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2021/185 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**

Citrus tristeza virus (*Closterovirus* – EPPO A2 List) is reported for the first time from Laos (Donovan *et al.*, 2021). **Present**.

In the Philippines, symptoms caused by cucurbit chlorotic yellows virus (*Crinivirus* – an emerging virus transmitted by *Bemisia tabaci*) were first observed in April 2018 on cucurbit crops in Luzon. The identity of the virus was then confirmed in symptomatic samples of *Cucumis melo* (melon), *Citrullus lanatus* (watermelon) and wild plants of *Cucumis agrestis* growing in the affected melon field (Chang *et al.*, 2021).

Diaphorina citri (vector of '*Candidatus* Liberibacter asiaticus' - Hemiptera: Liviidae, EPPO A1 List) was first detected in French Guiana in July 2021, in the city of Cayenne. Surveys are being conducted in a zone with a radius of 2 km to assess the extent of the outbreak (Plateforme ESV, 2021). **Present, not widely distributed and under official control**.

In Israel, lettuce chlorosis virus (*Crinivirus* – LCV – formerly EPPO Alert List) was detected during a survey conducted in 2017-2019 in 4 farms authorized to produce cannabis (*Cannabis sativa*). Affected plants showed conspicuous symptoms of leaf yellowing, chlorotic and necrotic old leaves, but with no apparent symptoms on the apical leaves. This is also the first time that LCV is reported on cannabis (Hadad *et al.*, 2019).

In Syria, symptoms resembling those of tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) were first observed in 2017 in tomato plants (*Solanum lycopersicum*) grown in a greenhouse in the Akkar plain (coastal region, Tartous governorate). The disease carried on spreading in the following years. The identity of the virus was confirmed as ToBRFV in symptomatic plants from the governorates of Tartous and Lattakia collected in November and December 2020 (Hasan *et al.*, 2021). **Present.**

Xylosandrus compactus (Coleoptera, Scolytinae, formerly EPPO Alert List) is first reported from Lebanon: this bark beetle was found on *Quercus calliprinos* in November 2017, and again in 2019 and 2020 (Moussa *et al.*, 2021).

- **Detailed records**

In China, the poplar rust caused by *Melampsora medusae* (EPPO A2 List) was first recorded in 2019 in Henan, Shaanxi, and Sichuan (RS 2019/142). Zhou *et al.* (2020) also identified the pathogen on *Populus deltoides* in the provinces of Jiangsu and Hubei.

In China, tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) is first reported from Yunnan Province. It was found during a survey on tomato plants (*Solanum lycopersicum*) in Yuanmou County in October 2020 (Ma *et al.*, 2021).

In France, tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) had been eradicated from Bretagne region (Northwest France) in June 2021. It was found again in July 2021 in Southern France (Lot-et-Garonne department, region Nouvelle-Aquitaine) in a

commercial greenhouse producing tomato fruit (*Solanum lycopersicum*). Eradication measures are being applied (NPPO of France, 2021).
The pest status of tomato brown rugose fruit virus in France is officially declared as: **Transient, actionable, under eradication**.

In Slovakia, *Trichoferus campestris* (Coleoptera: Cerambycidae – EPPO A2 List) was found in a trap in the municipality of Hriadky (Košice Region) (NPPO of Slovakia).
The pest status of *Trichoferus campestris* in Slovakia is officially declared: **Present, only in some parts of the Member State concerned, at low prevalence.**

- **Eradication**

In France, *Batrachedra enormis* (Lepidoptera: Batrachedridae) was first found in 2016 in a private garden located in Var department (EPPO RS 2017/038). The infested plants were destroyed and the NPPO of France now considers this outbreak eradicated (NPPO of France, 2021-07).

- **Host plants**

In Brazil, lettuce chlorosis virus (*Crinivirus* – LCV – formerly EPPO Alert List) was detected in 2 samples of *Passiflora* spp. (1 *Passiflora auriculata* and 1 *P. alata*) collected in 2017 from a germplasm collection in Brasília (Distrito Federal). LCV was also detected in a sample of *P. edulis* collected from a commercial field in Bahia state (Vidal *et al.*, 2021).

In China (Yunnan province), tomato mottle mosaic virus (*Tobamovirus*, ToMMV – EPPO Alert List) was detected in symptomatic plants of green pea (*Pisum sativum)* in 2020. This is the first report of natural infection of ToMMV in a non-solanaceous plant (Zhang *et al.*, 2021).

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

Computer codes: BATREN, CTV000, DIAACI, HESOCA, LCV000, MELMME, TOBRFV, TOMMV0, XYLSCO, BR, CN, FR, GF, LA, LB, SK

2021/186 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 2021/167), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*. https://gd.eppo.int/taxon/CORBFL/datasheet
- *Diabrotica undecimpunctata howardi*. https://gd.eppo.int/taxon/DIABUH/datasheet
- *Thaumatotibia leucotreta*. https://gd.eppo.int/taxon/ARGPLE/datasheet

Source: EPPO Secretariat (2021-09).

