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# EPPO Reporting Service

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## 2019/112 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**

*Ceroplastes japonicus* (Hemiptera: Coccidae) is reported for the first time from Slovakia. Dead scale insects were found on *Ilex* sp. in the glasshouse of a garden centre (municipality of Rozhanovce) which had carried out an insecticide treatment before samples were taken (NPPO of Slovakia, 2019). **Transient, non-actionable.**

During a survey on pospiviroids in potato (*Solanum tuberosum), Chrysanthemum stunt viroid* (*Pospiviroid*, CSVd – EPPO A2 List) was identified from naturally infected potato plants in Russia (Nizhny Novgorod and Novgorod regions) in 2018. The potato plants were asymptomatic. This is the first report of this viroid in Russia (Matsushita *et al.*, 2019), and of natural infection on potato. **Present: only in some areas.**

In Colombia during surveys in Antioquia region, *Chrysanthemum stunt viroid* (*Pospiviroid*, CSVd – EPPO A2 List) was isolated from a commercial field of chrysanthemum (*Dendranthema* spp.), as well as from the weed *Oxalis latifolia*. This is the first report of CSVd for Colombia (Gobatto *et al.*, 2019). **Present: only in some areas.**

Grapevine red blotch virus (*Grablovirus*, GRBV – EPPO Alert List) occurs in Mexico. A study was conducted in 2016-2017 in the major wine producing region (i.e. region of Ensenada in Baja California), and GRBV was detected for the first time in 2017 in symptomatic grapevines (*Vitis vinifera* cv. Nebbiolo) (Gasperin-Bulbarela *et al.*, 2019). **Present: only in some areas.**

- **Detailed records**

During surveys in 2010-2015, *Chrysanthemum stunt viroid* (*Pospiviroid*, CSVd – EPPO A2 List) and *Chrysanthemum chlorotic mottle viroid* (*Pelamoviroid*, CChMVd) were found in chrysanthemum plants (*Dendranthema x grandiflorum*) exhibiting severe symptoms in the main chrysanthemum-growing regions of India (Andhra Pradesh, Karnataka, and Tamil Nadu) (Adkar-Purushothama *et al.*, 2017). **Present, no details.**

Grapevine red blotch virus (*Grablovirus*, GRBV – EPPO Alert List) occurs in Missouri, USA. In 2016, the virus was detected in hybrid grapevines (*Vitis* sp.). A survey will be carried out to determine the incidence of GRBV in the commonly grown hybrid grapevines grown in Missouri (Schoelz *et al.*, 2019).

*Pseudomonas syringae* pv. *actinidiae* (EPPO A2 List) occurs in Fujian province, China. Symptoms of bacterial canker were first observed in 2016/2017 on 3-year-old plants (*Actinidia chinensis* cv. Hongyang) in an orchard (15 ha) in Fuan city. In this orchard, the disease incidence reached 70-80 %. It is noted that further studies are needed to determine the distribution of *P. syringae* pv. *actinidiae* in Fujian province and that quarantine measures are needed to prevent any further spread (Dai *et al.*, 2019).

In France, an outbreak of *Melampsora medusae* (EPPO A2 List) was detected in October 2017 on clones of three poplar (*Populus* spp.) varieties (Albelo, Dano, and Koster) grown in a nursery producing poplar plants in the department of Gers (Aquitaine region). The incidence

of the disease was very low. Surveys should be conducted in the area around the nursery for two years (NPPO of France, 2018). **Present, at low prevalence.**

- **Eradication**

*Xanthomonas fragariae* (EPPO A2 List) was found in Finland in a strawberry fruit production site in 2011 (EPPO RS 2011/243). Phytosanitary measures were applied and the bacterium is now considered to be eradicated (NPPO of Finland, 2018). The pest status of *Xanthomonas fragariae* in Finland is officially declared as: **Absent, pest eradicated**.

*Paysandisia archon* (Lepidoptera: Castniidae – EPPO A2 List) was found in Germany in January 2016 in a glasshouse of a nursery located near Halle in Saxony-Anhalt (EPPO RS 2017/033). Phytosanitary measures were applied and the pest is now considered to be eradicated (NPPO of Germany, 2018). The pest status of *Paysandisia archon* in Germany is officially declared as: **Absent, pest eradicated**.

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

**Computer codes:** CERPJA, CSVD00, GRBAV0, MELMME, PAYSAR, PSDMAK, XANTFR, CN, CO, DE, FI, FR, IN, MX, RU, US

## 2019/113 Recommendations to policy makers from Euphresco projects

The following research project has recently been carried out in the framework of Euphresco (network for phytosanitary research coordination and funding – hosted by EPPO). The report presenting the main objectives and results of this project, as well as recommendations made to policy makers, can be viewed on the Internet.

**Comparison of multiple real-time PCR & real-time LAMP detection methods for the plant pathogen '*Candidatus* Liberibacter' spp. causing the Huanglongbing disease on *Citrus* spp. (HLBVALID)**
Visual inspection of symptomatic plants is a routine method for the surveillance of huanglongbing (citrus greening) disease, but symptoms can be misinterpreted. Conventional PCR tests can lead to false negative results due to the low titre and uneven distribution of the bacterium in the host plant, especially at an early stage of infection. Several real-time PCR tests have been developed recently. The project aimed to compare the performance of three real-time PCR tests (Bertolini *et al.*, 2014; Li *et al.*, 2006; Morgan *et al.*, 2012) and the conventional duplex PCR from Teixeira *et al.* (2005) and Hocquellet *et al.* (1999). The real-time PCR test from Li *et al.* (2006) and the conventional duplex PCR performed best for both '*Candidatus* Liberibacter asiaticus' and '*Candidatus* Liberibacter africanus'.

