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CONTENTS ***Pests & Diseases***

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2015/161 Update on the situation of *Xylella fastidiosa* in Corsica (FR)

In France, *Xylella fastidiosa* (EPPO A1 List) was first found in the municipality of Propriano (Corse-du-Sud department) on *Polygala myrtifolia* in July 2015 (EPPO RS 2015/144). Since this initial record, new information has been published on the Internet by the official authorities and INRA. Eradication measures and intensive surveys are continuing in Corsica.

- **Subspecies of *X. fastidiosa* found in Corsica (FR) and Puglia (IT) are different**

It has now been confirmed that the subspecies of *X. fastidiosa* which occurs in Corsica on *Polygala myrtifolia* differs from the one found on olive (*Olea europaea*) in Puglia. In Corsica, *X. fastidiosa* subsp. *multiplex* has been identified, whereas in Puglia it is *X. fastidiosa* subsp. *pauca*. A map on the INRA website summarizes the world distribution of the different *X. fastidiosa* subspecies that are currently known: http://www.inra.fr/Grand-public/Sante-des-plantes/Tous-les-dossiers/Xylella-fastidiosa-identifiee-en-Corse/Fiche-d-identite

- ***X. fastidiosa* has been found in other locations in Corsica (FR)**

As a result of intensive surveys carried out in Corsica, new foci of *X. fastidiosa* have been detected, mainly in Corse-du-Sud, but also in Haute-Corse. As of 2015-09-24, more than 90 foci have been detected. A map showing demarcated areas (infected areas and buffer zones) can be viewed on the official website of the Préfecture of Corse-du-Sud: http://www.corse-du-sud.gouv.fr/IMG/pdf/Cartographie_94foyers_Xylella_Corse_24septembre2015.pdf
In almost all cases, *X. fastidiosa* was detected in *Polygala myrtifolia*. However, the bacterium has been found in 5 *Spartium junceum* plants near Ajaccio.

Source: INTERNET
Chauvel G, Cruaud A, Legendre B, Germain JF, Rasplus JY (2015) Mission d'expertise sur *Xylella fastidiosa* en Corse. Rapport définitif (2015-08-31), 139 pp. http://agriculture.gouv.fr/sites/minagri/files/20150908_rapport_mission_corse_xylella_31082015b.pdf

INRA. *Xylella fastidiosa*, la recherche mobilisée. http://www.inra.fr/Grand-public/Sante-des-plantes/Tous-les-dossiers/Xylella-fastidiosa-identifiee-en-Corse

Les services de l'Etat en Corse du Sud. http://www.corse-du-sud.gouv.fr/xylella-fastidiosa-une-menace-qui-demande-une-a1409.html

Additional key words: detailed record **Computer codes:** XYLEFA, FR

2015/162 *Clavibacter michiganensis* subsp. *sepedonicus* does not occur in Egypt

The NPPO of Egypt officially informed the EPPO Secretariat that despite the information stated in a recent paper (Seleim *et al.*, 2014 – see EPPO RS 2015/130), *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List) does not occur in Egypt. The NPPO explained that the original publication contained serious scientific flaws which rendered this record doubtful, if not erroneous. For example, the following problems were pointed out: 1) the number of tubers tested during the indicated timeframe was not feasible; 2) sampling procedures and locations were not presented in detail by the authors; 3) the use of a positive control could not be ascertained and the authorities had not been contacted to deliver the necessary permit to import bacterial strains; 4) no reference material has been deposited in an official collection; 5) upon further enquiries, it appeared that the procedures recommended by EC Directive 93/85/EEC had not been fully followed; 6) pathogenicity tests were not carried out in quarantine facilities. The NPPO will ask the

authors to reconsider their results, and official surveillance activities on potato bacteria will continue in Egypt with particular vigilance.
The pest status of *Clavibacter michiganensis* subsp*. sepedonicus* in Egypt is officially declared as: **Absent (unconfirmed report only).**

Source: NPPO of Egypt (2015-09).

Seleim M, Abo-Elyousr K, Mohamed A, Saead F (2014) First report of potato bacterial ring rot caused by *Clavibacter michiganensis* subsp*. sepedonicus* in Africa. *New Disease Reports* **30**, 15. http://dx.doi.org/10.5197/j.2044-0588.2014.030.015

Additional key words: absence, denied record **Computer codes:** CORBSE, EG

2015/163 First report of *Pseudomonas syringae* pv*. tomato* in Slovenia

The NPPO of Slovenia recently informed the EPPO Secretariat of the first record of *Pseudomonas syringae* pv*. tomato* on its territory. The bacterium was detected in one tomato (*Solanum lycopersicum*) greenhouse located in Ljubljana. Symptoms (brown spots and yellowing) were first noticed by the grower who collected a symptomatic sample for diagnosis. In June 2015, the identity of the bacterium was confirmed by the official laboratory of bacteriology using molecular tests. The infected grafted tomato plants had been grown from plants for planting imported from Spain. No official phytosanitary measures were taken, but the grower destroyed 2 100 grafted tomato plants and applied hygiene measures in the glasshouse concerned.
The pest status of *Pseudomonas syringae* pv*. tomato* in Slovenia is officially declared as: **Transient, no official measures taken. Infected plants destroyed by grower.**

Source: NPPO of Slovenia (2015-09).

Additional key words: new record, incursion **Computer codes:** PSDMTM, SI

2015/164 *Ralstonia solanacearum* (probably race 1) detected in ornamental *Anthurium* plants in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of the detection of *Ralstonia solanacearum* (EPPO A2 List) in ornamental *Anthurium* spp. plants (cvs.'Midori', 'Pistache' and 'Fire'). The bacterium was found in a greenhouse of 2.1 ha, containing 630 000 ornamental *Anthurium* plants grown for cut flower production, and located in the municipality of Bleiswijk. At different places within the greenhouse, many plants exhibited symptoms. Affected plants showed black discoloration and necrosis on the stems, chlorotic and wilting leaves. It is suspected that the bacterium has been disseminated within the greenhouse by knives used to cut the flowers. Plant samples were taken at the end of July 2015 and the identity of the bacterium was confirmed in August 2015, and it is suspected that race 1 is present. The source of infection is unknown. In this greenhouse, *Anthurium* plants had been planted 10 years ago, and until recently, no symptoms had been observed. There is no link with an earlier finding of *R. solanacearum* (probably race 1) on *Curcuma* plants for planting detected in 2014 (see EPPO RS 2014/192). Official phytosanitary measures have been taken to eradicate the disease. All *Anthurium* plants will be destroyed and the greenhouse will be cleaned and disinfected.

The pest status of *Ralstonia solanacearum* (race 1) in the Netherlands is officially declared as: **Transient, actionable, found on *Anthurium* and *Curcuma* plants for planting, under eradication.**

Source: NPPO of the Netherlands (2015-09).

