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2020/028 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**

Grapevine Pinot gris virus (Trichovirus, GPGV) was detected for the first time in Lebanon. Samples were collected randomly from 9 vineyards located in Bekaa Valley. Out of 108 samples, 14 tested positive for GPGV. None of the infected vines showed disease symptoms. Infection with GPGV was found in single or multiple infections with grapevine virus A and grapevine fleck virus (Abou Kubaa *et al.*, 2019). **Present, only in some areas.**

Xylosandrus compactus (Coleoptera: Scolytidae - EPPO Alert List) was first recorded in Greece in 2019 (Spanou *et al.*, 2019). **Present, no details.**

- **Detailed records**

In Russia, a single specimen of *Agrilus fleischeri* (Coleoptera, Buprestidae - EPPO A2 List) was collected in 2002 in the Berdyuzhsky district (Tyumen region), Western Siberia (Sergeeva & Stolbov, 2019).

Callidiellum rufipenne (Coleoptera: Cerambycidae - formerly EPPO Alert List) was found in France on the Ile de Noirmoutier (Vendée department, Pays-de-la-Loire region) in April 2019. Surveys conducted in October 2019 showed that the pest infested *Cupressus macrocarpa* trees. It is considered that the pest may have been present on the island for more than 10 years. The establishment of *C. rufipenne* in France had already been observed in the Pyrénées-Atlantiques department (Cocquempot *et al.*, 2019).

In the USA, *Raffaelea lauricola* (EPPO Alert List) has recently been reported from Kentucky and Tennessee. In July 2019, wilted and dead sassafras (*Sassafras albidum*) were observed in north-central Tennessee (Montgomery, Williamson, and Dickson counties) and southwestern Kentucky (Christian, Todd, and Logan counties). The identity of the fungus was confirmed by morphological and molecular methods, as well as by pathogenicity tests. In both states, *Xyleborus glabratus* female beetles were observed in the stands of wilting sassafras (Loyd *et al.*, 2020).

In Gran Canaria (Canary Islands, Spain), melon (*Cucumis melo*), zucchini (*Cucurbita pepo*), and squash (*Cucurbita maxima*) plants showing virus symptoms (curling and mosaic in young leaves, short internodes, and stunting) were observed in several municipalities during spring 2018. Molecular tests confirmed the presence of *Tomato leaf curl New Delhi virus* (*Begomovirus*, ToLCNDV - EPPO Alert List) in symptomatic plants (Espino de Paz *et al.*, 2019).

In Brazil, *Xylosandrus compactus* (Coleoptera: Scolytidae - EPPO Alert List) is reported from the states of Bahia, Espirito Santo and Rondônia as causing damage to coffee plants (*Coffea canephora* and *C. arabica*) (Túler *et al.*, 2019).

- **Host plants**

Avocado (*Persea americana*) is recorded as a natural host of *Scirtothrips aurantii* (Thysanoptera: Thripidae - EPPO A1 List) in South Africa (Bara & Laing, 2019).

- Taxonomy

In a recent paper, Li *et al.* (2018) have proposed to re-classify several *Clavibacter michiganensis* subspecies. In particular, *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List - causal agent of potato ring rot) has been elevated to species rank and called *Clavibacter sepedonicus*. There has been some debate amongst taxonomists about the validity of this proposal, but as the name *C. sepedonicus* is used in recent literature and taxonomic databases (e.g. [LPSN](#)), the entry in the EPPO Global Database has been modified accordingly.

Although this question has long been debated, phylogenetic studies have supported the inclusion of the genus *Mahonia* within the genus *Berberis*. According to the database maintained by Kewscience ([Plants of the World online](#)), all *Mahonia* species have now been transferred to the genus *Berberis*. Consequently, all necessary changes have been made in the EPPO Global Database. It can be noted that the genus *Berberis* is included in the EU list of high-risk plants.

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Additional key words: absence, detailed record, new host plant, new pest, new record, taxonomy

Computer codes: AGRLFL, CLLLRU, CORBSE, GFKV00, GPGV00, GVA000, PEBAM, RAFFLA, SCITAU, TOLCNDV, XYLBGR, XYLSKO, 1BEBG, ES, FR, GR, LB, RU, US, ZA

2020/029 Situation of several regulated pests in Lithuania in 2019

The NPPO of Lithuania has recently informed the EPPO Secretariat of the results of national surveys conducted in 2019 on several regulated pests. The EPPO Secretariat has extracted below data provided on pests which were declared to be present in Lithuania (pest status officially declared by the NPPO is indicated in bold). For pests which were declared as absent, pest statuses have been transferred directly into the EPPO Global Database.