**Authors**: Cellier G, Cruz L, Sá Pereira P, Andrade E, Cubero J, Redondo C, Sabuquillo P, Roselló M, Devorshak C, D'Onghia AM, Yaseen T, Ince E, Nilüfer Y, Güler PG.

**Duration of the project**: from 2016-09-01 to 2019-04-30.

**Report**: https://zenodo.org/record/3243371#.XP_Z5lwzbct

**Source:** Euphresco (2019-06). https://www.euphresco.net/projects/

**Additional key words:** research, diagnostics **Computer codes:** LIBEAF, LIBEAM, LIBEAS

## 2019/114 IPPC Guide to Pest Risk Communication

The 'IPPC Guide to Pest Risk Communication: a guide for national plant protection organizations on communicating with stakeholders about pest risks' was published in May 2019. This guide was created under the auspices of the IPPC Secretariat as a component of the IPPC National Phytosanitary Capacity Building Strategy. Its purpose is to support NPPOs in identifying and engaging with stakeholders, and in developing effective pest risk communication strategies.

The IPPC Guide to Pest Risk Communication can be downloaded at the following address: http://www.fao.org/3/ca3997en/ca3997en.pdf

**Source:** EPPO Secretariat (2019-06).

**Additional key words:** publication, communication, IPPC

## 2019/115 Eradication of *Anoplophora glabripennis* from the United Kingdom

In 2012, an outbreak of *Anoplophora glabripennis* (Coleoptera: Cerambycidae – EPPO A1 List) was detected in Paddock Wood in Kent (Southeastern England), United Kingdom (EPPO RS 2012/069). Eradication measures were immediately taken, and since 2015 phytosanitary measures have been taken in accordance with EU decision 2015/893. Annual surveys for *A. glabripennis* were conducted in the outbreak area and at national level. In the last 5 years, the pest has not been detected in the outbreak area, nor in other areas in the United Kingdom. Therefore, in 2019 the NPPO of the United Kingdom officially declared the successful eradication of *A. glabripennis* from its territory. Surveillance at the outbreak site will continue in the form of ground surveillance and inspection of trap trees for at least one more life cycle of the pest, as part of the UK ongoing monitoring programme for *A. glabripennis*. National surveillance will also continue and will include surveillance at registered nurseries and forestry sites, as well as inspections of wood packaging material.
The pest status of *Anoplophora glabripennis* in the United Kingdom is officially declared as: **Absent, confirmed by survey.**

**Source:** NPPO of the United Kingdom (2019-06).

**Pictures:** *Anoplophora glabripennis*. https://gd.eppo.int/taxon/ANOLGL/photos

**Additional key words:** absence, eradication **Computer codes:** ANOLGL, GB

## 2019/116 *Saperda tridentata* (Coleoptera: Cerambycidae – elm borer): addition to the EPPO Alert List

**Why:** *Saperda tridentata* (Coleoptera: Cerambycidae – elm borer) is a pest of *Ulmus* species native to North America. Because it has been intercepted in the EPPO region several times on traded elm wood from the USA, and it is now included in the EU Commission Implementing Regulation 2018/2019 of 18 December 2018, the EPPO Panel on Quarantine Pests for Forestry suggested that *S. tridentata* is added to the EPPO Alert List.

**Where:** *S. tridentata* is native to North America and has not been reported from other parts of the world.
**EPPO region**: Absent.
**North America**: Canada (Manitoba, New Brunswick, Nova Scotia, Ontario, Québec, Saskatchewan), USA (Alabama, Arkansas, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, West Virginia, Wisconsin).

**On which plants:** *S. tridentata* feeds on *Ulmus* species. Its preferred host is *U. americana* (American elm), but *U. rubra* (slippery elm) and *U. crassifolia* (cedar elm) are also attacked. It can probably feed on other North American elm species, but data on the susceptibility of these potential host species is lacking. According to the literature, *S. tridentata* does not infest the European species, *U. minor* (English elm), but this remains to be confirmed. It must be underlined that information is lacking about the susceptibility of elm species that are present in the EPPO region (e.g. *U. glabra, U. laevis, U. minor*).

**Damage:** *S. tridentata* is a wood borer whose larvae feed in galleries under the bark of elm trees. Adult beetles feed on leaves and petioles. The first sign of infestation by *S. tridentata* is the appearance of thin, yellowish foliage followed by dying of some branches (often scattered over the tree). On the trunk and branches, reddish frass is extruded from tiny openings in bark crevices. As the infestation progresses, large pieces of loosened bark can easily be stripped from the tree, and galleries can be observed in the inner bark. Larvae feed in the region between the inner bark and outer layer of the sapwood, and only pupal cells extend down into the sapwood (3-6 mm deep). Ovipositing females usually choose elm trees that are already weakened by drought, diseases or other causes. The presence of numerous larvae boring galleries can girdle the trunk and kill the tree. In addition to direct damage caused by larvae, it is reported that beetles of *S. tridentata* can transmit Dutch elm disease (*Ophiostoma ulmi*) from diseased trees to healthy ones.
Adults are 9 to 17 mm long, blackish with dense grey pubescence and three orange oblique crossbars on the elytra, as well as narrow stripes on each side of the pronotum and the base of the elytra. On male beetles, antennae can be almost as long as their body. In its native range, *S. tridentata* usually has one generation per year, but in some cases the life cycle extends to 2 or 3 years. Adult beetles emerge from elm trees in May and June, leaving round exit holes of 3 mm diameter on the bark. For one month, females lay eggs (singly) in bark crevices at night. After hatching larvae feed initially in the outer corky layer of the bark and later move to the phloem layer creating extensive galleries. From August to October, larvae bore chambers where they overwinter. In March and April, pupation takes place, lasting from 15 to 33 days. Pictures of *S. tridentata* can be viewed on the Internet:
https://www.forestryimages.org/browse/subthumb.cfm?sub=2140&start=1
https://www.marylandbiodiversity.com/viewSpecies.php?species=8478