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

2015/165 First report of '*Candidatus* Liberibacter solanacearum' on carrots in Germany

In September 2014, symptoms resembling those of '*Candidatus* Liberibacter solanacearum' (the potato haplotypes are listed in EPPO A1 List) were observed in commercial carrot (*Daucus carota*) fields in Niedersachsen, Germany. These fields were also infested by the carrot psyllid *Trioza apicalis,* and the infection rate was about 50% symptomatic plants/field. Symptoms included leaf curling, yellow and purple discoloration of leaves, stunted growth of shoots and roots, and proliferation of secondary roots. Symptomatic carrot (*D. carota* var. 'Nerac') and psyllid samples were collected from 3 fields near Hameln. Asymptomatic carrots (*D. carota* cv. 'Napoli') were also collected from an experimental field in Braunschweig and used as negative controls. Laboratory analysis (PCR, sequencing) confirmed the presence of '*Ca.* L. solanacearum' in 12 (out of 26) symptomatic plants and in 10 (out of 42) psyllid samples. This is the first time that '*Ca.* L. solanacearum' is reported from Germany.
The situation of '*Candidatus* Liberibacter solanacearum' in Germany can be described as: **Present, first found in 2014 in commercial carrot fields in Niedersachsen.**

Source: Munyaneza JE, Swisher KD, Hommes M, Willhauck A, Buck H, Meadow R (2015) First report of '*Candidatus* Liberibacter solanacearum' associated with psyllid-infested carrots in Germany. *Plant Disease* **99**(9), p 1269.

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

2015/166 First confirmed report of '*Candidatus* Phytoplasma ulmi' in the Czech Republic

The NPPO of the Czech Republic recently confirmed to the EPPO Secretariat the occurrence of '*Candidatus* Phytoplasma ulmi' (EPPO A1 List, initially listed as 'Elm phloem necrosis'*) on its territory. This finding resulted from a pest specific survey carried out by the Czech NPPO. In June 2015, the pathogen was identified (PCR, sequencing) in a sample (a branch) taken from one tree of *Ulmus minor* showing suspicious symptoms. On two branches of this tree, leaves had not sprouted and the bark was necrotic. This infected tree was part of a group of 3 elm trees (*U. minor*) growing in a forest in the Hradec Králové region. In Europe, it has been shown that this phytoplasma disease can be transmitted by *Macropsis glandacea* (=*M. mendax* – Hemiptera: Cicadellidae) and *Philaenus spumarius* (Hemiptera: Aphrophoridae), the latter being very common in the Czech Republic. In 2015, both the host plants and *P. spumarius* will be surveyed for the presence of '*Ca*. P. ulmi' to better define the infested area.
The NPPO considers that this is the first confirmed report of '*Ca*. P. ulmi' in the Czech Republic. Earlier records published in the 1960s (Bojňanský, 1969) or earlier (Klášterský, 1951) were only based on the observation of symptoms (elm yellows) on elm trees. More

recently, Navrátil *et al*. (2009) isolated a phytoplasma belonging to the Elm yellows group and closely related to '*Ca*. P. ulmi' (EPPO RS 2009/217), but some differences in the oligonucleotide sequences meant that the authors could not assign the Czech isolate to '*Ca*. P. ulmi'.
The pest status of '*Candidatus* Phytoplasma ulmi' in the Czech Republic is officially declared as: **Present, found only in one area; previous records are considered uncertain.**

* **Note**: Although phytoplasma diseases observed in elms in North America (elm phloem necrosis) and in several European countries (elm yellows) have different symptomatology, the phytoplasmas associated with them are very closely related if not belonging to the same species '*Candidatus* Phytoplasma ulmi'. The inclusion of this pathogen on the A1 List (absent from the EPPO region) might need to be reconsidered. However, EFSA performed a pest categorisation study of '*Ca*. P. ulmi' in 2014 and concluded that the currently available data on its distribution, insect vectors, elm species susceptibility and impacts was not sufficient to reach a conclusion.

Source: NPPO of the Czech Republic (2015-08).

Bojňanský V (1969) Elm witches'-broom, a new disease in Czechoslovakia. In C. Blattný (ed.) *Proceedings of the 6th Conference of the Czechoslovak Plant Virologists*, Olomouc 1967. Academia, Praha, pp. 211-213.

EFSA (2014) Scientific Opinion on the pest categorisation of Elm phloem necrosis mycoplasma. *EFSA Journal* **12**(7), 34 pp.

Klášterský I (1951) A cowl-forming virosis in roses, lime-trees and elm-trees. *Studia Botanica Čechoslovaca* **12**, 73–171.

Navrátil M, Šafářová D, Válová P, Fránová J, Šimková M (2009) Phytoplasma associated with witches'-broom disease of *Ulmus minor* Mill. in the Czech Republic: electron microscopy and molecular characterization. *Folia Microbiologica* **54**(1), 37–42.

Additional key words: detailed record **Computer codes:** PHYPUL, CZ

2015/167 First report of *Ceratocystis platani* in Albania

In June 2014, dieback symptoms and extensive tree mortality of *Platanus orientalis* were observed in several localities of Gjirokastër prefecture in Southern Albania. Samples were collected from trees showing dieback from 4 different localities (Sotirë, Platanias Selliou, Llovinë, Vrisera) in Gjirokastër prefecture. Laboratory studies confirmed the presence of *Ceratocystis platani* (EPPO A2 List) in these symptomatic samples. The identification of the fungus was based on both morphological characteristics in culture and DNA sequencing. The pathogenicity of *C. platani* was confirmed in inoculations on seedlings of *P. orientalis.* It is recalled that in 2010, the presence of *C. platani* was reported in Greece in the Epirus region which is very close to the border with Albania. It is considered that human activities, including the use of contaminated tools and terracing machinery, play a major role in the fungus dissemination. During the last two decades, transnational cooperation has taken place in the construction sector in the Greek-Albanian borders and the fungus could have easily been transferred from one country to the other with terracing machinery or pruning tools. It is also suggested that *C. platani* has spread with infected wood used as fire wood. This is the first time that *C. platani* is reported from Albania.

The situation of *Ceratocystis platani* in Albania can be described as follows: **Present, first found in 2014 in 4 localities of Gjirokastër prefecture.**

Source: Tsopelas P, Palavouzis S, Tzima AK, Tsopelas MA, Soulioti N, Paplomatas EJ (2015) First report of *Ceratocystis platani* in Albania. *Forest Pathology* DOI: 10.1111/efp.12219

Additional key words: new record **Computer codes:** CERAFA, AL

2015/168 First report of *Meloidogyne naasi* in the Czech Republic

The NPPO of the Czech Republic recently informed the EPPO Secretariat of the first record of *Meloidogyne naasi* (Nematoda: Meloidogynidae) on its territory. Since the end of summer 2014, extensive yellowing and decline symptoms have been observed on the lawns of a golf course located in the municipality of Praha-Hostivař (near Prague). These lawns were a mixture of *Agrostis stolonifera* cv. 'Penn A-4' and *Festuca rubra* cvs. 'Barcrown' and 'Bargreen', and had been sown in 2005. Samples containing soil substrate (sand) and symptomatic plants were collected in January 2015 and sent to the NPPO laboratory for diagnosis. Results of the analysis (light microscopy and PCR tests) confirmed the presence of *M. naasi*. Larvae and females of *M. naasi* were extracted from grass roots but the specific host was not identified. Only larvae could be extracted from soil samples. Although the observed symptoms are likely to be caused by *M. naasi*, the occurrence of another plant parasitic nematode, namely *Hemicycliophora* sp., was also detected in the studied samples. No official measures have been taken, but a national PRA has been carried out and a detection survey will be conducted to clarify the pest status of *M. naasi* in the Czech Republic.
The pest status of *Meloidogyne naasi* in the Czech Republic is officially declared as: **Present, found only in one locality.**

Note: *M. naasi* is a polyphagous root-knot nematode. Its main host plants are Poaceae, including cereals, fodder and turf grasses. Other crops such as alfalfa (*Medicago sativa*), clover (*Trifolium* spp.), onions (*Allium cepa*), peas and beans (*Pisum sativum, Phaseolus vulgaris*), soybean (*Glycine max*), sugarbeet (*Beta vulgaris*) have been reported to be host plants. *M. naasi* can also feed and reproduce on several weed species (e.g. *Stellaria media*). Its currently known geographical distribution has been added to the EPPO Global Database: https://gd.eppo.int/taxon/MELGNA/distribution

Source: NPPO of the Czech Republic (2015-08).