- **Bacteria**

***Clavibacter sepedonicus* (EPPO A2 List):** in 2019, 17 outbreaks of potato ring rot were detected. Most were found on ware potatoes grown in small farms of less than 0.5 ha which produced potatoes for their own consumption. Most infected potatoes had been grown from farm-saved seed potatoes. All infected potatoes have been destroyed and phytosanitary measures have been applied. These measures will be implemented during the next 4 years.

Present: only in some areas where host crop(s) are grown.

***Erwinia amylovora* (EPPO A2 List):** in 2019, 4 new outbreaks were detected in Lithuania on *Pyrus* spp. and *Crataegus* spp. Eradication measures have been applied: all infected trees and potential hosts located within a radius of 10 or 20 m around them were destroyed (uprooted and burned). Restrictions on the movement of host plants were applied in demarcated areas (outbreak, safety zone and buffer zone).

Present: under eradication.

- **Nematode**

***Globodera rostochiensis* (EPPO A2 List):** in 2019, 15 outbreaks were detected. The nematode was detected in soil samples collected from several ware potato farms. Most infestations were found in small farms. Official phytosanitary measures have been applied in accordance with EU Directive 2007/33/EC. In the infested fields, the cultivation of potatoes and other host plants is prohibited for the next 6 years.

Present: only in some areas where host crop(s) are grown.

- **Fungi**

***Dothistroma septosporum* (EU Annexes):** in 2019, the fungus was identified in 6 nurseries on *Pinus* spp. trees (*P. mugo*, *P. ponderosa*). Phytosanitary measures were taken to eradicate the disease: all infected plants were destroyed by incineration. Movement of host plants out of the demarcated areas is prohibited for one year.

Present: under eradication.

***Lecanosticta acicola* (EPPO A2 List):** in 2019, the fungus was identified in 4 sites on *Pinus mugo* trees. Phytosanitary measures were taken to eradicate the disease: all infected plants were destroyed by incineration. Movement of host plants out of the demarcated areas is prohibited for one year.

Present: under eradication.

***Phytophthora ramorum* (EPPO A2 List):** in 2019, *P. ramorum* was found on imported *Rhododendron* plants (see EPPO RS 2019/241). Infested plants were destroyed as well as other host plants within 2 m radius. A demarcated area was established. Inspections on susceptible plants will be carried out for the next 3 years.

Absent: intercepted only.

- Viruses

Plum pox virus (*Potyvirus*, PPV - EPPO A2 List): in 2019, the presence of PPV was detected on plum trees (*Prunus domestica*) in the region of Utena (in an orchard) and of Alytus (in a nursery) as a result of official surveys. No symptoms of plum pox virus were observed. All infected plum trees have been uprooted and destroyed by incineration. Phytosanitary measures will be implemented in the infected area for the next 3 years.

Present: under eradication.

Source: NPPO of Lithuania (2020-02).

Additional key words: detailed record

Computer codes: CORBSE, ERWIAM, HETDRO, PHYTRA, PPV000, SCIRAC, SCIRPI, LT

2020/030 First report of *Nemorimyza maculosa* in Madeira (PT) and Canary Islands (ES)

During a faunistic study on Agromyzidae, the presence of *Nemorimyza maculosa* (Diptera: Agromyzidae - EPPO A1 List) was reported for the first time in the EPPO region (Černý *et al.*, 2018), on the islands of Madeira (Portugal) and La Palma (Canary Islands, Spain). The NPPOs of Portugal and Spain have confirmed these findings and provided additional information.

- **Madeira (PT)**

In April 2016, 14 male specimens of *N. maculosa* were collected from the island of Madeira during a faunistic study. In January 2020, the NPPO of Portugal confirmed that *N. maculosa* is present in Madeira where it is under containment. Since 2017, an official survey has been implemented in the mainland and in the Azores and confirmed the absence of the pest from the rest of the Portuguese territory.

The situation of *Nemorimyza maculosa* in Portugal can be described as follows: **Present, only in Madeira (absent from the mainland).**

- **Canary Islands (ES)**

In January 2011, 7 specimens (2 males, 5 females) of *N. maculosa* were collected in 3 different areas of the island of La Palma. In February 2020, the NPPO of Spain confirmed that the pest has been detected in the islands of Tenerife, Gran Canaria, La Palma and La Gomera, but is absent from the mainland. In the Canary Islands, *N. maculosa* has mainly been found on *Lactuca sativa* (lettuce), but has also been detected on *Helianthus annuus* (sunflower) and several weed species, such as *Bidens pilosa* and *Erigeron (=Conyza) bonariensis*.

