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CONTENTS ***Pests & Diseases***

Invasive Plants

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2015/144 First report of *Xylella fastidiosa* in France

The NPPO of France recently informed the EPPO Secretariat of the first record of *Xylella fastidiosa* (EPPO A1 List) on its territory. During an official visual inspection, carried out in the framework of the surveillance programme against *X. fastidiosa*, a hedge of 31 desiccated plants of *Polygala myrtifolia* was observed on 2015-07-20, on the island of Corsica. This hedge was located along a wall, near a parking lot, in a commercial area of the municipality of Propriano (Corse du Sud department). Samples were collected and tested (real-time PCR, IF) by the ANSESreference laboratory. The identity of the bacterium was confirmed on 2015-07-22 and serological tests revealed a high concentration of the bacterium in tested plant tissues. The isolation of the bacterium on growing medium is under way and results will probably be obtained within 3 to 4 weeks. It is suspected that infected *P. myrtifolia* plants had been imported from another EU member state, but a study is being carried out to confirm this. All infected *P. myrtifolia* plants were destroyed by burning on 2015-07-23.
In accordance with a contingency plan, official phytosanitary measures were immediately taken to eradicate the disease (e.g. insecticide treatments, plant destruction). An infected area with a radius of 100 m around infected plants has been demarcated, as well as a buffer zone with a 10 km radius. Further studies are being made to determine the extent of the infected area. All known host plants of *X. fastidiosa* located in the infected area, as well as any plant showing suspicious symptoms, are being destroyed. In the infected area, the following host plants were present: *Rosmarinus officinalis, Westringia, Polygala myrtifolia* and *Olea europaea* (as explained above, only *P. myrtifolia* plants were found to be infected). On 2015-07-22, insects were collected by aspiration and specimens are being identified by the entomology laboratory of Anses. Finally, an information campaign has been launched, in particular to warn passengers that they should not bring plants into Corsica.
The pest status of *Xylella fastidiosa* in France is officially declared as:
Corsica: Transient, actionable, under eradication.
Mainland: Absent, intercepted only.

Source: NPPO of France (2015-07).

INTERNET
Avis aux voyageurs pour la Corse
http://www.gouvernement.fr/partage/4876-corse-avis-aux-voyageurs-transportant-des-vegetaux
Arrêté du 24 juillet 2015 définissant une zone délimitée vis-à-vis de *Xylella fastidiosa* et les mesures de lutte applicables
http://www.corse-du-sud.gouv.fr/IMG/pdf/Arrete_24_juillet_-_XF.pdf

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

2015/145 Publication of the EU measures against *Xylella fastidiosa*

Following the recent outbreak of *Xylella fastidiosa* (EPPO A1 List) in Italy (EPPO RS 2013/184), specific phytosanitary measures have been published by the European Union to prevent the introduction and spread of the bacterium in the EU territory. EU member states will have to conduct annual surveys to verify the presence or absence of *X. fastidiosa.* The detailed and specific measures which should be taken in infected areas, as well as in the case of new outbreaks, are specified. Restrictions on the movements of known host plants of *X. fastidiosa* (listed in an Annex) within the EU are also provided. The

introduction of plants for planting, other than seeds, of *Coffea* originating from Costa Rica and Honduras, is prohibited, and restrictions on the introduction of listed host plants from third countries are specified. The full text of the EU Decision can be downloaded from the Internet:

Commission Implementing Decision (EU) 2015/789 of 18 May 2015 as regards measures to prevent the introduction into and the spread within the Union of *Xylella fastidiosa* (Wells *et al*.) (notified under document C(2015) 3415).
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015D0789&from=EN

Source: EPPO Secretariat (2015-07).

Additional key words: regulations, EU **Computer codes:** XYLEFA

2015/146 *Ralstonia solanacearum* race 3 biovar 2 detected in New Caledonia.

The presence of *Ralstonia solanacearum* race 3 biovar 2 (EPPO A2 List) was recently detected in New Caledonia. The bacterium was found in imported seed potatoes which had been planted in La Foa and Bourail (Province Sud). An infection was suspected when cutting seed potatoes before sowing, and the identity of the bacterium was confirmed in mid-June 2015 by the ANSES plant health laboratory in Angers (FR). Eradication measures were ordered by the New Caledonian authorities. The relevant seed potato variety will be destroyed, and a survey will be done in order to destroy volunteer potato plants.
The pest status of *Ralstonia solanacearum* in New Caledonia is officially declared as: **Present, under eradication.**

Source: IPPC website. Official Pest Reports – New Caledonia (NCL-02/1 of 2015-08-17) *Ralstonia solanacearum* bv2, race 3 in New Caledonia.
https://www.ippc.int/en/countries/new-caledonia/pestreports/2015/08/ralstonia-solanacearum-bv2-race-3-in-new-caledonia/

