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2021/096 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**

Dasineura oxycoccana (Diptera: Cecidomyiidae – formerly EPPO Alert List) is reported for the first time from Morocco on blueberries (*Vaccinium corymbosum*). The pest was first found in March 2018 near Agadir. Surveys conducted in March and April 2019 in the main blueberry-growing regions (Loukkos, Gharb, Souss-Massa) showed that 68% of the surveyed blueberry farms were infested by *D. oxycoccana*, mainly in Souss-Massa and Gharb regions and to a lesser extent in Loukkos. During these studies, *Drosophila suzukii* (EPPO A2 List) and *Halyomorpha halys* (formerly EPPO Alert List) were also found. This is the first time that *H. halys* is reported from Morocco. *H. halys* was observed in Souss-Massa and Loukkos regions (Nouere *et al.*, 2019). The situation of both *D. oxycocanna* and *H. halys* in Morocco can be described as follows: **Present, not widely distributed.**

Gnomoniopsis smithogilvyi, the causal agent of chestnut brown rot, is first reported from Portugal. It was detected during surveys in 2018 in chestnut orchards (*Castanea sativa*) in the Trás-os-Montes region of Portugal. *G. smithogilvyi* had been also identified in an industrial processing plant in 2017, 2018 and 2019 and the proportion of infected nuts were 8.0, 5.3 and 5.0% respectively (Coelho & Gouveia, 2021). **Present, not widely distributed.**

- **Detailed records**

In Ukraine, the potato cyst nematode *Globodera rostochiensis* (EPPO A2 List) was reported in 18 of the 25 regions during surveys conducted in 2017-2018, on 4474 ha in total. It is not present in Central and Southern Ukraine (Poltava, Kirovohrad, Dnipropetrovsk, Mykolaiv, Zaporizhzhia, Donetsk regions and Autonomous Republic of Crimea) (Borzykh *et al.*, 2021). **Present, not widely distributed.**

In Portugal, *Oligonychus perseae* (Acari: Tetranychidae – formerly EPPO Alert List) was first reported in Madeira in 2005 and in the mainland in Algarve region in 2006. Naves *et al*. (2021) report that in 2020 it spread further North and caused significant damage on avocado (*Persea americana)* in the region of Óbidos (Centro region). **Present, not widely distributed.**

In Australia, *Spodoptera frugiperda* (Lepidoptera: Tortricidae – EPPO A1 List) was first reported in Torres Strait (late January 2020). The pest then spread to other states: Queensland (February 2020), Northern Territory and Western Australia (March 2020), and New South Wales (October 2020). In December 2020, *S. frugiperda* was found in Victoria, and in March 2021 in Norfolk Island and Tasmania. However, as *S. frugiperda* is a tropical/subtropical pest, it is still unknown whether it will be able to survive winter in the southernmost regions of Australia (IPPC, 2021). **Present, in all parts of the area.**

In Indonesia, *Spodoptera frugiperda* (Lepidoptera: Tortricidae – EPPO A1 List) was first found in 2019 in Sumatra, and then in Java and Kalimantan (EPPO RS 2019/139). In January 2020, the pest was also found in maize (*Zea mays*) crops in several districts in East Nusa Tenggara, including the East Flores district. Studies conducted in this district showed that *S. frugiperda* caused severe damage in the sub-districts of West Solor and Ile Mandiri where 80 to 100% of the maize fields were infested (Mukkun *et al.*, 2021). **Present, not widely distributed.**

- **Eradication**

In Australia, citrus canker caused by *Xanthomonas citri* subsp. *citri* (EPPO A1 List) was detected in April 2018 in the Northern Territory and Western Australia on potted citrus (*Citrus aurantiifolia*) plants (EPPO RS 2019/223). In April 2021, after a successful eradication program, citrus canker has been officially declared to be absent from all Australian states and territories (IPPC, 2021). **Absent: pest eradicated.**

- **Host plants**

In Florida (US), *Gymnosporangium clavipes* (EPPO A1 List) was found in March 2020 in a *Crataegus marshallii* (Rosaceae) tree which displayed stem galls (McVay *et al.*, 2020).

- **Regulation**

EU emergency measures against pepino mosaic virus (*Potexvirus*, PepMV – EPPO A2 List) have been repealed. This virus is now regulated as a Regulated Non-Quarantine Pest (RNQP) for tomato plants for planting (*Solanum lycopersicum*) (EU, 2020).

- **Taxonomy**

The brown citrus aphid, previously named *Toxoptera citricidus* (Hemiptera: Aphididae – EPPO A2 list) is now placed again in the genus *Aphis* and thus should be called *Aphis citricidus*. Morphological and molecular studies have concluded that *Toxoptera* should be considered as a subgenus of *Aphis* (Lagos *et al.*, 2014).

Sources:

Borzykh OI, Sigareva DD, Fedorenko OL, Bondar TI, Kornyushin VV, Sokolova OO, Karpliuk VG (2021) Current distribution of golden potato cyst nematode, *Globodera rostochiensis* (Tylenchida, Heteroderidae), in Ukraine. *Zoodiversity* **55**(2), 167-174. https://doi.org/10.15407/zoo2021.02.167

Coelho V, Gouveia E (2021) *Gnomoniopsis smithogilvyi*, the causal agent of chestnut brown rot reported from Portugal. *New Disease Report* **43**, e12007. https://doi.org/10.1002/ndr2.12007

EU (2020) Commission Implementing Decision (EU) 2020/1549 of 22 October 2020 repealing Decision 2004/200/EC on measures to prevent the introduction into and the spread within the Community of Pepino mosaic virus. *OJL 354, 26.10.2020, 7-8*. http://data.europa.eu/eli/dec_impl/2020/1549/oj