The pest status of *Nemorimyza maculosa* in Spain is officially declared as: **Present, restricted distribution (Canary Islands); Absent (mainland).**

Source: Černý M, Andrade R, Gonçalves AR, von Tschirnhaus M (2018) New records of Agromyzidae (Diptera) from Portugal, with an updated checklist. *Acta Musei Silesiae, Scientiae Naturales* **67**, 7-57.

NPPO of Portugal (2020-01).

NPPO of Spain (2020-02).

Additional key words: new record

Computer codes: AMAZMA, ES, PT

2020/031 First report of *Spodoptera frugiperda* in Australia

In February 2020, *Spodoptera frugiperda* (Lepidoptera: Noctuidae - EPPO A1 List) was reported for the first time in the Australian islands of Saibai and Erub, Torres Strait. In late January 2020, suspect lepidopteran specimens had been caught in pest-specific traps and their identity was confirmed by morphological and molecular methods. Surveys using traps are being carried out to delimit the extent of the infestation. The NPPO of Australia noted that there is no evidence of an established population of *S. frugiperda* on both islands. Eradication measures are being implemented in both islands.

The pest status of *Spodoptera frugiperda* in Australia is officially declared as: **Transient: actionable, under eradication.**

Additional note: Soon after this initial report in Torres Strait islands, *S. frugiperda* was also detected on the mainland. The first specimen was detected at Bamaga, in the Northern part of Queensland (Queensland Government, 2020-02).

Source: IPPC website. Official Pest Reports - Australia (AUS-96/1 of 2020-02-07) First detection of *Spodoptera frugiperda* (fall armyworm) in Torres Strait. <https://www.ippc.int/en/countries/australia/pestreports/2020/02/first-detection-of-spodoptera-frugiperda-fall-armyworm-in-torres-strait/>

Queensland Government. First mainland detection of fall armyworm. News release of 2020-02-19. <https://www.daf.qld.gov.au/news-media/media-centre/biosecurity/news/first-mainland-detection-of-fall-armyworm>

Pictures: *Spodoptera frugiperda*. <https://gd.eppo.int/taxon/LAPHFR/photos>

Additional key words: new record

Computer codes: LAPHFR, AU

2020/032 First record of *Rhagoletis zoqui* in Germany

The NPPO of Germany informed the EPP0 Secretariat of the finding of *Rhagoletis zoqui* (Diptera: Tephritidae, EU Annexes as ‘non-European Tephritidae’) in a nursery in Nordrhein-Westfalen in August 2019. *R. zoqui* was caught in a yellow sticky trap which had been placed in a *Prunus* tree. This fruit fly species is native to Mexico where it infests fruit of walnut trees (*Juglans regia*, *Juglans mollis*, *Juglans pyriformis*). An express Pest Risk Analysis was conducted and concluded that *R. zoqui* could establish and cause damage to walnut production in Germany and other EU Member States. Control measures applied against *Rhagoletis completa* and *R. suavis* are likely to be effective against this new species. The pest status of *Rhagoletis zoqui* in Germany is officially declared as: **Present, only in some parts of the Member State concerned.**

Source: NPPO of Germany (2019-09).

JKI (2019) Express - PRA1 zu *Rhagoletis zoqui*. Available at https://pflanzengesundheit.julius-kuehn.de/dokumente/upload/Rhagoletis-zoqui_expressPRA.pdf

Additional key words: new record

Computer codes: RHAGZO, DE

2020/033 First report of *Eotetranychus lewisi* in Ecuador

During studies conducted in October 2016 in the experimental fields of the Universidad Técnica de Ambato (province of Tungurahua), *Eotetranychus lewisi* (Acari, Tetranychidae - EU Annexes) was detected for the first time in Ecuador. The pest was found on *Arracacia xanthorrhiza* (Apiaceae) and *Tropaeolum tuberosum* (Tropaeolaceae). This is the first time that *E. lewisi* is detected in Ecuador, as well as on the above host plants which are important root vegetable crops in the Andean part of the country.