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

2015/147 Maize lethal necrosis: an emerging disease in Africa

Maize lethal necrosis is an emerging disease of maize (*Zea mays*) crops in Africa which is caused by a combination of *Maize chlorotic mottle virus* (*Machlomovirus*, MCMV) with a maize-infecting Potyviridae, such as *Sugarcane mosaic virus* (*Potyvirus,* SCMV)*, Maize dwarf mosaic virus* (*Potyvirus*, MDMV), or *Wheat streak mosaic virus* (*Tritimovirus*, WSMS). Early symptoms are leaf mottling and chlorosis which can be followed by leaf deformation and extensive necrosis. Stems can also be deformed. Severely affected plants have small cobs with little or no grain production. Infection rates and impact on yield can be very high, and in some cases total loss of maize crops has been observed. It is suspected that this disease is transmitted by insect vectors (such as maize thrips, rootworms, or leaf beetles), and possibly by seeds (at a low rate). Since its initial discovery in Kenya in 2011, maize lethal necrosis has been reported from other African countries: Democratic Republic of Congo, Ethiopia, Mozambique, Rwanda, South Sudan, Tanzania, and Uganda. Research is being carried out to better understand the biology and epidemiology of this severe disease, and to develop control strategies.

Source: Adams IP, Harju VA, Hodges T, Hany U, Skelton A, Rai S, Deka MK, Smith J, Fox A, Uzayisenga B, Ngaboyisonga C, Uwumukiza B, Rutikanga A, Rutherford M, Ricthis B, Phiri N, Boonham N (2014) First report of maize lethal necrosis disease in Rwanda. *New Disease Reports* **29**, 22. [http://dx.doi.org/10.5197/j.2044-0588.2014.029.022]

FAO. Food Security and Nutrition Working Group. Maize lethal necrosis disease (MLND) – a snapshot. http://www.fao.org/fileadmin/user_upload/emergencies/docs/MLND%20Snapshot_FINAL.pdf

IPPC website. Official Pest Reports
- Kenya (KEN-02/1 of 2014-06-27) Status of maize lethal necrosis disease (MLND) in Kenya. https://www.ippc.int/en/countries/Kenya/pestreports/2014/06/status-of-maize-lethal-necrosis-disease-mlndin-kenya/
– Rwanda (RWA-01/1 of 2015-07-15) New pest of maize: maize lethal necrosis in Rwanda. https://www.ippc.int/en/countries/rwanda/pestreports/2015/07/new-pest-of-maize-maize-lethal-necrosis-in-rwanda/
– Uganda (UGA-01/2 of 2013-06-19) New pest of maize: maize lethal necrosis in Uganda. https://www.ippc.int/en/countries/Uganda/pestreports/2013/04/new-pest-of-maize-maize-lethal-necrosis-in-uganda/

ProMed postings
- posting (no. 20150130.3130105 of 2015-01-29) Lethal necrosis, maize - Ethiopia: 1st report. http://www.promedmail.org/direct.php?id=3130105
- posting (no 20140918.2782853 of 2014-09-18) Lethal necrosis, maize - Tanzania: (Manyara). http://www.promedmail.org/direct.php?id=2782853
- posting (no. 20140604.2518403 of 2014-06-04) Lethal necrosis, maize - Rwanda: 1st report (Northern Province) http://www.promedmail.org/direct.php?id=2518403
- posting (no. 20131004.1983210 of 2013-10-04) Lethal necrosis, maize - Mozambique: 1st report. http://www.promedmail.org/direct.php?id=1983210
- posting (no. 20130403.1620327 of 2013-04-03) Lethal necrosis, maize - Uganda, Tanzania: 1st reports. http://www.promedmail.org/direct.php?id=1620327
- posting (no. 20130123.1510727 of 2013-01-23) Lethal necrosis, maize - Africa: 1st report (Kenya). http://www.promedmail.org/direct.php?id=1510727

Wangai AW, Redinbaugh MG, Miano DW, Leley PK, Dasina M, Mahuku G, Scheets K, Jeffers D (2012) First report of *Maize chlorotic mottle virus* and Maize lethal necrosis in Kenya. *Plant Disease* **96**(10), 1582-1583.

Additional key words: new pest

Computer codes: MCMV00, MDMV00, SCMV00, WSMV00, CD, ET, MZ, RW, SS, TZ, UG

2015/148 *Andean potato latent virus* (APLV) split into *Andean potato latent virus* (APLV) and Andean potato mild mosaic virus (APMMV)

Andean potato latent virus (APLV) belongs to the genus *Tymovirus* and was included on the EPPO A1 List in 1978. In 2013, molecular studies of several isolates of APLV showed that they corresponded in fact to two distinct species: *Andean potato latent virus* (APLV) and a new species for which the name Andean potato mild mosaic virus was proposed. Usually APLV is latent but occasionally it can cause chlorotic netting of minor veins, mild or even severe mosaic. APMMV is usually symptomless or in rare cases shows mild mosaic. The implications these taxonomic changes have on the categorization and geographical distribution of both viruses are being discussed within EPPO. It has been proposed to add APMMV to the EPPO A1 List, but this remains to be approved by EPPO Council.