**Dissemination:** No data is available on the natural spread of *S. tridentata*, nor on the flying capacity of adult beetles. Over long distances, movements of infested plants and wood can transport the pest. From 2016 to 2019, *S. tridentata* has been intercepted by the Italian NPPO at least 6 times on elm wood (*U. rubra*) imported from the USA. Pictures of these Italian interceptions can be viewed on the EPPO Global Database (https://gd.eppo.int/taxon/SAPETR/photos).

**Pathways:** Plants for planting, wood and bark, wood packaging material(?), other wood products(?) of *Ulmus* spp. from countries where *S. tridentata* occurs.

**Possible risks:** In the EPPO region, elms are valuable trees used for wood production and landscaping which have already been decimated by Dutch elm disease epidemics (*O. ulmi, O. novo-ulmi*). In North America, S. *tridentata* is considered as a pest of weakened trees but high levels of infestation can cause tree mortality. Management measures rely on cultural practices to keep trees vigorous and on the removal of severely infested trees to reduce pest populations. Parasitoids of *S. tridentata* have been observed in the USA but they are not considered to be sufficiently efficient to prevent economic damage. The fact that *S. tridentata* can cause mortality on American elm trees, that it can transmit Dutch elm disease, and that it can be moved in trade of elm wood advocates for caution. However, there is still a high uncertainty about the susceptibility of elm species that are present in the EPPO region, as well as a general lack of data on the economic impact of the pest in its native range.

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EPPO RS 2019/116

Panel review date – Entry date 2019-06

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

## 2019/117 First reports of *Halyomorpha halys* in Belgium, Bulgaria and in Malta and update for other European countries

In Belgium three adults of *Halyomorpha halys* (Hemiptera: Pentatomidae – formerly EPPO Alert List) were discovered over the last 8 years. The first specimen was captured in Soignies (Province of Hainaut) in 2011, the second photographed in Saint-Nicolas (Province of East Flanders) in 2017 and the third captured in Ransart (Province of Hainaut) in 2019 (Claerebout *et al.*, 2019). The situation of *Halyomorpha halys* in Belgium can be described as follows: **Present, few occurrences.**

In Bulgaria, *H. halys* was first observed in Sofia in September 2016. 3 nymphs and one adult female were found in 2 sites on *Hibiscus syriacus* (Simov, 2016). The situation of *Halyomorpha halys* in Bulgaria can be described as follows: **Present, first found in 2016 in one locality (Sofia).**

In Iceland, *H. halys* has been intercepted 27 times between 2009 and 2019 in imported goods. Specimens were found near maritime ports, airports and warehouses (Claerebout *et al.*, 2019). **Intercepted only.**

In Malta, *H. halys* was first observed in May 2018. A survey was conducted in 10 localities (9 on Malta and 1 on the island of Gozo) from March 15 to May 31, 2018 with sticky traps baited with aggregation pheromone. One single male was trapped near Freeport in Birżebbuġa on May 15. The authors considered that, as the specimen was very fresh and not damaged, it was most likely bred in Malta and that a small stable population already exists there (Tassini and Mifsud, 2019). The situation of *Halyomorpha halys* in Malta can be described as follows: **Present, first found in 2018 in one locality (Birżebbuġa).**

In Switzerland, *H. halys* is present in 20 out of 26 cantons (Claerebout *et al.*, 2019). **Present, widespread.**

In Sweden, one specimen of *H. halys* was found in Danderyd (near Stockholm) in 2016 and one in Mjölby (Östergötland) in 2018. **Intercepted only**.

In Italy, Cianferoni *et al.* (2018) have reported findings in Abruzzo, Apulia, Campania, Calabria, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Liguria, Lombardia, Marche, Piemonte, Puglia, Sardinia, Sicilia, Toscana, Trentino-Alto Adige, and Valle d'Aosta. **Present, widespread.**

Claerebout *et al.* (2019) also reported findings of specimens in Albania (Vlora and Bera) in 2018, in Southern Poland (Dobczyce) in 2018, and in Ukraine in 2018.

**Source:** Cianferoni F, Grazini F, Dioli P, Ceccolini F (2018) Review of the occurrence of *Halyomorpha halys* (Hemiptera: Heteroptera: Pentatomidae) in Italy, with an update of its European and World distribution. *Biologia* **73**(6), 599–607.