The situation of *Eotetranychus lewisi* in Ecuador can be described as follows: **Present, only in some areas (first found in 2016 in the province of Tungurahua).**

Source: Vásquez C, Dávila M, Telenchana N, Mangui J, Navas D (2017) [First report of *Eotetranychus lewisi* in the Andean region from Ecuador on *Arracacia xanthorrhiza* (white carrot), *Tropaeolum tuberosum* (mashua)]. *Revista Mexicana de Biodiversidad* **88**(4), 992-994 (in Spanish). <http://revista.ib.unam.mx/index.php/bio/article/view/2093/1618>

Additional key words: new record

Computer codes: AMAZMA, ES, PT

2020/034 First report of *Icerya seychellarum* in Italy

The NPPO of Italy informed the EPPO Secretariat of the finding of *Icerya seychellarum* (Hemiptera: Margarodidae) on its territory. This polyphagous scale insect is widespread in tropical areas and also occurs in France, Spain and Madeira (Portugal). An infestation of avocado plants (*Persea americana*) grown in greenhouses was reported to the Phytosanitary Service by a researcher in the municipality of Bisignano (Calabria). Plants were destroyed and further surveys in the surroundings on other host plants did not detect the pest. The pest status of *Icerya seychellarum* in Italy is officially declared as: **Absent, pest eradicated**.

It may be noted that an express Pest Risk Analysis was conducted in Germany after an interception of *I. seychellarum* in a consignment of mango fruit from Egypt in September 2019. It was concluded that this species could establish in southern EU Member States, but that economic impact would be limited, as has been observed in France and Spain.

Source: NPPO of Italy (2019-09).

JKI (2019) Express PRA for *Icerya seychellarum*. Available at https://pflanzengesundheit.julius-kuehn.de/dokumente/upload/Icerya-seychellarum_express-pra.pdf

Additional key words: new record

Computer codes: ICERSE, IT, DE

2020/035 Revision of the taxonomy of *Euwallacea fornicatus*

Euwallacea fornicatus (Coleoptera: Curculionidae: Scolytinae - EPPO A2 List) is now considered as a species complex. The taxonomic status of the *E. fornicatus* species complex (*Euwallacea fornicatus sensu lato*) was under discussion until recently. Based on morphological and molecular data, the existence of four species seems now to be agreed between specialists: *E. fornicatior*, *E. fornicatus*, *E. perbrevis*, and *E. kuroshio*.

- *E. fornicatus* (polyphagous shot hole borer): considered to be native in China, Japan, Malaysia, Samoa, Sri Lanka, Taiwan, Thailand, and Vietnam, and introduced into Israel, South Africa, and the USA (California).
- *E. perbrevis* : species of the ‘previously described tea shot hole borer’, considered to be native in American Samoa, Australia, China, Fiji, India, Indonesia, Japan, Malaysia, Palau, Papua New Guinea, Philippines, Réunion, Singapore, Sri Lanka, Taiwan, Thailand, Timor Leste, and Vietnam, and introduced into the USA (Florida and Hawaii)
- *E. fornicatior*: species of the ‘previously described tea shot hole borer’, not found outside its native range which is south-eastern Asia.
- *E. kuroshio* (Kuroshio shot hole borer): native in Indonesia, Japan, and Taiwan, and introduced into Mexico and the USA (California).

Because the taxonomic identity of the species complex was recently reassessed, it is difficult to attribute previous host records to one of these species. For the time being, these 4 species are covered in EPPO Global Database under *Euwallacea fornicatus sensu lato*.

- Source:** Gomez DF, Hulcr J, Carrillo D (2019) Diagnosis and management of the invasive shot hole borers *Euwallacea fornicatus*, *E. kuroshio*, and *E. perbrevis* (Coleoptera: Curculionidae: Scolytinae). Publication #FOR353. October 2019
<https://edis.ifas.ufl.edu/fr422>
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<https://doi.org/10.1093/isd/ixy018>
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Additional key words: taxonomy

Computer codes: XYLBFO, EUWAFO, EUWAKU

2020/036 Update on the situation of *Pomacea* sp. in Spain

The NPPO of Spain recently informed the EPPO Secretariat that the outbreak of *Pomacea* sp. (Gastropoda: Ampullariidae- EPPO A2 List) detected in the province of Girona (Cataluña) in 2015 (EPPO RS 2016/203) was officially declared eradicated in January 2020. *Pomacea maculata* (EPPO A2 List) was first found in Spain in July 2010 in the Ebro delta, in the province of Tarragona (Cataluña) (EPPO RS 2012/039). Another outbreak was found in August 2015 in a rice plot (2.9 ha) located in the zone of Pals, province of Girona (Cataluña): ten egg masses and three adult snails of *Pomacea* sp. were detected. Eradication measures were immediately applied in the plot. Intensive surveys were carried out in all the rice plots of this zone, and no *Pomacea* sp. have been detected since September 2015. Phytosanitary measures are ongoing in the province of Tarragona.