Source: Kreuze J, Koening R, de Souza J, Vetten HJ, Muller G, Flores B, Ziebell H, Cuella W (2013) The complete genome sequences of a Peruvian and a Colombian isolate of Andean potato latent virus and partial sequences of further isolates suggest the existence of two distinct potato-infecting tymovirus species. *Virus Research* **173**(2), 431-435.

Additional key words: taxonomy **Computer codes:** APLV00, APMMV0

2015/149 *Heterobasidion irregulare* detected for the first time in Minnesota (US)

The presence of *Heterobasidion irregulare* (EPPO Alert List) has recently been detected for the first time in Minnesota (US). During a survey conducted in red pine (*Pinus resinosa*) plantations that had been previously thinned in Southeastern Minnesota, groups of dead and dying trees, occurring in a circular pattern, were observed. Samples were collected from dead and dying trees, and obtained from the main stem at and below ground line and from roots. Laboratory analysis (isolation on growing media, morphological characteristics, PCR, sequencing) confirmed the identity of the fungus. It is concluded that because *P. resinosa* is an important tree species in Minnesota covering approximately 270 000 ha (662 000 acres) of forest, management strategies for controlling this disease should be implemented in Minnesota.

Source: Blanchette RA, Held BW, Mollov D, Blake J, d'Amato AW (2015) First report of *Heterobasidion irregulare* causing root rot and mortality of red pines in Minnesota. *Plant Disease* **99**(7), p 1038.

Additional key words: detailed record **Computer codes:** HETEIR, US

2015/150 Incursion of *Platynota rostrana* in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of the first report of *Platynota rostrana* (Lepidoptera: Tortricidae) on its territory. In 2015-06-10, during a post-import inspection, a single 3rd instar larva of *P. rostrana* was found on *Dracaena marginata bicolor* grown in one compartment of a glasshouse located in the municipality of Lansingerland. This compartment of 4 500 m² contained in total 23 105 *Dracaena marginata,* 5 875 *Dracaena marginata bicolor* and 300 *Areca* ornamental plants for planting. During a follow-up survey carried out two days later, 2 other larvae, 1 empty pupal case and 1 pupa were found. The identity of the pest was confirmed in 2015-06-10 on the basis of morphological characteristics and DNA analysis. The origin of this introduction is unknown but it is suspected to be linked with imports of plants for planting from Costa Rica. The NPPO recalled that interceptions of *P. rostrana* had previously been made in the Netherlands. In 2013-11-04, 1 larva was found on *Schefflera* plants imported from Costa Rica. In 2015-06-15, *P. rostrana* was intercepted on 2 imported consignments of *Dracaena marginata* plants for planting from Costa Rica.
Phytosanitary measures were immediately taken to eradicate the pest. Chemical treatments were performed. A light trap and five pheromone traps were placed to verify whether any adults were still present. All plants for planting suspected to be infested in the glasshouse compartment were visually inspected. Plants were only released to final consumers. The empty compartment will be disinfected before any new plants can be grown in it. As no new specimens were detected, the NPPO of the Netherlands considered that *P. rostrana* has been eradicated.

The pest status of *Platynota rostrana* in the Netherlands is officially declared as: **Absent, pest found present but eradicated.**

Source: NPPO of the Netherlands (2015-06).
NVWA website.
Pest Reporting. Insects.
https://www.nvwa.nl/onderwerpen/english/dossier/pest-reporting/pest-reports
QuickScan
https://www.nvwa.nl/onderwerpen/english/dossier/pest-risk-analysis/quick-scans

Additional key words: new record, incursion, eradication **Computer codes:** PLAARO, NL

2015/151 First report of the eucalyptus leaf beetle *Paropsisterna selmani* in the United Kingdom and in Ireland

The NPPO of the United Kingdom recently informed the EPPO Secretariat of the first record of *Paropsisterna selmani* (Coleoptera: Chrysomelidae) on its territory. An infestation was found on several species of *Eucalyptus* in a botanical garden in Surrey (Southeastern England). The identity of the pest was confirmed by morphological means at Fera. Several eucalyptus plants were infested but the full extent of the infestation remains to be determined. The source of this introduction is unknown and is currently being investigated. No statutory action is being taken against *P. selmani*. However, the botanical garden will be surveyed by staff members of the garden to determine the extent of the infestation. Although one unconfirmed photo of the beetle was taken in a garden in London in 2012, this is the first confirmed report of *P. selmani* in the United Kingdom.
The pest status of *Paropsisterna selmani* in the United Kingdom is officially declared as: **Present, localised.**

Paropsisterna selmani has recently been described as a new species (Reid and de Little, 2013). This species, originating from Australia, was first described on the basis of specimens collected from Tasmania (AU) and Ireland on *Eucalyptus nitens*. In 2007, the pest was found attacking cultivated *Eucalyptus* species in county Kerry, Ireland, but at that time it was tentatively identified as *Chrysophtharta gloriosa* (note: the genus *Chrysophtharta* has now been included into the genus *Paropsisterna*). *P. selmani* is widespread in eastern and central parts of Tasmania where it has been collected from native Tasmanian eucalyptus species (*E. brookeriana, E. dalrympleana, E. rubida* and *E. gunnii*), as well as on the exotic species *E. nitens* used in plantations. In Ireland, *P. selmani* has been collected on many eucalyptus species (*E. glaucescens, E. globulus, E. gunnii, E. johnstonii, E. moorei, E. nicholii, E. nitens, E. parvula, E. pauciflora, E. perriniana, E. pulverulenta, E. vernicosa,* and *E. viminalis*).