IPPC website. Official Pest Reports – Australia (AUS-100/1 of 2021-04-30) Eradication of *Xanthomonas citri* subsp. *citri* (citrus canker) from Australia. https://www.ippc.int/fr/countries/australia/pestreports/2021/04/eradication-of-xanthomonas-citri-subsp-citri-citrus-canker-from-australia/

IPPC website. Official Pest Reports – Australia (AUS-101/1 of 2021-05-05) *Spodoptera frugiperda* (fall armyworm) detections Australia. https://www.ippc.int/fr/countries/australia/pestreports/2021/05/spodoptera-frugiperda-fall-armyworm-detections-australia/

Lagos DM, Voegtlin DJ, Coeur d'acier A, Giordano R (2014) *Aphis* (Hemiptera: Aphididae) species groups found in the Midwestern United States and their contribution to the phylogenetic knowledge of the genus. *Insect Science* **21**, 374-391. https://doi.org/10.1111/1744-7917.12089

McVay JD, Jones C, Carroll C, Denfeld N, Urbina H (2021) First report of *Gymnosporangium clavipes* causing stem galls on *Crataegus marshallii* in Florida, U.S.A. *Plant Disease* **105**(4), p 1214. https://doi.org/10.1094/PDIS-11-20-2383-PDN

Mukkun L, Kleden YL, Simamora AV (2021) Detection of *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera: Noctuidae) in maize field in East Flores District, East Nusa Tenggara Province, Indonesia. *International Journal of Tropical Drylands* **5**, 20-26.
Naves P, Nóbrega F, Auger P (2021) Updated and annotated review of Tetranychidae occurring in mainland Portugal, the Azores, and Madeira Archipelagos. *Acarologia* **61**(2), 380-393. https://doi.org/10.24349/acarologia/20214437
Nouere S, Amiri S, Lahlali R (2019) Situation des problèmes phytosanitaires du myrtillier (*Vaccinium corymbosum*) au Maroc. *Revue Marocaine des Sciences Agronomiques et Vétérinaires* **8**(3), 321-330.

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

Computer codes: DASYVA, GNMPCA, GYMNCL, HALYHA, HETDRO, LAPHFR, LAPHFR, OLIGPA, PEPMV00, TOXOCI, XANTCI, AY, EU, ID, MA, PT, UA, US

2021/097 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 2021/075), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Bactrocera dorsalis*. https://gd.eppo.int/taxon/DACUDO/datasheet
- *Bactrocera latifrons*. https://gd.eppo.int/taxon/DACULA/datasheet
- *Bactrocera tryoni*. https://gd.eppo.int/taxon/DACUTR/datasheet
- *Bactrocera zonata*. https://gd.eppo.int/taxon/DACUZO/datasheet
- *Ceratitis capitata*. https://gd.eppo.int/taxon/CERTCA/datasheet
- *Dacus ciliatus*. https://gd.eppo.int/taxon/DACUCI/datasheet
- *Grapholita inopinata*. https://gd.eppo.int/taxon/CYDIIN/datasheet

Source: EPPO Secretariat (2021-05).

Additional key words: publication

Computer codes: CERTCA, CYDIIN, DACUCI, DACUDO, DACULA, DACUTR, DACUZO

2021/098 Revision of ISPM 8: Determination of pest status in an area

In March 2021, the first revision of ISPM 8 Determination of pest status in an area was adopted by the Commission on Phytosanitary Measures (CPM). The main objective of this Standard is to provide guidance to NPPOs on how to determine the pest status in an area and provide the most appropriate description of this pest status based on information coming from various sources (including surveillance). In particular, ISPM 8 defines the following categories to describe the presence or absence of a pest in an area:

Presence	Absence
Present: widely distributed Present: not widely distributed and not under official control Present: not widely distributed and under official control Present: at low prevalence Present: except in specified pest free areas Present: transient	Absent: pest not recorded Absent: the entire country is pest free Absent: pest records invalid Absent: pest no longer present Absent: pest eradicated

The English version of ISPM 8 can be found on the IPPC website: https://assets.ippc.int/static/media/files/publication/en/2021/04/ISPM_08_2021_En_2021-04-09_PostCPM-15_AuBuf56.pdf

Source: IPPC Secretariat (2021) Determination of pest status in an area. International Standard for Phytosanitary Measures No. 8. Rome. https://www.ippc.int/fr/core-activities/standards-setting/ispms/

Additional key words: IPPC, standards

2021/099 First report of *Coccotrypes cyperi* in Sweden

The NPPO of Sweden recently informed the EPPO Secretariat of the first finding of the bark beetle *Coccotrypes cyperi* (Coleoptera: Scolytinae) on its territory. The pest was first detected on a plant of *Ficus retusa* purchased at a retail chain store in February 2021. Trace forward analysis showed that 22 plants from the same batch had been distributed to 4 separate stores of the retail chain. All 22 plants were destructively sampled. At two of the retail stores, 6 out of 7 *F. retusa* sampled were infested by *Coccotrypes* sp. In the other two stores a total of 15 plants were inspected and found to be free of *Coccotrypes* sp. but at one retail store an infestation of *Opogona sacchari* (Lepidoptera: Tineidae – EPPO A2 List) was detected. Trace back analysis showed that the plants had been imported from a third country via another EU Member State. A quick risk assessment was performed by SLU Risk Assessment of Plant Pests which concluded that the likelihood of establishment outdoors in Sweden and the Nordic region was very low because of unsuitable ecoclimatic conditions and the absence of host plant species.

The pest status of *Coccotrypes cyperi* in Sweden is officially declared as: **Transient, actionable, under eradication.**

Note: *C. cyperi* originates from South East Asia but has spread outside its native range. It is now reported from Africa (the Seychelles), Asia, North, Central and South America, and Oceania. In Europe, the species has been intercepted in Cyprus on plants for planting of *Ficus microcarpa* (EPPO RS 2015/138, RS 2013/088). The species is very polyphagous and has been reported from at least 50 host plant species.

