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General

Pests

Diseases

Invasive plants

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2016/202 New EU plant health regime

The Regulation (EU) 2016/2031 of the European Parliament of the Council of 26 October 2016 on protective measures against pests of plants was published in the Official Journal of the European Union on 2016-11-23. This new EU plant health regime will replace the current directive (2000/29/EC) and will be applicable after a transition period of three years, during which the necessary tertiary legislation will be adopted.

Source: INTERNET
Regulation (EU) 2016/2031 of the European Parliament of the Council of 26 October 2016 on protective measures against pests of plants, amending Regulations (EU) No 228/2013, (EU) No 652/2014 and (EU) No 1143/2014 of the European Parliament and of the Council and repealing Council Directives 69/464/EEC, 74/647/EEC, 93/85/EEC, 98/57/EC, 2000/29/EC, 2006/91/EC and 2007/33/EC
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R2031&from=EN

Additional key words: EU, legislation

2016/203 Details on quarantine pests in Spain: 2015 situation

The magazine 'Phytoma-España' presented the phytosanitary situation of the main crops in several regions of Spain (Andalucía, Aragón, Baleares, Cataluña, Castilla-La Mancha, Comunidad Valenciana, Extremadura, La Rioja, Murcia, Navarra, País Vasco) for the year 2015. The EPPO Secretariat has extracted the following information on the presence of several quarantine pests or pests of the Alert List.

Bemisia tabaci (Homoptera: Aleyrodidae – EPPO A2 List): Andalucía (protected crops of aubergine, cucumber, courgette, tomato, melon, and watermelon), Aragón (tomato), Castilla-La Mancha, Murcia, Navarra.

Ceratitis capitata (Diptera: Tephritidae – EPPO A2 List): Andalucía (*Annona cherimola*, citrus), Baleares (citrus), Cataluña (citrus and other fruit trees), Castilla-La Mancha, Comunidad Valenciana, Extremadura, Navarra.

Ceratocystis platani (EPPO A2 List): one outbreak was detected in 2010 in the province of Girona (Cataluña) and subsequently eradicated. Absence has been confirmed by further surveys.

Clavibacter michiganensis* subsp. *michiganensis (EPPO A2 List): Cataluña (first found in the north of the region, few outbreaks), Extremadura (low level of damage).

Cucumber vein yellowing virus (*Ipomovirus* – EPPO A2 List): Andalucía (protected cucumber crops at low incidence, melon).

Cucurbit yellow stunting disorder virus (*Crinivirus* – EPPO A2 List): Andalucía (watermelon).

Cydalima perspectalis (Lepidoptera: Crambidae – formerly EPPO Alert List): País Vasco (found for the first time in 2015 on *Buxus sempervirens* together with *Cylindrocladium buxicola* in Gipuzkoa).

Drosophila suzukii (Diptera: Drosophilidae – EPPO A2 List): Andalucía (small fruits, more particularly raspberry), Aragón (no damage), Baleares (diminishing populations), Castilla-La Mancha, Comunidad Valenciana (low level of damage), Murcia (low level of damage), Extremadura (damage on raspberry), Navarra (cherry), País Vasco (strawberry).

Dryocosmus kuriphilus (Hymenoptera: Cynipidae – EPPO A2 List): Cataluña.

Erwinia amylovora (EPPO A2 List): Aragón, Cataluña, Comunidad Valenciana (new outbreak in Montserrat on pear), Castilla-La Mancha, Extremadura, La Rioja, Navarra (low incidence). Under official control.

Frankliniella occidentalis (Thysanoptera: Thripidae – EPPO A2 List): Andalucía (protected crops of aubergine, capsicum, cucumber, strawberry), Comunidad Valenciana, Extremadura.

Fusarium circinatum (teleomorph *Gibberella circinata* – EPPO A2 List): País Vasco (1 new outbreak found in 2015 in Bizkaia).

Grapevine flavescence dorée phytoplasma (EPPO A2 List)***:*** Cataluña (under official control).

Helicoverpa armigera (Lepidoptera: Noctuidae – EPPO A2 List): Andalucía (cotton, tomato for processing), Aragón (maize, tomato for processing), Cataluña (horticultural crops), Extremadura (capsicum, tomato, tobacco), Navarra (tomato).

Iris yellow spot virus (*Tospovirus* - formerly EPPO Alert List): Aragón (onion), Castilla-La Mancha (onion),

Leptinotarsa decemlineata (Coleoptera: Chrysomelidae – EPPO A2 List): Aragón.

Oligonychus perseae (Acarida: Tetranychidae - formerly EPPO Alert List): Andalucía (avocado).

Paysandisia archon (Lepidoptera: Castniidae – EPPO A2 List): Cataluña (in several municipalities of Girona and Barcelona provinces on *Trachycarpus fortunei* and *Chamaerops humulis*).

Pepino mosaic virus (*Potexvirus* – EPPO Alert List): Pais Vasco (found for the first time in Bizkaia in 2015 in 2 production sites).

Pezothrips kellyanus (formerly EPPO Alert List): Comunidad Valenciana.

Pomacea maculata: a focus was found in Cataluña in August 2015 in the rice-growing area of Pals (Girona province), under eradication.

Plum pox virus (*Potyvirus* – EPPO A2 List): Navarra (since 2009).

Pseudomonas syringae* pv. *actinidiae (EPPO A2 List): País Vasco (first found in 2015 in Gipuzkoa, in a small private orchard).

Quadraspidiotus perniciosus (Hemiptera: Diaspididae – EPPO A2 List): Comunidad Valenciana, Extremadura.

Ralstonia solanacearum (EPPO A2 List): Castilla-La Mancha (in water samples).

Rhynchophorus ferrugineus (Coleoptera: Curculionidae – EPPO A2 List): Cataluña (in a delimited zone of 24 comarcas along the coast, mainly on *Phoenix canariensis* and to a lesser extent on *Phoenix dactylifera*).

Scaphoideus titanus (Hemiptera: Cicadellidae – EU Annexes): Cataluña.

Tomato leaf curl New Delhi virus (*Begomovirus* – EPPO Alert List): Andalucía (protected cucumber (very low incidence), courgette, melon crops), Baleares (courgette), Castilla-La Mancha (first found in 2015 on melon), Comunidad Valenciana (courgette), Murcia (melon).

Tomato spotted wilt virus (*Tospovirus* – EPPO A2 List): Andalucía (protected capsicum crops), Navarra (low incidence), País Vasco.

Tomato yellow leaf curl virus (*Begomovirus* – EPPO A2 List): Andalucía (protected tomato crops), Baleares, Murcia (tomato), Navarra.

Tuta absoluta (Lepidoptera: Gelechiidae – EPPO A2 List): Andalucía (protected crops of aubergine and tomato), Aragón (tomato), Baleares (protected tomato crops), Cataluña, Extremadura, Navarra (low level of damage), País Vasco.

Viteus vitifoliae (Hemiptera: Phylloxeridae - EPPO A2 List)**:** Cataluña (low incidence).

Xanthomonas arboricola* pv*. pruni (EPPO A2 List)*:* Aragón (mainly on apricot, peach, and nectarine), Cataluña, Navarra (since 2009).