Additional key words: new record **Computer codes:** MELGNA, CZ

2015/169 New *Phytophthora* species

Within the genus *Phytophthora*, many new species have recently been described (see also EPPO RS 2009/159). Outbreaks of invasive species such as *P. alni, P. ramorum* and *P. kernoviae* in forests and woodlands of Europe and North America have triggered surveys in different types of environments. In addition, the development of new molecular tools together with the use of adequate isolation techniques and observation of morphological characteristics has facilitated the identification of new *Phytophthora* species. The list

below has been compiled by the EPPO Secretariat from recent publications but is not an exhaustive list.

Phytophthora acerina
P. acerina is a new species causing bleeding cankers and dieback of *Acer pseudoplatanus* trees. It was isolated from bark and rhizosphere soil of *A. pseudoplatanus* trees planted in the Boscoincittá Park in Milano, Northern Italy (Ginetti *et al.*, 2014).

Phytophthora agathidicida
This new species was found to be associated with kauri dieback in New Zealand, a disease which has been observed since the 1970s. Kauri (*Agathis australis* - Araucariaceae) is a large conifer tree (trunks can measure more than 4.5 m in diameter), considered to be one of the most ancient tree species still existing, and is therefore of high patrimonial value (Weir *et al.*, 2015).

Phytophthora aquimorbida
P. aquimorbida is a new species which has been recovered from agricultural irrigation reservoirs in Virginia (US). During experiments, *P. aquimorbida* has shown some pathogenicity to rhododendrons but its host range and pathogenicity under field conditions need to be further investigated (Hong *et al.*, 2012).

Phytophthora arenaria* and *P. constricta
These two new species have been found in sclerophyllous shrubland (locally called Kwongan) in Western Australia (AU). *P. arenaria* and *P. constricta* were mainly associated with dead and dying *Banksia* species (Proteaceae), and studies have confirmed their pathogenicity to *Banksia attenuata* (Rea *et al.*, 2011).

Phytophthora asiatica
This new species was isolated from kudzu plants (*Pueraria montana* var*. lobata* – EPPO A2 List) showing leaf and stem blight in the Toyama and Ishikawa prefectures (Honshu) in Japan (Rahman *et al.*, 2014).

Phytophthora bilorbang
This new species was isolated from the rhizosphere soil and roots of declining or dead *Rubus anglocandicans* in the southwest of Western Australia (AU). There are indications that *P. bilorbang* could be responsible for the decline syndrome of blackberry which is observed in the Warren and Donelly river catchments in the southwest of Western Australia (Aghighi *et al.*, 2012).

Phytophthora borealis, P. riparia* and *P. pluvialis
P. borealis and *P. riparia* were found during surveys carried out in forest waterways and adjacent riparian vegetation in Oregon (US). However, their pathogenicity and ecology remains to be elucidated (Hansen *et al.*, 2012). During another survey, *P. pluvialis* was found in streams, soil and canopy drip in the mixed tanoak-Douglas fir forest (*Notholithocarpus densiflorus* - *Pseudotsuga menziesii*) in Curry county, Oregon, and in two additional streams in other areas of Western Oregon (Reeser *et al.,* 2013).

Phytophthora chlamydospora
This new species, formerly known as *Phytophthora* taxon Pgchlamydo, has now been described and called *Phytophthora chlamydospora.* It has been found in streams, rivers, adjacent riparian soils in temperate forests in the western parts of North and South America, Europe, Asia, Africa and Australia. It has also occasionally been recovered from bark cankers, roots, and foliage of nursery plants (Hansen *et al.*, 2015).

Phytophthora chrysanthemi
P. chrysanthemi was isolated from chrysanthemums showing stem and root rot in the Gifu and Toyama prefectures (Honshu) in Japan (Naher *et al*., 2011).

Phytophthora cichorii, P. dauci*, and *P. lactucae
These three new species were described during studies on *Phytophthora* isolates collected from different vegetable crops. *P. cichorii* was found in roots of chicory plants (*Cichorium intybus*). *P. dauci* was isolated from carrot (*Daucus carota*) roots. *P. lactucae* was found in lettuce (*Lactuca sativa*) (Bertier *et al*., 2013).

Phytophthora cocois
This new species was isolated from husks of diseased fruit of *Cocos nucifera* (coconut) collected in Hawaii (US) and Côte d'Ivoire. *P. cocois* causes a severe disease (plant wilting and premature fruit drop) which has killed hundreds of coconut trees in Hawaii (Weir *et al*., 2015).

Phytophthora gibbosa, P. gregata, P. litoralis, P. thermophila
These four new taxa have been identified during surveys of dying vegetation in natural ecosystems and associated waterways in Australia. Their pathogenicity remains to be studied (Jung *et al*., 2011).

Phytophthora glovera
This new species was found in roots of tobacco (*Nicotiana tabacum*) plants affected by a yellow stunt disease known as Amarelão in Brazil. Pathogenicity tests showed that *P. glovera* causes root rot and yellowing on tobacco under greenhouse conditions (Abad *et al*., 2011).

Phytophthora himalsilva
P. himalsilva was found in the rhizosphere of *Quercus, Castanopsis, Carpinus* and *Cupressus* species in a remote forest in Western Nepal. No disease symptoms were observed on the trees associated with the soil samples. In the laboratory, *P. himalsilva* was able to cause lesions on *Juglans regia* (Vettraino *et al*., 2011).

Phytophthora hydropathica
This newly described species has frequently been isolated from irrigation water in ornamental nurseries in Virginia, Maryland and North Carolina (US). In two nurseries in Virginia, it has also been found that *P. hydropathica* could cause leaf necrosis and shoot blight on *Rhododendron catawbiense*, as well as collar rot on *Kalmia latifolia*. However, during surveys conducted on irrigation waters in other ornamental nurseries, no severe disease outbreaks caused by this pathogen were observed (Hong *et al.*, 2010). The occurrence of *P. hydropathica* has recently been reported from Italy in association with wilting and shoot dieback of *Viburnum tinus* (Vitale *et al*., 2014).

Phytophthora lacustris
This species was first isolated from *Salix matsudana* roots in 1972 in Southern England (as *Phytophthora* taxon Salixsoil). It was then frequently obtained from wet or riparian habitats in different parts of the world, and from roots of *Alnus* and *Prunus* species. It has recently been described and called *P. lacustris*. This species appears to be widespread in Europe and has also been detected in Australia, New Zealand and the USA. During inoculation studies, it was shown to be weakly or moderately aggressive to *Alnus, Prunus* and *Salix.* Evidence suggests that *P. lacustris* has entered the nursery trade in Europe and

is causing root rots in commercial *Prunus* and other fruit tree plantations in Italy and Central Europe (Nechwatal *et al*., 2013).