Source: NPPO of Sweden (2021-04, 2021-05).

SLU Risk Assessment of Plant Pests (2021) *Coccotrypes cyperi* - distribution, host plants and potential for establishment in Sweden and the Nordic region, 13 pp. Available at https://www.slu.se/globalassets/ew/org/centrb/riskv/pub/coccotrypes-cyperi_23april2021.pdf and at https://pra.eppo.int/organism/COCOCY

Additional key words: new record **Computer codes:** COCOCY, OPOGSC, SE

2021/100 First report of *Ips calligraphus* and *I. grandicollis* in China

Ips calligraphus (Coleoptera: Scolytinae, EPPO A1 List) and *I. grandicollis* (Coleoptera: Scolytinae, EPPO A1 List) are first reported from China. This is also the first record of these American species in Continental Asia. From 2016 to 2018, specimens suspected to be *I. calligraphus* and *I. grandicollis* were collected from traps with ethanol as a sole lure in Zhuhai (province of Guangdong) China. A specific survey was conducted in 2019 in the area of Zhuhai. *I. calligraphus* was found at four sites and *I. grandicollis* was found at two sites. The authors consider that the fact that all samples came from traps over a limited area supports the hypothesis of a recent introduction. The host plant of *I. calligraphus* from Zhuhai was identified as slash pine *Pinus elliottii* (an American species widely grown in this area) using DNA barcoding of gut contents from trapped individuals.

The situation of *Ips calligraphus* and *I. grandicollis* in China can be described as: **Present, not widely distributed (only reported from Guangdong).**

Source: Li Y, Johnson AJ, Gao L, Wu C, Hulcr J (2021) Two new invasive *Ips* bark beetles (Coleoptera: Curculionidae) in mainland China and their potential distribution in Asia. Pest Management Science (early view) https://doi.org/10.1002/ps.6423

Pictures: *Ips calligraphus*. https://gd.eppo.int/taxon/IPSXCA/photos

Additional key words: new record **Computer codes:** IPSXCA, IPSXGR, CN

2021/101 First report of *Xylosandrus crassiusculus* in Malta

The NPPO of the Malta recently informed the EPPO Secretariat of the first detection of *Xylosandrus crassiusculus* (Coleoptera, Scolytinae - EPPO Alert List) on its territory. During the official annual survey, samples were collected around Malta (8 locations) and Gozo (4 locations) in March 2021. The pest was found in the island of Malta (municipalities of Mgarr, Rabat, Qrendi, Qormi, Birzebbuga) and of Gozo (municipality of Qala) on carob trees (*Ceratonia siliqua*). The NPPO will conduct an awareness campaign on this pest, as well as a study with other entities such the University of Malta to further study its impact and spread.

The pest status of *Xylosandrus crassiusculus* in Malta is officially declared as: **Present, in specific parts of the Member State, where host crop(s) are grown.**

Source: NPPO of Malta (2021-05).

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

Additional key words: new record **Computer codes:** XYLBCR, MT

2021/102 First report of *Trichoferus campestris* in Latvia

In August 2020, a single male specimen of *Trichoferus campestris* (Coleoptera: Cerambycidae – EPPO A2 List) was caught in Daugavpils, Latvia. This insect was observed flying in the evening. Considering that there are no ports, customs services, or airports near this location, it is considered that the caught specimen was living nearby, probably in a cemetery where many large trees are planted. It is concluded that studies should be conducted to determine the spread and behaviour of this insect species in Latvia, as well as in neighbouring countries. The situation of *Trichoferus campestris* in Latvia can be described as follows: **Present, at low prevalence (only 1 male specimen caught in Daugavpils).**

Source: Janovska M (2020) The first record of *Trichoferus campestris* (Faldermann, 1835) (Coleoptera: Cerambycidae) in Latvia. *Baltic Journal of Coleopterology* **20**(2), 207-210.

Pictures: *Trichoferus campestris*. https://gd.eppo.int/taxon/HESOCA/photos

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

2021/103 Expansion of the invasive range of *Agrilus planipennis* in Russia

In 2018 and 2019, studies were conducted in Russia to monitor the north-western limit of the invaded range of *Agrilus planipennis* (Coleoptera: Buprestidae – EPPO A2 List). In June 2018, 10 study plots were established along a highway (M10) that runs from Moscow to Saint Petersburg via the city of Tver (approximately 180 km from Moscow). This highway is lined with ash trees (*Fraxinus* spp.). On each plot, 2-4 *F. pennsylvanica* trees were girdled by removing a band of 50 cm of the bark around their trunks to attract flying adults of *A. planipennis*. In addition, sticky traps (purple and dark-green) were placed around trunks. These study plots were examined in September/November 2018, and in October 2019. Results showed that the north-western limit of *A. planipennis* corresponds to the north-western border of the city of Tver, and that this limit has not significantly changed since observations made in 2015-2018. It is noted that despite the fact that *F. pennsylvanica* and *F. excelsior* are widely planted in the city of Tver and along nearby roads, population density of *A. planipennis* remained low. In Tver, many ash trees are damaged by the insect, but damage remains localized and massive dieback of ash trees is not observed. Considering the recent detection of *A. planipennis* in Saint Petersburg (EPPO RS 2021/009) which is approximately 520 km from Tver, it is considered that this new expansion towards the northwest does not result from natural spread but from accidental introduction. The insect might have been transported by vehicles, infested plants for planting and/or other commodities. The Saint Petersburg's outbreak, which is approximately 130 km from Estonia and Finland, shows that the pest is approaching the European Union borders from the east, threatening ash trees. The authors concluded that measures are urgently required to contain and control the pest, as well as regular monitoring.