Xanthomonas arboricola* pv*. corylina (EPPO A2 List): Cataluña (low incidence).

Xanthomonas axonopodis* pv*. vesicatoria (EPPO A2 List): Aragón (on capsicum).

Xanthomonas vesicatoria (EPPO A2 List): Extremadura (on tomato, low incidence).

Source: Anonymous (2016) Incidencia de plagas y enfermedades en las Comunidades Autónomas en 2015.
Phytoma-España no. 278, 16-52.
Phytoma-España no. 279, 16-40.

Additional key words: detailed record

Computer codes: BEMITA, CERTCA, CERAFP, CORBMI, CVYV00, CYSDV0, DPHNPE, DROSSU, DRYCKU, ERWIAM, FRANOC, GIBBCI, PHYP64, HELIAR, IYSV00, LPTNDE, OLIGPA, PAYSAR, PEPMV0, PEZTKE, POMAIN, PPV000, PSDMAK, QUADPE, RALSSO, RHYCFE, SCAPLI, TOLCND, TSWV00, TYLCV0, GNORAB, VITEVI, XANTPR, XANTVE, XANTCY, XANTAV, ES

2016/204 New BBCH growth stage keys

The BBCH* growth stage keys aimed to provide a standard and uniform description of the visible growth stages of plants, using a two-digit decimal code. This system has been developed for many important crops, such as cereals, rice, maize, rape, potato, fruit trees, small fruits, vegetables (see EPPO RS 2011/119). In 1997, the BBCH growth stage keys were recommended by the EPPO Working Party on Plant Protection Products and by Council for use in EPPO countries, thus replacing the previously recommended EPPO

growth stage keys. The following new BBCH scales have recently been published to describe the growth stages of:

- *Allium sativum* (garlic) (Lopez-Bellido *et al.*, 2016)
- *Ananas comosus* (pineapple) (Zhang *et al.*, 2016)
- *Pyrus pyrifolia* (nashi tree) (Martinez-Nicolás *et al.*, 2016)
- *Solanum sessiliflorum* (Moreno *et al.*, 2016)

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* The abbreviation BBCH derives from the first letters of the German names of ***B***iologische Bundesanstalt (Federal Biological Research Centre), ***B***undessortenamt (Federal Plant Variety Office) and ***Ch***emical industry.

Source: INTERNET
JKI. BBCH Scale: http://pub.jki.bund.de/index.php/BBCH/issue/view/161

Lopez-Bellido FJ, Lopez-Bellido RJ, Muñoz-Romero V, Fernandez-Garcia P, Lopez-Bellido L (2016), New phenological growth stages of garlic (*Allium sativum*). *Annals of Applied Biology* **169**(3), 423-439.

Martinez-Nicolás JJ, Legua P, Melgarejo P, Martinez R, Hernández F(2016) Phenological growth stages of nashi tree (*Pyrus pyrifolia*): codification and description according to the BBCH scale. *Annals of Applied Biology* **168**(2), 255-263.

Moreno C, Quiñones JR, Jiménez P (2016) Phenological growth stages of *Solanum sessiliflorum* according to the BBCH scale. *Annals of Applied Biology* **168**(1), 151-157.

Zhang HN, Sun WS, Sun GM, Liu SH, Li YH, Wu QS, Wei YZ (2016) Phenological growth stages of pineapple (*Ananas comosus*) according to the extended Biologische Bundesantalt, Bundessortenamt and Chemische Industrie scale. *Annals of Applied Biology* **169**(2), 311-318.

Additional key words: publications, growth stage keys

2016/205 Update on the situation of *Anoplophora chinensis* in Turkey and confirmed absence of *A. glabripennis*

In Turkey, *Anoplophora chinensis* (Coleoptera: Cerambycidae – EPPO A2 List) was first found on *Acer palmatum, A. saccharum* and *Salix caprea* in a nursery located in the Sile district near Istanbul in June 2014 (EPPO RS 2015/067). Since then, surveys have been carried out in Istanbul and across the country. Phytosanitary measures, in line with the EU Commission Implementing Decision 2012/138/EU, have been taken to eradicate the pest. All infested trees have been destroyed, an intensive survey and awareness raising programmes have been implemented. According to the survey results, *A. chinensis* has not been found outside the Istanbul area where eradication continues.
The situation of *Anoplophora chinensis* in Turkey can be described as follows: **Transient, under eradication.**

In 2014, a paper (Ayberk *et al.,* 2014) suggested that *Anoplophora glabripennis* (Coleoptera: Cerambycidae – EPPO A1 List) was present on *Acer negundo* trees in the garden of Abdi Ipekci Arena Sport Hall and along an avenue in the Zeytinburnu district of Istanbul (EPPO RS 2015/068). The NPPO of Turkey queried this record and conducted further studies. Results of the diagnosis confirmed that the pest found was *A. chinensis*. The results of surveys carried out in Istanbul and across the country have showed that *A. glabripennis* does not occur in Turkey.
The situation of *Anoplophora glabripennis* in Turkey can be described as follows: **Absent, confirmed by survey.**

Source: Ayberk H, Ozdikmen H, Cebect H (2014) A serious pest alert for Turkey: a newly introduced invasive longhorned beetle, *Anoplophora glabripennis* (Cerambycidae: Lamiinae). *Florida Entomologist* **97**(4), 1852-1855.

NPPO of Turkey (2016-06).

Pictures: *Anoplophora chinensis.* https://gd.eppo.int/taxon/ANOLCN/photos

Additional key words: detailed record, absence **Computer codes:** ANOLCN, ANOLGL, TR

2016/206 First reports of *Drosophila suzukii* in Bosnia and Herzegovina, Romania, Serbia and Turkey

During the revision of the CABI distribution map on *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List), which was done in association with the EPPO Secretariat, the following new records concerning EPPO member countries were found in the literature.

Bosnia and Herzegovina
D. suzukii was first found in 2013 at 4 sites where traps had been placed: Potpolje-Čitluk, Blizanci-Čitluk, Krehin Gradac-Čitluk and Cerno-Ljubuški (Ostojić *et al*., 2014).

Romania
D. suzukii was detected for the first time in September 2013. The first specimens were caught in a trap, designed for *Ceratitis capitata*, and placed on wild blackberry (*Rubus caesius*) bushes in the Northern part of Bucharest city. In 2014, the pest was caught in different ecological habitats, again on wild blackberries, as well as in gardens in urban, suburban and rural locations in Bucharest, Ilfov and Giurgiu counties (Southern Romania).

It was observed that fruit of *R. caesius* and of *Phytolacca americana* were infested by *D. suzukii* larvae but no damage on cultivated plants was recorded so far (Chireceanu *et al*., 2015).

Serbia
During a survey conducted in October-November 2014, *D. suzukii* was found in 4 districts (Rasinski, Mačvanski, Raški, Pčinjski) as well as in Zemun (city of Belgrade). In this survey, ripe fruit (blackberry, fig, grape, raspberry) were collected from commercial plantations or individual plants and transferred into the laboratory until the emergence of adult flies. Considering that the sampling period was not optimal for detecting the pest and that it was found in all surveyed districts, it is concluded that the distribution of *D. suzukii* in Serbia is probably wider than that which has been observed for the moment (Toševski *et al*., 2014).

