 2023/1032 of 25 May 2023 establishing measures to prevent the introduction into and the spread within the Union territory of Tomato brown rugose fruit virus (ToBRFV) and amending Implementing Regulation (EU) 2020/1191, OJ L 139. http://data.europa.eu/eli/reg_impl/2023/1032/oj

Pictures Tomato brown rugose fruit virus. https://gd.eppo.int/taxon/TOBRFV/photos

Additional key words: new record **Computer codes:** TOBRFV, RO

2024/134 First report of American plum line pattern virus in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of the first finding of American plum line pattern virus (*Ilarvirus APLPV*, APLPV – EPPO A1 List) on its territory.

APLPV was detected in two different reference collections of *Prunus* trees grown in the open air. This plant material is maintained by the NPPO of the Netherlands as a collection of *Prunus* viruses which can be used as positive controls e.g. for test development or proficiency testing. The identity of APLPV was confirmed on 30 May 2024 by the National Reference Laboratory. In one of these reference collections, two *Prunus* trees of approximately 10 years old (*Prunus x yedoensis* and *Prunus serrulata*) were found to be infected. Fourteen other *Prunus* trees in the same and neighbouring row tested negative for APLPV, based on individual sampling and testing of each tree. In the other reference collection, 9 *Prunus* trees (1 *Prunus subhirtella*, 2 *Prunus x yedoensis*, 5 *Prunus avium* and 1 *Prunus serrulata*) were found to be infected. This collection was tested as its trees are clonally linked to those of the other collection.

The source of the outbreak is unknown, but it is considered that the virus may have been present in some of the accessions or clonal lines since the 1960s. No typical symptoms were observed on the trees. Infected trees will be destroyed. Neighbouring trees that tested negative, will again be tested in 2025.

The pest status of American plum line pattern virus in the Netherlands is officially declared as: **Present, localized, under eradication.**

Source: NPPO of the Netherlands (2024-06).

Pictures *Ilarvirus APLPV*. https://gd.eppo.int/taxon/APLPV0/photos

Additional key words: new record **Computer codes:** APLPV0, NL

2024/135 First report of tomato ringspot virus (*Nepovirus lycopersici*) in Belgium

The NPPO of Belgium recently informed the EPPO Secretariat of the first outbreak of tomato ringspot virus (*Nepovirus lycopersici*, ToRSV – EPPO A2 List) on its territory. A few interceptions of potted plants infested with ToRSV had been recorded in Belgium at the end of 2023 but those were not considered as outbreaks.

ToRSV was detected in January 2024 in samples of 3 *Malus domestica* trees during official testing before exportation. The exportation of the lot was consequently blocked, and the trees cannot be moved. The trees had been grown in an open field in the province of Vlaams-Brabant. Further samples and analyses are being performed to assess the phytosanitary situation, investigate the source of the outbreak and delimit the infested area.

The pest status of tomato ringspot virus in the Belgium is officially declared as: **Present, in specific parts of the Member State, where host crop(s) are grown.**

Source: NPPO of Belgium (2024-04).

Pictures *Nepovirus lycopersici*. https://gd.eppo.int/taxon/TORSV0/photos

Additional key words: new record **Computer codes:** TORSV0, BE

2024/136 First report of citrus yellow vein clearing virus in the Republic of Korea

Citrus yellow vein clearing virus (*Potexvirus citriflavivenae,* CYVCV, EPPO Alert list) is first reported from the Republic of Korea. A total of 118 leaf samples from nine regions of six provinces in Korea were collected from various citrus species in 2020 and 2021. CYVCV was identified using next-generation sequencing and reverse transcription polymerase chain reaction (RT-PCR) in 11 samples.

CYVCV was detected in 6 host plants: Eureka lemon (*Citrus x limon*), calamansi (x *Citrofortunella microcarpa),* kumquat (*Fortunella japonica*), Persian lime (*Citrus x latifolia)*, pummelo (*Citrus maxima*) and mandarin (*Citrus reticulata x sinensis*), often in a mixed infection. This is the first report of calamansi and kumquat as hosts of CYVCV. Eureka lemon and Persian lime exhibited yellow vein clearing, leaf distortion, and water-soak lesions on the underside of the leaves, while the other hosts showed only yellowing symptoms on the leaves.