Source: Musolin DL, Selikhovkin AV, Peregudova EY, Popovichev BG, Mandelshtam MY, Baranchikov, YN, Vasaitis R (2021) North-Westward expansion of the invasive range of emerald ash borer, *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae) towards the EU: from Moscow to Saint Petersburg. *Forests* **12**, 502. https://doi.org/10.3390/f12040502

Pictures: *Agrilus planipennis*. https://gd.eppo.int/taxon/AGRLPL/photos

Additional key words: detailed record **Computer codes:** AGRLPL, RU

2021/104 Update on the situation of *Popillia japonica* in Switzerland

In Switzerland, *Popillia japonica* (Coleoptera: Rutelidae – EPPO A2 List) was first found in the canton of Ticino in June 2017 (EPPO RS 2017/160, RS 2019/157). The site of the finding is located next to the demarcated area of an outbreak detected in 2014 in Italy (RS 2020/116) In July 2020, for the first time, adults of *P. japonica* were found in high numbers in two vineyards (*Vitis vinifera*) in the municipality of Genestrerio-Mendrisio (Canton of Ticino). All measures available to eradicate the pest were taken. Nevertheless, larvae were found in the soil close to the infested vineyards in autumn 2020. Based on these findings, the eradication strategy was changed to a containment strategy and a demarcated area was established in November 2020. Phytosanitary measures are applied in the infested area (30 municipalities) they include: restrictions of movement of plant material, of soil, of machinery. Official surveys will be conducted to monitor the pest and appropriate control measures will be applied to limit the prevalence of the pest. A buffer zone of 15 km around the infested area has been defined where measures are also implemented.

The pest status of *Popillia japonica* in Switzerland is officially declared as: **Present, under eradication, only in some part of the country, under containment in case eradication is impossible.**

Source: NPPO of Switzerland (2021-03).

Anonymous (2020) Décision de portée générale sur les mesures d'urgence visant à prévenir la propagation de *Popillia japonica* Newman dans le canton du Tessin https://www.fedlex.admin.ch/eli/fga/2020/2490/fr

Pictures: *Popillia japonica*. https://gd.eppo.int/taxon/POPIJA/photos

Additional key words: detailed record **Computer codes:** POPIJA, CH

2021/105 First report of *Globodera pallida* in Morocco

During surveys for potato cyst nematodes in 2019-2020, 1500 soil samples were collected just before the harvest of potato (*Solanum tuberosum*) in different potato-producing regions of Morocco: central western (Casablanca-Rabat), eastern (Nador-Berkane), northern (Larache-Tangier), central (middle Atlas), south-eastern (Midelt-Errachidia), and south-western (Agadir-Taroudant). Cysts were extracted and identified by morphological and molecular methods. The presence of *Globodera pallida* (EPPO A2 List) was confirmed in 3 regions: Berkane (Eastern Morocco), Gharb and Doukkala (Western Morocco).

The situation of *Globodera pallida* in Morocco can be described as: **Present, restricted distribution (Berkane, Gharb and Doukkala).**

Source: Hajjaji A, Ait Mhand R, Rhallabi N, Mellouki F (2021) First report of morphological and molecular characterization of Moroccan populations of *Globodera pallida*. *Journal of Nematology* **53**, 1-8. https://doi.org/10.21307/jofnem-2021-007

Pictures: *Globodera pallida*. https://gd.eppo.int/taxon/HETDPA/photos

Additional key words: new record **Computer codes:** HETDPA, MA

2021/106 First report of tomato brown rugose fruit virus in Malta

The NPPO of the Malta recently informed the EPPO Secretariat of the first detection of tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) on its territory. ToBRFV was detected during regular official surveys. It was found in April 2021 in a greenhouse at Dingli, Birzebbugia, Gudja, Żabbar, Xewkija, and in two greenhouses at Mgarr producing tomato fruit (*Solanum lycopersicum*). All infected plants were destroyed by incineration.

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

Source: NPPO of Malta (2021-05). https://agrikoltura.gov.mt/en/phd/Documents/pressNotices/notificationVirusTomatoesAndPeppers.pdf

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

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

2021/107 First report of citrus tristeza virus in Tunisia

In Tunisia, following the observation of dieback symptoms in several orange (*Citrus sinensis*) orchards in the municipalities of Beni Khalled and Menzel Bouzelfa (Nabeul governorate), surveys were conducted by the NPPO. Laboratory analysis (serological and molecular tests) confirmed the presence of citrus tristeza virus (*Closterovirus*, CTV – EPPO A2 List). Phytosanitary measures are being implemented to eradicate the outbreaks and prevent any further spread. This is the first confirmed record of CTV in Tunisia. In the 1960s, infections had been reported on Meyer lemon (*Citrus x meyeri*), but these had subsequently been considered eradicated.

The pest status of citrus tristeza virus in Tunisia is officially declared as: **Present, only in some areas, subject to official control.**

Source: IPPC website. Official Pest Reports – Tunisia (TUN-02/4 of 2021-03-29) Premier signalement du virus de la tristeza ou Citrus tristeza virus (CTV) en Tunisie. https://www.ippc.int/fr/countries/tunisia/pestreports/2021/03/premier-signalement-du-virus-de-la-tristeza-ou-citrus-tristeza-virus-ctv-en-tunisie/

Pictures: Citrus tristeza virus. https://gd.eppo.int/taxon/CTV000/photos

Additional key words: new record **Computer codes:** CTV000, TN

2021/108 Lettuce necrotic leaf curl virus: a new torradovirus found in the Netherlands and France

Lettuce necrotic leaf curl virus (LNLCV) is a recently described virus which was first observed in 2011 in a single lettuce (*Lactuca sativa*) field in the Netherlands. In this open field, approximately 30 irregularly distributed lettuce plants, were showing disease symptoms. The virus was initially isolated from a lettuce plant which was showing conspicuous symptoms of necrosis and moderate leaf curling. In 2015, LNLCV was accepted by the ICTV as a new member of the genus *Torradovirus*. Later studies conducted in the Netherlands showed that

unlike other torradoviruses, LNLCV is not transmitted by whiteflies but by aphids. During experiments, LNLCV was successfully transmitted by *Nasonovia ribisnigri*. The virus could also be detected in the stylets of *Cavariella aegopodii* suggesting that it might be a potential vector, but no transmission could be obtained.