Phytophthora macilentosa* and *Phytophthora stricta
These two new species were recovered from an irrigation reservoir of an ornamental nursery in Mississippi (US). *P. stricta* has also been found in two water streams in Virginia during a survey. Their host range and pathogenicity need to be further investigated (Yang *et al*., 2014).

Phytophthora obscura
This species was first found in Oregon (US), infecting foliage of *Kalmia latifolia* showing leaf blight, and in soil substrate underneath a diseased *Pieris japonica*. *P. obscura* has also been found in Germany, in soil samples collected underneath an *Aesculus hippocastanum* tree showing a bleeding canker. Its morphological and ecological characteristics are very similar to those of *P. syringae* (Grünwald *et al*., 2012).

Phytophthora pachypleura
This new species has been found associated with mortality of *Aucuba japonica* (Garryaceae) in the United Kingdom. Preliminary studies have shown that this pathogen has the potential to affect other ornamental species (Henricot *et al*., 2014).

Phytophthora pisi
P. pisi is a newly described species which has been isolated from *Pisum sativum* (pea) and *Vicia faba* (faba bean) plants in Sweden exhibiting root rot. *P. pisi* can also infect *Lens culinaris* (lentil), *Cicer arietinum* (chickpea), *Lathyrus* spp. (pea), *Vicia sativa* (garden vetch), and *V. benghalensis* (purple vetch) (Hayman *et al.,* 2013).

Phytophthora plurivora
This new species has been found during large-scale surveys for soilborne *Phytophthora* species in forests, semi-natural stands and nurseries in Europe. *P. plurivora* was previously identified as *P. citricola* or less frequently as *P. inflata* in Europe and North America based solely on morphological and physiological characters. *P. plurivora* has a wide host range including *Acer platanoides, Aesculus hippocastanum, Alnus glutinosa, Fagus sylvatica, Quercus robur, Tilia* spp., and conifer species (Jung and Burgess, 2009).

Source:

Abad ZG, Ivors KL, Gallup CA, Abad JA, Shew HD (2011) Morphological and molecular characterization of *Phytophthora glovera* sp. nov. from tobacco in Brazil. *Mycologia* **103**(2), 341-350.

Aghighi S, Hardy GESJ, Scott JK, Burgess TI (2012) *Phytophthora bilorbang* sp. nov., a new species associated with the decline of *Rubus anglocandicans* (European blackberry) in Western Australia. *European Journal of Plant Pathology* **133**(4), 841-855.

Bertier L, Brouwer H, de Cock AWAM, Cooke DEL, Olsson CHB, Höfte M (2013) The expansion of *Phytophthora* clade 8b: three new species associated with winter grown vegetable crops. *Persoonia* 31, 63-76.

Ginetti B, Moricca S, Squires J, Cooke D, Ragazzi A, Jung T (2014) *Phytophthora acerina* sp. nov., a new species causing bleeding cankers and dieback of *Acer pseudoplatanus* trees in planted forests in Northern Italy. *Plant Pathology* **63**(4), 858-876.

Grünwald NJ, Werres S, Goss EM, Taylor CR, Fieland VJ (2012) *Phytophthora obscura* sp. nov., a new species of the novel *Phytophthora* subclade 8d. *Plant Pathology* **61**(3), 610-622.

Hansen EM, Reeser P, Sutton W, Brasier CM (2015) Redesignation of Phytophthora taxon Pgchlamydo as *Phytophthora chlamydospora* sp. nov. *North American Fungi* **10**(2), 1-14.

Hansen EM, Reeser PW, Sutton W (2012) *Phytophthora borealis and Phytophthora riparia*, new species in *Phytophthora* ITS Clade 6. *Mycologia* **104**(5), 1133–1142.

Henricot B, Pérez Sierra A, Jung T (2014) *Phytophthora pachypleura* sp. nov., a new species causing root rot of *Aucuba japonica* and other ornamentals in the United Kingdom. *Plant Pathology* 63(5), 1095-1109.

Heyman F, Blair JE, Persson L, Wikström M (2013) Root rot of pea and faba bean in southern Sweden caused by *Phytophthora pisi* sp. nov. *Plant Disease* **97**(4), 461-471.

Hong C, Gallegly M, Richardson PA, Kong P, Moorman GW, Lea-Cox JD, Ross D (2010). *Phytophthora hydropathica*, a new pathogen identified from irrigation water, *Rhododendron catawbiense* and *Kalmia latifolia*. *Plant Pathology* **59**(5), 913-921.

Hong CX, Gallegly ME, Richardson PA, Kong P, Moorman GW, Lea-Cox JD, Ross DS (2010) *Phytophthora hydropathica*, a new pathogen identified from irrigation water, *Rhododendron catawbiense* and *Kalmia latifolia*. *Plant Pathology* **59**(5), 913-921.

Hong CX, Richardson PA, Hao W, Shimire SR, Kong P, Moorman GW, Lea-Cox JD, Ross DS (2012) *Phytophthora aquimorbida* sp. nov. and *Phytophthora* taxon 'aquatilis' recovered from irrigation reservoirs and a stream in Virginia, USA. *Mycologia* **104**(5), 1097-1108.

Jung T, Burgess TI (2009) Re-evaluation of *Phytophthora citricola* isolates from multiple woody hosts in Europe and North America reveals a new species, *Phytophthora plurivora*. *Persoonia* **22**, 95-110.

Jung T, Stukely MJC, Hardy GEStJ, White D, Paap T, Dunstan WA, Burgess TI (2011) Multiple new *Phytophthora* species from ITS Clade 6 associated with natural ecosystems in Australia: evolutionary and ecological implications. *Persoonia* **26**, 13-39.

Naher M, Motohash K, Watanabe H, Chikuo Y, Senda M, Suga H, Brasier C, Kageyama K (2011) *Phytophthora chrysanthemi* sp. nov., a new species causing root rot of chrysanthemum in Japan. *Mycological Progress* **10**(1), 21-31.

Nechwatal J, Bakonyi J, Cacciola SO, Cooke DEL, Jung T, Nagy ZA, Vannini A, Vettraino AM, Brasier CM (2013) The morphology, behaviour and molecular phylogeny of *Phytophthora taxon* Salixsoil and its redesignation as *Phytophthora lacustris* sp. nov. *Plant Pathology* **62**(2), 355-369.

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Vettraino AM, Brasier CM, Brown AV, Vannini A (2011) *Phytophthora himalsilva* sp. nov. an unusually phenotypically variable species from a remote forest in Nepal. *Fungal Biology* **115**(3), 275-287.

Vitale S, Luongo L, Galli M, Belisario A (2014) First report of *Phytophthora hydropathica* causing wilting and shoot dieback on *Viburnum* in Italy. *Plant Disease* **98**(11), p 582.

Weir BS, Paderes EP, Anand N, Uchida JY, Pennycook SR, Bellgard SE, Beever RE (2015) A taxonomic revision of *Phytophthora* Clade 5 including two new species, *Phytophthora agathidicida* and *P. cocois*. *Phytotaxa* **205**(1), 21-38.

Yang X, Copes WE, Hong C (2014) Two novel species representing a new clade and cluster of *Phytophthora*. *Fungal Biology* **118**(1), 72-82.