Additional key words: publication

Computer codes: ARGPLE, CORBFL, DIABUH

2021/187 Resistance to plant protection products: a new EPPO Database on Resistance Cases

Within the framework of EPPO's activities on plant protection products, a new database on resistance was released in September 2021. The EPPO Database on Resistance Cases aims to share information on documented resistance cases among the authorities responsible for registration of plant protection products across the EPPO region and between authorities and other stakeholders. The added value of this database, when compared to other existing databases, is the inclusion, in addition to published and well-known cases, of information about early detection of resistance cases, as well as resistance cases that occur locally that are based on data even if this data is limited. The information presented in the database is made available after validation by the EPPO Expert Working Group on Resistance to Plant Protection Products.

Access the EPPO Database on Resistance Cases: https://resistance.eppo.int/

Source: EPPO Secretariat (2021-09).

Additional key words: database, EPPO, plant protection products

2021/188 First report of *Takahashia japonica* in Croatia

The string cottony scale *Takahashia japonica* (Hemiptera: Coccidae) originates in the Far East. It was reported for the first time in Italy (and in Europe) in 2017 (RS 2019/075) and in 2018 in the United Kingdom (RS 2019/076). In Croatia, the species was first observed in spring 2019 in a tree in the city of Pula (Istria County) but not identified then. It was identified in May 2020 on *Albizia julibrissin* trees. As the specific morphology of the eggsacs enabled easy recognition of this species, a citizen science campaign was initiated to stimulate additional reports of the species. In total, 7 reports were made by citizens in the city of Pula. The most common host plants of *T. japonica* were *Acer* sp. and *Morus alba,* some of which had suffered significant defoliation and tree decay.
Eradication measures were applied (cutting and incineration of infested branches, application of insecticides on the infested trees).

Source: Landeka N, Uzelac M, Poljuha D, Sladonja B (2021) [The first record of the Asiatic string cottony scale *Takahashia japonica* in Croatia]. *Šumarski list* **145**(5-6), 263-267. https://doi.org/10.31298/sl.145.5-6.5 (in Croatian with English abstract).

Pictures: *Takahashia japonica*. https://gd.eppo.int/taxon/TAKAJA/photoss

Additional key words: new record **Computer codes:** TAKAJA, HR

2021/189 First report of *Aphis illinoisensis* in Slovenia

The NPPO of Slovenia recently informed the EPPO Secretariat of the first report of the grapevine aphid, *Aphis illinoisensis* on its territory. In autumn 2020, the occurrence of *A. illinoisensis* was confirmed on *Vitis vinifera* in an abandoned vineyard located in Šempeter pri Gorici (Western Slovenia). No economic damage was observed on infested plants. It is noted that aphid colonies were actively visited by ants (*Lasius emarginatus*).

The pest status of *Aphis illinoisensis* in Slovenia is officially declared as: **Present: at low prevalence.**

EPPO note: The grapevine aphid, *Aphis illinoisensis* (Homoptera: Aphididae) originates from the Americas but was introduced into the Mediterranean region in the 2000s where it is showing an invasive behaviour. A distribution map can be viewed on the EPPO Global Database: https://gd.eppo.int/taxon/APHIIL/distribution

Source: NPPO of Slovenia (2021-07).

Seljak G (2021) [First record of grapevine aphid (*Aphis illinoisensis* Shimer, 1866) in Slovenia (Hemiptera, Aphidoidea: Aphididae)]. *Acta Entomologica Slovenica* **29**(1), 107-112 (in Slovenian). https://www.pms-lj.si/si/files/default/Publikacije/Strokovna-glasila/Acta-entomologica-slovenica/2021/1/8%20SELJAK%201_2021.pdf

Additional key words: new record **Computer codes:** APHIIL, SI

2021/190 Isolated findings of *Lycorma delicatula* in Rhode Island, Vermont and Kansas (US)

During August and September 2021, *Lycorma delicatula* (Hemiptera: Fulgoridae - EPPO A1 List) was reported for the first time from several US states. However, all new reports correspond to isolated findings and there is no evidence of established populations. Information campaigns are ongoing to inform growers, municipalities and residents, and citizens are invited to report any suspect findings.

In August 2021, *L. delicatula* was reported for the first time in Rhode Island. A single specimen was found in an industrial/commercial area in Warwick, but no established populations were observed.

In August 2021, several specimens of *L. delicatula* were found on a shipment delivered by a lorry in Rutland, Vermont. One live specimen was kept for identification and the others were killed. The shipment concerned was treated and traps were placed in the area where the insect was intercepted. No other specimens or signs of *L. delicatula* on potential host trees (*Ailanthus altissima, Juglans* and *Salix*) were detected. It is considered that the pest has been eradicated from Vermont.

In September 2021, during the Kansas State Fair a student presented his insect collection which contained a dead specimen of *L. delicatula* collected from Thomas county (Kansas). One of the Fair's judges was familiar with *L. delicatula* and informed the phytosanitary authorities. Surveys will be conducted to try to identify how this specimen was introduced into Kansas which is more than 1 700 km away from other known infested areas.