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**Pictures:** *Halyomorpha halys*. https://gd.eppo.int/taxon/HALYHA/photos

**Additional key words:** new record, detailed record

**Computer codes:** HALYHA, AL, BE, BG, CH, IS, IT, MT, PL, SE, UA

## 2019/118 Update on the situation of *Cydalima perspectalis* in the EPPO region

*Cydalima perspectalis* (Lepidoptera: Crambidae – formerly EPPO Alert List) continues to spread within the EPPO region. Its presence has recently been recorded in the following countries (or regions).

**Albania**: the first specimens of *C. perspectalis* were observed by an entomologist during a conference technical visit in June 2017 in the natural *Buxus* tree communities of Kuturman Massif near Librazhd (Prefecture of Elbasan) (Raineri *et al.*, 2017).

**British Isles**: in the United Kingdom, *C. perspectalis* arrived in England in 2007 (a year earlier than originally reported – EPPO RS 2010/106), as a single specimen was found in September 2007 in Wye (East Kent). For some years, spread was slow, but in 2013 the insect started to expand its geographical range and abundance. *C. perspectalis* is now present across England (except the far northwestern part). In Wales, it was first observed in the northern part in July 2015 in Pwllheli and Llandudno (Caernarfonshire). In 2016, it was also found in the southern part of Wales. In Scotland, *C. perspectalis* was observed for the first time in July 2018 in Dalgety Bay and Newburgh (both in Fifeshire). In Ireland, the first specimen of *C. perspectalis* was recorded in July 2017 in the county of Waterford. In 2018, it was also found near Dublin, in Williamstown. The same year, the pest was recorded in Northern Ireland, in Bangor in the county of Down, in Belfast and 5 localities along the Eastern coast. In this review, it is also noted that the moth was first recorded in the Channel Islands, on Guernsey in 2014 (Plant *et al.*, 2019).

**Denmark**: the establishment of the pest still needs to be confirmed but a picture of a specimen caught in a trap in Søborg in August 2013 has been published on the Internet (Hobern, 2013).

**Lithuania**: the first specimen of *C. perspectalis* was caught in a light trap in September 2018 in Žudiškės (Vilnius district). For the moment, this is the northernmost record in the EPPO region (Paulavičiūtė and Mikalauskas, 2018).

**Luxembourg**: the first specimen *of C. perspectalis* was found in September 2015, on a wall near a railway station in Wasserbillig (Hellers and Christian, 2016).

**Moldova**: *C. perspectalis* was first found in Moldova in 2015 (ANSA, 2018).

**North Macedonia**: *C. perspectalis* was recorded for the first time in 2014 on young *Buxus* plants in parks, gardens and other urban green areas in the city of Skopje. The pest was subsequently observed in urban environments in Kavadarci and Ohrid. In 2015, it was also found in natural *Buxus* communities on the Vodno mountain and in the area of Matka (both near Skopje). The highest insect populations were observed in urban environments and were causing damage (Skopje, Kavadarci and Ohrid). Severe defoliation was noticed in 2017 and 2018, in several natural *Buxus* communities on the Vodno mountain (Načeski *et al.*, 2018).

**Portugal**: according to agricultural warning bulletins, *C. perspectalis* was first found in 2016 in Norte region, in the municipalities of Caminha, Vila Nova de Cerveira, Ponte de Lima, and Santo Tirso and since then has been spreading to other areas (SNAA, 2017).

**Source:** Hellers M, Christian S (2016) Eine neue invasive Art in Luxemburg: der Buchsbaumzünsler *Cydalima perspectalis* (Walker, 1859). *Bulletin de la Société des*

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**Pictures:** *Cydalima perspectalis*. https://gd.eppo.int/taxon/DPHNPE/photos

**Additional key words:** new record, detailed record **Computer codes:** AL, DK, GB, GS, IE, LT, MD, MK, PT, DPHNPE

## 2019/119 Incursion of *Ceratitis capitata* in Poland

Since 2017, the NPPO of Poland has been carrying out specific surveys for *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) using pheromone traps. Every year, pheromone traps are placed in 50 locations in 5 Southern voivodships (Dolnośląskie, Lubuskie, Opolskie, Wielkopolskie and Zachodniopomorskie). In 2017, *C. capitata* was not found. In September 2018, 26 male specimens of *C. capitata* were caught in 1 trap placed in a peach (*Prunus persica*) orchard in Dolnosląskie voivodship. It is noted that within a radius of 1-1.5 km, there are 7 supermarkets, and 1 fruit wholesaler, as well as 1 municipal landfill slightly further (approximately 4 km away). Those sites are considered to be potential 'sources' of infestation. Considering the finding date (late in the growing season) and the adverse climatic conditions prevailing during Polish winters, the NPPO considers that this incidental

finding cannot lead to the establishment of the pest. However, inspections with pheromone traps will continue in 2019.
The pest status of *Ceratitis capitata* in Poland is officially declared as: **Absent, pest no longer present for reasons other than eradication (*Ceratitis capitata* is a species of tropical origin that did not develop adaptation measures to survive cold seasons)**.