Turkey
D. suzukii was first found during summer 2014 on strawberry crops in the province of Erzurum, Eastern Anatolian region (Orhan *et al*., 2016).

Source:
CABI (2016) Distribution Maps of Plant Pests. No. 766. *Drosophila suzukii*. http://www.cabi.org/dmpp/
Chireceanu C, Chiriloaie A, Teodoru A (2015) First record of the spotted wing drosophila *Drosophila suzukii* (Diptera: Drosophilidae) in Romania. *Romanian Journal for Plant Protection* **8**, 86-95.
Orhan A, Aslantaş R, Önder BS, Tozlu G (2016) First record of the invasive vinegar fly *Drosophila suzukii* (Matsumura) (Diptera: Drosophilidae) from eastern Turkey. *Turkish Journal of Zoology* **40**, 290-293.
Ostojić I, Zovko M, Petrović D (2014) [First record of spotted wing *Drosophila suzukii* (Matsumura, 1931) in Bosnia and Herzegovina]. *Works of the Faculty of Agriculture University of Sarajevo* **59**(64/1), 127-133 (in Bosnian).
Toševski I, Milenković S, Krstić O, Kosovac A, Jakovljević M, Mitrović M, Cvrković T, Jović, J (2014) *Drosophila suzukii* (Diptera: Drosophilidae), a new invasive pest in Serbia. *Zaštita bilja* **65**(3), 99-101.

Pictures: *Drosophila suzukii*. https://gd.eppo.int/taxon/DROSSU/photos

Additional key words: new record **Computer codes:** DROSSU, BA, RO, RS, TR

2016/207 *Zaprionus indianus* and *Z. tuberculatus*: addition to the EPPO Alert List

Following a proposal made by the French NPPO, the EPPO Panel on Phytosanitary Measures considered that two invasive drosophilids, *Zaprionus indianus* and *Z. tuberculatus* should be added to EPPO the Alert List.

Zaprionus indianus (Diptera: Drosophilidae) – African fig fly

Why: *Zaprionus indianus* was first described in 1970 from specimens collected in India, but this species is considered to originate from tropical Africa. During the last decades, this species has clearly demonstrated an invasive behaviour. The history of its invasion across the Indian subcontinent is not well known but presumably not recent. The invasion of the Americas started in the 1990s, with a first published record in 1999 in Brazil which was followed by a rapid and broad expansion in South America. On the North American continent, it was detected for the first time in Chiapas (Mexico) in 2002 and in Florida (US) in 2005. *Z. indianus* is generally considered to be a secondary pest which can live on a

wide range of fruit species. However, it has been able to cause economic damage as a primary pest to fig crops (*Ficus carica*) in Brazil.

Where: *Z. indianus* is an Afrotropical species which is now considered to be semi-cosmopolitan. Its presence has been reported in some countries around the Mediterranean Basin.
EPPO region: Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Portugal (Madeira only), Spain (Andalucía, Islas Canárias).
Africa: Benin, Cameroon, Cape Verde, Comoros, Congo, Cote d'Ivoire, Egypt, Gabon, Guinea, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Morocco, Mozambique, Niger, Nigeria, Reunion, Saint Helena, Sao Tome & Principe, Senegal, Seychelles, South Africa, Sudan, Tanzania.
Asia: India (Andhra Pradesh, Chandigarh, Delhi, Haryana, Jharkand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Uttaranchal, Uttar Pradesh), Iran, Iraq, Israel, Jordan, Lebanon, Nepal, Oman, Pakistan, Saudi Arabia, United Arab Emirates.
North America: Canada (Ontario, Québec), Mexico, USA (Alabama, Arizona, California, Connecticut, Florida, Georgia, Kansas, Michigan, Minnesota, Mississippi, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Texas, Virginia, Wisconsin).
Central America and the Caribbean: Cayman Islands, Panama.
South America: Argentina, Brazil (Amazonas, Bahia, Ceara, Distrito Federal, Goias, Maranhao, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Para, Paraiba, Parana, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Rondonia, Santa Catarina, Sao Paulo, Tocantins), Ecuador, French Guiana, Paraguay, Peru, Uruguay, Venezuela.

On which plants: *Z. indianus* is a generalist species which uses a wide range of cultivated and wild fruit species (approximately 80 host species) for feeding and mating. *Z. indianus* is a secondary pest which usually does not attack unripe and undamaged fruits (unlike *Drosophila suzukii*). *Z. indianus* mainly feeds on bacteria and yeasts (e.g. *Candida tropicalis*) found on decomposing fruits. However, in Sao Paulo (BR), *Z. indianus* has been reported to feed and cause direct damage to fig (*Ficus carica*) crops. *Z. indianus* has been found in association with- or reared from the following fruit species (the list is not exhaustive): *Actinidia chinensis* (kiwifruit), *Aleurites mollucana* (Indian walnut), *Anacardium occidentale* (cashew), *Annona glabra* (pond apple), *Averrhoa carambola* (star fruit), *Campomanesia aromatica* (strawberry guava), *Citrus sinensis* (sweet orange), *Dimocarpus longan* (longan), *Diospyros kaki* (persimmon), *Eriobotrya japonica* (loquat), *Ficus carica* (fig), *Fragaria* x *ananassa* (strawberry), *Genipa americana*, *Malpighia emarginata* (Barbados cherry), *Malpighia punicifolia* (acerola), *Musa* (banana), *Olea europaea* (olive), *Persea americana* (avocado), *Phoenix dactylifera* (date), *Prunus armeniaca* (apricot), *Prunus cerasus* (sour cherry), *Prunus persica* (peach), *P. persica* var. *nucipersica* (nectarine), *Psidium guajava* (guava), *Punica granatum* (pomegranate), *Rubus idaeus* (raspberry), *Solanum lycopersicum* (tomato), *Spondias tuberosa* (imbu), *Syagrus romanzoffiana* (queen palm), *Syzygium jambos* (rose apple), *Vaccinium* spp. (blueberry), Vitis *vinifera* (grape), *Ziziphus jujuba* (common jujube), *Ziziphus spina-christi* (Christ' thorn).

Damage: As is the case for most drosophilids, *Z. indianus* is a secondary pest which infests overripe, fallen, or rotting fruit, but it has been reported as a primary pest of fig in Brazil. It has been observed that females oviposit near the fig ostiole from where larvae can easily access and feed on the interior fruit flesh, causing the fruit to become soft and unmarketable. When it was first reported in 1999 in the Valinhos area (Sao Paulo), one of the main fig-producing area in Brazil, losses were estimated at 40% in fresh figs with an

80% reduction in fruits eligible for export. However, apart from this initial observation, data is generally lacking about the present impact of the pest on Brazilian fruit crops. In a paper about the presence of *Z. indianus* in Jordan, it is reported that heavy losses were observed on figs but that no quantitative research was done.
Adults are small flies (about 3.5 mm long) with a reddish-brown head and thorax, yellow abdomen and red eyes. A pair of longitudinal white stripes, interspersed with black bands, are clearly visible on the back of the head and thorax. Eggs are small, white and oblong with 4 filaments. There are three larval stages. Larvae have white, cylindrical bodies (3.5 mm long when fully grown), tapered anteriorly with posterior spiracles. Pupae are spindle-shaped, reddish brown with two anterior stigmata.
Pictures can be viewed on the Internet
http://file.lacounty.gov/acwm/cms1_235106.pdf
http://bugguide.net/node/view/71772/bgimage

Dissemination: Studies have been carried out in Brazil to better understand the invasion history of *Z. indianus*. It is hypothetized that it first arrived in Sao Paulo state with air transport of fruit from Africa. It then further spread within the country by natural means and more importantly by road transportation of commercial fruit, in particular along two major highways (BR-153 (transbrasiliana highway) and BR-116). It is also supposed that *Z. indianus* has been introduced into other parts of the world by human activities and in particular by intercontinental movements of fruits.