Additional key words: taxonomy

Computer codes: PHYTAA, PHYTAE, PHYTAG, PHYTAZ, PHYTBI, PHYTBR, PHYTCH, PHYTCS, PHYTCT, PHYTDA, PHYTGI, PHYTGL, PHYTGR, PHYTHM, PHYTHY, PHYTKR, PHYTLC, PHYTLI, PHYTLT,

PHYTML, PHYTOB, PHYTPI, PHYTPP, PHYTPU, PHYTRP, PHYTST, PHYTTH, PHYTUV, PHYTXI

2015/170 Agapanthus gall midge: a new and undescribed species found for the first time in the United Kingdom

The NPPO of the United Kingdom recently informed the EPPO Secretariat of the first record of an undescribed species of gall midge (Diptera: Cecidomyiidae) on *Agapanthus* spp. This insect was first reported to the advisory service of the Royal Horticultural Society in July 2014, following the reception of samples from Farnham, Surrey. These samples came from plants that had been infested for at least 3 years. An independent gall midge expert confirmed in August 2014 that that the agapanthus gall midge was a species new to science which still needed to be formally described. Following an official survey conducted in 2015, the midge has subsequently been identified on *Agapanthus* plants from public gardens in Devon, Essex, Somerset and Surrey; from private gardens in Surrey and West Sussex; and from nurseries/garden centres in Cornwall, Dorset, Hampshire and Surrey. So far, there are no records of this pest north of Essex, so the distribution of the pest is currently restricted to Southern England. As the agapanthus gall midge is new to science, there is very limited information about its origin and biology. So far, it has only been found on *Agapanthus* spp. It is a tiny fly which lays eggs on the developing flower buds. Feeding activities of the larvae inside the buds cause abnormal bud development. Infested buds are deformed and can fail to open. Occasionally, collapse of the whole flower head has been observed. Pictures of the insect and damage on *Agapanthus* can be viewed on the Royal Horticultural Society website: https://www.rhs.org.uk/advice/profile?PID=901
Although the agapanthus gall midge is restricted to a small industry in the United Kingdom, agapanthus plants are of high value and the impact of the pest could be severe. Phytosanitary measures are being taken on commercial premises where the pest has been detected in order to prevent its spread across the United Kingdom and its introduction into other countries. In commercial premises where the pest has been found, one the following three options has to be followed: 1) destroy infested and at risk material; 2) disbud flowers of *Agapanthus* and then repot, to sell or move on in this disbudded state, 3) keep *Agapanthus* on site over winter and treat with chemical pesticides in spring. If found free after treatment, plant material can be sold or moved.
The pest status of the agapanthus gall midge is officially declared as: **Present (restricted distribution).**

Source: NPPO of the United Kingdom (2015-09).

Additional key words: new pest **Computer codes:** 1CECIF, GB

2015/171 *Aponychus corpuzae* found in Slovenia and Italy: first records in the EPPO region

In November 2012, *Aponychus corpuzae* (Acari: Tetranychidae) was recorded for the first time on *Phyllostachys bambusoides* (Poaceae, Bambuseae) in Southwestern Slovenia near Nova Gorica. Later on it was discovered on the same bamboo species in several places in the area, as well as in one place in Northeastern Italy (Gorizia) near the border with Slovenia. Its repeated findings for three consecutive years (2012-2014) suggest that the species has become established in this area. *A. corpuzae* feeds mainly on bamboos and

originates from Asia (China, Japan, Korean peninsula). This is the first time that its presence is recorded in the EPPO region.

Source: Seljak G (2015) The bamboo spider mite *Aponychus corpuzae* Rimando (Acari: Tetranychidae); first record in the West-Palaearctic. *Bulletin OEPP/EPPO Bulletin* **45**(2), 199-204.

Additional key words: new record **Computer codes:** APONCO, IT, SI

2015/172 *Ricania speculum* found in Italy: first record in the EPPO region

In Italy, the presence of *Ricania speculum* (Hemiptera: Ricaniidae) was confirmed in August 2014. Adults were collected on *Citrus* spp. in the province of La Spezia (Liguria region). Later in 2014, more specimens were found on several other host plants (*Laurus nobilis, Prunus persica, Populus pyramidalis, Pyrus communis, Vitis*) within a radius of about 15 km around the first finding (Rossi and Lucchi, 2015). According to other authors (Mazza *et al*., 2014), *R. speculum* has been observed in Genova and other localities of the Ligurian Riviera (e.g. Carasco, Casarza Ligure, Chiavari, Cogorno, Lavagna, Sestri Levante) since 2009, thus suggesting that this species might be more widespread than originally thought. *R. speculum* is an Asian planthopper which is known to occur at least in China, India, Indonesia, Japan, Korea Democratic Peoples' Republic, Korea Republic, Malaysia, Philippines, Taiwan, and Vietnam. *R. speculum* is a polyphagous insect (sap feeder) which has been reported on *Camellia oleifera, Camellia sinensis* (tea), *Ceiba pentandra* (kapok), *Citrus* spp., *Coffea* spp. (coffee), *Elaeis guineensis* (oil palm), *Glycine max* (soybean), *Gossypium* (cotton), *Luffa cylindrica*, *Pueraria montana* (kudzu), *Sorghum bicolor* (millet), *Tectona grandis* (teak), and *Theobroma cacao* (cocoa). Although it is considered to be a minor pest in its area of origin, the past experience of the introduction of another exotic species, *Metcalfa pruinosa* (Hemiptera: Flatidae) advocates for careful monitoring of *R. speculum*.

Source: Mazza G, Pennacchio F, Gargani E, Franceschini I, Roversi PF & Cianferoni F (2014) First report of *Ricania speculum* (Walker, 1851) in Europe (Hemiptera: Fulgoromorpha: Ricaniidae). *Zootaxa* **3861**, 297–300.

Rossi E, Lucchi A (2015) The Asian planthopper *Ricania speculum* (Walker) (Homoptera: Ricaniidae) on several crops in Italy: a potential threat to the EPPO region? *Bulletin OEPP/EPPO Bulletin* **45**(1), 119–122.

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

2015/173 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 on the EPPO Alert List, and indicated in bold the situation of the pest concerned using the terms of ISPM no. 8.

- **New records**

During a survey carried out from April to August 2014 on virus disease of sweet cherry, *Little cherry virus-1* (*Velarivirus*, LChV-1 – EU Annexes) was detected in 1 symptomatic leaf sample of *Prunus avium* cv. Napoleon from Beijing and in 1 asymptomatic bark sample of *P. avium* cv. Tieton from Daliang in Liaoning (out of a total of 28 samples tested). This is the first time that LChV-1 is reported from China (Lu *et al.*, 2015). **Present, few occurrences.**

In Bosnia and Herzegovina, *Cydalima perspectalis* (Lepidoptera: Crambidae – formerly EPPO Alert List) was recorded for the first time in 2014. In 2015, the pest was found in several locations (e.g. municipalities of Čapljina, Ljubuški, Grude and Čitluk). Damage has been observed on *Buxus sempervirens* only. The pest is also reported to occur in Montenegro and Serbia (Ostojić *et al*., 2015).