**Source:** NPPO of Poland (2019-02).

**Pictures:** *Ceratitis capitata*. https://gd.eppo.int/taxon/CERTCA/photos

**Additional key words:** absence, incursion **Computer codes:** CERTCA, PL

## 2019/120 Interceptions of *Zaprionus* species in fruit imports in France

In France, molecular analyses were conducted to identify drosophilid larvae found during phytosanitary inspections of fruit imports. These larvae had been intercepted by French phytosanitary inspectors in the mainland and overseas departments from 2010 to 2016. Eighteen larvae intercepted from 8 countries and 6 host plants were studied. As a result, 8 different drosophilid taxa were found in imported fruit consignments: *Z. indianus* (EPPO Alert List), *Z. ornatus*, *Z. tuberculatus* (EPPO Alert List), *Z. mascariensis*, *Z. bogoriensis*, *Drosophila simulans* and two unidentified drosophilid taxa, one of which probably belongs to the genus *Zaprionus*.
The authors also report the first findings of *Z. indianus* in Guadeloupe and Martinique, as well as the detection of *Z. indianus* in guava (*Psidium guajava)* from Dominican Republic (for which the EPPO Secretariat had no confirmation of its presence in this country). As it is sometimes questioned whether *Zaprionus* species are secondary or primary pests, they noted that *Z. indianus* was found alone on *Citrus sinensis*, *Capsicum frutescens* (new host report) and *Psidium guajava*. *Z. tuberculatus* was also found alone in *Citrus sinensis*, and in association with larvae of *Ceratitis quilicii* on *Litchi chinensis*. These are new host records for this pest. Finally, *Z. bogoriensis* was also intercepted alone in *Mangifera indica*. The authors concluded that this study highlights the importance of phytosanitary import controls which should not be restricted to insects of quarantine significance.

**Source:** Balmès V, Mouttet R (2019) The drosophilid risk on imports. *EPPO Bulletin* **49**(1), 122–126. https://doi.org/10.1111/epp.12536

Balmès V and Mouttet R (2017) Development and validation of a simplified morphological identification key for larvae of tephritid species most commonly intercepted at import in Europe. *EPPO Bulletin* **47**(1), 91–99.

**Pictures:** *Zaprionus indianus*. https://gd.eppo.int/taxon/ZAPRIN/photos
*Zaprionus tuberculatus*. https://gd.eppo.int/taxon/ZAPRTU/photos

**Additional key words:** new record, new host plant, interception **Computer codes:** CERTQI, ZAPRIN, ZAPRBO, ZAPRMA, ZAPROR, ZAPRTU, DROSSM, FR, GP, MQ

## 2019/121 First report of *Xylella fastidiosa* in Israel

The NPPO of Israel recently informed the EPPO Secretariat of the first record of *Xylella fastidiosa* (EPPO A2 List) on its territory. During a survey carried out in 2017-2018, a few symptomatic almond (*Prunus dulcis*) trees were discovered and subsequently eradicated. More recently, symptomatic almond trees were discovered in 3 adjacent commercial orchards in the Hula Valley (Northeastern part of Israel). Symptomatic leaf samples were collected and tested in the laboratory using molecular techniques (preliminary screening for *X. fastidiosa* by real-time PCR and then conventional PCR identification of subspecies). Results confirmed the presence of *X. fastidiosa* subsp. *fastidiosa*.
The origin of the disease in Israel is unknown. Surveys are ongoing throughout the country to verify the absence of the disease in other areas. So far, almond trees in other parts of Israel have been surveyed and found to be free of *X. fastidiosa*. In the infected area, nurseries were tested and found to be free of the bacterium. Other potential hosts present in the area (*Vitis vinifera* (grapevine), *Olea europaea* (olive), *Nerium oleander,* and *Prunus* spp. other than almonds) were also found to be free from *X. fastidiosa*. All Cicadomorpha (including Cicadellidae) from the infected orchards were collected by both net sweeping and sticky traps. To date, no insects have been found to be infected with the bacterium. Awareness-raising meetings have been carried out with the Israeli almond growers' board, and nurseries have been informed.
The pest status of *Xylella fastidiosa* in Israel is officially declared as: **Present: in one area only, under containment.**

**Source:** NPPO of Israel (2019-06).

**Pictures:** *Xylella fastidiosa*. https://gd.eppo.int/taxon/XYLEFA/photos

**Additional key words:** new record **Computer codes:** XYLEFA, XYLEFF, IL

## 2019/122 The presence of *Xanthomonas arboricola* pv. *pruni* in Iran is considered doubtful

In 2005, a report on the detection of *Xanthomonas arboricola* pv. *pruni* (EPPO A2 list) in samples of sweet and sour cherry (*Prunus avium, P. cerasus*) and plum (*P. domestica*), was published (Jami *et al.*, 2005). This was the first record of this bacterium in Iran (EPPO RS 2006/059). However, more recent studies questioned the presence of *X. arboricola* pv. *pruni* in Iran (Zarei *et al.*, 2019). In this study, 94 stone fruit orchards were surveyed from July 2015 to June 2017. In total, 189 *Prunus* spp. samples were collected from 10 provinces and tested with molecular techniques. All results were negative for *X. arboricola* pv. *pruni*. In addition, it is explained that following the first report of the bacterium in 2005, several studies were conducted to monitor the distribution and epidemiological impact of the disease in Iran, but all attempts to isolate *X. arboricola* pv. *pruni* were unsuccessful. Furthermore, as in the original report no reference strain of *X. arboricola* pv. *pruni* was used in pathogenicity and biochemical tests, it is no longer possible to evaluate the validity of this past data. It is now considered that this initial record of *X. arboricola pv. pruni* in Iran is doubtful and that there is not sufficient data to state that the disease currently occurs in Iran.
The situation of *Xanthomonas arboricola* pv. *pruni* in Iran can be described as follows: **Absent, a record published in 2005 is now considered to be doubtful.**

**Source:** Jami F, Kazempour MN, Elahinia SA, Khodakaramian G (2005) First report of *Xanthomonas arboricola pv. pruni* on stone fruit trees in Iran. *Journal of Phytopathology* **153**(6), 371-372.