Pathway: Fruit of host plants from countries where *Z. indianus* occurs.

Possible risks: *Z. indianus* has clearly demonstrated its invasive behaviour, and its ability to adapt to new environments and to use a wide range of fruit species, many of them being cultivated in the EPPO region. *Z. indianus* is generally considered to be a tropical and subtropical species, therefore more data would be needed on its potential of establishment under temperate conditions. For example, in the cooler areas of its invaded range (e.g. in Northern India or Canada/USA), it is not known whether the species survives periods of cold in diapause or populations re-establish through reintroductions. Its capacity to damage crops directly has been observed on figs which is an important crop around the Mediterranean Basin. Its interactions with other drosophilids or fruit flies might enhance the negative impacts of the latter on cultivated fruit crops. Recent studies have shown that *Z. indianus* could be reared in large numbers from fruits which were attacked by other pests such as, *D. suzukii* (on grapes in Michigan, strawberries in Southern Brazil), *Ceratitis capitata* (on kiwifruit in Lebanon) and *Bactrocera oleae* (on olive in Iran). Although no economic losses have been reported from the Mediterranean countries where *Z. indianus* has been introduced, its potential to become a fruit pest in the EPPO region cannot be totally ruled out and considering the recent experience with the introduction of *D. suzukii*, it seems wise to monitor the situation of *Z. indianus* within the EPPO region.

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Yazzin A, David JR (2010) Revision of the Afrotropical species of *Zaprionus* (Diptera, Drosophilidae), with descriptions of two new species and notes on internal reproductive structures and immature stages. *ZooKeys* **51**, 33-72.

***Zaprionus tuberculatus* (Diptera: Drosophilidae)**

Why: *Zaprionus tuberculatus* is an invasive species originating from tropical Africa which has recently been found in the EPPO region. Although, its pest status on fruit crops has not been ascertained, the spread of this species might represent a risk to the EPPO region.

Where:
EPPO region: Cyprus, Greece, Israel, Italy, Malta, Spain (Islas Canarias only), Romania, Turkey.
Africa: Cameroon, Cape Verde, Central African Republic, Chad, Congo, Congo (Democratic republic), Cote d'Ivoire, Egypt, Gabon, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Niger, Nigeria, Réunion, Saint Helena, Seychelles, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

On which plants: According to the literature *Z. tuberculatus* has successfully been reared on 49 different species of tropical fruit, including: *Artocarpus* sp., *Dacryodes* sp., *Detarium senegalense, Ficus lutea, Ficus mucuso, Ficus natalensis, Ficus saussureana, Ficus sur, Gambeya taiensis, Guarea cedrata, Hirtella* sp., *Parinari excelsa, Santiria trimera, Spondias mombin, Tieghemella heckelii, Uncaria* sp. In the EPPO region, as most specimens were caught in traps, no direct association with plants has been documented. For example, traps were placed in a deciduous wood near Trento in Italy, and in *Rubus caesius* bushes in a urban area near Bucharest city in Romania. In Turkey, captures were made in urban or semiurban environments or forest areas.

Damage: As in the case for most drosophilids, *Z. tuberculatus* is a secondary pest which infests overripe, fallen, or rotting fruit. In its native range, it is not reported as a pest. In its invaded range, for the moment it seems that no reports of damage have been made, but as for *Z. indianus*, it cannot be excluded that it might cause damage to fig (*Ficus carica*) production.
Pictures of the insect can be viewed on the Internet:
https://galerie-insecte.org/galerie/ref-173473.htm

Dissemination: There are no study on the potential for spread of *Z. tuberculatus.* Over short distances adults can fly, and as for *Z. indianus*, movement of infested fruits is likely to transport *Z. tuberculatus* over long distances.

Pathway: Fruit of host plants from countries where *Z. tuberculatus* occurs.

Possible risks: As very little is known about its biology and ecology, it is difficult to evaluate the pest potential of *Z. tuberculatus* to healthy fruit species. However, its association with other primary pests (such as *Drosophila suzukii* as observed in Romania), could contribute to enhance the negative impacts of those pests on fruit crops. It seems wise to pay more attention to the spread of *Z. tuberculatus* within the EPPO region and gather more information about its potential pest status.

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EPPO RS 2014/107, 2016/207

Panel review date - Entry date 2016-11

Additional key words: Alert List **Computer codes:** ZAPRIN, ZAPRTU

2016/208 First report of *Vespa velutina* in the United Kingdom

The presence of the Asian hornet, *Vespa velutina* (Hymenoptera: Vespidae), in England (United Kingdom) was confirmed in September 2016. The insect has been observed in the Tetbury area of Gloucestershire (Southwestern England). In October 2016, the National Bee Unit removed the nest and no further live Asian hornets were found in the Tetbury area. Two dead specimens were discovered in Somerset, but no nest or live hornets could be located. It is considered that the outbreak *V. velutina* in Southwestern England has been successfully contained. However, the situation will continue to be monitored. This is the first time that *V. velutina* is reported from England. It is believed that the species will not be able to survive in the north of the UK due to colder winters. In addition to this sighting in Southwestern England, *V. velutina* was also discovered for the first time in Jersey and Alderney during summer 2016.

Source: INTERNET
GOV.UK. Press release of 2016-09-20. Asian hornet identified in Gloucestershire. https://www.gov.uk/government/news/asian-hornet-identified-in-gloucestershire
GOV.UK. Press release of 2016-11-04. https://www.gov.uk/government/news/asian-hornet-outbreak-contained-in-gloucestershire-and-somerset
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GOV.GG. Press release of 2016-07-22. Asian hornet identified in Alderney. https://www.gov.gg/article/155332/Asian-Hornet-identified-in-Alderney

Additional key words: new record **Computer codes:** VESPVE, GB

2016/209 First report of *Aleurothrixus (=Aleurotrachelus) trachoides* in India

The presence of *Aleurotrachelus trachoides* (Aleyrodidae – EPPO Alert List) has recently been observed in Karnataka, Southern India. This invasive whitefly was first found in 2014 on *Duranta erecta* (Verbenaceae) and on *Capsicum annuum* (Solanaceae). Heavy infestations caused chlorotic leaf spots and leaf curling. In addition, following the close examination of the morphological characteristics of *Aleurotrachelus trachoide*s, it was proposed to transfer it into the genus *Aleurothrixus*.