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

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

2021/191 Update on 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 Roma (Lazio region) (EPPO RS 2021/082). The NPPO of Italy recently informed the Secretariat of the presence of this pest in two new regions (Abruzzo and Puglia).
In September 2021, the presence of *T. parvicornis* was confirmed on 480 pine trees (*Pinus* sp.) located in the municipality of Pescara (Abruzzo region) as well as 9 pine trees in the city of Bari (Puglia region). In these two cases, phytosanitary measures are applied, as defined by the Ministerial decree of 3 June 2021. They include the establishment of a

demarcated area with a buffer zone of 5 km radius, the destruction of heavily infested plants, insecticide treatments and restriction of movement of host plants.

The pest status of *Toumeyella parvicornis* in Italy is officially declared as: **Present, only in some parts of the Member State concerned, under containment, in case eradication is impossible.**

Source: NPPO of Italy (2021-09).

Decreto ministeriale 3 giugno 2021 - Misure fitosanitarie di emergenza ai fini del contrasto dell'organismo nocivo *Toumeyella parvicornis* (Cockerell) (Cocciniglia tartaruga). Gazzetta Ufficiale n.173 del 21-07-2021. http://www.agricoltura.regione.campania.it/difesa/files/DM-03-06-21.pdf

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

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

2021/192 Update on the situation of *Xylosandrus crassiusculus* in Slovenia

In Slovenia, *Xylosandrus crassiusculus* (Coleoptera: Curculionidae: Scolytinae - formerly EPPO Alert List) was first trapped in 2017 in the municipality of Brda (Western Slovenia). In 2018 and 2019, surveys were conducted and the insect was trapped again in the same area, but no infested plants could be found. The NPPO of Slovenia informed the EPPO Secretariat that in August 2021, *X. crassiusculus* was found for the first time in plants in two locations near Brda. The insect was detected on several plants of *Diospyros kaki* in an intensive orchard in Snežatno, and the grower was advised to place alcohol traps at appropriate times to reduce the beetle population. *X. crassiusculus* was also incidentally detected in one *Ulmus minor* tree in a forest in Podsabotin. The infested tree was removed and no other infested plants were found in its vicinity.

The pest status of *Xylosandrus crassiusculus* in Slovenia is officially declared as: **Present, only in some areas.**

Source: NPPO of Slovenia (2021-09).

Pictures: *Xylosandrus crassiusculus*. https://gd.eppo.int/taxon/XYLBCR/photos

Additional key words: detailed record **Computer codes:** XYLBCR, SI

2021/193 *Euwallacea fornicatus:* host range studies in Israel and California (US)

Studies on the host range of *Euwallacea fornicatus* (Coleoptera: Curculionidae: Scolytinae – EPPO A2 List as part of *E. fornicatus sensu lato*) have been carried out in Israel and California (US), two areas which are part of the invaded range of this insect originating from Southeast Asia. In Israel, surveys were conducted from 2013 to 2020 in different habitats, including public parks, botanical gardens, private gardens, ornamental landscapes and commercial avocado orchards with surrounding woody vegetation. In California, surveys were carried out in botanical gardens, arboreta, as well as in native and urban forests.

During these studies, 3 tree categories were defined:

- Reproductive hosts: when eggs, larvae, pupae or callow adults of *E. fornicatus* were detected in galleries and the associated fungus, *Fusarium euwallaceae*, was detected.
- Non-reproductive host: when typical symptoms of insect attack were observed (usually associated with detection of *F. euwallaceae*) but without any signs of beetle reproduction.
- Non-attacked trees: when trees were not affected although observed in the vicinity (within a radius of 25 m) of attacked trees.

In total 583 tree species were examined, and host species could be classified as a 'non-reproductive hosts' (55.9%) and 'reproductive hosts' (13.8%). No particular correlation could be found between host tree phylogeny and susceptibility to *E. fornicatus*. It is suggested that the beetle reproduction success rate over a wide host range, as well as the long list of species belonging to the 'non-reproductive host' category, result from interactions between the beetle fungal symbiont, *F. euwallaceae*, and sapwood of the attacked tree; the host range suitable for successful reproduction of the beetle being determined by the development of *F. euwallaceae*.

A list of tree species that are hosts of *E. fornicatus* can be found in the EPPO Global Database: https://gd.eppo.int/taxon/EUWAWH/hosts

Source: Mendel Z, Lynch SC, Eskalen A, Protasov A, Maymon M, Freeman S (2021) What determines host range and reproductive performance of an invasive ambrosia beetle *Euwallacea fornicatus*; lessons from Israel and California. *Frontiers in Forests and Global Change* **4**, 654702. https://doi.org/10.3389/ffgc.2021.654702

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

Additional key words: host plants **Computer codes:** EUWAWH, XYLBFO

2021/194 Interceptions of *Bactrocera dorsalis* in France

In France, *Bactrocera dorsalis* (Diptera: Tephritidae – EPPO A1 List) was first detected in traps in 2019 as part of the official survey for this pest (EPPO RS 2019/227) but is not considered established. The NPPO of France recently informed the EPPO Secretariat of several isolated findings of this pest in August 2021:

- in Ile-de-France region (Val-de-Marne department): 8 adults (males) were caught in 7 different traps, close to Orly airport (Paris) and to a wholesale fresh produce market, in an urban area.
- In Southern France (Var department, Provence-Alpes-Côte d'Azur region), 5 adults (males) were caught in a trap located in a citrus orchard in the municipality of Hyères. No symptoms or larvae were observed in the orchard, and no specimens were caught in the other trap in the same orchard. Preventive measures and further surveillance will be applied in this orchard.