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

Source: NPPO of Spain (2020-01).

Additional key words: detailed record, eradication

Computer codes: POMASP, POMAIN, ES

2020/037 First report of tomato brown rugose fruit virus in France

The NPPO of France recently informed the EPP0 Secretariat of the first detection of *Tomato brown rugose fruit virus* (*Tobamovirus*, ToBRFV - EPP0 Alert List) on its territory. Symptomatic plants of tomato (*Solanum lycopersicum*) grown for fruit production in a greenhouse (2.4 ha) were observed by a grower at the end of January 2020 in Finistère department (Bretagne region). The identity of the virus was confirmed by the National Reference Laboratory in early February 2020. Phytosanitary measures were taken to eradicate the disease, including the destruction of plants and growing media, and the disinfection of facilities. The origin of the outbreak is still under investigation and traceability studies are being carried out. The plantlets had been imported from the United Kingdom and derived from seed produced in the Netherlands. The pest status of *Tomato brown rugose fruit virus* in France is officially declared as: **Transient, actionable, under eradication.**

Source: NPPO of France (2020-02).

INTERNET

Alim'agri (2020-02-18) Virus ToBRFV : le ministère confirme la contamination de tomates en serre dans le Finistère. <https://agriculture.gouv.fr/virus-tobrfv-le-ministere-confirme-la-contamination-de-tomates-en-serre-dans-le-finistere>

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

Additional key words: new record

Computer codes: TOBRFV, FR

2020/038 Update on the situation of tomato brown rugose fruit virus in the Netherlands

The *Tomato brown rugose fruit virus* (*Tobamovirus*, ToBRFV - EPP0 Alert List) was first detected in the Netherlands in October 2019 in one greenhouse in the municipality of Westland (RS 2019/209). The virus was further detected in other tomato (*Solanum lycopersicum*) greenhouses. As of 11 February 2020, 17 outbreaks are reported: 8 in the municipality of Westland, 4 in the municipality of Hollands Kroon, 2 in the municipality of Brielle, 1 in the municipality of Reimerswaal, 1 in the municipality of Haarlemmermeer, 1 in the municipality of Midden-Delfland. The identity of the virus was confirmed by sequencing (NGS). In addition, 4 other cases are suspected (based on RT-PCR) but still need to be confirmed by sequencing. Among the 4 suspected cases, 2 are in the municipality of Westland. In all cases, phytosanitary measures are applied. The NPPO of the Netherlands also surveys seed companies, and ToBRFV was detected in tomato seed imported from Peru (a country where the virus is not known to occur).

Source:

INTERNET

NVWA (2020-02-11) Tomato brown rugose fruit virus (ToBRFV) <https://www.nvwa.nl/onderwerpen/plantenziekten-en-plagen/tomato-brown-rugose-fruit-virus-tobrfv>

NVWA (2020-02-07) Tomatenvirus ToBRFV ook aangetroffen op tomatenzaad <https://www.nvwa.nl/onderwerpen/plantenziekten-en-plagen/nieuws/2020/02/07/nvwa-tomatenvirus-tobrfv-ook-aangetroffen-op-tomatenzaad>

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

Additional key words: detailed record

Computer codes: TOBRFV, NL

2020/039 Update on the situation of tomato brown rugose fruit virus in Spain

The *Tomato brown rugose fruit virus* (*Tobamovirus*, ToBRFV - EPPO Alert List) was first detected in Spain in October 2019 in one greenhouse in the municipality of V́icar, Almería province (Andalucía) (EPPO RS 2019/238). As a result of delimiting surveys, the presence of ToBRFV has been confirmed in two new tomato (*Solanum lycopersicum*) greenhouses in Vicar and El Ejido (Almería) with surfaces of 1.36 ha and 0.50 ha respectively. In these two greenhouses, plants had been grown from the same seed lot as in the first glasshouse found to be infected. In other greenhouses where the same seed lot has been used, the presence of ToBRFV was not detected.