In Tasmania, adult beetles emerge from hibernation in spring, feed on foliage, and mate. Oviposition continues through summer to early autumn. Eggs are pale yellow and laid in groups of 5-15 on the leaf blade. Larvae feed on foliage and when fully developed, they drop to the ground where pupation occurs in the soil under host trees. Teneral adults emerge in autumn and feed prior to overwintering. In Ireland, field observations have shown that after the overwintering period, adults appeared on the foliage in April, and that adults that had emerged during the growing season were still active on the foliage in early November. The first egg masses and larvae were observed in early May. Teneral adults emerged in late June and again in late July/early August.

P. selmani is a pest in eucalyptus plantations in both Tasmania and Ireland where it can cause significant leaf defoliation. Both adult and larvae feed on the new foliage. Feeding activity results in characteristic notching in the leaves and disbudded shoot tips. Chronic defoliation and consumption of buds can have a long-term effect on tree growth. Leaf consumption on eucalyptus species grown for the production of ornamental cut-foliage has significant economic impact, as the end product is unmarketable. *P. selmani* is slowly spreading in Ireland (found in counties Kerry and Cork). Finally, it can be recalled that another eucalyptus leaf beetle, *Paropsisterna bimaculata* (= *Chrysophtharta bimaculata* – Tasmanian eucalyptus leaf beetle – formerly EPPO Alert List) had been intercepted several times by the United Kingdom on tree ferns (*Dicksonia antarctica*) imported from Australia. These plants are not hosts of *P. bimaculata* but could transport the pest (hitchhiking) over long distances. Although, the origin of the introduction of *P. selmani* into Europe is not known, imports of plants for planting or parts of plants from Australia most probably act as a pathway for this type of eucalyptus defoliators. *P. selmani* can now be added to an already rather long list of exotic eucalyptus pests which have been introduced into the EPPO region during the last decades (e.g. *Blastopsylla occidentalis, Ctenarytaina eucalypti, Glycaspis brimblecombei, Ophelimus maskelli, Thaumastocoris peregrinus, Phoracantha recurva).*

Source: Fanning PD, Baars JR (2014) Biology of the Eucalyptus leaf beetle *Paropsisterna selmani* (Chrysomelidae: Paropsini): a new pest of *Eucalyptus* species (Myrtaceae) in Ireland. *Agricultural and Forest Entomology* **16**, 45–53.

NPPO of the United Kingdom (2015-07).

Reid CA, de Little DW (2013) A new species of *Paropsisterna* Motschulsky, 1860, a significant pest of plantation eucalypts in Tasmania and Ireland (Coleoptera: Chrysomelidae: Chrysomelinae). *Zootaxa* **3681**(4), 395-404.

Additional key words: new record, new pest **Computer codes:** PSISSE, GB, IE

2015/152 *Scaphoideus titanus* occurs in Slovakia

The presence of *Scaphoideus titanus* (Hemiptera: Cicadellidae), the main vector of flavescence dorée was reported for the first time from Slovakia in 2015 (see EPPO RS 2015/101). Recently, the NPPO of Slovakia officially confirmed the occurrence of this pest on its territory. In July 2015, specimens were caught in yellow traps in the municipality of Tibava (Sobrance district), in the eastern part of the country. The identity of the pest was confirmed on the basis of its morphological characteristics. No official control measures were taken.

The pest status of *Scaphoideus titanus* occurs in Slovakia is officially declared as: **Present, only in some areas where host crop(s) are grown.**

Source: NPPO of Slovakia (2015-08).

Additional key words: detailed record **Computer codes:** SCAPLI, SK

2015/153 Taxonomic studies suggest that *Leucinodes orbonalis* does not occur in Africa and that other new *Leucinodes* species are present

The taxonomy of African species of *Leucinodes* and *Sceliodes,* based on morphological characters in wing pattern, genitalia and larvae as well as mitochondrial DNA, has been studied. Larvae belonging to these genera are internal feeders of solanaceous fruits, causing damage to cultivated plants such as aubergines (*Solanum melongena, S. aethiopicum*). Among *Leucinodes*, *Leucinodes orbonalis* is a species that was first described from specimens collected in India and Java (Indonesia). According to current knowledge, it was widely distributed in Asia and sub-Saharan Africa. In addition, *L. orbonalis* has been regularly intercepted by EPPO member countries on aubergines imported from Asia and Africa. Results of these taxonomic studies have led to the following conclusions:

- The genus *Sceliodes* should be synonymized with *Leucinodes*.
- *L. orbonalis* is apparently absent from Africa as no specimens collected in Africa belonged to this species.
- African *Leucinodes* correspond to several species, most of which are new to science: *L. africensis, L. ethiopica, L. kenyensis, L. laisalis (=Sceliodes laisalis, L. translucidalis), L. malawiensis, L. pseudorbonalis, L. rimavallis,* and *L. ugandensis.*
- Most *Leucinodes* specimens found in solanaceous fruits imported from Africa into Europe during the last 50 years belong to *L. africensis,* and to a lesser extent to *L. laisalis, L. pseudorbonalis* and *L. rimavallis*.