In October 2019, a symptomatic lettuce plant (*Lactuca sativa* cv. Tregoney) was collected in an open field in South-Western France. Symptoms included stunted and deformed leaves with light necrosis and yellow spotting along minor veins of older leaves. Molecular tests (HTS, RT-PCR) and inoculation to herbaceous indicators confirmed the presence of LNLCV. As no other viruses were detected, LNLCV is likely to be responsible for the mild necrosis and leaf deformation symptoms observed in the lettuce plant. It is noted that further studies are needed to better understand the distribution and potential impact of LNLCV to lettuce crops.

Source:

Dutch NPPO (2013) Quick scan. Lettuce necrotic leaf curl virus. EPPO Platform on PRAs. https://pra.eppo.int/pra/bf3890cd-c8df-4f64-9fd7-7f910c917325

Svanella-Dumas L, Marais A, Faure C, Lefebvre M, Gaudin J, Candresse T (2021) First report of lettuce necrotic leaf curl virus infecting cultivated lettuce in France. *Plant Disease* **105**(4), 1233. https://doi.org/10.1094/PDIS-11-20-2348-PDN

Verbeek M, Dullemans AM, van der Vlugt RAA (2017) Aphid transmission of *Lettuce necrotic leaf curl virus*, a member of a tentative new subgroup within the genus *Torradovirus*. *Virus Research* **241**, 125-130.

Verbeek M, Dullemans AM, van Raaij HMG, Verhoeven JTJ, van der Vlugt RAA (2014) Lettuce necrotic leaf curl virus, a new plant virus infecting lettuce and a proposed member of the genus *Torradovirus*. *Archives of Virology* **159**, 801–805.

Additional key words: new pest, new record **Computer codes:** LNLCV, FR, NL

2021/109 Update of the situation of *Citrus bark cracking viroid* in Slovenia

In Slovenia *Citrus bark cracking viroid* (CBCVd - EPPO A2 List) was first recorded causing a damaging disease on hop (*Humulus lupulus*) in 2015 (EPPO RS 2015/111). Since then, national official phytosanitary measures are applied and were strengthened in 2019 (RS 2019/166). Despite of the removal of infected plants on 135 ha in 2018 and 2019, CBCVd was detected in new sites, reaching a total of 25 infected farms in 2020, on 167 ha (which represents 10.6 % of all hop-producing areas in Slovenia). The infested area, defined as all hop growing fields in these 25 infested farms, covers 341 ha in 2020. The number of plants with visible symptoms is very low (0.09 % in average), but the NPPO of Slovenia considers that despite the implementation of eradication measures for many years, CBCVd can spread again from critical points with machinery, tools and workers. Therefore, based on a risk assessment, official measures have been changed in 2020 from eradication to containment measures.

The pest status of *Citrus bark cracking viroid* in Slovenia is officially declared as: **Present, under containment, in case eradication is impossible.**

Source: NPPO of Slovenia (2021-04). https://www.gov.si/teme/huda-viroidna-zakrnelost-hmelja-citrus-bark-cracking-viroid/

Pictures: *Citrus bark cracking viroid*. https://gd.eppo.int/taxon/CBCVD0/photos

Additional key words: detailed record, containment **Computer codes:** CBCVD0, SI

2021/110 First report of '*Candidatus* Liberibacter solanacearum' in Serbia

In Serbia, symptoms resembling those caused by '*Candidatus* Liberibacter solanacearum' were first observed at the beginning of July 2020 in a commercial carrot (*Daucus carota* cv. Maestro) field in Begeč, in the southern part of the Bačka region, Vojvodina. Affected carrot plants showed symptoms of yellowing and reddish leaf discoloration. At the end of July, leaves became bronze and purplish; shoots and roots were stunted with pronounced proliferation. In some cases, damage was so extensive that it led to plant decay. In early July, disease incidence was of 0.5-1% but reached 10-15% in mid-August. 15 symptomatic and 5 asymptomatic plants were tested in the laboratory (PCR, sequencing). Results confirmed the presence of '*Candidatus* Liberibacter solanacearum' in all symptomatic plants. The pathogen was not found in asymptomatic plants. It is noted that in 2014, one of the psyllid vectors of the disease, *Bactericera trigonica*, had been found for the first time in Serbia in a few localities, including Begeč.

The situation of '*Candidatus* Liberibacter solanacearum' in Serbia can be described as follows: **Present, restricted distribution (first found in 2020 in a commercial carrot field in Begeč, Bačka region).**

Source: Trkulja V, Mitrović P, Mihić Salapura J, Iličić R, Ćurković B, Đalović I, Popović T (2021) First report of '*Candidatus* Liberibacter solanacearum' on carrot in Serbia. *Plant Disease* **105**(4), p 1188. https://doi.org/10.1094/PDIS-11-20-2384-PDN

Pictures: '*Ca*. L. solanacearum'. https://gd.eppo.int/taxon/LIBEPS/photos

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

2021/111 First report of *Xanthomonas fragariae* in Taiwan

Since 2017, symptoms resembling those caused by *Xanthomonas fragariae* (EPPO A2 List) have been observed in several strawberry cultivars (e.g. *Fragaria ananassa* cvs. 'Taoyuan No. 1' and 'Xiang-Shui') in Taiwan. Early symptoms were angular, water-soaked lesions on the abaxial leaf surface, and later, reddish-brown irregular spots and coalesced lesions developed on the adaxial surface. In humid conditions, sticky bacterial ooze exuding from lesions was observed. Laboratory analysis (isolation, PCR, sequencing, pathogenicity tests) confirmed the identity of the bacterium. This is the first time that *X. fragariae* is reported from Taiwan. It is noted that in some parts of the island, severe outbreaks of the disease have been observed and that management strategies will be needed to prevent any further spread and economic losses.