Source: Jin T, Kim JK, Byun HS, Choi HS, Cha B, Kwak HR, Kim M (2024) Occurrence and multiplex PCR detection of citrus yellow vein clearing virus in Korea. *The Plant Pathology Journal* **40**(2), 125. https://doi.org/10.5423/PPJ.OA.09.2023.0136

Additional key words: new record **Computer codes:** CSYV00, KR

2024/137 First report of *Clavibacter nebraskensis* in Mexico

Clavibacter nebraskensis causes Goss's wilt and leaf blight of maize (*Zea mays*). It was considered as a serious disease that appeared in the 1970s in maize-producing areas in Nebraska and neighbouring states of the USA. It disappeared in the mid 1980s, before re-emerging after 2004 and spreading to further US states, as well as in Canada.

A recent article reports that in Mexico, this pathogen (regulated as a quarantine pest in Mexico) had caused occasional outbreaks in several parts of the country: in Sinaloa in 2011, in Coahuila in 2012, in Veracruz in 2013, and in Durango, Tlaxcala and Oaxaca in 2014.

Severe bacterial leaf blight symptoms were observed in several maize crops in Tlaxcala in September 2021. Pathogenicity and molecular tests confirmed that the pathogen was *Clavibacter nebraskensis*. The authors consider that *C. nebraskensis* is established in Mexico, and raise the hypothesis that it may originate in the Tlaxcala region.

Source: Flores-López LF, Olalde-Portugal V, Vidaver AK, Morales-Galván Ó, Hernández-Rosales M, Huerta AI (2024) Unlocking a mystery: characterizing the first appearance of *Clavibacter nebraskensis* in Mexican cornfields. *Plant Disease* **108**(5), 1374-1381.

Osdaghi E, Robertson AE, Jackson-Ziems TA, Abachi H, Li X, Harveson RM (2023) *Clavibacter nebraskensis* causing Goss's wilt of maize: five decades of detaining the enemy in the New World. *Molecular Plant Pathology* **24**(7), 675-692.

Additional key words: new record **Computer codes:** CORBNE, MX

2024/138 First report of '*Candidatus* Phytoplasma pyri' and '*Candidatus* Phytoplasma phoenicium' in Jordan

During field surveys conducted in September-October 2021 in North-Western Jordan (Amman and Ajloun governorates), '*Candidatus* Phytoplasma pyri' (associated with pear decline, EPPO A2 List) was detected for the first time in symptomatic pear (*Pyrus communis*) trees. The psyllid *Cacopsylla bidens* (Homoptera: Psyllidae) was abundant in pear trees and also tested positive for '*Ca* P. pyri', suggesting that this species could act as a vector of '*Ca*. P. pyri' in Jordan. In addition, '*Ca*. Phytoplasma solani' (EPPO A2 List), '*Ca*. P. aurantifolia' (EU A1 quarantine pest) and '*Ca*. P. omanense' were also detected. A phytoplasma-associated disease causing leaf yellowing and scorch on apple trees (*Malus domestica*) is also reported for the first time in Jordan. '*Ca*. P. solani' and '*Ca*. P. omanense' were detected in symptomatic apple samples.

In another study conducted between October 2020 and January-2021 in North-Western Jordan (Irbid and Ajloun governorates) phytoplasma-like symptoms were observed in almond trees (*Prunus dulcis*): early flowering along with evergreen pattern; witches' broom, yellowing and dieback; slim leaf and leaf rolling; stem fasciation. Phytoplasmas were detected in 30 of 140 samples collected from symptomatic almond trees. Seven species were identified: '*Ca*. Phytoplasma asteris' '*Ca*. P. aurantifolia', '*Ca*. P. omanense', '*Ca*. P. phoenicium' (EPPO A1 List), '*Ca*. P. pyri', '*Ca*. P. solani', and '*Ca*. P. ulmi'. This is the first report of '*Ca*. P. phoenicium' in Jordan, and the first report of '*Ca*. Phytoplasma pyri', '*Ca*. P. omanense', and '*Ca*. P. ulmi' on almond worldwide.