Source: Dubey AK, Sundararaj R (2015) A new combination and first record of the genus *Aleurothrixus* Quaintance and Baker (Hemiptera: Aleyrodidae) from India. *Biosystematica* **9**(1/2), 23-28.

Pictures: *Aleurothrixus trachoides* https://gd.eppo.int/taxon/ALTRTR/photos

Additional key words: new record, taxonomy **Computer codes:** ALTRTR, IN

2016/210 First reports of *Phytoliriomyza jacarandae* in Greece, Portugal and Spain

Phytoliriomyza jacarandae (Diptera: Agromyzidae) is a leaf miner which feeds exclusively on *Jacaranda mimosifolia* (Bignoniaceae). This tree originates from South America and is frequently planted for ornamental purposes in urban environments. The jacaranda leaf miner, *P. jacarandae,* was first described in California (US) in 1978 and is thought to originate from South America. According to the literature, *P. jacarandae* has been reported from Argentina, Australia, New Zealand, and South Africa. In the EPPO region, *P. jacarandae* was first found in Sicilia (IT) in 2006 during a study on pests of ornamental plants in parks and botanical gardens (EPPO RS 2009/071). The first specimens were collected from Catania, Messina, and Palermo. In 2007, it was also found in Alassio, in Liguria. In 2013, *P. jacarandae* was detected in Lisboa, Portugal. In 2014, it was reported from the island of Corfu (Greece). During summer 2014, it was found in urban areas of Jerez de la Frontera (province of Cádiz, Andalucía), Spain. Limited information is available on the biology of this insect. Larvae of *P. jacarandae* mine leaflets of *J. mimosifolia* creating short, brown mines which enlarge into irregular blotches. Affected leaflets fall and larvae pupate in the soil. Affected trees rapidly show yellowing foliage and premature leaf fall. It is considered that this monophagous pest might cause problems in urban areas where *J. mimosifolia* has been widely planted.

Source:
Anonymous (2010) Jacaranda leaf miner in New Zealand. Forest Health News no. 207, 2 pp. https://www.scionresearch.com/__data/assets/pdf_file/0005/18158/FHNews-207_July2010.pdf

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Pictures: *Phytoliriomyza jacarandae*. https://gd.eppo.int/taxon/PLIRJA/photos

Additional key words: new record **Computer codes:** PLIRJA, ES, GR, IT, PT

2016/211 First report of *Meloidogyne graminicola* in Italy

The presence of *Meloidogyne graminicola* is reported for the first time from Italy. This root-knot nematode was found in Piemonte region on rice (*Oryza sativa*) crops and wild plants (*Alisma plantago, Cyperus difformis, Echinochlora crus-galli, Heteranthera reniformis, Murdannia keisak, Panicum dichotomiflorum). M. graminicola* was found in rice fields in the municipality of Buronzo (province of Vercelli), and in two other localities, Mottalciata and Gifflenga (province of Biella). The infested area is estimated at approximately 20 ha. The presence of unusual symptoms had initially been reported by a rice grower to the regional Plant Protection Service of Piemonte region. During inspection of rice fields, plants showing symptoms of chlorosis and stunted growth, and numerous swellings and galls on the roots could be observed. In July 2016, the identity of the nematode was confirmed in plant and soil samples using morphological and molecular methods. The origin of this outbreak is unknown. Further surveys will be carried out to determine the extent of this infestation and determine possible control measures (e.g. field submersion, crop rotation and biofumigation).
The pest status of *Meloidogyne graminicola* in Italy is officially declared as: **Present, only in some parts.**

EPPO note: *M. graminicola* is a polyphagous species and is considered to be a pest in rice crops. This is the first time that this species is reported in the EPPO region. A world distribution can be found in the EPPO Global Database: https://gd.eppo.int/taxon/MELGGC/distribution

Source: NPPO of Italy (2016-09).

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

2016/212 Previous finding of *Meloidogyne ethiopica* in Slovenia is now attributed to *Meloidogyne luci*

Meloidogyne luci is a root-knot nematode which was recently described (Carneiro *et al*., 2014). This new species has been found parasitizing vegetables, fruit trees and ornamental plants in Brazil, Iran, Chile, and Guatemala. As reported in EPPO RS 2011/004, a population of *Meloidogyne* sp. was isolated in 2003 from heavily infested tomato roots (*Lycopersicum esculentum* cv. 'Belle') grown in a glasshouse located in the village of Dornberk, Slovenia. At that time, the pest was identified as *Meloidogyne ethiopica*. As this was the first record for Slovenia and Europe, *M. ethiopica* was added to the EPPO Alert List. It was stressed that this new population was not considered to be established as all infested plants had been destroyed and the nematode not found again. During recent studies (multi locus mitochondrial DNA analysis) on 80 populations of *Meloidogyne* species collected from a wide range of geographical origins and host plants, it was found the population from Dornberk (Slovenia), originally identified as *M. ethiopica*, corresponded in fact to *M. luci*.

According to the literature, *M. luci* has been found on the following plant species: *Abelmoschus esculentus* (okra), *Actinidia deliciosa* (kiwifruit), *Antirrhinum majus* (snapdragon), *Brassica oleracea* var. *italica* (broccoli), *Cucumis sativus* (cucumber), *Daucus carota* (carrot), *Glycine max* (soybean), *Hylotelephium spectabile* (sedum), *Lactuca sativa* (lettuce), *Lavandula angustifolia* (lavender), *Phaseolus vulgaris* (common bean), *Polymnia*

sonchifolia (yakon), *Rosa* sp. (rose), *Solanum lycopersicum* (tomato), *Vitis vinifera* (grapevine). At least on bean, tomato, and soybean crops, symptoms of decline and stunting, as well as root galling have been reported. The currently known geographical distribution of *M. luci* can be summarized as follows:
EPPO region: Absent. *M. luci* (initially identified as *M. ethiopica*) was found in 2003 on tomatoes in 1 glasshouse located in Dornberk, Slovenia. All infested plants were destroyed and this nematode was no longer found.
South America: Brazil (Distrito Federal, Rio Grande do Sul, Parana), Chile, Guatemala.
Asia: Iran.

Source: Bellé C, Brum D, Groth MZ, Barros DR, Kaspary TE, Schafer JT, Gomes CB (2016) First report of *Meloidogyne luci* parasitizing *Glycine max* in Brazil. *Plant Disease* **100**(11), p 2174.
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Additional key words: new pest **Computer codes:** MELGET, MELGLC, SI

2016/213 First report of *Xylella fastidiosa* in Spain

In November 2016, the presence of *Xylella fastidiosa* (EPPO A1 List) was confirmed in Islas Baleares (ES). This is the first report of the bacterium in Spain. During official inspections, the bacterium was detected in 3 samples collected from sweet cherry (*Prunus avium*) in a garden centre in Porto Cristo (municipality of Manacor) on the island of Mallorca. Laboratory studies revealed the occurrence of *X. fastidiosa* subsp. *fastidiosa* in these 3 positive samples. In accordance with the EU Implementing Decisions 2015/789 and 2016/764, phytosanitary measures have been taken to eradicate the disease. A focus zone of 100 m radius and a buffer zone of 10 km have been delimited, and phytosanitary measures will be applied to avoid any further spread. In the garden centre, all infected plants and other potential host plants (in total 97 plants belonging to 7 different species) have been burned. It is noted that the delimited zones mainly cover touristic areas and private gardens where the following potential hosts could be found: *Olea europaea, Nerium oleander, Polygala myrtifolia, Rosmarinus officinalis* and *Westringia fruticosa*. In the agricultural part of the delimited zones, the following potential host plants could be found: almond (*Prunus dulcis*), a few vineyards (*Vitis vinifera*), carob (*Ceratonia siliqua*) and olive (*Olea europaea*). Tracing-back studies have showed that the infected cherry plants came from a nursery in Tarragona (Cataluña), but surveys conducted in this nursery did not detect the bacterium.
The pest status of *Xylella fastidiosa* in Spain is officially declared as follows: **Transient, actionable, under eradication.**

Source: NPPO of Spain (2016-11).