The situation of *Xanthomonas fragariae* in Taiwan can be described as follows: **Present, restricted distribution.**

Source: Wu HY, Lai QJ, Wu YM, Chung CL, Chung PC, Lin NC (2021) First report of *Xanthomonas fragariae* causing angular leaf spot on strawberry (*Fragaria* × *ananassa*) in Taiwan. *Plant Disease* **105**(4), p 1187. https://doi.org/10.1094/PDIS-07-20-1631-PDN

Pictures: *Xanthomonas fragariae*. https://gd.eppo.int/taxon/XANTFR/photos

Additional key words: new record **Computer codes:** XANTFR, TW

2021/112 New finding of *Peronospora aquilegiicola* in Germany

Peronospora aquilegiicola, the downy mildew of columbines, was first reported in Germany in 2019 in a private garden in Lower Saxony (Niedersachsen) (EPPO RS 2020/131). The NPPO of Germany recently informed the EPPO Secretariat of new findings of this pathogen on plants of *Aquilegia* sp. in two commercial companies in another region, Nordrhein-Westfalen. In the first nursery, plants were grown outdoors. Out of the 6000 plants of the variety concerned, 2280 showed symptoms and were destroyed. The remaining plants were treated with plant protection products. Following the discovery of the first outbreak in Nordrhein-Westfalen, the plant protection service sent a warning note to the horticultural advisory service and another outbreak was detected. Eradication measures have been taken based on a preliminary Express-PRA. All the *Aquilegia* plants grown on the production site (87 620 plants) were declared infested and destroyed. The production site was cleaned of plants and plant debris. Official controls will be carried out in 2021 and 2022 including visual inspections and testing.

The pest status of *Peronospora aquilegiicola* in Germany is officially declared as: **Present, under eradication**.

Source: NPPO of Germany (2021-05).

JKI (2020) Express – PRA zu *Peronospora aquilegiicola*. Available at https://pflanzengesundheit.julius-kuehn.de/index.php?menuid=57&downloadid=2766&reporeid=76

Pictures: *Peronospora aquilegiicola*. https://gd.eppo.int/taxon/PEROAQ/photos

Additional key words: detailed record **Computer codes:** PEROAQ, DE

2021/113 *Artemisia princeps* in the EPPO region: addition to the EPPO Alert List

Why
Artemisia princeps was first observed in the EPPO region in 2011 in the Antwerp port area in Belgium. Since then, it has been recorded from several additional locations in Belgium and the Netherlands where it can form large monospecific stands.

Geographical distribution
EPPO region: Belgium, the Netherlands.
Asia: China (native), Japan (native), Korean peninsula (native).

Morphology

Stem: Erect 60–150 cm, sparsely arachnoid puberulent in upper half, glabrescent towards base.

Leaves: densely arachnoid tomentose beneath, glabrous above. Lowermost leaves long petiolate; leaf blade ovate or elliptic-ovate, 1- or 2-pinnatipartite; segments 2 pairs, oblong or oblong-elliptic. Middle cauline leaves: petiole 1–2(–3) cm; leaf blade ovate or ovate-elliptic, 6–12 × 4–8 cm, pinnatipartite; segments 2–3 pairs, elliptic-lanceolate or elliptic; distal lobe and lobules of lateral lobes larger, obtuse to acute apically. Uppermost leaves pinnatipartite; leaflike bracts 3-lobed or entire.

Inflorescence: a broad panicle with divaricate, erecto-patent branches. Capitula oblong or oblong-ovoid, 1.5–2 mm wide × 2.5–3.5 mm long, sessile or shortly pedicellate. Phyllaries imbricate, in four series, the outer oblong to broadly ovate, the inner rounded, sparsely arachnoid puberulent to glabrescent. Marginal florets female, threadlike, 1.2 mm long, 5–7 in number. Disk florets bisexual, tubular, purplish, 2 mm long, usually 4–9 in number (sometimes less).

Achenes: oblong, truncate at both ends, 1.5 × 0.5 mm, glabrous, seed coat loose.

Biology and Ecology
Artemisia princeps is a rhizomatous perennial herb species that in Western Europe starts to flower towards the end of August or early September.

Habitats
In Western Europe, habitats include roadsides, embankments, railway embankments, and rough ground, often in port areas, between 0 and 20 m altitude. In the native range in China, *A. princeps* is found along roadsides, forest margins and riverbanks and on slopes and shrub land, between 100 and 1400 m altitude.

Pathways for movement
In Asia, *A. princeps* is utilised for a number of purposes including medicinal purposes, and as a culinary herb. The species may have been introduced into the region for these purposes or, as the species is found near entry points (ports), it could have arrived as a contaminant of goods.

Impacts
In Belgium and the Netherlands, the species has been shown to form large monospecific stands and is capable of spreading via rhizomes and seed.

Control
There is no specific information on the control of *A. princeps*, but as the species has long rhizomes any control programme should ensure that belowground material is removed to avoid regrowth.