The situation of '*Candidatus* Phytoplasma pyri' in Jordan can be described as follows: **Present, not widely distributed.**

The situation of '*Candidatus* Phytoplasma phoenicium' in Jordan can be described as follows: **Present, not widely distributed.**

Source: Alloush AH, Bianco PA, Busato E, AlMahasneh A, Alma A, Tedeschi R, Quaglino F (2023) Association of seven '*Candidatus* Phytoplasma' species to an almond disease complex in Jordan, and preliminary information on their putative insect vectors. *Crop Protection* **164**, 106147.
Alloush AH, Bianco PA, Alma A, Tedeschi R, Quaglino F (2024) Phytoplasma identification in pome fruit trees and *Cacopsylla bidens* (Hemiptera: Psyllidae) in Jordan. *European Journal of Plant Pathology* **169**(1), 65-71.

Pictures '*Candidatus* Phytoplasma pyri'. https://gd.eppo.int/taxon/PHYPPY/photos
'*Candidatus* Phytoplasma phoenicium'. https://gd.eppo.int/taxon/PHYPPH/photos

Additional key words: new record, new host plant

Computer codes: PHYPAF, PHYPPY, PHYPSO, PHYPOM, CCPSBI, JO

2024/139 First report of '*Candidatus* Phytoplasma phoenicium' in Türkiye

'*Candidatus* Phytoplasma phoenicium' (EPPO A1 List) is associated with almond witches' broom in Lebanon and Iran.

Leaves of symptomatic almond trees (*Prunus dulcis*) were collected from the almond production areas in İlhan village (province of Şanlıurfa, Southeastern Anatolia region) in Türkiye. The trees showed symptoms such as witches' broom, stunting, shortening of the

internodes and early foliation. The detection and identification of the pathogen was done by a two-step PCR (direct and nested) test followed by sequencing. This is the first report of '*Candidatus* Phytoplasma phoenicium' on almond in Türkiye.

The situation of '*Candidatus* Phytoplasma phoenicium' in Türkiye can be described as follows: **Present, not widely distributed**

Source: Akkurak H, Güldür ME, Dikilitas M, Karakas S, Alfaifi MY, Shati AA, Sayyed RZ (2024) Molecular characterization of '*Candidatus* Phytoplasma phoenicium' infecting almond (*Prunus dulcis*) and evaluation of biochemical defenses produced in the plants. *Journal of Phytopathology* **172**(1), e13260.

Pictures '*Candidatus* Phytoplasma phoenicium'. https://gd.eppo.int/taxon/PHYPPH/photos

Additional key words: new record **Computer codes:** PHYPPH, TR

2024/140 Controversy about *Trichoderma afroharzianum* and its role in the ear rot of maize in Europe

In 2018, severe fungal infestations on maize (*Zea mays*) cobs were observed in several experimental fields in Southern Germany and the causal agent was identified as *Trichoderma afroharzianum* (Pfordt *et al.*, 2020). The presence of *T. afroharzianum* causing ear rot symptoms was also detected in a few cases in France and Italy (EPPO RS 2022/087, 2023/194). As this was the first time that a *Trichoderma* species was associated with a maize disease in Europe, *T. afroharzianum* was added to the EPPO Alert List.

Trichoderma species are associated with many different substrates such as soil, rhizosphere, decaying plant debris, foliar environment, and some species have been isolated as endophytes. Several strains of *Trichoderma* have been shown to be beneficial to plants and are being used in agriculture to promote nutrient uptake and plant growth, or to control a wide range of soilborne plant pathogens (e.g. *Fusarium, Phytophthora, Rhizoctonia*) on various crops.

A recent paper from Trillas *et al.* (2024) considers that the methodology used in the experiments carried out in Germany was questionable and did not provide sufficient evidence to conclude that *T. afroharzianum* was an aggressive plant pathogen causing ear rot on maize. In one of their conclusions, the authors wrote that '*as scientists and according to the International Biocontrol Manufacturers Association (IBMA), it is very important to investigate the real importance of* Trichoderma *ear rot in Europe and also determine whether* Trichoderma *is a secondary or a main agent responsible for disease by performing studies under realistic conditions …*)'.

No doubt that the debate on this question will continue.