Surveys carried out in other tomato greenhouses owned by the two producers who had the findings in their greenhouses, detected the presence of ToBRFV in two new greenhouses both in Vicar (Almería) with an area of 1.13 ha and 0.99 ha respectively. Later in January, another greenhouse in Vicar (0.89 ha) was found to be infected. As the first reported case was on grafted tomatoes, surveys were also carried out in the greenhouse where the rootstock had been produced and did not detect ToBRFV. In total, 6 greenhouses were found infected: 5 in Vicar and 1 in El Ejido, both in Almería province (Andalucía), covering an area of 6.25 ha. A total of 55 970 plants of tomato have been destroyed. Eradication measures are applied. The pest status of *Tomato brown rugose fruit virus* in Spain is officially declared as: **Present, under eradication.**

Source: NPPO of Spain (2019-12, 2020-02).

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<https://www.juntadeandalucia.es/boja/2020/21/31>

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

Additional key words: detailed record

Computer codes: TOBRFV, ES

2020/040 Eradication of *Ralstonia pseudosolanacearum* in the Netherlands

In September and October 2015, *R. solanacearum* (race 1) (now considered to be *R. pseudosolanacearum*, EPPO A2 List) was found in glasshouse companies producing *Rosa* plants for planting. In 2015 and 2016, tracing-back and tracing-forward investigations revealed the presence of the bacterium in 15 companies (including 5 propagation companies) covering about 36 ha (EPPO RS 2015/182, 2017/017). Official measures were implemented to prevent further spread and eradicate the bacterium. Monitoring showed that some plants or irrigation water were still contaminated in 2017 at one company and in 2018 at three companies. In 2019, water samples collected from these companies were tested and found to be free from the bacterium. The possible source of the outbreak could not be elucidated. The pest status of *Ralstonia pseudosolanacearum* in the Netherlands is officially declared as: **Absent, pest eradicated.**

Source: NPPO of the Netherlands (2019-11).

Additional key words: detailed record, eradication

Computer codes: RALSSO, RALSPS, NL

2020/041 *Phytophthora* species found in forest stands in Vietnam

In 2016 and 2017, studies on *Phytophthora* diversity were performed in 25 natural and semi-natural forest stands and 16 rivers in temperate and subtropical montane regions, as well as in tropical lowland regions of Vietnam.

Phytophthora isolates were recovered from soil and water by baiting assays, or from naturally fallen leaves by direct isolation. As a result, 13 described *Phytophthora* species, 5 informally designated *Phytophthora* taxa, and 21 previously unknown *Phytophthora* taxa were isolated (see table below).

<i>Phytophthora</i> species and unknown taxa	Phylogenetic clade
<i>P. capensis</i> <i>P. citricola</i> VII, VIII, IX, X and XI <i>P. sp. botryosa</i> -like 2, <i>P. sp. meadii</i> -like 1 and 2 <i>P. sp. tropicalis</i> -like 2 <i>P. sp. multivesiculata</i> -like 1	Clade 2
<i>P. castaneae</i> <i>P. heveae</i>	Clade 5
<i>P. chlamydospora</i> <i>P. gregata</i> <i>P. sp. bitahaiensis</i> -like <i>P. sp. sylvatica</i> -like 1, 2 and 3	Clade 6
<i>P. cinnamomi</i> (EU Annexes) <i>P. parvispora</i> <i>P. attenuata</i> <i>P. sp. attenuata</i> -like 1, 2 and 3 <i>P. x heterohybrida</i>	Clade 7
<i>P. drechsleri</i> <i>P. pseudocryptogea</i> <i>P. ramorum</i> (EPPO A2 List) <i>P. sp. kelmania</i>	Clade 8
<i>P. macrochlamydospora</i> <i>P. sp. x insolita</i> -like <i>P. sp. x kunnunara</i> -like <i>P. sp. x virginiana</i> -like s.l. <i>P. sp. quininea</i> -like <i>P. sp. Grenada 3</i> -like <i>P. sp. x Peru 4</i> -like	Clade 9
<i>P. sp. gallica</i> -like 1 and 2	Clade 10

It can be noted that this is the first documented report of *Phytophthora ramorum* (EPPO A2 List) in Asia, and the first record for Vietnam. Until now, only *P. cinnamomi* (A2 mating type) was associated with severe dieback of montane forests in Northern Vietnam. Most other *Phytophthora* species, including *P. ramorum*, were not associated with obvious disease symptoms. It is suggested that Vietnam is within the centre of origin of most *Phytophthora* taxa listed above, including *P. cinnamomi* and *P. ramorum*, and that *Phytophthora* clades 2, 5, 6, 7, 8, 9, and 10 are native to the Indochina peninsula.