Sources
Verloove F, Andeweg R (2020) *Artemisia princeps* L. (Asteraceae), an overlooked invasive Far Eastern weed in Western Europe. *Gorteria* **42**, 1-18.
Verloove F, Janssens SB, Andeweg R, Zooneveld BJM, Van der Beeten I (2020) Morphological, genome-size and molecular evidence for the presence of another invasive East Asian *Artemisia* (Asteraceae) in Western Europe. *BioInvasions Records* **9**(4), 685–701. https://doi.org/10.3391/bir.2020.9.4.03

Pictures
Artemisia princeps. https://gd.eppo.int/taxon/ARTPC/photos

Additional key words: invasive alien plant, alert list **Computer codes:** ARTPC, BE, NL

2021/114 Aquatic alien plants in Poland

Limnobium laevigatum (Hydrocharitaceae), *Pistia stratiotes* (Araceae: EPPO A2 List) and *Pontederia crassipes* (Pontederiaceae: EPPO A2 List) were recently recorded as casual species in an artificial pond in the Bieżanów-Prokocim district, of the eastern part of Kraków, Poland.

Limnobium laevigatum is a free-floating or rooted perennial freshwater plant native to tropical areas of Central and South America. It usually occurs in rivers, lakes, swamps, canals, and ponds. Mature plants grow up to 50 cm tall with emergent leaves and solitary or paired white, unisexual flowers. It reproduces sexually by seeds and vegetatively by fragmentation of stolons. It has been introduced into North America, Europe, Asia, Africa, and Australia, where it is often used as an ornamental plant in aquaria and artificial ponds. In the EPPO region, it is recorded as casual in Belgium and Hungary. This is the first record of *L. laevigatum* in Poland.

Pontederia crassipes is a free-floating perennial freshwater plant native to tropical areas of South America. It reproduces sexually by seeds and vegetatively by fragmentation of stolons. It has been introduced to North America, Europe, Africa, Asia, and Australia. In the EPPO region, it is invasive in Portugal, Spain, France, and Italy. In many other countries, it is reported as a casual or naturalised species. This is the first record of *P. crassipes* in Poland.

Pistia stratiotes is a free-floating aquatic species with an ambiguous native range: potentially South America or pan-tropical occupying a native range across the tropical and subtropical regions of Asia, Africa, Australia and South America. It is invasive in Africa, Asia and Australia. It is present in a number of EPPO countries and is regarded as invasive in Italy and France.

All three species can form dense mats which can reduce native species diversity and negatively effect ecosystem services. In the artificial pond, *L. laevigatum* covered about 35% of the water surface and *P. crassipes* coupled with *P. stratiotes* covered approximately 5 % of the water surface. All species were probably dumped in the pond and follow-up surveys should be conducted to check if the population persists.

Source:
Pliszko A, Górecki A (2021) First record of *Limnobium laevigatum* (Humb. & Bonpl. ex Willd.) Heine (Hydrocharitaceae) and *Pontederia crassipes* Mart.

(Pontederiaceae) in Poland. *BioInvasion Records* **10** (in press). https://www.reabic.net/journals/bir/2021/Accepted/BIR_2021_Pliszko_Gorecki_correctedproof.pdf

Additional key words: invasive alien plant **Computer codes:** LIMLA, EICCR, PIIST, PL

2021/115 Lockdown botany in 2020: alien plants in Ukraine

During 2020, although the pandemic severely restricted surveys for plant species in Ukraine, some limited opportunities arose in Kyiv City and Kyiv Region in the northern central part of Ukraine. In total, 10 alien plant species are reported along with note on their occurrence.

Species	Family	Origin	Notes on occurrence
Amaranthus spinosus	Amaranthaceae	S. America	Small population of several plants along roadside
Artemisia tournefortiana	Asteraceae	Asia	Ruderal sites, abandoned buildings and along tram line
Chenopodium ucrainicum	Chenopodiaceae	Uncertain	Ruderal site under willow trees and alongside fences
Celastrus orbiculatus	Celastraceae	Asia	Large population naturalised in forest of Pushcha-Vodytsya
Datura innoxia	Solanaceae	North and Central America	Semi-escaped plants in Kyiv from cracks at the base of stone walls
Dysphania ambrosioides	Chenopodiaceae	North America	Escaped from cultivation in Gryshko Natioanl Botanical Gardens, several dozen plants persisting for at least 2 years
Erechtites hieraciifolius	Asteraceae	Americas	Pine forest near Kyiv
Mesembryanthemum × *vascosilvae*	Aizoaceae		Several locations in Kyiv - semi-escaped in neglected flower beds
Phytolacca americana	Phytolaccaceae	North America	Well established colony of the species in the forest of Pushcha-Vodytsya in the North-West of Kyiv city
Thladiantha dubia	Cucurbitaceae	Asia	Large dense escaped colonies in ruderal habitats in the neighbourhoods of Lukianivka

Source: Mosyakin SL, Mosyakin AS (2021) Lockdown botany 2020: some noteworthy records of alien plants in Kyiv City and Kyiv Region. *Ukrainian Botanical Journal* **78**(2), 96–111.

Additional key words: invasive alien plants **Computer codes:** AMASP, ARTTO, CELOR, DATIN, CHEAM, EREHI, 1MEKG, PHTAM, THDDU, UA

2021/116 Biological control of *Acacia longifolia* in Portugal

Acacia longifolia (Fabaceae) is a small shrub or tree species native to South-Eastern Australia. It is invasive in a number or countries including Argentina, Brazil, New Zealand and South Africa. Within the EPPO region it is considered invasive in Spain and Portugal where it can form extensive populations within coastal ecosystems which act to displace native plant communities. *A. longifolia* alters soil chemistry, reduces forest productivity, and increases the potential for natural fires. In Portugal, the gall forming wasp *Trichilogaster acaciaelongifoliae* (Hymenoptera: Pteromalidae) was released as a biocontrol agent in 2015. Since then, and up to 2020, the establishment, spread and impact of the biocontrol agent has been monitored across 61 sites. Since its first release, establishment has been confirmed at 36 sites. The transfer of the wasp from the southern hemisphere limited its initial establishment, but increased rates of establishment followed with synchronization of its life cycle to northern hemisphere conditions. *T. acaciaelongifoliae* populations then experienced an exponential growth (from 66 galls by 2016, to 24 000 galls by 2018). Galled *A. longifolia* branches produced significantly fewer pods (-84.1%), seeds (-95.2%) and secondary branches (-33.3%). The results are promising for the long-term effectiveness of this biocontrol agent and are also encouraging for future biocontrol programmes that require hemisphere translocations of biocontrol agents.