In Greece, the presence of *Cydalima perspectalis* (Lepidoptera: Crambidae – formerly EPPO Alert List) was recorded for the first time in October 2013 in Thermi (Thessaloniki, Northern Greece). In 2014 and 2015, more specimens were collected by entomologists and citizens in several other locations: city of Thessaloniki, village of Ano Lechonia (Pelion mountain), cities of Drama, Katerini, Kalamaria and Kifissia (near Athens). Heavy infestations were observed on *Buxus sempervirens* plants at the Benaki Phytopathological Institute and in several private and public gardens in Kifissia. This is the first time that *C. perspectalis* is reported from Greece (Strachinis *et al*., 2015). **Present, first found in 2014.**

In Slovakia, the first specimens of *Cydalima perspectalis* (Lepidoptera: Crambidae – formerly EPPO Alert List) were caught in 2012 near Bratislava (Pastorális, 2013). **Present, first found in 2012.**

In Spain, the first specimens of *Cydalima perspectalis* (Lepidoptera: Crambidae – formerly EPPO Alert List) were found in May 2014 on *Buxus sempervirens* in the southern part of the province of Pontevedra in Galicia (Pérez-Otero *et al*., 2014). **Present, first found in 2014.**

- **Detailed records**

Impatiens downy mildew caused by *Plasmopara obducens* (formerly EPPO Alert List) was observed for the first time in North Dakota (US) in 2013 on *Impatiens walleriana* (McGinnis *et al*., 2015).

In Spain, the presence of *Dryocosmus kuriphilus* (Hymenoptera, Cynipidae) was first reported in Cataluña in 2012 (see EPPO RS 2014/067). In 2013, the pest was found in Cantabria. In May 2014, it was first detected in Galicia in the provinces of Lugo, Ourense, and La Coruña. In Galicia, chestnut (*Castanea sativa*) is an economically important tree species cultivated for fruit production (Pérez-Otero and Mansilla, 2014).

- **Eradication**

In May 2015, *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) was detected in the area of Cabo Rojo in Puerto Rico (see EPPO RS 2015/071). Eradication measures were implemented and included high density trapping, fruit removal, control measures, regulatory quarantine measures, and foliar bait sprays near the detection sites. At the end of June 2015, as no additional specimens could be found after a period corresponding to three life cycles of *C. capitata*, it was considered that eradication was achieved in the area of Cabo Rojo.
The pest status of *Ceratitis capitata* in Puerto Rico is officially declared as: **Absent, eradicated** (NAPPO, 2015).

- **Diagnostics**

A multiplex PCR has been developed in Japan for the identification of 4 thrips species: *Frankliniella intonsa*, *F. occidentalis* (EPPO A2 List), *Thrips palmi* (EPPO A1 List), *T. tabaci* (Nakahara and Minoura, 2015).

- **New pests**

A new nematode species, *Bursaphelenchus ulmophilus* sp. n., has recently been described in Russia. This nematode species was found in declining *Ulmus glabra* trees in parks in St Petersburg. These trees were affected by Dutch elm disease (*Ophiostoma novo-ulmi*). Studies have shown that *B. ulmophilus* is vectored by adults and larvae of the bark beetles *Scolytus multistriatus* and *S. scolytus* (Ryss *et al*., 2015).

A new nematode species, *Ditylenchus arachis* sp. n., has recently been described in China. This nematode species was found in peanut crops (*Arachis hypogaea*) in Shandong and Hebei provinces. Affected peanut plants showed pod rot and *D. arachis* could be recovered from roots, pegs, hulls and seeds (Zhang *et al*., 2014).

- **New host plants**

Although *Picea engelmannii* (Engelmann spruce) was previously considered to be immune to infection by *Arceuthobium abietinum* f. sp. *concoloris* (EPPO A1 List), 4 infected trees were observed in August 2013 near Suttle Lake in Oregon, USA (Oblinger, 2015).

Since 2009, symptoms of stunting, leaf yellowing and reddening, upward leaf curling and brittleness have been observed in commercial celery (*Apium graveolens*) fields located in several production areas of Spain (Alicante, Albacete, Murcia, and Valencia). This celery disease was observed every growing season with an incidence ranging from 1 to 10%. Studies were conducted to investigate the possible presence of '*Candidatus* Liberibacter solanacearum' (the potato haplotypes are listed in EPPO A1 List), *Spiroplasma citri* (EU Annexes), phytoplasmas and viruses. Twenty out of the 21 symptomatic celery plants tested positive for *S. citri*. Mixed infections with *S. citri* and another pathogen were detected in 7 samples: 4 samples with '*Ca.* L. solanacearum', 1 with phytoplasmas belonging to the Stolbur group (16SrXII-A) and 2 with *Celery mosaic virus*. This is the first time that *S. citri* is found in *A. graveolens* (Alfaro-Fernández *et al*., 2015).

In Brazil, *Meloidogyne enterolobii* (EPPO A2 List) has been detected on *Morus nigra* seedlings showing root galls. These seedlings have been collected from plant lots transported by trucks in Itapetininga, Sao Paulo state (Paes-Takahashi *et al*., 2015).

Source:

Alfaro-Fernández A, Hernández-Llópis D, Ibáñez I, Rodríguez-León F, Ferrándiz JC, Sanjuán S, Font MI (2015) First report of Spiroplasma citri in celery in Spain. Plant Disease **99**(8), p 1175.

Lu MG, Gao R, Chen RR, Wu B, Zhang ZX, Li SF (2015) First report of *Little cherry virus 1* in sweet cherry trees in China. *Plant Disease* **99**(8), p 1191.

McGinnis E, Kinzer K, LeBoldus J (2015) First report of impatiens downy mildew caused by *Plasmopara obducens* in North Dakota. *Plant Disease* **99**(7), p 1039.

Nakahara S, Minoura K (2015) Identification of four thrips species (Thysanoptera: Thripidae) by multiplex polymerase chain reaction. *Research Bulletin of the Plant Protection Service Japan* no. 51, 37-42.

NAPPO Phytosanitary Pest Alert System. Official Pest Reports. USA (2015-08-21) *Ceratitis capitata* (Mediterranean fruit fly) - Removal of quarantine area in the Cabo Rojo area of Puerto Rico. http://www.pestalert.org/oprDetail.cfm?oprID=633

Oblinger BW (2015) First report of white fir dwarf mistletoe (*Arceuthobium abietinum* f. sp. concoloris) on Engelmann spruce (*Picea engelmannii*) from Oregon. *Plant Disease* **99**(7), p 1041.

Ostojić I, Zovko M, Petrović D, Elez D (2015) [New records of box tree moth *Cydalima perspectalis* (Walker, 1859) in Bosnia and Herzegovina]. Radovi Poljoprivredno-prehrambenog fakulteta, Univerziteta u Sarajevu (Works of the Faculty of Agricultural and Food Sciences, University of Sarajevo) **60**(65), 139-143 (in Croatian).

Paes-Takahashi VS, Soares PLM, Carneiro PA, Ferreira RJ, de Almeida EJ, dos Santos JM (2015) [Detection of *Meloidogyne enterolobii* in mulberry seedlings (*Morus nigra* L.)]. *Ciência Rural* **45**(5), 757-759 (in Portuguese).

Pastorális G, Elsner G, Kopeèek F, Kosorin F, Laštůvka A, Lendela A, Liška J, Nimy J, Richter I, Stefanovie R, Šumpich J, Tokar Z (2013) [Fourteen Lepidoptera species new to the fauna of Slovakia]. *Folia Faunistica Slovaca* **18**, 1-12 (in Slovak).