Source: Trillas I, Segarra G, Avilés M (2024) Is *Trichoderma* ear rot on maize really a new dangerous plant disease. *Frontiers in Agronomy* **6**, https://doi.org/10.3389/fagro.2024.1386568

Pfordt A, Schiwek S, Karlovsky P, von Tiedemann A (2020) Trichoderma afroharzianum ear rot – A new disease on maize in Europe. *Frontiers in Agronomy* **2**, 547758. https://doi.org/10.3389/fagro.2020.547758

Sanna M, Pugliese M, Gullino ML, Mezzalama M (2022) First report of *Trichoderma afroharzianum* causing seed rot on maize in Italy. *Plant Disease* **106**(7), 1983. https://doi.org/10.1094/PDIS-12-21-2697-PDN

Pictures *Trichoderma afroharzianum*. https://gd.eppo.int/taxon/TRCDAF/photos

Additional key words: controversy **Computer codes:** TRCDAF

2024/141 *Myriophyllum rubricaule* in the EPPO region: addition to the EPPO Alert List

Why
Myriophyllum rubricaule (Haloragaceae) is a recently described species with a limited distribution in the EPPO region. The EPPO Panel on Invasive Alien Plants are seeking further information on any additional occurrences of *M. rubricaule* in the EPPO region and reports of environmental and economic impacts.

Geographical distribution
EPPO region: Belgium, Hungary, Netherlands.
South America: Chile (native).

Morphology
Myriophyllum rubricaule is an amphibious or aquatic species, only known from female plants in the introduced range. Stems are unbranched or with up to 6 branches per 20 cm, often rooting at submerged and lower emerged nodes. Leaves in whorls of 4 or 5, opposite and/or alternate. Submerged leaves are olive green or turning pale to dark reddish brown. Emerged leaves are bright green to bluish green, sometimes tinged red brown or pinnae red-tipped. Flowers solitary in the axils of the emerged leaves, tinged pink. Fruits have not been observed.

Biology and Ecology
No seed production has been observed in the EPPO region and it is likely that dispersal is via regeneration of plants/stem fragments. It is likely that *M. rubricaule* will be able to grow in a wide range of physical and chemical conditions. Survival in an open air pond under Dutch winter conditions has been observed for over 10 years.

Habitats
Slow moving water bodies including rivers, irrigation channels, ponds, lakes, canals and damp ditches.

Pathways for movement
Aquarium and horticultural trade. *M. rubricaule* is known to have escaped from cultivation in the EPPO region. The species can appear in trade incorrectly labelled often as *Myriophyllum brasiliensis* or *M. brasiliense*. Entry into the natural environment is potentially via the dumping of aquarium or garden waste.

Impacts
Potential impacts are likely to be similar to that of *M. aquaticum*, although the plant is of more modest dimensions. Dense mats of *M. rubricaule* could block sunlight which may alter the quality of the water body by reducing oxygen levels. This can have a negative impact on invertebrates and plant species in the invaded habitat. Ecosystem services can be negatively affected, for example by reducing access to the water body or blocking irrigation channels.

Control
Control methods would be similar to other non-native *Myriophyllum* species. Chemical control methods are largely not applied on or near water bodies in Europe. Mechanical control can be attempted though it is difficult to remove all material from a waterbody.

Sources

Van Valkenburg JLCH, Duistermaat L, Boer E, Raaymakers TM (2022) *Myriophyllum rubricaule* sp. nov., a *M. aquaticum* look-alike only known in cultivation. *European Journal of Taxonomy* **828**, 1-15. https://doi.org/10.5852/ejt.2022.828.1847

Van Valkenburg JLCH, Boer E (2015) *Cabomba* and *Myriophyllum* in trade, What's in a name? *In*: Newman J. (ed.) *Abstracts 47th Robson meeting, Reading, England*: 16-17, Waterland management, United Kingdom.

Van Valkenburg J, Duistermaat L, Westenberg M, van de Vossenberg B (2015) *Myriophyllum* in trade in Western Europe, what species are we really talking about? *In*: *Aquatic Plants 2015, 14th International Symposium on Aquatic Plants*, p 57. The Centre for Ecology & Hydrology, Edinburgh, United Kingdom.