These findings are considered as linked to the import of infested exotic fruits and not to outbreaks.

The pest status of *Bactrocera dorsalis* in France is officially declared as: **Absent, intercepted only. Isolated findings in traps, not linked to an outbreak.**

Source: NPPO of France (2021-08).

Plateforme ESV (2021) Bulletin mensuel N°33 (août 2021). Available at https://plateforme-esv.fr/sites/default/files/2021-09/BMsemaines32-33-34.html

Pictures: *Bactrocera dorsalis*. https://gd.eppo.int/taxon/DACUDO/photos

Additional key words: absence, incursion **Computer codes:** DACUDO, FR

2021/195 *Spodoptera praefica* (Lepidoptera: Noctuidae - Western yellow-stripped armyworm): addition to the EPPO Alert List

Why: Following the recent introduction of *Spodoptera frugiperda* (Lepidoptera: Noctuidae – EPPO A1 List) in different parts of the world, more attention is being paid to other species of *Spodoptera* which are still absent from the EPPO region. *S. ornithogalli* has recently been added to the EPPO Alert List (EPPO RS 2021/012) and the EPPO Panel on Phytosanitary Measures suggested that *S. praefica* (Western yellow-striped armyworm) should also be added.

Where: *S. praefica* is native to North America. It occurs in the western part of the USA, and southern parts of Alberta and British Columbia in Canada. In Alberta, it is considered that it is probably not present all-year round, but that adults are migrating from further south during summer.
EPPO region: Absent.
North America: Canada (Alberta, British Columbia), USA (California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington).

On which plants: *S. praefica* is a polyphagous species which can feed on forage crops, fruit and vegetables, ornamentals, and weeds. More than 60 plant species or genera have been recorded as hosts: *Allium cepa, Amaranthus, Antirrhinum, Arctium lappa, Beta vulgaris, Centaurea solstitialis, Chenopodium album, Convolvulus, Cosmos, Crataegus, Cucumis melo, Cucurbita, Dahlia, Daucus carota, Erodium cicutarium, Fagopyrum esculentum, Gossypium herbaceum, Gossypium hirsutum, Grindelia camporum, Helianthus annuus, Hosta, Ipomoea purpurea, Juglans, Kochia, Lactuca serriola, Lathyrus odoratus, Lens culinaris, Lupinus albus, Malus domestica, Malva, Medicago sativa, Melilotus officinalis, Mentha, Oryza sativa, Phaseolus, Phaseolus vulgaris, Pisum sativum, Polygonum, Prunus persica, Pyrus communis, Rheum rhabarbarum, Rubus allegheniensis, Rubus idaeus, Rubus parviflorus, Rubus vitifolius, Salix, Sambucus nigra, Setaria, Sinapis arvensis, Smilax californica, Solanum, Solanum lycopersicum, Solanum tuberosum, Sonchus oleraceus, Sorghum bicolor, Taraxacum, Trifolium, Trifolium cyathiferum, Tripleurospermum inodorum, Vigna unguiculata, Vitis vinifera, Zea mays*.

Damage: Larvae feed on many broad-leaved plant species, chewing large holes in leaves or fruit (e.g. on tomatoes). Young larvae can be found on terminal leaves and buds, whereas older larvae are usually found in plant debris on the soil. Within a crop, larvae often aggregate on a few plants where complete defoliation may occur.
S. praefica has two overlapping generations per year. The first generation of moths emerge in March and April and females lay eggs in masses on the foliage. Egg masses are covered with grey cottony material. Larvae feed on plant foliage for 6 to 8 weeks and then pupate in the soil. Adults from the second generation emerge in mid-August/early September.

Larvae from second generation feed from late September and early October and the species overwinters as pupae in the soil.
Adult moths have a wingspan of 3.5-4 cm. Forewings are light brown with yellow, brown and dark brown markings. Hindwings are silvery grey. Moths fly at night; mating and egg laying usually occur between dusk and midnight. Larvae are black with distinct pale-yellow stripes on each side of the body (up to 5 cm long for mature larvae), with an inverted 'Y' marking on the head. Larval feeding is generally observed during the day.
Pictures can be found on the Internet:
https://search.museums.ualberta.ca/g/2-5135
http://uspest.org/mint/westyellid.htm

Dissemination: Moths can fly, possibly over rather long distances as is the case for other *Spodoptera* species, but no specific data could be found on the flying capacities of *S. praefica*. Over long distances, *S. praefica* could be spread with its host plants or with soil (as pupae).

Pathways: Fruits and vegetables, plants for planting, cut flowers of host plants, soil from countries where *S. praefica* occurs.