Pérez-Otero R, Mansilla JP (2014) [The chestnut gall wasp *Dryocosmus kuriphilus* Yasumatsu, 1951 (Hymenoptera, Cynipidae) arrives to Galicia (NW of the Iberian Peninsula]. *Arquivos Entomolóxicos* **12**, 33-36 (in Spanish).

Pérez-Otero R, Mansilla JP, Vidal M (2014) [*Cydalima perspectalis* Walker, 1859 (Lepidoptera, Crambidae): a new threat for *Buxus* spp. in the Iberian Peninsula]. *Arquivos Entomolóxicos* **10**, 225-228 (in Spanish).

Ryss A, Polyanina KS, Popovichev BG, Subbotin SA (2015) Description of *Bursaphelenchus ulmophilus* sp. n. (Nematoda: Parasitaphelenchinae) associated with Dutch elm disease of *Ulmus glabra* Huds. in the Russian North West. *Nematology* **17**, 685-703 (via PestLens).

Strachinis I, Kazilas C, Karamaouna F, Papanikolaou NE, Partsinevelos GK, Milonas PG (2015) First record of *Cydalima perspectalis* (Walker, 1859) (Lepidoptera: Crambidae) in Greece. *Hellenic Plant Protection Journal* **8**, 66-72.

Additional key words: new record, detailed record, eradication, diagnostic, new host plant, new pest

Computer codes: AREAB, BURSUL, CERTCA, DITYAR, DPHNPE, DRYCKU, LCHV10, MELGMY, PLASOB, SPIRCI, BA, BR, CN, ES, ES, GR, ME, PR, RS, SK, US

2015/174 New additions to the EPPO A1 and A2 Lists

In September 2015, the EPPO Council approved the addition of the following pests to the EPPO A1 and A2 Lists of pests recommended for regulation as quarantine pests.

Addition to the A1 List (pests absent from the EPPO region):

- *Andean potato mild mosaic virus* (*Tymovirus*),
- *Leucinodes africensis, L. rimavallis* and *L. pseudorbonalis* (Lepidoptera: Crambidae).

Additions to the A2 List (pests locally present in the EPPO region):

- *Geosmithia morbida (fungi)* and *Pityophthorus juglandis* (Coleoptera: Scolytidae),
- *Heterobasidion irregulare* (fungi),
- *Xanthomonas perforans, X. euvesicatoria* and *X. gardneri* (bacteria),
- *Alternanthera philoxeroides* (Amaranthaceae),
- *Myriophyllum heterophyllum (Haloragaceae),*
- *Microstegium vimineum (Poaceae).*

Transfer from A1 to the A2 List:

- *Bactrocera zonata* (Diptera: Tephritidae),
- *Dacus ciliatus* (Diptera: Tephritidae).

Deletion from the A2 List

- *Xanthomonas axonopodis* pv. *vesicatoria* (bacteria).

For each individual pest, a datasheet and PRA documents are being prepared and will be available in due course on the EPPO website.

Source: EPPO Secretariat (2015-09).

Additional key words: EPPO Lists

Computer codes: ALRPH, APMMV0, DACUCI, DACUZO, GEOHMO, HETEIR, LEUIAF, LEUIPS, LEUIRI, MCGVI, MYPHE, PITOJU, XANTAV, XANTEU, XANTGA, XANTPF

2015/175 PQR - the EPPO database on quarantine pests: new update

PQR - the EPPO database on quarantine pests (geographical distributions, host plants, regulatory status, pathways, and pictures) was updated on 2015-09-28. If PQR has already been installed on your computer, when opening the database you will be automatically notified that a new update is available.

The following new items have been added since the previous update (2015-02-10)

- **World distributions:** e.g. *Apriona cinerea, Apriona germari, Apriona rugicollis, Citrus bark cracking viroid, Cnestus mutilatus, Dynaspidiotus regnieri, Globodera ellingtonae,* Grapevine red blotch-associated virus, Grapevine vein clearing virus, *Groundnut ringspot virus, Leucinodes africensis, Leucinodes ethiopica, Leucinodes kenyensis, Leucinodes laisalis, Leucinodes malawiensis, Leucinodes pseudorbonalis, Leucinodes rimavallis, Leucinodes ugandensis, Lycorma delicatula, Meloidogyne naasi, Potato virus H, Rose rosette virus, Sirococcus tsugae, Tomato leaf curl New Delhi virus, Tomato mottle mosaic virus, Vespa velutina.*

- **Pest pictures:** e.g. *Acizzia jamatonica, Aedes japonicus, Anopheles plumbeus, Anoplophora chinensis, Aphis pomi, Arge berberidis, Azolla filiculoides, Caloptilia syringella, Chrysomela populi, Citrus bark cracking viroid, Clavibacter michiganensis subsp. michiganensis, Cryptostroma corticale, Diplocarpon rosae, Erannis defoliaria, Eriosoma lanigerum, Fallopia baldschuanica, Fallopia japonica, Helicoverpa armigera, Heracleum mantegazzianum, Horidiplosis ficifolii, Hyphantria cunea, Impatiens glandulifera, Lobesia botrana, Lysichiton americanus, Monochamus sartor, Myriophyllum heterophyllum, Nezara viridula, Peronospora arborescens, Phytophthora infestans, Plodia interpunctella, Popillia japonica, Rhododendron ponticum, Scolytus multistriatus, Thaumetopoea pityocampa, Thrips setosus, Tomato spotted wilt virus, Trioza erytreae, Xanthomonas fragariae, Xylella fastidiosa.*
- All recent data from the EPPO Reporting Service (January 2015 to August 2015) and updated pest statuses sent by several NPPOs of EPPO member countries.

The EPPO Secretariat takes this opportunity to thank all photographers who have kindly provided their photos. More would be most welcome and can easily be uploaded via the EPPO Global Database!

If you have not already installed PQR on your computer, you can download it (free) from the EPPO website: http://www.eppo.int/DATABASES/pqr/pqr.htm

Source: EPPO Secretariat (2015-09).

Practical guide to upload photos via the EPPO Global Database.
https://gd.eppo.int/media/files/photos_user-guide.pdf

Additional key words: database, EPPO

2015/176 *Microstegium vimineum* recommended for regulation in the EPPO region

A pest risk analysis (PRA) was conducted on *Microstegium vimineum* for the EPPO region in 2015. Following approval of the PRA in September 2015, *M. vimineum* was recommended for regulation in the EPPO region.

M. vimineum is an annual C4 grass that flowers under short day conditions, native to China, India, Japan and Nepal. *M. vimineum* possesses characteristics typical of many invasive alien species: it grows quickly, fruits within a single season, produces abundant seed, and readily invades habitats that have been disturbed by natural (e.g. flood scouring) and anthropogenic (e.g. mowing, tilling) events. It is also capable of invading natural areas and swiftly replacing natural communities with nearly monospecific stands. With the discovery of *M. vimineum* in Turkey and the Southern Caucasus, EPPO added the species to the Alert List in 2008 and transferred it to the List of Invasive Alien Plants in 2012 labelling it as an emerging invasive alien species considering the outputs of the EPPO Prioritization process for this species. In North America, *M. vimineum* changes plant community richness (number of species), plant diversity, and overall groundcover, out-competing other species. It may have negative impact on native species through multiple mechanisms including competitive exclusion, changing soil properties and reducing light availability. The pest risk analysis identified a number of potential pathways for introduction such as travellers (seeds contaminating clothes and shoes), used machinery, bird seed and growing media adherent to plant for planting.