Zarei S, Taghavi SM, Banihashemi Z, Hamzehzarghani H, Osdaghi E (2019) Etiology of leaf spot and fruit canker symptoms on stone fruits and nut trees in Iran. *Journal of Plant Pathology* (early view). https://doi.org/10.1007/s42161-019-00283-w

**Pictures:** *Xanthomonas arboricola* pv. *pruni*. https://gd.eppo.int/taxon/XANTPR/photos

**Additional key words:** denied record **Computer codes:** XANTPR, IR

## 2019/123 First report of *Tomato brown rugose fruit virus* in Turkey

Virus symptoms were observed in January 2019 on greenhouse tomato plants (*Solanum lycopersicum*) growing in Demre near Antalya in the Mediterranean region of Turkey. Symptoms included leaves with chlorotic mosaic, mottling, rugosity and occasional narrowing. Necrotic spots were observed on the peduncle, calyces and petioles and the fruit was rough with chlorotic and necrotic patches. About 20% of plants in the greenhouses were diseased. Symptomatic plants were tested by RT-PCR and *Tomato brown rugose fruit virus* (*Tobamovirus*, ToBRFV - EPPO Alert List) was identified. The authors noted that the production of winter-grown tomatoes is important to the economy of Turkey, and Antalya is the main centre of off-season production.

Following this detection, the NPPO of Turkey has demarcated an infected area and applied eradication measures. Further surveys are being conducted for the presence of ToBRFV in tomato and pepper (*Capsicum* spp.) production in the entire country.
The situation of *Tomato brown rugose fruit virus* in Turkey can be described as follows: **Present, few occurrences (Mediterranean region).**

**Source:** Fidan H, Sarikaya P, Calis O (2019) First report of *Tomato brown rugose fruit virus* on tomato in Turkey. *New Disease Reports* **39**, 18. http://dx.doi.org/10.5197/j.2044-0588.2019.039.018

NPPO of Turkey (2019-06).

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

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

## 2019/124 New outbreak of *Tomato brown rugose fruit virus* in Italy (Piemonte)

Suspected symptoms of *Tomato brown rugose fruit virus* (*Tobamovirus*, ToBRFV - EPPO Alert List) were observed in a tomato (*Solanum lycopersicum*) crop grown in a hydroponic greenhouse in the municipality of Bra (Cuneo Province, Piemonte) in May 2019. About 15% of plants in the greenhouse (30 000 m²) presented symptoms but no severe symptoms on fruits were observed. The identity of the virus was confirmed by laboratory analysis. Eradication measures are being applied. In Italy, ToBRFV was first identified in Sicilia in December 2018 (EPPO RS 2019/013).
The pest status of *Tomato brown rugose fruit virus* in Italy is officially declared as: **Present, under eradication.**

**Source:** NPPO of Italy (2019-05).

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

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

## 2019/125 First report of *Blueberry scorch virus* in Switzerland

The NPPO of Switzerland recently informed the EPPO Secretariat of the first record of *Blueberry scorch virus* (*Carlavirus*, BlScV - EPPO A2 List) on its territory. In May 2019, the virus was detected in the canton of Ticino, in an organic orchard of *Vaccinium corymbosum* where approximately 10-15% of the plants were affected. The grower was recommended to remove all plants. No official measures were taken because the virus is not regulated as a quarantine pest in Switzerland.
The pest status of *Blueberry scorch virus* in Switzerland is officially declared as: **Present: only in some parts of the Member State concerned.**

**Source:** NPPO of Switzerland (2019-06).

**Additional key words:** new record **Computer codes:** BLSCV0, CH

## 2019/126 First report of *Thekopsora minima* in Brazil

In January and February 2017, symptoms of leaf rust were observed in a commercial blueberry (*Vaccinium corymbosum*) field, in the municipality of Jaguarão, Rio Grande do Sul, Brazil. The disease started as small reddish-brown leaf spots, with yellowish pustules. As the disease progressed, the leaf spots enlarged, becoming vein delimited, with a reddish-purple halo. At later stages, lesions coalesced, spreading all over the plant, causing severe early defoliation of the plants (especially on cvs Jewel and Snowchaser). Laboratory analysis (morphology, molecular tests, pathogenicity tests to verify Koch's postulates) confirmed that the causal agent was *Thekopsora minima* (EPPO A2 List). This is the first time that *T. minima* is reported from Brazil. The authors noted that further studies are needed to evaluate the risk that blueberry leaf rust may present to commercial fields in Southern Brazil.
The situation of *Thekopsora minima* in Brazil can be described as follows: **Present, only in some areas (first found in 2017 in the municipality of Jaguarão, Rio Grande do Sul).**

**Source:** Pazdiora PC, Dorneles KR, Araújo Filho JV, Rossetto EA, Guatimosim E, Dallagnol LJ (2019) First report of blueberry leaf rust caused by *Thekopsora minima* on blueberry (*Vaccinium corymbosum*) in South America. *Plant Disease* **103**(5), p 1027.