Source: Jung T, Scanu B, Brasier CM, Webber J, Milenković I, Corcobado T, Tomšovský M, Pánek M, Bakonyi J, Maia C, Bačová A, Raco M, Rees H, Pérez-Sierra A, Horta Jung M (2020) A survey in natural forest ecosystems of Vietnam reveals high diversity of both new and described *Phytophthora* taxa including *P. ramorum*. *Forests* 11(1), 93. <https://doi.org/10.3390/f11010093>

Additional key words: detailed record

Computer codes: 1PHYTG, PHYTCE, PHYTCI, PHYTCN, PHYTDR, PHYTHE, PHYTKA, PHYTMA, PHYTPK, PHYTPV, PHYTRA, PHYTTT, VN

2020/042 First report of *Datura innoxia* in Bosnia and Herzegovina

Datura innoxia (Solanaceae) is reported as a new alien species in the flora of Bosnia and Herzegovina. The species is native to Central America and has been introduced into the EPPO region where it is established as an alien species in France, Italy, Portugal, Spain and Turkey. The species is recorded as a casual alien in Romania and has been recorded in Greece, Croatia, Montenegro and recently in Serbia (RS 2018/043). In Bosnia and Herzegovina, during surveys conducted between 2018/2019, *D. innoxia* was recorded from two locations in the city of Mostar where it has escaped cultivation and established small populations in ruderal habitats including waste land.

Source: Maslo S, Šarić Š (2019) *Datura innoxia* Mill. (Solanaceae), a new alien species in the flora of Bosnia and Herzegovina. *Thaiszia Journal of Botany* **29**, 225-230.

Additional key words: invasive alien plants, new record

Computer codes: DATIN, BA

2020/043 First report of *Anredera cordifolia* in Algeria

Anredera cordifolia (Basellaceae) is reported for the first time in Algeria. This vine is native to South America. It has been introduced into many countries as an ornamental plant where it has become invasive, particularly in Australia, South Africa, New Zealand and Hawaii. In the EPPO region, it is naturalized in Croatia, Greece, Italy, and invasive in Spain. It spreads by vegetative means and the stems can break into viable sections which can aid spread. In Algeria, *A. cordifolia* has been recorded in many localities within Skikda area. It was found in 2014 in several locations in the cities of Saleh Chebel (commune of Hamadi Krouma) and Larbi Ben M'Hidi (commune of Skikda) at the edges of gardens. At Larbi Ben M'Hidi, a large population was observed on the roadside in a ruderal habitat where it forms an extensive mat clinging to various surrounding shrubs. In 2015, to the east of the town of Skikda, another large population was recorded. The plant can be considered as naturalized in the Skikda region and it should be further monitored and controlled to avoid it becoming invasive.

Source: Sakhraoui N, Metallaoui S, Chefrour A (2019) Naturalisation d'*Anredera cordifolia* (Basellaceae) en Algérie. *Flora Mediterranea* **29**, 159-162.

Additional key words: invasive alien plants, new record

Computer codes: BOGCO, DZ

2020/044 *Melia azedarach*, *Canna indica* and *Pelargonium zonale* in Algeria

Melia azedarach (Meliaceae) is recorded as naturalized in Algeria. The species is native to South Asia and was introduced into Algeria as an ornamental species. Similarly, the species was introduced into the USA as an ornamental species in the 1800s and has since become an invasive species invading roadsides and forests edges. It is also recorded as invasive in parts of Africa (Kenya, Tanzania and Uganda) and parts of South America. In the EPPO region, the species is recorded as naturalized in France, Cyprus, Israel, Italy, Jordan and Malta. In North America, it can form dense stands which can restrict the growth of native vegetation. In Algeria, near the town of Skikda, *M. azedarach* has been observed along roads for consecutive years from 2014-2019.

Canna indica (Cannaceae) is native to Mexico, Central and South America and the Caribbean. It is reported as invasive in Africa (e.g. Kenya, Malawi, South Africa) and several oceanic islands. In Algeria, the species was introduced in the early 1800s as an ornamental species and small populations have recently been reported growing among native species. It has been recorded along roadsides between Stora and the town of Skikda.

Pelargonium zonale (Geraniaceae) is native to South Africa and has been cultivated as an ornamental plant in many regions of the world. The species has escaped from cultivation in Puerto Rico. In Algeria, the species was introduced as an ornamental species. In 2017, it was found at several sites in the city of Salah Chebel and in 2019 along the road network linking Filfilla to Hamrouche Hamoudi. It has also been found growing in waste land.

All of the aforementioned species should be monitored in Algeria and included on a watch list to ensure the early detection of any invasiveness.