Govern Illes Balears (2016-11-10) Localizados tres cerezos afectados por *Xylella fastidiosa* a un centro de jardinería de Mallorca.
http://www.caib.es/govern/pidip/dadesComunicat.do?lang=es&codi=8932920
Primera detecció de *Xylella fastidiosa* a les Illes Balears.
http://www.caib.es/sites/M94/f/217798

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

Additional key words: new record **Computer codes:** XYLEFA, ES

2016/214 First report of *Gnomoniopsis smithogilvyi* in the United Kingdom

The NPPO of the United Kingdom recently informed the EPPO Secretariat of the first record of *Gnomoniopsis smithogilvyi* on its territory in association with a shoot canker disease of sweet chestnut (*Castanea sativa*). In August 2016, symptoms resembling those of *Cryphonectria parasitica* (EPPO A2 List) were reported on a single plant of *C. sativa* in a rural area. This small tree was part of a 2 year-old amenity planting in Southern England. Samples were collected and tested by Forest Research (Tree Health Diagnostic and Advisory Service). As the initial tests gave negative results for the presence of *C. parasitica,* further studies were carried out (isolation, morphological and molecular methods) and confirmed the presence of *G. smithogilvyi* in October 2016. Investigations could not trace the origin of this finding but discussion is on-going with the land manager. The need for further action will be evaluated through the UK Plant Health Risk Register process.
The pest status of *Gnomoniopsis smithogilvyi* in the United Kingdom is officially declared as: **Transient, under eradication.**

EPPO note: *G. smithogilvyi* was first described in 2012 as the causal agent of nut rot on sweet chestnut (*Castanea sativa* and *C. crenata x C. sativa* hybrids) in Australia. The same year, *G. castanea* was described in Italy as the causal of a nut rot ('mummificazione bianca delle castagne'), a disease which has been observed in Italy since the second half of the 19th century but whose incidence has increased since 2005 in the north-west (EPPO RS 2013/063). In addition to Italy, *G. castanea* has also been isolated from rotten nuts from Southeastern France, Southern Switzerland, and a very closely related species (informally called *Gnomonia pascoe*) has been recorded in New Zealand. Recent studies (morphology, phylogeny) have concluded that all three names referred to a single species and that the name *G. smithogilvyi* had priority. *G. smithogilvyi* is associated with nut rot and is also able to cause cankers on twigs and scions that are very similar to the ones caused by *Cryphonectria parasitica*. On affected nuts, the endosperm becomes chalky, white and sponge-like, resulting in an alteration of flavour. The fungus has also been isolated as an endophyte on chestnut from asymptomatic flowers, leaves and stems. Nut rot is raising increasing concerns in countries where chestnut is grown for fruit production. As a consequence, studies are being carried out to better understand its biology and find possible control methods, in particular in the field of biological control.
According to the literature, *G. smithogilvyi* occurs in the following countries:
EPPO region: France (Southeast), Italy (Mainland and Sardegna), Switzerland (cantons of Glarus, Graubünden, Ticino), United Kingdom (single tree, under eradication).
Asia: India (Jammu and Kashmir).
Oceania: Australia (New South Wales, Victoria), New Zealand.

Source: NPPO of the United Kingdom (2016-10).

Additional sources:

Dar MA, Rai M (2015) *Gnomoniopsis smithogilvyi*, a canker causing pathogen on *Castanea sativa*: First report. *Mycosphere* **6**(3), 327-336.

Dennert GF, Broggini AL, Gessler C, Storari M (2015) *Gnomoniopsis castanea* is the main agent of chestnut nut rot in Switzerland. *Phytopathologia Mediterranea* **54**(2), 199–211.

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Additional key words: new record **Computer codes:** GNMPCA, GB

2016/215 *Phytophthora pluvialis* is causing a new disease on *Pinus radiata* in New Zealand

In 2013, *Phytophthora pluvialis* was described as a new species from isolates which had been collected from streams, soil and canopy drip in mixed tanoak-Douglas fir forests (*Notholithocarpus densiflorus* - *Pseudotsuga menziesii*) in Curry county, Southwestern Oregon (US), as well as from two additional streams in other areas of Western Oregon (EPPO RS 2015/169). Further studies conducted in Oregon have detected *P. pluvialis* in the foliage of *P. menziesii* but associated with mild symptoms only.
In 2014, *P. pluvialis* was reported to be the cause of red needle cast on *Pinus radiata* in New Zealand. This new disease is characterized by discrete olive-coloured bands on needles, and these lesions are frequently accompanied by small, dark, resinous spots or narrow bands. The lower part or the entire crown of affected trees turn reddish brown, and is followed by premature needle cast. In New Zealand, these symptoms were first noticed during winter 2008 in forest stands on the Eastern coast of the North Island. Subsequent monitoring surveys showed that symptoms usually started in late autumn to late winter, but that newly developing spring and summer foliage was seldom affected. It was also observed that both disease incidence and severity varied among areas and years. The presence of *P. pluvialis* was consistently found in diseased *P. radiata* samples. It is noted that on rare occasions, *P. kernoviae* was also recovered from needles presenting the same symptoms. Although no direct tree mortality could be attributed to *P. pluvialis* in New Zealand, it was considered that control strategies (e.g. chemical control and breeding programmes) should be developed and implemented to minimize the impact of red needle cast disease in *P. radiata* plantations.