Pictures *Myriophyllum rubricaule*. https://gd.eppo.int/taxon/MYPRU/photos

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

2024/142 Prioritization of plant species from the EPPO Alert List

In May 2024, the EPPO Panel on Invasive Alien Plants assessed four species from the EPPO Alert List using the EPPO Standard PM 5/6 *EPPO Prioritization process for invasive alien plants*. A summary for each species is detailed below.

- ***Artemisia princeps*** **(Asteraceae)**

Artemisia princeps is native to Asia and is established in Belgium and the Netherlands where it occurs in ruderal habitats. It has a moderate spread potential where natural spread occurs by seed and rhizomes. The potential impact of *A. princeps* on biodiversity is high, it can form dense monospecific stands outcompeting native species. There are currently no reports of negative impacts on agriculture. *A. princeps* has been transferred from the Alert List to the EPPO Observation List.

- ***Euphorbia davidii*** **(Euphorbiaceae)**

Euphorbia davidii is native to North America and is established in the EPPO region in Bulgaria, France, Hungary, Italy, Moldova, Russia, Serbia and Ukraine. In the EPPO region, *E. davidii* occurs in agricultural habitats. It has a high spread potential where seed is naturally spread locally and potentially more widely by human assistance. The potential impact of *E. davidii* on agriculture is high. In Serbia, the presence of dense patches can have a negative effect on the size of maize plants and can initiate early ripening of sunflower heads. *E. davidii* has been transferred from the Alert List to the EPPO List of Invasive Alien Plants. The species is a priority for a pest risk analysis.

- ***Euphorbia heterophylla*** **(Euphorbiaceae)**

Euphorbia heterophylla is native to the Americas. In the EPPO region it occurs in Cyprus, Greece, Israel, Italy and Spain (Canary Islands) where it is present in agricultural and ruderal habitats. Its spread potential is high as seed can be moved by agricultural machinery. The potential impact on agriculture is high. Globally it is reported to reduce yields in a variety of different crops. Climatic conditions in the EPPO region might limit its occurrence. *E. heterophylla* has been transferred from the Alert List to the EPPO List of Invasive Alien Plants.

- ***Sarracenia purpurea*** **(Sarraceniaceae)**

Sarracenia purpurea is native to North America. It is found in isolated populations in the EPPO region, mainly in Western Europe. The spread potential of *S. purpurea* is moderate. It is deliberately planted in the natural environment by carnivorous plant enthusiasts and natural spread is low. The potential impact on biodiversity is high, *S. purpurea* is planted in habitats of high conservation and it can displace the bryophyte community. *S. purpurea* has been transferred from the Alert List to the EPPO Observation List.

Source: EPPO Global Database: https://gd.eppo.int/

EPPO (2012) PM 5/6 EPPO prioritization process for invasive alien plants. *EPPO Bulletin* **43**, 463-474.

Pictures *Artemisia princeps*. https://gd.eppo.int/taxon/ARTPC/photos
Sarracenia purpurea. https://gd.eppo.int/taxon/SRNPU/photos

Additional key words: invasive alien plants **Computer codes:** ARTPC, EPHDV, EPHHL, SRNPU

2024/143 The economic costs of aquatic and semi-aquatic invasive plants

Aquatic invasive alien plants can incur an array of negative impacts on the habitats they invade ranging from negative impacts on biodiversity, ecosystem services – including cultural impacts by degrading waterbodies aesthetic value or restricting recreational activities; to blocking sunlight which can affect nutrient cycling; to blocking irrigation systems and drainage ditches. Control measures can be both laborious and costly. Data on economic impacts of invasive aquatic and semi-aquatic plants, was obtained from the on-line open access database InvaCost to assess the global economic impact. Over 1670 records were used in the study. Statistical models were used to examine the recorded costs over time. Between 1975 and 2020, the total cost of aquatic and semi-aquatic invasive plants to the global economy exceeded 32 billion USD, of which the majority of recorded costs (57 %) was attributable to multiple or unspecified taxa. Submerged plants had costs of 8.4 billion USD (25.5 %) followed by floating plants 4.7 billion USD (14.5 %), emergent 684 million USD (2.1 %) and semi-aquatic 306 million USD (0.9 %). In terms of impacted sectors, costs from published material included: government expenditure (8.9 billion USD), fishery (7.6 billion USD), authorities-stakeholders (2.0 billion USD), environment (977 million USD), agriculture (24 million USD), and the health sector (25.5 USD) had the lowest monetary impacts. Reported costs constituted economic damage, management and a mixture of costs or unspecified. Most of the costs were attributed to species level taxa, e.g. *Elodea* spp., or *Ludwigia* spp. However, where data was available for single species, ten species had significant economic impacts (Table 1).