***Leucinodes africensis* sp. nov.**
Distribution: Angola, Congo (Democratic Rep. of), Côte d'Ivoire, Gabon, Ghana, Liberia, Nigeria, and Tanzania. It has been intercepted by the United Kindgom and the Netherlands on plant imports from Ghana and Zimbabwe.
Host plants: *S. aethiopicum, S. lycopersicon, S. melongena*.

***Leucinodes ethiopica* sp. nov.**
Distribution: Eritrea, Ethiopia, Saudi Arabia.
Host plants: unknown.

***Leucinodes kenyensis* sp. nov.**
Distribution: Kenya, Zimbabwe (this record still needs to be confirmed).
Host plants: *Withania somnifera*.

Leucinodes laisalis
Distribution: Côte d'Ivoire, Ghana, Kenya, Morocco, Nigeria, Senegal, South Africa, Tanzania. Recorded in Europe, in Portugal and Spain.
Host plants: *S. incanum, S. anguivi, S. macrocarpon, S. melongena, S. linnaeanum, S. lycopersicon* and *Capsicum annuum.*

***Leucinodes malawiensis* sp. nov.**
Distribution: Malawi.
Host plants: unknown.

***Leucinodes pseudorbonalis* sp. nov.**
Distribution: Angola, Senegal, Uganda. It has been intercepted by the Netherlands and the United Kingdom.
Host plants: *S. aethiopicum, S. melongena.*

***Leucinodes rimavallis* sp. nov.**
Distribution: Burundi, Congo (Democratic Rep. of), Kenya, Rwanda, South Africa. It has been intercepted by the Netherlands on plant imports from Uganda (no specimens from Uganda were included in the present study).
Host plants: *S. melongena, Withania somnifera.*

***Leucinodes ugandensis* sp. nov.**
Distribution: Ethiopia, Kenya, Somalia, South Sudan, Uganda.
Host plants: *Solanum* spp.

Source: Mally R, Korycinska A, Agassiz DJL, Hall J, Hodgetts J, Nuss M (2015) Discovery of an unknown diversity of *Leucinodes* species damaging Solanaceae fruits in sub-Saharan Africa and moving in trade (Insecta, Lepidoptera, Pyraloidea). *ZooKeys* **472,** 117-162.

Additional key words: taxonomy **Computer codes:** LEUIAF, LEUIET, LEUIKE, LEUILA, LEUILA, LEUIMA, LEUIOR, LEUIPS, LEUIRI, LEUIUG

2015/154 *Dendroctonus mesoamericanus*: a new species of bark beetle

A new species of bark beetle, *Dendroctonus mesoamericanus* sp. nov. (Curculionidae: Scolytinae – Mesoamerican pine beetle) has recently been described from the state of Chiapas in Mexico. This new species belongs to the *D. frontalis* complex which includes the following 6 species: *D. adjunctus* (EPPO A1 List), *D. approximatus, D. brevicomis* (EPPO A1 List), *D. frontalis* (EPPO A1 List), *D. mexicanus* and *D. vitei*.
Identifications based on morphological characteristics and DNA sequencing of 289 adult specimens collected from Southern Mexico and Central America indicated that *D. mesoamericanus* occurs in the following countries: Belize, El Salvador, Guatemala, Honduras, Nicaragua, Mexico (states of Chiapas, Oaxaca and Michoacán). Within this geographical range, the distribution of *D. mesoamericanus* appears to be entirely sympatric with *D. frontalis*.
D. mesoamericus has been observed at elevations ranging from 311 m to 2600 m on several pine species such as: *Pinus caribaea, P. devoniana, P. hartwegii, P. maximinoi, P. montezumae, P. oocarpa, P. pringlei* and *P. pseudostrobus*. In general, *D. mesoamericanus* was found infesting pine trees together with *D. frontalis*. It was observed that *D. mesoamericanus* primarily colonizes the bottom 1-3 metres of the trunk whereas *D. frontalis* is concentrated in the middle-upper part of the trunk. More studies are needed to evaluate the aggressiveness of *D. mesoamericanus* and its potential capacity to kill pine trees.

Source: Armendáriz-Toledano F, Niño A, Sullivan BT, Kirkendall LR, Zúñiga G (2015) A new species of bark beetle, *Dendroctonus mesoamericanus* sp. nov. (Curculionidae: Scolytinae), in Southern Mexico and Central America. *Annals of the Entomological Society of America* **108**(3), 403-414.