Source:

Dick MA, Willimas NM, Bader MKF, Gardner JF, Bulman LS (2014) Pathogenicity of *Phytophthora pluvialis* to *Pinus radiata* and its relation with red needle cast disease in New Zealand. *New Zealand Journal of Forestry Science* **44**(6), 12 pp. http://nzjforestryscience.springeropen.com/articles/10.1186/s40490-014-0006-7
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Additional key words: new pest **Computer codes:** PHYTUV, NZ, US

2016/216 First report of *Chrysanthemum stem necrosis virus* in the Republic of Korea

In September 2013, symptoms of stem necrosis, chlorotic and necrotic ring leaf spots, and leaf distortions were observed on chrysanthemum plants (*Chrysanthemum morifolium* cv. 'Jimba') in a greenhouse in Changwon, Republic of Korea. In this greenhouse, the disease incidence reached approximately 60% and the presence of *Frankliniella occidentalis* (Thysanoptera: Thripidae – EPPO A1 List) was observed. Laboratory analysis (electron microscopy, inoculation to indicators, DAS-ELISA, RT-PCR, sequencing) confirmed the presence of *Chrysanthemum stem necrosis virus* (CSNV – EPPO A2 list) in diseased plants. This is the first time that CSNV is reported from the Republic of Korea, and this virus is considered to be a major threat for the production of chrysanthemum plants which relies on vegetative propagation.
The situation of *Chrysanthemum stem necrosis virus* in the Republic of Korea can be described as follows: **Present, first found in 2013 in one production site in Changwon.**

Source: Yoon JY, Choi GS, Choi SK (2016) First report of *Chrysanthemum stem necrosis virus* on *Chrysanthemum morifolium* in Korea. *Plant Disease* 100. http://dx.doi.org/10.1094/PDIS-06-16-0906-PDN

Pictures: *Chrysanthemum stem necrosis virus.* https://gd.eppo.int/taxon/CSNV00/photos

Additional key words: new record **Computer codes:** CSNV00, KR

2016/217 *Potato spindle tuber viroid* detected in volunteer and wild plants in Western Australia (AU)

During studies conducted from 2007 to 2012 in Western Australia (AU), *Potato spindle tuber viroid* (*Pospiviroid*, PSTVd – EPPO A2 List) was detected in volunteer and wild plants in the Gascoyne Horticultural District. This area is located in the arid central coastal region of Western Australia and along the Gascoyne River. In this irrigated area, a wide range of temperate, tropical and subtropical crops are grown including solanaceous crops. In this area, PSTVd was first detected in field tomatoes (*Solanum lycopersicum*) in 2006. Since then, PSTVd has frequently been detected in field crops of tomato, pepper and chilli (*Capsicum* spp.). During these studies, PSTVd was detected in volunteer plants of tomato, pepper and chilli, as well as in the following wild and weed plants: *Atriplex semilunaris, Conyza bonariensis, Datura leichhardtii, Nicandra physalodes, Rhagodia eremaea, Solanum nigrum,* and *Streptoglossa* sp. In addition, PSTVd was detected in another location in Western Australia, in the Ord River irrigation area (Kimberley region) on *Physalis angulata*. It is concluded that in these areas of Western Australia, volunteer and wild plants probably act as reservoirs for the viroid and that this may explain the occurrence of repeated PSTVd outbreaks in nearby solanaceous crops.

Source: Mackie AE, Rodoni BC, Barbetti MJ, McKirdy SJ, Jones RAC (2016) *Potato spindle tuber viroid*: alternative host reservoirs and strain found in a remote subtropical irrigation area. *European journal of Plant Pathology* **145**(2), 433-446.

Pictures: *Potato spindle tuber viroid*. https://gd.eppo.int/taxon/PSTVD0/photos

Additional key words: detailed record, epidemiology **Computer codes:** PSTVD00, AU

2016/218 Studies on seed transmission of four pospiviroids in horticultural plants

Seed transmission of four pospiviroids: *Potato spindle tuber viroid* (PSTVd – EPPO A2 List), *Tomato chlorotic dwarf viroid* (TCDVd), *Tomato apical stunt viroid* (TASVd) and *Columnea latent viroid* (CLVd) has been studied in Japan on several horticultural plants.
The rate of seed transmission of PSTVd-infected tomato plants (*Solanum lycopersicum*) to progeny seedlings varied among the studied tomato cultivars from 0 to 90.2%. Seed transmission rates of PSTVd obtained for other plants were as follows: 0.3-0.5% in *Capsicum annuum*, 1.2% in *Glebionis coronaria* and 81% in *Petunia x hybrida* 'Mitchell'. The distribution of PSTVd within tomato seed tissues has been investigated and it was found that this viroid is present in the embryo and endosperm.
In the case of TCDVd and CLVd, transmission rates were 25% in *Petunia x hybrida* 'Mitchell' and 5.3-100% in tomato, respectively. No seed transmission was obtained for TASVd on the studied plant species (*S. lycopersicum, Glebionis coronaria* and *Tagetes patula*), although it is noted that seed transmission has been obtained in tomato by other researchers.

Source: Matsushita Y, Tsuda S (2016) Seed transmission of *Potato spindle tuber viroid, Tomato chlorotic dwarf viroid, Tomato apical stunt viroid,* and *Columnea latent viroid* in horticultural plants. *European Journal of Plant Pathology* **145**(4), 1007-1011.

Pictures: *Potato spindle tuber viroid*. https://gd.eppo.int/taxon/PSTVD0/photos

Additional key words: epidemiology **Computer codes:** CLVD00, PSTVD0, TASVD0, TCDVD0

2016/219 Biological control of *Impatiens glandulifera*

The macrocyclic rust fungus *Puccinia komarovii* var *glanduliferae* was released as a biological control agent against *Impatiens glandulifera* (Balsaminaceae; EPPO List of Invasive Alien Plants) at a limited number of sites in the United Kingdom in 2014. In 2015, a nationwide release programme was initiated at over 25 sites. At most of these sites the rust spread to infect field plants in the close vicinity though infection (pustule size) was lower compared to that seen under greenhouse conditions. In addition, there was variation in infection between sites indicating differences in susceptibility between biotypes of the plant. In 2016, the focus of the research was to establish the rust in intensively monitored sites over the course of the season and to explore variation in susceptibility between populations. To investigate susceptibility, plants were grown from seed collected from 18 sites in England and Wales and infected with rust. Although the results are still under analysis, there is a clear indication that there is significant genetic variation within the population of *I. glandulifera* in England and Wales and this is reflected by the variation in susceptibility of plants to the rust. With this in mind, more than one strain of the rust may be required to control the plant nationally and to this effect a rust isolate collected from Pakistan in 2006 has been tested against closely related plant species and shows the same specificity as the Indian isolate. Potentially, both strains could be released to control the plant.

Source: Varia S, Pollard K, Ellison C (2016) Implementing a novel weed management approach for Himalayan balsam: progress on the biological control in the UK. *Outlooks on Pest Management* **27**(5) 198-203.

Pictures *Impatiens glandulifera*. https://gd.eppo.int/taxon/IPAGL/photos

Additional key words: invasive alien plants **Computer codes:** IPAGL, PUCCKG, GB

2016/220 A prioritization process for invasive alien plants incorporating the requirements of the EU Regulation no. 1143/2014

When faced with a large number of invasive, or potentially invasive alien plant species prioritization is an essential component to focus limited resources on those species which pose the greatest risks. When considering alien plant species for the whole EPPO region or for species under the Plant Health Regulation, the original EPPO prioritization process for invasive alien plants is the preferred tool to use. However, when considering alien plants under the EU Regulation no. 1143/2014 and within the remit of the LIFE IAP-RISK project, EPPO has adapted the original prioritization process into a stand-alone tool specially designed to incorporate the requirements of the Regulation. Similar to the original, the prioritization process for EU invasive alien plants acts as a first step to determine which species have the highest priority for a pest risk analysis. The prioritization process for EU invasive alien plants has two stages where stage 1 prioritises species into one of four lists (EU List of Invasive Alien Plants, EU Observation List, EU List of Minor Concern and the Residual List). Only those species with a medium to high spread potential coupled with high impacts on native species or ecosystem services are included in the EU List of Invasive Alien Plants and are further evaluated in Stage 2 – the risk management stage. In this second stage, five questions are asked to determine the potential for further spread, establishment, and if preventative or management actions can be applied for the species in a cost-effective manner. The output of Stage 2 is to prioritize those species which have the highest priority for a risk assessment at the EU level compared to those species where national measures should apply.