The pest risk analysis concluded that *M. vimineum* presents a high phytosanitary risk for the EPPO region with a low uncertainty rating.

Source: EPPO (2015) Pest risk analysis for *Microstegium vimineum*. EPPO Paris. http://www.eppo.int/QUARANTINE/Pest_Risk_Analysis/PRA_intro.htm

Additional key words: invasive alien plants, pest risk analysis **Computer codes:** MCGVI

2015/177 *Alternanthera philoxeroides* recommended for regulation in the EPPO region

A pest risk analysis (PRA) was conducted on the aquatic invasive alien *Alternanthera philoxeroides* (Amaranthaceae: EPPO A2 List) for the EPPO region in 2015. Following approval of the PRA in September 2015, *A. philoxeroides* was recommended for regulation in the EPPO region.

A. philoxeroides is an emergent aquatic perennial herb found growing in both aquatic and terrestrial habitats throughout its native (South America) and non-native range. In the EPPO region, *A. philoxeroides* is recorded from France and Italy only, though there are suitable habitats and climates for this species throughout Europe in particular the Mediterranean region. It is not clear how this species entered the EPPO region and there are no clear pathways of further introduction, as the species is not widely traded as an aquarium plant or as any other type of living plant material. There may be confusion with *A. sessilis*, or other *Alternanthera* species traded for aquarium, ornamental or food purposes. The risk of *A. philoxeroides* establishing in other EPPO countries is considered high as movement through irrigation and river systems may act to connect countries, facilitating spread regionally, especially through high energy unstable river systems that may encourage fragmentation. Spread may be significantly accelerated by water based

recreational activities. The potential high impact of the species within the EPPO region is be considered similar to that seen in other countries where the species has invaded and become established; i.e. Australia and the southern states of North America. Impacts are likely to be more pronounced in countries and regions where the climate is most suited to population establishment, growth and spread. *A. philoxeroides* has been shown to have significant environmental and economic impacts within the invaded range (excluding the EPPO region). There is no evidence to suggest that the impacts observed will be different in the EPPO region. The potential economic impact of *A. philoxeroides* in the EPPO region could be highly significant if the species spreads and establishes in further areas; especially when consideration is given to the loss of earnings and costs associated with management for other aquatic species in Europe. There are no host specific natural enemies in the EPPO region to regulate the pest species, and in many EPPO countries herbicide application in or around water bodies is highly regulated or not permitted. Climate change, especially increases in temperature may extend the total area this species is able to invade.

The pest risk analysis concluded that *A. philoxeroides* presents a high phytosanitary risk for the EPPO region with a low uncertainty rating.

Source: EPPO (2015) Pest risk analysis for *Alternanthera philoxeroides*. EPPO Paris.http://www.eppo.int/QUARANTINE/Pest_Risk_Analysis/PRA_intro.htm

Additional key words: invasive alien plants, pest risk analysis **Computer codes:** ALRPH

2015/178 *Myriophyllum heterophyllum* recommended for regulation in the EPPO region

A pest risk analysis (PRA) was conducted on *Myriophyllum heterophyllum* (Haloragaceae: EPPO A2 List) for the EPPO region in 2014. Following approval of the PRA in September 2015, *M. heterophyllum* was recommended for regulation in the EPPO region.

M. heterophyllum is an aquatic plant native to the Eastern United States where it often forms dense stands**.** The plant is imported into the EPPO region as a misidentified aquatic species for aquaria and ponds and is already established in Austria, Belgium, France, Germany, Hungary, the Netherlands, Spain and Switzerland. The risk of entry into other EPPO countries through import is considered high. The risk of the species establishing in additional countries is high as movement through irrigation and river systems acts to connect countries, facilitating spread regionally. Spread may be accelerated by recreational activities in water bodies invaded by the weed. Impacts of the species within the EPPO region are likely to be severe, including aquatic plant species displacement, habitat dominance and effects on other aquatic organisms. Dense mats of *M. heterophyllum* reduce light reaching other submerged plants and can affect water quality by reducing oxygen levels resulting in fish avoiding the infested area. Many rivers and lakes within the PRA area are either protected areas or contain protected species that are likely to be adversely affected by dense mats of *M. heterophyllum*. The presence of *M. heterophyllum* in rivers and lakes in the EPPO region will act to degrade such habitats reducing the ecological status of water bodies.

The pest risk analysis concluded that *M. heterophyllum* presents a high phytosanitary risk for the EPPO region with a low uncertainty rating.

Source: EPPO (2015) Pest risk analysis for *Myriophyllum heterophyllum*. EPPO Paris. http://www.eppo.int/QUARANTINE/Pest_Risk_Analysis/PRA_intro.htm

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

2015/179 EU study on horizon scanning for invasive alien species

Horizon scanning is a systematic examination of potential threats and opportunities within a given context. It is an important tool in the management of invasive alien species for the EU. Through horizon scanning exercises, invasive alien plants that are currently absent or have a limited occurrence in the EU, can be identified and preventative action can be taken. The EU funded horizon scanning exercise (ENV. B.2/ETU/2014/0016) compiled a list of 250 species from across five thematic groups (plants, vertebrates, terrestrial invertebrates, marine species and freshwater invertebrates and fish) and through workshops, discussions and consensual agreement between experts species were ranked in priority for risk assessment. The study identified 95 species that present a very high or high risk of arrival, establishment, spread and threat to biodiversity and associated ecosystem services across the EU over the next ten years. Of these 95 species, 24 are plant species (Table 1).

Table 1. Twenty four alien plant species that were found by the study to represent a very high (bold) or high risk to the EU within the next ten years.

Species	Family	Native range	Risk score
Alternanthera philoxeroides (EPPO A2 List)	Amaranthaceae	South America	625
Gymnocoronis spilanthoides (EPPO Observation List)	Asteraceae	Asia/South America	625
Lygodium japonicum	Lygodiaceae	Asia	625
Andropogon virginicus (EPPO Observation List)	Poaceae	North America	500
Celastrus orbiculatus	Celastraceae	Asia	500
Cortaderia jubata	Poaceae	South America	500
Euonymus fortunei	Celastraceae	Asia	500
Euonymus japonicus	Celastraceae	Asia	500
Lespedeza juncea	Fabaceae	Asia/Australia	500
Ligustrum sinense	Oleaceae	Asia	500
Lonicera maackii	Caprifoliaceae	Asia	500
Lonicera morrowii	Caprifoliaceae	Asia	500
Microstegium vimineum (EPPO A2 List)	Poaceae	Asia	500
Prosopis juliflora	Fabaceae	North/South America	500
Prunus campanulata	Rosaceae	Asia	320
Rubus rosifolius	Rosaceae	Asia/Australia	320
Triadica sebifera	Euphorbiaceae	Asia	300
Cinnamomum camphora	Lauraceae	Asia	400

Species	Family	Native range	Risk score
Clematis terniflora	Ranunculaceae	Asia	400
Ehrharta calycina	Poaceae	Africa	400
Sphagneticola trilobata	Asteraceae	South America	400
Chromolaena odorata	Asteraceae	South America	320
Cryptostegia grandiflora	Apocynaceae	Madagascar	320
Albizia lebbeck	Fabaceae	Asia/Australia	300

Source: EU website
http://ec.europa.eu/environment/nature/invasivealien/docs/Prioritising%20prevention%20efforts%20through%20horizon%20scanning.pdf

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