Possible risks: *S. praefica* has many hosts that are major crops in the EPPO region. In its native range, it is considered to be an occasional pest of various crops including tomato and forage crops (e.g. alfalfa). It can be recalled that *S. praefica* had been screened in the EPPO study on 'Pest Risks associated with the import of tomato fruit' as a pest posing potential risks to tomato production in the EPPO region. In its risk assessment of American species of *Spodoptera*, the Netherlands Food and Consumer Product Safety Authority concluded that *S. praefica* (as was also the case for *S. eridania*, *S. frugiperda* and *S. ornithogalli*) presented risks for the European Union. Considering the wide host range of *S. praefica*, its introduction is likely to cause significant losses in various crops of economic importance, especially in the Southern parts of the European Union. Although further assessment is needed, this conclusion could most probably be extended to the Southern part of the EPPO region.

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EPPO RS 2021/195

Panel review date – Entry date 2021-09

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

2021/196 First report of tomato brown rugose fruit virus in Portugal

The NPPO of Portugal recently informed the EPPO Secretariat of the first detection of tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) on its territory. The virus was detected in two nurseries situated in the Algarve region, one in the county of Tavira and one in the county of Faro, during an official survey in August 2021. The virus was detected in seeds of tomato (*Solanum lycopersicum*) originating from China (in the case of Tavira) and Israel (in the case of Faro). Some of the seed has been used to produce plantlets. In both cases, eradication measures are being applied and include the testing of other host plants in the nursery, as well as the disinfection of the greenhouse and associated equipment. The seed that had not been used has been destroyed, as well as the plants produced from the infested lots still present in the nurseries. Trace-forward studies are conducted to retrieve the plants that had already been sold to other operators.

The pest status of tomato brown rugose fruit virus in Portugal is officially declared as: **Transient, actionable, under eradication.**

Source: NPPO of Portugal (2021-09).

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

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

2021/197 First report of cherry necrotic rusty mottle virus in sweet cherries in Slovenia

In Slovenia, studies were conducted to detect the possible presence of robigoviruses. In May 2019, asymptomatic leaf samples were collected from 14 sweet cherry (*Prunus avium*) trees grown in 4 locations in Central Slovenia and 1 location in Eastern Slovenia. Molecular tests (PCR, sequencing) confirmed the presence of cherry necrotic rusty mottle virus (*Robigovirus*, CNRMV - formerly EPPO A2 List) in 4 samples taken from a collection orchard in Central Slovenia. This is the first time that CNRMV is reported from Slovenia. It is noted that as CNRMV can cause yield and growth reduction, bark necrosis, reduced bud break and angular chlorotic spots on leaves of sweet cherry, further studies should be conducted to evaluate the presence of the virus in Slovenia and to minimize its spread.

Source: Virščeк Marn M, Mavrič Pleško I, Beber A (2021) First report of cherry necrotic rusty mottle virus in sweet cherries in Slovenia. *Journal of Plant Pathology* **103**, 1035–1036. https://doi.org/10.1007/s42161-021-00846-w

Additional key words: new record **Computer codes:** CRNRM0, SI

2021/198 First report of raspberry latent virus in Serbia and the EPPO region

Raspberry latent virus (*Reoviridae*, RpLV) is an aphid-borne virus which had only been reported from North America (Canada and the USA). In commercial cultivars of raspberry (*Rubus idaeus*) it is symptomless, but in mixed infections with other viruses it can induce fruit crumbliness. Studies were carried out in Serbia during 2014 to 2020 and the presence of RpLV was investigated in 185 samples collected from 32 locations across the country. RpLV was detected (PCR tests, sequencing) in 2 asymptomatic samples, as well as in 11 samples showing symptoms of leaf blotch, leaf yellows and fruit crumbliness in mixed infections with other viruses. This is the first time that RpLV is reported from Serbia, and from the EPPO region.

Source: Jevremović D, Paunović AP (2021) First report of raspberry latent virus in Europe. *Journal of Plant Pathology* **103**, 1013. https://doi.org/10.1007/s42161-021-00833-1

Additional key words: new record **Computer codes:** RPLV00, RS

2021/199 First reports of *Colletotrichum fructicola* in the EPPO region (France and Italy)

Bitter rot is one of the prevalent diseases of apple (*Malus domestica*) worldwide. The disease affects the fruit preharvest in orchards and/or postharvest in storage, resulting in considerable economic losses. Until recently the reported causal agents in Europe belonged to the *Colletotrichum acutatum* species complex; however, *Colletotrichum fructicola*, belonging to the *C. gloeosporioides* species complex, is known to cause bitter rot of apple in the USA, the Republic of Korea, Brazil, and Uruguay. In September 2017, bitter rot symptoms were observed on apple fruit (cultivars Joya Cripps Red, Granny Smith, and Pink Lady) in four orchards in the region of Occitanie in France. The pathogen was identified as *C. fructicola*.
C. fructicola was also identified as the cause of a severe outbreak of fruit rot in commercial 'Pink Lady' apple orchards (>20 ha in total) in the region Emilia-Romagna (Northern Italy) in late summer 2019. *C. fructicola* has a wide host range worldwide and it has also been identified on other plants in Italy, e.g. avocado (*Persea americana)*, aromatic and ornamental plants.
A distribution map can be viewed on the EPPO Global Database: https://gd.eppo.int/taxon/COLLFC/distribution.

In 2021, EFSA conducted a pest categorization and concluded that the pathogen is likely to establish and cause negative impacts in the European Union. However there is uncertainty on the current distribution because of the re-evaluation of *Colletotrichum* taxonomy. Systematic surveys would be useful to know which *Colletotrichum* species are currently present in European orchards.