Table 1. The ten costliest species from the study.

Species	Family	Plant type	EPPO Status
Alternanthera philoxeroides	Amaranthaceae	Emergent - Freshwater	A2
Azolla filiculoides	Salviniaceae	Floating - Freshwater	Obs. List
Caulerpa taxifolia	Caulerpaceae	Submerged - Marine	
Elodea canadensis	Hydrocharitaceae	Submerged - Freshwater	
Hydrilla verticillata	Hydrocharitaceae	Submerged - Freshwater	List IAP
Hydrocotyle ranunculoides	Araliaceae	Floating - Freshwater	A2

Species	Family	Plant type	EPPO Status
Lythrum salicaria	Lythraceae	Semi-aquatic - Freshwater	
Pontederia crassipes	Pontederiaceae	Floating - Freshwater	A2
Spartina alterniflora	Poaceae	Emergent - Brackish	
Spartina cynosuroides	Poaceae	Emergent - Brackish	

For EPPO Status List IAP = EPPO List of Invasive Alien Plants; Obs. List = EPPO Observation List.

Source: Macědo RL, Haubrock PJ, Klippe G, Fernandez RD, Leroy B, Angulo E, Carneiro L, Musseau CL, Rocha O, Cuthbert RN (2024) The economic cost of invasive cost of invasive aquatic plants: A global perspective on ecology and management gaps. *Science of the Total Environment*, https://doi.org/10.1016/j.scitotenv.2023.168217

Diagne C, Leroy B, Gozlan R, Vaissière AC, Assailly C, Nuninger L (2020) InvaCost: Economic cost estimates associated with biological invasions worldwide. Figshare. Dataset. https://doi.org/10.6084/m9.figshare.12668570.v5

Additional key words: invasive alien plants **Computer codes:** ALRPH, AZOFI, EICCR, ELDCA, HYDRA, HYLLI, KAATA, LYTSA, SPTAL, SPTCY

2024/144 Control of *Pseudotsuga menziesii* in Chile

Pseudotsuga menziesii (Pinaceae) is native to North America and considered an invasive alien species in Argentina, New Zealand and Chile. In Chile, the initial introduction of non-native conifers was used to recover degraded land. However, some of these species present a high invasion risk when they are not properly managed. Impacts can include negative impacts on biodiversity and ecosystem services. *Pseudotsuga menziesii* is listed as invasive in south-central Chile where it can establish beyond the original plantation area. In order to assess the negative impact of *P. menziesii*, five longitudinal transects (10×100 m) were established in a protected area with an altitude ranging from 900 to 1 060 m a.s.l. The five transects were established with varying distance from a *P. menziesii* plantation and included two habitat types, (1) within the native forest and (2) open scrub areas. Forest structure, soil nutrients, the floristic composition, and pine regeneration before and after control was measured in each site. Results show that in the native forest, soil nutrient availability and the density of *P. menziesii* decreased with distance from the plantation. Other studies have shown that the invasion of *P. menziesii* is influenced by abiotic factors including soil nutrient availability. An increase in native species cover was found after removing pines, but *P. menziesii* can readily re-invade native forest habitats after its removal. In open scrubland areas, *P. menziesii* density was lower than in native forest conditions. The results indicate that repeated control measures against *P. menziesii* are needed at the early stages of invasion and plantation management should include measures to prevent spread into natural areas.

Source: Fuentes-Ramirez A, Vargas-Gaete R, Toy-Opazo O, Muñoz-Gómez N, Salas-Eljatib C, Pauchard A (2024) Control of invasive conifers in temperate Andean forests promotes native vegetation restoration, but requires continuous management. *Trees, Forest and People*. https://doi.org/10.1016/j.tfp.2024.100581

Additional key words: invasive alien plants **Computer codes:** PSTME, CL