Source: Sakhraoui N, Chefrour A, Metallaoui S (2019) Naturalisation de *Melia azedarach* (Meliaceae) et premier signalement de *Canna indica* (Cannaceae) et *Pelargonium zonale* (Geraniaceae) en Algérie. *Flora Mediterranea* **29**, 223-226.

Additional key words: invasive alien plants, detailed record

Computer codes: CNNIN, MEIAZ, PELZN, DZ

2020/045 *Impatiens glandulifera* in forest habitats

Impatiens glandulifera (Balsaminaceae: EPPO List of Invasive Alien Plants) is an invasive, annual species native to the Western Himalayas. It was originally introduced into the EPPO region as a garden ornamental and has spread throughout Europe. Over the last 20 years the spread of *I. glandulifera* into forest habitats has accelerated, and this may be facilitated by (1) high propagule pressure from widespread riparian populations, (2) extensive anthropogenic and natural disturbances in forest ecosystems, (3) increased use of forest machinery that can spread seeds and (4) the wide environmental tolerance of the species. The impacts of *I. glandulifera* in forest habitats can include negative impacts on native plant species diversity and mycorrhizal fungi. *I. glandulifera* may also negatively impact growth of tree saplings planted in the forests. The authors suggest measures to prevent further spread of *I. glandulifera* into forests, including reducing soil disturbances and limiting the transport of soil contaminated with seeds. They also suggest that forest practices such as logging should be conducted before the seeds of *I. glandulifera* are released to minimise additional spread.

Source: Čuda J, Skálova H, Pyšek P (2020) Spread of *Impatiens glandulifera* from riparian habitats to forests and its associated impacts: insights from a new invasion. *Weed Research* **60**, 8-15.

Additional key words: invasive alien plants

Computer codes: IPAGL, CZ

2020/046 Elodea nuttallii in Bulgaria

Elodea nuttallii (Hydrocharitaceae: EPPO List of Invasive Alien Plants) is native to North America and has been introduced into the EPPO region as an ornamental species and has since been accidentally released from aquariums into the natural environment. *E. nuttallii* is included in the List of invasive alien species of EU concern (EU Regulation 1143/2014). In Bulgaria, the species has been recorded as naturalised since 2002 and since then, the number of locations where the species is recorded has increased rapidly. In Bulgaria, it invades slow-flowing rivers, lakes, reservoirs, ponds and canals. The species can spread rapidly through vegetative reproduction and growth and can form monospecific stands. Once established the species is difficult to control as even small fragments can form viable populations. The species was first recorded in Bulgaria in the Topolovets River and has since been recorded on the Black Sea Coast and in North east Bulgaria, Sofia region, Vitosha region, Znepole region, West Frontier Mountains, Valley of the River Struma, Rhodopi Mountains and Thracian Lowlands. The authors highlight that the Danube River has been a major corridor for the spread of the species in Bulgaria.

Source: Georgiev V, Tsoneva S, Kenderov L, Truchkova T, Todorov M, Vladimirov V (2019) Distribution of *Elodea nuttallii*, an invasive alien species of EU concern, in Bulgaria. *Phytologia Balcanica* **25**, 417-423.

Additional key words: invasive alien plants, detailed record

Computer codes: ELDNU, BG

2020/047 Alien plants in Central European river ports

Ports are potential areas for the introduction of alien species which have been brought to new areas by shipping. Invasive alien plants can be contaminants of for example: seeds, grain, or entire plants, in particular plants for planting. River ports typically occur in industrial areas and form part of the urban matrix. To evaluate the extent of alien plant species in Central European ports, data was analysed from a 40-year dataset (1968-2009) from 54 river ports in 5 countries (Austria, the Czech Republic, Germany, Hungary, and Slovakia). All river ports studied were situated on one of two important waterways in Europe (32 ports in Elbe-Vltava waterway and 22 ports on the Danube river). In total, 1056 plants were recorded in and around the 54 river ports, and of these 433 species (41 %) were alien species. There was an average of 125 alien species per river port in the Elbe-Vltava waterway and 140 alien species per port in the Danube waterway. Along both waterways, the proportion of alien plants decreased in ports with increased distance from the sea. The authors note that river ports should be taken into consideration when conducting urban inventories for alien plant species as they can act as important sources for the spread of these species.

Source: Jehlik V, Dostálek J, Frantik T (2019) Alien plants in central European river ports. *NeoBiota* **45**, 93-115.

Additional key words: invasive alien plants, pathway

Computer codes: AT, CZ, DE, HU, SK