Source: EPPO (2016) Mini datasheet on *Colletotrichum fructicola (Ascomycota)* prepared during the DROPSA project. Available at https://gd.eppo.int/taxon/COLLFC/documents
EFSA PLH Panel (EFSA Panel on Plant Health), Bragard C, Dehnen-Schmutz K, Di Serio F, Gonthier P, Jacques M-A, Jaques Miret JA, Justesen AF, MacLeod A, Magnusson CS, Milonas P, Navas-Cortes JA, Parnell S, Potting R, Thulke H-H, Van der Werf W, Civera AV, Yuen J, Zappala L, Migheli Q, Vloutoglou I, Campese C, Maiorano A, Streissl F, Reignault PL (2021) Scientific Opinion on the pest

categorisation of *Colletotrichum fructicola*. *EFSA Journal* **19**(8), 6803, 41 pp. https://doi.org/10.2903/j.efsa.2021.6803

Guarnaccia V, Martino I, Gilardi G, Garibaldi A and Gullino ML (2021) *Colletotrichum* spp. causing anthracnose on ornamental plants in Northern Italy. *Journal of Plant Pathology* **103**, 127–137.

Nodet P, Chalopin M, Crété X, Baroncelli R, Le Floch G (2019) First report of *Colletotrichum fructicola* causing apple bitter rot in Europe. *Plant Disease* **103**(7), 1767.

Wenneker M, Pham KT, Kerkhof E, Harteveld DO (2021) First report of preharvest fruit rot of 'Pink Lady' apples caused by *Colletotrichum fructicola* in Italy. *Plant Disease* **105**(5), 1561.

Additional key words: new record **Computer codes:** COLLFC, IT, FR

2021/200 First finding of pathotype 38 (Nevşehir) of *Synchytrium endobioticum* in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of the first detection of the pathotype 38 (Nevşehir) of *Synchytrium endobioticum* (EPPO A2 List, agent of potato wart disease) on its territory.

As part of the annual official survey of starch and ware potatoes, the presence of *S. endobioticum* was detected in October 2020 in 3 fields (total of 14.43 ha) in the municipality of Stadskanaal (Province of Groningen). Starch potatoes (*Solanum tuberosum*) presented typical warts. The pathotype was determined in July 2021 on the basis of a bio-assay (Spieckermann method) in combination with sequencing of the mitochondrial DNA of the isolates. It is the first time that pathotype 38 (Nevşehir) is found in the Netherlands and the NPPO considers that the source of the outbreak is outside the Netherlands. This pathotype is only known to occur in Turkey (where it was initally reported), Bulgaria and Georgia.

Official phytosanitary measures are applied: all 3 fields have been demarcated as infested areas for at least 20 years, together with a buffer zone and safety zone, as defined in Council Directive 69/464/EC. The production of potato is prohibited in the infested area and only resistant potato varieties may be grown in the buffer and safety zones. The production of plants for planting (e.g. seed potato) is prohibited in all demarcated areas.

During autumn 2021 the annual survey for *S. endobioticum* will focus on detection of this new pathotype in this area.

The pest status of *Synchytrium endobioticum* in the Netherlands is officially declared as: **Present, under eradication, only in demarcated areas.**

Source: NPPO of the Netherlands (2021-09).

Pictures: *Synchytrium endobioticum*. https://gd.eppo.int/taxon/SYNCEN/photos

Additional key words: detailed record **Computer codes:** SYNCEN, NL

2021/201 Update on the situation of *Pantoea stewartii* subsp. *stewartii* in Italy

In Italy, the bacterial wilt of maize caused by *Pantoea stewartii* subsp. *stewartii* (EPPO A2 List) had been found in several regions but was subsequently eradicated (EPPO RS 2020/130). The pathogen was found again in 2020 and 2021 during official surveys of maize (*Zea mays*) grown for seed in Emilia-Romagna region. At least 10% of the seed crops (5615 ha) were inspected. In 2021, 36 samples with suspect symptoms were taken and tested according to EPPO protocol PM 7/60. Two samples were positive, one in the municipality of Imola (Bologna province), and one in the municipality of Comacchio (Ferrara province). The plants within 1.5 m radius around the positive plants were uprooted and destroyed. Before harvesting, at 30% seed humidity, maize cobs will be collected in the affected area and tested to verify the absence of the pathogen before marketing the seed.

The pest status of *Pantoea stewartii* subsp. *stewartii* in Italy is officially declared as: **Transient, actionable, under eradication.**

Source: NPPO of Italy (2021-07).