Source: López-Núñez FA, Marchante E, Heleno R, Duarte LN, Palhas J, Impson F, Freitas H, Marchante H (2021) Establishment, spread and early impacts of the first biocontrol agent against an invasive plant in continental Europe. *Journal of Environmental Management*. https://doi.org/10.1016/j.jenvman.2021.112545

Pictures *Acacia longifolia*. https://gd.eppo.int/taxon/ACALO/photos

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

2021/117 Frequently occurring alien plants in Sicily (IT)

A large dataset of plant species presence/absence in vegetation plots in Sicily was analysed to evaluate frequently occurring alien plant species. The dataset comprised 3 655 plots, 1 601 species and 75 969 species occurrence records. There were 70 alien species recorded in the dataset. The plots encompassed a variety of different habitats which differed strongly in their level of invasion by alien species, from both Mediterranean and non-Mediterranean origin. The man-made habitats had the highest numbers of alien species. The vegetation of coastal saltmarshes, sandy coasts, perennial dry grasslands and riparian thickets were also prone to colonization by alien species. Some habitats were alien-free, such as Mediterranean temporary ponds, standing and running water, volcanic fields and rocky grasslands. *Oxalis pes-caprae* was the commonest and most ubiquitous alien species in the dataset, with 302 occurrences in 13 different habitats.

Table 1. A selection of frequently occurring alien plant species in Sicily. Species in bold are listed on the EPPO List of Invasive Alien plants.

Species	Family	Origin	Life form
Oxalis pes-caprae	Oxalidaceae	African	Herb
Xanthium orientale	Asteraceae	North American	Annual
Erigeron bonariensis	Asteraceae	South American	Annual
Lycium intricatum	Solanaceae	Mediterranean	Shrub
Symphyotrichum squamatum	Asteraceae	South American	Annual
Rhus coriaria	Anacardiaceae	Mediterranean	Shrub
Opuntia ficus-indica	Cactaceae	North American	Shrub
Erigeron sumatrensis	Asteraceae	South American	Annual
Veronica persica	Plantaginaceae	Eurasian	Annual
Amaranthus retroflexus	Amaranthaceae	North American	Annual
Galinsoga parviflora	Asteraceae	South American	Annual
Erigeron canadensis	Asteraceae	North American	Annual
Arundo donax	Poaceae	Eurasian	Shrub, Herb
Dactyloctenium aegyptium	Poaceae	Subtropical	Annual
Sisymbrium orientale	Brassicaceae	Wide-Mediterranean	Annual
Amaranthus deflexus	Amaranthaceae	South American	Annual
Acacia saligna	Fabaceae	Oceanian	Shrub, Tree
Cichorium pumilum	Asteraceae	Mediterranean	Annual
Megathyrsus bivonianus	Poaceae	Mediterranean	Herb
Cenchrus setaceus	Poaceae	Subtropical	Herb

Source: Guarino R, Chytrý M, Attorre, F *et al.* (2021) Alien plant invasions in Mediterranean habitats: an assessment for Sicily. *Biological Invasions*. https://doi.org/10.1007/s10530-021-02561-0

Additional key words: invasive alien plants

Computer codes: OXAPC, XANOR, ERIBO, LYUIN, ASTSQ, RHUCR, OPUFI, ERISU, VERPE, AMARE, GASPA, ERICA, ABKDO, DTTAE, SSYOR, AMADE, ACASA, CICED, PESSA, IT

2021/118 Controlling *Impatiens edgeworthii* in Germany

Impatiens edgeworthii (Balsaminaceae) is an annual species native to the Western Himalayas where it is found in high altitude valleys in India, Nepal and Pakistan. It is currently spreading in East-Central Germany where it grows in forests and extends along tracks and forest edges. *I. edgeworthii* was listed on the EPPO Alert List from 2015 until its transfer to the EPPO Observation List in 2018. Based on its potential to negatively impact native plants, botanists in the (voluntary) Botanical Society of Berlin and Brandenburg (BVBB) tested the potential for Early Detection and Rapid Response (EDRR). Even though EDRR is often promoted as the second-best option to deal with invasive species (after prevention), there is relatively little information on the effectiveness of this method for invasive alien plants as shown by a literature review. It seems therefore unclear if, and to what extent, the ongoing invasion of a new species can be stopped or slowed. Activities of the BVBB included targeting one

population of the species per year in Berlin where all the individuals of *I. edgeworthii* were pulled before they produced seed. All plants were measured and counted, and the surrounding vegetation was recorded. Plots are revisited in following years to record the presence/absence of *I. edgeworthii*. So far, one population has been successfully eradicated, though for another population this was not successful, so the measure had to be repeated. The work is ongoing.

Source: Starfinger U, Burkart M (2021) Verfälschung oder Bereicherung? Die AG Neophyten des botanischen Vereins und *Impatiens edgeworthii*. *Verhandlungen des Botanischen Vereins von Berlin und Brandenburg* **152**, 281-284.

Starfinger U, Burkart M (2021) Lässt sich die Invasion einer Pflanzenart aufhalten? 'Early Detection and Rapid Response' am Beispiel von Impatiens edgeworthii, dem Bunten Springkraut, in Berlin und Brandenburg*. *Verhandlungen des Botanischen Vereins von Berlin und Brandenburg* **152**, 105-114.

Additional key words: invasive alien plants **Computer codes:** IPAED, DE