Additional key words: new pest, taxonomy **Computer codes:** DENCMS

2015/155 The International Plant Sentinel Network

The International Plant Sentinel Network (IPSN) is a global network of botanic gardens, arboreta, plant health institutes and NPPOs working together to provide an early warning system for new and emerging pests. Launched in 2013 the IPSN is a 3 year Euphresco project coordinated by Botanic Gardens Conservation International (BGCI), alongside a full list of European partners which can be found on the IPSN website. IPSN member gardens will monitor the non-native species, the 'sentinels', in their collection for damage by pests and diseases and report back to the plant's country of origin. The IPSN has already produced a standard form for botanic gardens and arboreta (the IPSN Plant Health Checker) to record general health problems observed in sentinel (exotic) plants. General guidance is also provided on how to observe plant pests and diseases, and on how to prepare samples for diagnostic purposes. Posters on emerging pest and disease threats to trees in the UK have been prepared for oak (*Agrilus auroguttatus, Ceratocystis fagacearum, Enaphalodes rufulus*), ash (*Agrilus planipennis, Hymenoscyphus fraxineus, Xylosandrus germanus*), and pine (*Thaumetopoea pityocampa, Dothistroma septosporum, Monochamus galloprovincialis*).

The IPSN:

- seeks and shares examples of best practice;
- provides standardised methodologies for monitoring and surveying of damaging plant pests and pathogens;
- provides training materials to increase capability among member gardens;
- facilitates access to diagnostic support;
- is developing databases in order to share and store information; and
- will communicate scientific evidence with NPPOs.

The IPSN is now looking for additional European organisations, interested in working in sentinel research, to contribute to a new Euphresco project aimed at developing the network further.

For more information:
IPSN Coordinator: Miss Ellie Barham - ellie.barham@bgci.org
Website: www.plantsentinel.org
Twitter: @IPSN_BGCI

Source: EPPO Secretariat (2015-07).

Additional key words: communication **Computer codes:**

2015/156 Online questionnaire on the EPPO Reporting Service

As agreed by the EPPO *ad hoc* Panel on Plant Protection Information, an online questionnaire has just been launched. The objectives are to better know who the readers of the EPPO Reporting Service are, and to improve this information service.

You are kindly invited to fill-in this short questionaire which should not take more than 5 minutes. The results will be presented to the EPPO *ad hoc* Panel on Plant Protection Information at its next meeting in November 2015 and published in the EPPO Reporting Service.

http://survey2.eppo.int/qst/48D2CE

Thank you for participating in this questionnaire!

Source: EPPO Secretariat (2015-08).

2015/157 *Azolla filiculoides* invasion in the Doñana marshland (Spain)

The Doñana marshland in Southwest Spain is one of the most extensive protected marshland networks in Europe covering over 360 km^2. *Azolla filiculoides* (Azollaceae: EPPO Observation List of Invasive Alien Plants) an invasive aquatic fern species native to North America was first recorded in the marsh in 2001. Since this first record the occurrence of *A. filiculoides* has been mapped throughout the marsh using medium resolution remote sensing Landsat satellites. Since 2001, the annual variation in the cover of *A. filiculoides* has varied considerably ranging from approximately 400 ha in 2001 to 1600 ha in 2007 where cover was at its highest. Over ten years when the mapping of *A. filiculoides* took place, the average minimum temperature during the summer and winter months was shown to increase. In this study it was shown that there was a positive relationship between the annual cover of *A. filiculoides* and air temperature in the winter months. Warmer winter temperatures may promote the growth of *A. filiculoides* early in the season before the spring establishment of submerged macrophytes. At present Azolla management has not been attempted within the Doñana marshland – the Azolla biological control agent *Stenopelmus rufinasus* (Coleoptera: Curculionidae) has not been recorded at the site but it is present in the wider vicinity. The potential negative effect of *A. filiculoides* on native macrophyte abundance necessitates careful monitoring of the population and integrated control programmes throughout the marshland network.

Source: Espinar JL, Días-Delgado R, Bravo-Utrera MA, Vilà (2015) Linking *Azolla filiculoides* invasion to increased winter temperatures in the Doñana marshland (SW Spain). *Aquatic Invasions* **10**, 17–24.

Additional key words: invasive alien plants **Computer codes:** AZOFI, ES

2015/158 Invasive plant species in Sweden

In Sweden there are an estimated 721 established vascular plants and bryophyte species known to have been introduced since the year 1700. Evaluating these species for their invasive potential is an essential prerequisite for determining where limited resources should be applied to achieve the most value for money. Those species which are regarded as the most invasive and detrimental to native biodiversity and ecosystem services should, where feasible, be managed. The authors of this study assigned an invasion concern value to each of the 721 species. The invasion concern value was calculated by first obtaining individual scores for 6 components: (A) competitive ability in natural vegetation, (B) current population density of the species, (C) dispersal capacity, (D) potential hybridization, (E) time since introduction and (F) distance to native range. Following the scoring of these 6 components the invasion concern value was calculated by:

Invasion concern value (I) = (A + B + C + D) x (E + F) – 4

Thirty of the 721 species obtained an invasive concern value greater than 20 (Table 1) and 150 obtained an index value greater than 15. Of the 30 most problematic species a large number are shrub species (*Rubus* and *Rosa* species for example) which can form thick impenetrable stands outcompeting native biodiversity. Only one aquatic species features in the top 30 – *Elodea nuttallii* – though other invasive alien aquatic species appear in the most problematic 150 species.