Pictures: *Pantoea stewartii* subsp. *stewartii*. https://gd.eppo.int/taxon/ERWIST/photos

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

2021/202 First report of *Hydrocharis laevigata* in Spain

Hydrocharis laevigata (Hydrocharitaceae: synonym *Limnobium laevigatum*) is a floating aquatic plant which is native to South and Central America. It has been introduced into a number of countries worldwide, including Australia, the USA (California), Japan, Indonesia (Java), Zambia and Zimbabwe. A risk assessment conducted by the United States Department of Agriculture (USDA), scored the species as a high risk for the USA. It can form massive floating mats which can block light and have negative impacts on native biodiversity. Additionally, it can negatively impact ecosystem services by altering carbon and nutrient cycles. *Hydrocharis laevigata* is a popular aquatic plant for aquariums and ponds and it is readily available on the internet. In the EPPO region, *H. laevigata* has been reported as a casual in Belgium, Hungary and Poland (EPPO RS 2021/114). In the case of Belgium, several small populations (with at least 100 individuals) were discovered in 2013 in a small river near Ganshoren. In Spain, two individuals of *H. laevigata* were discovered in 2021 in the Martín Gonzalo stream, below the dam of the same name, in the province of Córdoba, which constitutes a novel finding for the flora of Andalusia. The two plants were not flowering, and it is not clear if the species can persist to form an established population. Previously, *H. laevigata* has been reported from the province of Madrid. *H. laevigata* is a species of concern as it could have environmental impacts similar to that of other mat forming aquatic species such as *Pontederia crassipes* and *Pistia stratiotes*. Surveys should be conducted in the wider region where the species has been recorded and the phytosanitary risk to the EPPO region should be assessed.

Sources Martinez-Sagarra G, Garcia Murillo P, Devesa JA (2021) *Hydrocharis laevigata* (Humb. & Bonpl. Ex Willd.) Byng & Christenh (Hydrocharitaceae), novedad para la flora de Andalucia (España). *Acta Botanica Malacitana* **46.** http://doi.org/10.24310/abm.v46i.11403

Additional key words: invasive alien plant, new record **Computer codes:** LIMST, ES

2021/203 Impacts of *Ailanthus altissima* in Mediterranean grasslands

Ailanthus altissima (Simaroubaceae - EPPO List of Invasive Alien Plants) commonly known as the tree of heaven is an invasive alien plant species in the EPPO region and native to Asia. It can invade a variety of habitats including managed and unmanaged grasslands, forests, riverbanks/canal-sides, rail/roadsides, wasteland and urban areas. Within Europe, *A. altissima* preferentially colonises natural Mediterranean and sub- Mediterranean areas. Further north, it colonises urban and ruderal habitats. In a study conducted in the Alta Murgia National Park (South-East Italy), the impact of the species on biodiversity in grassland was studied by comparing 17 vegetation quadrats from invaded areas with nine quadrats in nearby uninvaded areas. In six of the invaded sites, *A. altissima* was removed and the vegetation composition was sampled for two consecutive years. The results showed that *A. altissima* negatively impacted on the species composition of invaded sites, where species richness and diversity were decreased compared to the uninvaded sites. In the invaded stands, there were more ruderal and common taxa, and fewer endemic and Mediterranean specific species compared to those present in the uninvaded sites. The difference between the community composition of invaded and uninvaded quadrats was most prominent when *A. altissima* plants exceeded 1 m in height and 50 % coverage. Following the removal of *A. altissima*, the recovery of the grassland community was not completely achieved after two years, suggesting lasting impacts on the habitat. The control of *A. altissima* caused a change in environmental conditions as well as an increase of species richness and diversity one year after removal. However, the community composition was still different from that of

uninvaded grasslands. The invasion of *A. altissima* into the Alta Murgia dry grasslands has resulted in a large change in the plant community and management practices should take into account the age of the invasion and restoration practices.

Source: Terzi M, Fontaneto D, Casella F (2021) Effects of *Ailanthus altissima* invasion and removal on high-biodiversity Mediterranean grasslands. *Environmental Management*. https://doi.org/10.1007/s00267-021-01522-6

Pictures: *Ailanthus altissima*: https://gd.eppo.int/taxon/AILAL/photos

Additional key words: invasive alien plant **Computer codes:** AILAL, IT

2021/204 Management of *Carpobrotus edulis*

Carpobrotus edulis (Aizoaceae: EPPO List of Invasive Alien Plants) is native to South Africa and is a succulent species which invades temperate coastal areas around the world. The species has been shown to modify the environment where it invades, and it affects the composition, diversity and dynamics of native plant communities due to its mat forming habit. Within the EPPO region, *C. edulis* can grow in a variety of habitats including coastal dune systems, rock ledges, and cliffs. Invasion in such habitats, particularly the latter, can have implications for successful management as some of the areas where plants may persist are difficult to access. Managing the species can include a number of methods such as hand removal, herbicides and mulching, though these are labour intensive and plant material should be removed and disposed of, as fragments of *C. edulis* can re-root following hand removal. The present study evaluated the regeneration capacity of plant fragments placed on different substrates (sand and stones) and assessed if herbivory, by the specialist South African scale insect *Pulvinariella mesembryanthemi* (introduced accidentally probably with its host plants into the EPPO region) reduces the regeneration capacity. Plant material and the natural enemy were collected from sites near Baiona, Spain. Fragments of *C. edulis* were placed on stone, sand on bare ground (the control), with and without *P. mesembryanthemi*. The results showed that regardless of the substrate, the specialist herbivore greatly reduced *C. edulis* regeneration, and biomass. The decomposition of *C. edulis* was accelerated by combining biological control with preventing re-rooting by avoiding connection to the soil.