**Pictures:** *Thekopsora minima*. https://gd.eppo.int/taxon/THEKMI/photos

**Additional key words:** new record **Computer codes:** THEKMI, BR

## 2019/127 First record of *Pistia stratiotes* in natural waterbodies in Serbia

*Pistia stratiotes* (Araceae - EPPO A1 List) is a free-floating perennial freshwater macrophyte native to South America. The species is invasive in many regions of the world including Africa, Asia, Central America and the Caribbean, North America, and Oceania. Within the EPPO region, *P. stratiotes* has been widely introduced as an ornamental species and is thought to be established in the Mediterranean region, as well as in thermally abnormal (warmed) waters in Slovenia and Germany. Within its invasive range, *P. stratiotes* can form dense monocultures on the surface of waterbodies which can have negative impacts on native plant communities and other aquatic organisms. The dense mats can block sunlight and act to decrease oxygen levels within the waterbody. In Serbia, the species had been reported from thermally abnormal waters in southeastern and eastern Serbia (Sićevačka klisura gorge in 1994 and near in Knjaževac city in Rgošta Banja spa in early 2000s). However, in 2017, the species was recorded at three locations in natural inland rivers in the Vojvodina Province (northern lowland part of Serbia). Both mature and young plants were recorded near the village Srpski Itebej close to the Romanian boarder (1.2 km downstream). The authors highlight that further research is needed to determine the exact population range and density of *P. stratiotes* in the region.

**Source:** Živković MM, Anđelković AA, Cvijanović DL, Novković MZ, Vukov DM, Šipoš ŠŠ, Ilić MM, Pankov NP, Miljanović BM, Marisavljević DP, Pavlović DM, Radulović SB (2019) The beginnings of *Pistia stratiotes* L. invasion in the lower Danube delta: the first record for the Province of Vojvodina (Serbia). *BioInvasions Records* **8**(2), 218–229.

**Pictures:** *Pistia stratiotes*. https://gd.eppo.int/taxon/PIIST/photos

**Additional key words:** invasive alien plant, detailed record **Computer codes:** PIIST, RS

## 2019/128 Naturalization of *Paulownia tomentosa* in Sicily (Italy)

*Paulownia tomentosa* (Paulowniaceae) is native to China and is recorded as an invasive species in Australia and the USA where in the case of the latter, it is reported as invasive from Pennsylvania south to Georgia and west to Missouri. Within the EPPO region, *P. tomentosa* has had a long use as a garden ornamental and a tree species grown in towns and cities. Within the EPPO region, the species has been reported as escaping cultivation and colonising disturbed urban habitats. In Switzerland, the species has been included on the Watch List since 2014 (EPPO RS 2014/176) and in Germany it is one of 42 potentially invasive alien species included on the Grey List (EPPO RS 2013/251). In Sicily (Italy), over the last few decades, the number of casual or naturalised alien tree species has steadily increased. Since 2015, periodic observations of mature *P. tomentosa* trees were carried out in green areas (parks and gardens) of Palermo. During this period, approximately 10 self-sown individuals were found. Natural regeneration exclusively occurred at the base of walls or on pavements where some water and nutrients may accumulate. The authors highlight that in the case of *P. tomentosa*, its future behaviour in Mediterranean-climate remains uncertain, especially as the species is grown in urban situations and thus spread into natural environments is difficult. In addition, the species seems to be limited by its lack of ability to cope with drought, which may also prevent its colonisation of new areas. The authors suggest that *P. tomentosa* should be considered as a casual alien species in Sicily.

**Source:** Badalamenti E (2019) Notes about the naturalization in Sicily of *Paulownia tomentosa* (Paulowniaceae) and remarks about its global spread. *Flora Mediterranea* **29**, 67-70.

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

## 2019/129 Outbreak of *Salvia reflexa* in Northeastern China

*Salvia reflexa* (Lamiaceae) is an annual species native to southern USA and Mexico. The species has been introduced into the south-east USA, Argentina, Australia, Canada, Japan and New Zealand. In some areas of its invasive range, the species has been reported to degrade arable land and have negative impacts on crop yields. Within the EPPO region, *S. reflexa* has been previously reported in Austria, Belgium, France (EPPO RS 2008/112), Germany, Hungary, Romania, Slovakia, Switzerland, Ukraine and the United Kingdom. It has also been recorded as naturalized in Serbia. In China, the species was first detected growing adjacent to a grain depot in Shahai village, Jianping county, Liaoning province in 2007. To assess any further populations, field surveys were conducted in 44 prefectures within Liaoning, Jilin and Heilongjiang provinces between 2007 and 2017. Surveys were focused around known *S. reflexa* habitats (e.g. low forest cover, roadsides, riverbanks and agricultural habitats). Surveys were conducted from cars and complemented with searches on foot every 1-2 km along the road. Plants with geographic segregation were considered different populations. In total, seven populations of *S. reflexa* were recorded during the field surveys. The populations ranged in size from a large population comprising tens of thousands of individuals close to a market in Jianping county to small populations of 10 plants found near livestock sites in Kazuo county. Other populations were found along riparian systems. The authors highlight this is the first time a member of the Lamiaceae family has been found in cold environments in China, and although its current distribution is limited, measures should be taken to prevent further spread.

**Source:** Shao MN, Qu B, Drew BT, Xiang CL, Miao Q, Luo SH (2019) Outbreak of a new alien invasive plant *Salvia reflexa* in north-east China. *Weed Research* **59**, 201-208.