Table 1 Thirty established alien plant species from Sweden which obtained an Invasion concern value (I) greater than 20.

Species	**Family**	**Native range**	**I**
Campylopus introflexus	Dicranaceae	Southern hemisphere	28
Rosa rugosa	Rosaceae	Asia	26.6
Epilobium adenocaulon	Onagraceae	Americas/Asia	26.6
Lamiastrum galeobdolon subsp. *argentatum*	Lamiaceae	Europe	24.9
Orthodontium lineare	Orthodontium	Southern hemisphere	24
Rubus armeniacus	Rosaceae	Americas	23.2
Calystegia sepium subsp. *spectabilis*	Convolvulaceae	North & South hemisphere	23.2
Solidago canadensis (EPPO List of Invasive Alien Plants)	Asteraceae	North America	23.2
Prunus serotina (EPPO List of Invasive Alien Plants)	Rosales	Americas	23
Epilobium ciliatum	Onagraceae	Americas	23
Prunus virginiana	Rosales	North America	22.6
Elodea nuttallii (EPPO List of Invasive Alien Plants)`	Hydrocharitaceae	North America	22.6
Lamiastrum galeobdolon subsp. *montanum*	Lamiaceae	Europe	21.6
Rubus montanus	Rosaceae	Europe	21.6
Cornus sericea (EPPO List of Invasive Alien Plants)	Cornaceae	North America	21.6
Amelanchier confusa	Rosaceae	North America	21.5
Trifolium pratense var. *sativum*	Fabaceae	Europe/Asia	21.5
Amelanchier spicata (EPPO List of Invasive Alien Plants)	Rosaceae	North America	21.5
Impatiens glandulifera (EPPO List of Invasive Alien Plants)	Balsaminaceae	Asia	21.5
Sorbus graeca	Rosaceae	Europe	21.5
Spiraea latifolia	Rosales	North America	21.2
Cotula coronopifolia	Asteraceae	South Africa	21.2
Solidago gigantea (EPPO List of Invasive Alien Plants)	Asteraceae	North America	21.2
Prunus pensylvanica	Rosales	North America	20.7
Rubus spectabilis	Rosaceae	North America	20.7
Iris versicolor	Iridaceae	North America	20.7
Glyceria striata	Poaceae	North America	20.7
Glyceria grandis	Poaceae	North America	20.7
Senecio inaequidens (EPPO List of Invasive Alien Plants)	Asteraceae	South Africa	20.7
Lysichiton americanus (EPPO Observation List of Invasive Alien Plants)	Araceae	North America	20.7

Source: Tyler T, Karlsson T, Sahlin U, Sundberg S (2015) Invasive plant species in the Swedish flora: developing criteria and definitions, and assessing the invasiveness of individual taxa. *Nordic Journal of Botany* **33**, 300-317.

Additional key words: invasive alien plants

Computer codes: AMECO, AMESP, CAGSP, CRWSR, CULCO, ELDNU, EPIAC, EPICT, GLYGR, GLYST, IPAGL, IRIVE, KMPIN, LAMAR, LSTGM, LSYAM, OTDLI, PRNPE, PRNSO, PRNVG, ROSRG, RUBAE, RUBCN, RUBSP, SENIQ, SOOCA, SOOGI, SOUGC, SPVLF, TRFPS, SE

2015/159 Evidence for recent evolution in *Microstegium vimineum* in North America

Microstegium vimineum (Poaceae; EPPO List of Invasive Alien Plants) is an annual grass species native to Asia and recorded as invasive in North and Central America, and within the EPPO region (Azerbaijan, Georgia, Russia (Northern Caucasus) and Turkey). To evaluate if plant growth parameters varied in response to abiotic parameters, seed was collected from 3 distinct mid-Atlantic populations in the US. Under controlled conditions, growth experiments were conducted. Plant replicates were exposed to four environmental treatments where each treatment had varying levels of sunlight and nutrient addition. Plant growth parameters were measured at the end of the experiment where biomass measurements were taken for leaves, stems, roots and seeds. In addition total leaf area was recorded for each plant replicate. Significant effects were observed for leaf area, leaf weight, stem weight and total weight as a function of population, light and nitrogen levels. The degree of variation in seed production and biomass among populations grown in the experiment was highly correlated to growing season length and cumulative day degrees recorded near each population location indicating adaptive evolution. This high level of phenotypic plasticity would help the species to colonies diverse ecological niches increasing its invasiveness in fragmented habitats. In 2014, EPPO conducted a pest risk assessment on *Microstegium vimineum* and the PRA is currently undergoing peer review.

Source: Ziska LH, Tomecek MB, Valerio M, Thompson JP (2015) Evidence for recent evolution in an invasive species, *Microstegium vimineum*, Japanese stiltgrass. *Weed Research* **55**, 260-267.