Source: Nůňá N, Rodríguez J, González L (2021) Managing the invasive plant *Carpobrotus edulis*: is mechanical control or specialized natural enemy more effective? Journal of *Environmental Management*. https://doi.org/10.1016/j.jenvman.2021.113554

Pictures *Carpobrotus edulis*. https://gd.eppo.int/taxon/CBSED/photos

Additional key words: invasive alien plant **Computer codes:** CBSED, ES

2021/205 Impact of invasive alien plants on species composition along river banks

River systems are important corridors for the movement of nutrients and minerals, and their banks harbour a rich diversity of plant species, with many species endemic to such habitats. Such habitats are in a constant state of flux and are prone to high levels of natural disturbance which can make them vulnerable to invasion by invasive alien plants. The impacts of non-native plant species on the vegetation of a semi-natural riparian ecosystem were assessed in the Tiber River basin in Umbria (Italy). The study aimed to assess the change in riparian vegetation composition over a 22-year period by comparing data collected in 1998

at 46 sites, to data collected at 48 sites in 2020. The results showed that both datasets contained 91 species in total and there was only a 2 % increase in the number of non-native plant species (6.6 % 1998 compared to 8.8 % in 2020). However, the percentage cover of non-native species increased significantly, from 4.3 % in 1998 to 36.6 % in 2020. The three taxa that increased their cover the most were *Paspalum distichum* (Poaceae: EPPO List of Invasive Alien Plants), *Amorpha fruticosa* (Fabaceae: EPPO List of Invasive Alien Plants), and *Xanthium orientale* subsp. *italicum* (Asteraceae). *Amorpha fruticosa* is native to North America and was introduced into the EPPO region as a garden ornamental in the early 1700s. It can outcompete native species and has negative impacts on ecosystem services. *Paspalum distichum* is considered native to the Americas and is found throughout the world, including several countries in the EPPO region. The species is an aggressive invader, especially in riparian systems (e.g. Portugal) where it can have detrimental impacts on endemic vegetation. In the current study, generally, in sites where *A. fruticosa* is absent, *P. distichum* is dominant. *Xanthium orientale* subsp. *italicum* is also native to North America and is invasive in the EPPO region where it colonises disturbed habitats (roadsides, river banks and sandy beaches). All populations of the species should be monitored and controlled.

Source: Praleskouskaya S, Venanzoni R (2021) Effects of invasive alien species on riparian vegetation over a 20-year time-lapse: a case study from the Tiber river in Central Italy. *Biodiversity* **22**(1-2), 67-81. https://doi.org/10.1080/14888386.2021.1940277

Additional key words: invasive alien plant **Computer codes:** PESSA, PASDS, XANSI, IT

2021/206 *Baccharis halimifolia* phenotypic variation between native and introduced ranges

Over the last few centuries, humans have greatly influenced species distributions by modifying the environment and by dispersing species beyond their natural ranges. *Baccharis halimifolia* (Asteraceae: EPPO A2 List), is native to North America and is found within the EPPO region in Belgium, France, Georgia, Italy, Netherlands, Spain and the United Kingdom. It is also invasive in Australia and New Zealand. Within the EPPO region, the species was widely introduced for ornamental purposes, windbreaks and soil stabilization around the 1800s. On the Atlantic coast, *B. halimifolia* became naturalised in the early 1900s and considered invasive in the 1940s. Along the Mediterranean coast, it did not naturalise until the early 1980s. In Australia, the species was introduced in 1888 and became naturalised around the 1930s. Populations in the invasive range may exhibit different traits compared to native populations due to adaptation to different selection pressures between the ranges. Eighty populations were selected from the United States, Europe (France, Italy, Spain) and Australia where morphological data (height, canopy width and basal stem diameter) and achenes from two shrubs were collected. A total of 18 240 seeds were sown under the same controlled conditions (saline and non-saline) and seed germination, seedling emergence, survival and early growth were measured. Seeds collected from the European Atlantic coast (Spain and France) grew faster than those from the native range but the same was not shown for the Mediterranean coast (France and Italy) populations. The Australian populations grew faster than native populations under non-saline conditions but had lower survival in saline conditions. Germination also differed from populations within the USA, where expansive inland populations germinated faster than coastal native populations in non-saline environments but grew and germinated more slowly in saline environments. The results show that *B. halimifolia* exhibits phenotypic variation from across its area of distribution which may contribute to the success of the species when expanding its native range or naturalising in non-native regions.

Source: Lázaro-Lobo A, Moles AT, Fried G, Verloove F, Antonio Campos J, Herrera M, Goñi E, Bioret F, Buffa G, Fantinato E, Sentinella A, Zalucki MP, Mayfield M, Smith T, Catling A, Zalucki JM, Lucardi RD, Shoemaker CM, Mason DS, Ervin GN (2021) Phenotypic differentiation among native, expansive and introduced populations influences invasion success. *Journal of Biogeography*, 1–12. https://doi.org/10.1111/jbi.14252

Pictures: *Baccharis halimifolia*. https://gd.eppo.int/taxon/BACHA/photos

Additional key words: invasive alien plant **Computer codes:** BACHA, ES, FR, IT