The publication detailing the prioritization process (together with a flow diagram) for EU invasive alien plants is freely avalaible in the EPPO Bulletin.
http://onlinelibrary.wiley.com/doi/10.1111/epp.12336/full

Source: Branquart E, Brundu G, Buholzer S, Chapman D, Ehert P, Fried G, Starfinger U, van Valkenburg J, Tanner R (2016) A prioritization process for invasive alien plant species incorporating the requirements of the EU Regulation no. 1143/2014. *Bulletin OEPP/EPPO Bulletin* **46**(3), 603-617.

Additional key words: invasive alien plants, EPPO Lists **Computer codes:** SPIOL

2016/221 Assessment of the risks to Norwegian biodiversity from aquarium and garden pond plants

Aquatic invasive alien plants can have high negative impacts in areas they invade. Impacts include blanketing monocultures which can outcompete native plant species and associated fauna, economic impacts by degrading land and blocking drainage channels and impacts on ecosystem services including cultural and regulating services. The Norwegian Environment Agency commissioned a study on the assessment of risks to Norwegian biodiversity from the import and keeping of aquarium and garden pond plants. For the assessment, aquatic species were preliminary screened into 1 of 3 categories based on their area of occurrence and climatic preferences. Those species in category 1 are naturally occurring in tropical climates – these species were further assessed to see if they can survive naturally below 5 ^{O}C. Category 2 taxa include those naturally occurring in temperate and continental climates – these species were individually risk assessed (see table 1 for an output using a modified two-stage Non-native Species Application-based Risk Analysis process). Species in category 3 were taxa occurring naturally in Norway and these species were assessed as a group to evaluate the risk of transferring genetic material to local populations. See the full report for the list of category 1 and 3 species. For those species where a full risk analysis was conducted (see table 1), *Crassula helmsii* and *Myriophyllum heterophyllum* (both EPPO A2 species) were highlighted as two species posing a high risk to biodiversity in Norway.

Table 1. Aquatic plant species subjected to full risk assessments. Confidence levels in brackets equal, L: Low, M: Medium, H: High). Mod represents moderately. *Potamogeton* species were risk assessed together and include: *P. epihydrus, P. nodosus, schweinfurthii, P. wrightii*.

Species	Entry	Establishment	Spread	Impacts	Overall
Ceratophyllum submersum	Very likely (H)	Likely (H)	Very slowly (H)	Minimal (H)	Low (H)
Crassula helmsii	Likely (M)	Mod likely (L)	Rapid (M)	Major (M)	High (M)
Egeria densa	Likely (M)	Mod likely (L)	Slowly (M)	Mod (M)	Mod (M)
Eleocharis vivipara	Likely (M)	Unlikely (L)	Slowly (M)	Minimal (L)	Low (M)
Hydrilla verticillata	Likely (M)	Mod likely (L)	Mod fast (M)	Mod (M)	Mod (M)
Lagarosiphon major	Likely (M)	Mod likely (L)	Slowly (M)	Mod (M)	Mod (M)
Lemna gibba	Likely (M)	Mod likely (M)	Mod fast (M)	Minor (M)	Mod (M)
Myriophyllum aquaticum	Very likely (H)	Likely (H)	Mod fast (H)	Mod (H)	Mod (H)
Myriophyllum heterophyllum	Very likely (H)	Likely (H)	Rapidly (H)	Major (H)	High (H)
Myriophyllum quitense	Likely (H)	Unlikely (M)	Slowly (M)	Minimal (M)	Low (M)

Species	Entry	Establishment	Spread	Impacts	Overall
Najas guadalupensis	Very likely (M)	Mod likely (L)	Slowly (L)	Minor (L)	Low (L)
Najas minor	Mod likely (M)	Likely (M)	Mod fast (M)	Mod (M)	Mod (M)
Potamogeton spp.	Unlikely (M)	Unlikely (M)	Slowly (L)	Minimal (M)	Low (M)
Salvinia natans	Likely (H)	Unlikely (H)	Very slowly (H)	Minimal (H)	Low (H)
Trapa natans	Very likely (M)	Unlikely (L)	Mod fast (L)	Mod (L)	Mod (M)
Vallisneria spiralis	Likely (H)	Unlikely (M)	Very slowly (L)	Minor (M)	Low (M)
Wolffia arrhiza	Mod likely (L)	Mod likely (L)	Mod fast (L)	Minor (L)	Minor (M)

Source: VKM (2016). Assessment of the risks to Norwegian biodiversity from the import and keeping of aquarium and garden pond plants. Scientific Opinion on the alien organisms and trade in endangered species of the Norwegian Scientific Committee for Food Safety ISBN: 978-82-8259-240-6. Oslo, Norway.

Additional key words: invasive alien plants, PRA

Computer codes: CEYSU, CSBHE, ELDDE, ELOVI, HYLLI, LEMGI, LGAMA, MYPBR, MYPHE, NAIGU, NAIMI, PTMEP, PTMNA, PTMSC, SAVNA, TRPNA, VAISP, WOLAR

2016/222 Honolulu challenge – action on invasive alien species

At the 2016 IUCN (International Union for Conservation of Nature) World Conservation Congress in Honolulu (Hawaii), the Union and the host country have called for greater action to address invasive alien species for the protection of biodiversity and human wellbeing. The Union has listed 11 main focus points needed:

- Multiply efforts to develop and enact effective biosecurity policies and programmes for countries and islands,
- Enforce effective measures to address priority pathways of invasions, including efforts to strengthen collaboration with relevant sectors in particular agriculture and health,
- Greatly increase the number and scale of invasive alien species eradications, especially on islands and in other priority sites; by 2020 there shall be a doubling of commitments to achieve this goal,
- Substantially increase resources for invasive alien species management and control,
- Integrate invasive alien species into planning and management for protected areas and key biodiversity areas,
- Invest in the development, application and sharing of innovative technologies, and other solutions to prevent further invasions, and eradicate or control invasive alien species,
- Institutionalise invasive alien species programmes across government ministries, cooperating with the private sector, NGOs, indigenous peoples and local communities, and other stakeholders on programme implementation,
- Support assessments on the social and economic impacts of invasive alien species,
- Engage with relevant sectors and civil society to raise awareness of the negative impacts of invasive alien species, including the compounded impacts under climate change, and increase public support for potential solutions,

- Work with public and private financial institutions to increase international financial flows and mobilise domestic resources for addressing biological invasions,
- Enable enhanced knowledge on invasive alien species, their impacts and pathways of invasion, through investment in data collection, standardization, sharing and open access.

Source: IUCN website: https://www.iucn.org/theme/species/our-work/invasive-species/honolulu-challenge-invasive-alien-species/commitments

Additional key words: invasive alien plants