Additional key words: invasive alien plants

Computer codes: MCGVI

2015/160 Alien flora of Rhodes island (Greece)

The alien flora of Greece includes 272 taxa of which 250 are considered established. Here the authors present the alien flora of the Island of Rhodes which is the largest of the Dodecanese islands located in the Southeast Aegean region. Rhodes Island is 1400 km^2 with a semi-arid Mediterranean climate (short mild wet winter and a long hot dry summer). The alien flora of Rhodes comprises 114 taxa of vascular plants and marine algae representing 55 families. Of the 101 vascular plant taxa 78 are established (naturalised) and 23 are casual. The majority are herbaceous species (59 taxa) with a smaller number of trees (26 taxa) and shrubs (15 taxa). For all alien taxa recorded the majority originate from the Americas. In 1987 a survey of Rhodes Island identified 40 naturalised vascular plant species – whereas this present study has identified 78 which corresponds to a 95 % increase in naturalised vascular plants. As a result of the current study 27 alien flora were recorded for the first time on the island of Rhodes (Table 1). Of these 27 taxa, 14 are new additions to the flora of Greece and one – *Phymosia umbellata* - is recorded for the first time in Europe. The threat to local biodiversity is particularly high in island ecosystems and the threat to the native flora of Rhodes Island is no exception. Some of the alien flora of

Rhodes have been shown to decrease the abundance of native species. *Arundo donax*, *Carpobrotus edulis* (EPPO List of Invasive Alien Plants), *Ipomoea indica*, *Lantana camara* and *Oxalis pes-caprae* (EPPO List of Invasive Alien Plants) have all been shown to outcompete native species. Other alien species on the island such as *Ailanthus altissima* (EPPO List of Invasive Alien Plants) alter the soil chemistry while *Agave americana* competes indirectly with native plant species for light, nutrients and space. All of the alien taxa presented in the current study should be closely monitored for both their spread on the island and impacts on native species. Management practices should be implemented for the most invasive of these species.

Table 1. First alien flora records for Rhodes Island (Greece). Species names in bold represent the first record of the species in Greece.

Species	**Family**	**Native range**	**EPPO countries***
Justicia adhatoda	Acanthaceae	S. Asia	CY, GR, MT
Yucca gloriosa	Agavaceae	Americas	GB, GR, ME, PT
Nothoscordum gracile	Alliaceae	N. America	GR, PT
Amaranthus cruentus	Amaranthaceae	Americas	GR, HU, PL, UA
Narcissus papyraceus	Amaryllidaceae	Mediterranean	native EPPO region
Thevetia peruviana	Apocynaceae	S. Africa	CY, GR
Zantedeschia aethiopica	Araceae	S. Africa	FR, GB, GR, IE, IT, PT
Washingtonia filifera	Arecaceae	N. America	CY, IT, GR
Bidens pilosa	Asteraceae	Americas	CY, ES, FR, GR, IT
Senecio angulatus	Asteraceae	S. Africa	ES, FR, GR, IT
Jacaranda mimosifolia	Bignoniaceae	S. America	ES, GR
Austrocylindropuntia subulata	Cactaceae	S. America	IT, ES, GR
Bauhinia variegata	Caesalpiniaceae	SE. Asia	GR, PT
Caesalpinia gilliesii	Caesalpiniaceae	S. America	ES, GR
Erythrina lysistemon	Fabaceae	Africa	GR, PT
Freesia leichtlinii subsp. *alba*	Iridaceae	S. Africa	GR
Brachychiton populneus	Malvaceae	Australia	ES, GR
Hibiscus rosa-sinensis	Malvaceae	E. Asia	GR, PT
Phymosia umbellata	Malvaceae	C. America	GR
Albizia julibrissin	Mimosaceae	Asia	CY, GR, PT
Ficus microcarpa	Moraceae	Australia	IT, GR
Pittosporum tobira	Pittosporaceae	Asia	GB, GR
Cortaderia selloana	Poaceae	S. America	Widespread
Pyracantha coccinea	Rosaceae	Europe	native EPPO region
Myoporum tenuifolium	Scrophulariaceae	SE Asia	ES, GR, IT, PT
Tropaeolum majus	Tropaeolum	S. America	Widespread
Lantana camara	Verbenaceae	S. America	ES, IT, GR

* Records where the species has been recorded either as a casual or established species. Records of species have been checked in the Q-bank database, as well as the DAISIE, NOBANIS and PQR databases.

Source: Galanos CJ (2015) The alien flora of terrestrial and marine ecosystems of Rodos island (SE Aegean), Greece. *Willdenowia* **45**(2), 261–278.

Additional key words: invasive alien plants, detailed record

Computer codes: ALBJU, AMACR, BAUVA, BIDPI, BYHPO, CAEGI, CDTSE, ERZLY, FIUTH, FRELE, FYMUM, HIBRS, IACMI, IUIAD, LANCA, MYMAC, NARPA, NOTFR, OPUEX, PTUTO, PYECO, SENAN, THVPE, TOPMA, UCCGL, WATFI, ZNTAE, GR