**Additional key words:** invasive alien plant **Computer codes:** SALRE, CN

## 2019/130 *Ailanthus altissima* habitat preferences in Switzerland

*Ailanthus altissima* (Simaroubaceae - EPPO List of Invasive Alien Plants) commonly known as tree of heaven is an invasive alien plant species in the EPPO region and native to North and Eastern China. Throughout the EPPO region, *A. altissima* can invade a variety of habitats including managed and unmanaged grasslands, forests, riverbanks/canal-sides, rail/roadsides, wastelands and urban areas. In these habitats, the species can have a negative impact on native biodiversity and ecosystem services. The species is very difficult to manage therefore, a combination of control methods is often needed for successful control. To evaluate the habitat preference of *A. altissima* in Switzerland, three study sites were selected which all comprised abandoned unmanaged stands of *Castanea sativa*. Sites selected were at the current front of the *A. altissima* invasion with no vegetation regeneration. All female trees of *A. altissima* bearing seed were recorded and the age of each tree was estimated. In addition, *A. altissima* saplings were identified and recorded within each site. Environmental variables were measured at each site. The spread of *A. altissima* was positively related to high rock cover, low litter cover and high light availability. The abundance of *A. altissima* was positively influenced by high light availability, low litter cover and high feeding pressure on competing species. High rock cover has not previously been identified as being beneficial for *A. altissima* in previous studies, though rock cover has been suggested to reduce competition and serve as a refuge for early successional species.

**Source:** Knűsel S, Conedera M, Bugmann H, Wunder J (2019) Low litter cover, high light availability and rock cover favour the establishment of *Ailanthus altissima* in forests in southern Switzerland. *NeoBiota* **46**, 91-116.

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

**Computer codes:** AILAL, CSNSA, CH

**Additional key words:** invasive alien plant

## 2019/131 Effects of climate change and horticultural use on the spread of alien garden plants

The horticulture pathway is one of the most important pathways of alien plant introductions globally. Climate change is predicted to increase the number of species that are able to escape from cultivation. Assessing the relationship between cultivation intensity and the spread of alien ornamental species is important to consider when regulating a species (e.g. import or sale bans) or establishing voluntary codes of conduct or raising consumer awareness: all which will have varying effects on limiting propagule pressure. The potential spread of 15 ornamental plant species was simulated for the 21$^{st}$ century (2010 – 2090) across Europe with statistical modelling. All 15 selected species have not currently naturalised within Europe. Data on the current distribution of the 15 species was extracted from GBIF (Global Biodiversity Information Facility) and for characterizing current climate conditions, six bioclimatic variables from WorldClim were used. Future climate conditions in Europe were represented by three emission scenarios (mild RCP 2.6, intermediate RCP 4.5 and severe RCP 8.5). Habitat suitability of each species was included into the projection models along with six levels of cultivation intensity. Cultivation frequency was included in the models as the size of the area used for planting a species at the European level. The outputs of the models suggest that the spread of potentially invasive garden plants in Europe will not necessarily be dictated by climate change. Although the area of climatic suitability increases, species may not spread fast enough to fill these new areas and currently naturalised areas will become unsuitable for some species. In the models, cultivation frequency had a stronger effect on species spread compared to climate change. Thus, restricting cultivation of invasive plant species can be effective in preventing spread, though this depends on high levels of compliance to keep propagule pressure at a low level.

**Source:** Klonner G, Wessely J, Gattringer A, Moser D, Dullinger I, Hulber K, Rumpf S, Block S, Bossdorf O, Carboni M, Conti L, Dawson W, Haeuser E, Hermy M, Münkemüller T, Parepa M, Thuiller W, Van der Veken S, Verheyen K, van Kleunen M, Essl F, Dullinger S (2019) Effects of climate change and horticultural use on the spread of naturalized alien garden plants in Europe. *Ecography* doi: 10.1111/ecog.04389.

**Additional key words:** invasive alien plants, modelling

## 2019/132 Assessing the association of pathways of entry and alien plant impacts in protected areas

Assessing the potential pathways of introduction of invasive alien plants into protected areas can direct surveillance and enhance detection strategies. Additionally, predicting those species with the highest potential impact can also act to preserve native biodiversity and target resources to those species with the highest potential impacts. The study focused on the South African National Parks (SANParks) estate which has 752 alien plant species recorded across its 19 national parks. The SANParks estate covers an area of 39 000 $km^2$ encompassing nine biomes. 139 transformer species defined as 'those alien species that change the character, condition, form, or nature of ecosystems over a substantial area relative to the extent of that ecosystem', and had the highest potential impact were selected for the study. Their potential for entry into the protected areas was assessed for eight pathways (rivers; road, paths, trails, tracks; contamination by construction material, equipment, soil; ornamental plants; agriculture; clothing; food or produce; and animal dispersal). In addition, their potential impact on five main categories was evaluated (impact on ecosystem processes, impact on community structure, impact on community composition, impact on individual indigenous species, species interactions). The similarity of impact and pathway types between species was assessed using statistical methods. Nearly 80 % of the species were ornamental species and 60 % were dispersed along rivers, highlighting the importance of managing ornamental species and monitoring along rivers. There was a positive relationship between the number of potential pathways and the variety of impact categories the species can have impacts in. – which highlights species which can use multiple pathways can reach a wider range of habitats and have different kinds of impacts.

**Source:** Foxcroft LC, Spear D, van Wilgen NJ, McGeoch MA (2019) Assessing the association between pathways of alien plant invaders and their impacts in protected areas. *NeoBiota* **43**, 1–25. https://doi.org/10.3897/neobiota.43.29644

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