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CONTENTS ***Pests & Diseases***

Invasive Plants

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2015/045 New NAPPO Executive Director

NAPPO (North American Plant Protection Organization) has selected Dr Stephanie Bloem to be its new Executive Director. In this role, she will manage the human and financial resources of the NAPPO Secretariat while leading the fulfilment of the NAPPO Executive Committee's strategic plan and priority goals for North America. Dr Bloem will assume the position of NAPPO Executive Director on 2015-07-01. Dr Rebecca Lee will continue as Acting Executive Director until then.

Source: NAPPO (2015-03).

Additional key words: NAPPO

2015/046 *Massicus raddei* (Coleoptera: Cerambycidae – oak longhorn beetle): addition to the EPPO Alert List

Why: the addition of *Massicus raddei* (Coleoptera: Cerambycidae) to the EPPO Alert List was suggested by the NPPO of the United Kingdom. *M. raddei* was identified during the horizon scanning of literature which has been carried out for the UK Pest Risk Register, as a serious pest of oak trees in China.

Where: *M. raddei* occurs only in Asia.
EPPO region: Russia (Far East).
Asia: China (Anhui, Fujian, Guizhou, Hebei, Heilongjiang, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Neimenggu, Shaanxi, Shandong, Shanxi, Sichuan, Yunnan, Zhejiang), Japan (Honshu, Shikoku), Korea (Dem. People's Republic of), Korea (Republic of), Russia (Far East), Taiwan, Vietnam.

On which plants: *M. raddei* mainly attacks oaks (*Quercus* spp.) and chestnuts (*Castanea* spp.). In the literature, the following species are recorded as host plants: *Castanea crenata, C. mollissima, Castanea sativa, Quercus acuta, Q. acutissima, Q. aliena, Q. dentata, Q. liaotungensis, Q. mongolica, Q. serrata, Q. variabilis.* Other tree species such as *Castanopsis cuspidata*, *Castanopsis cuspidata* var. *sieboldii*, *Morus* sp. and *Paulownia* sp. are also mentioned.

Damage: *M. raddei* is a wood borer. Damage is essentially caused by its larvae which make galleries inside tree trunks. Studies conducted in China have showed that adults of *M. raddei* can feed on sap oozing from the wounds they themselves have inflicted to trunks of *Q. mongolica*. According to the literature, infested trees show crown dieback but it is unclear whether tree mortality has been observed or not. Nevertheless, it is stated that during the last decades, outbreaks of *M. raddei* have been observed in Northeastern China (in particular in Jilin, Inner Mongolia (Neimenggu, Liaoning) on *Q. mongolica* and *Q. liaotungensis* causing ecological and economic losses. In these infested oak forests, it is estimated that 45% of the trees were attacked. Studies on the distribution pattern of *M. raddei* in the trunk of *Q. liaotungensis* have showed that larvae were rarely found in trees with a trunk diameter of less than 9 cm (and with a bark thickness < 0.5 cm), therefore suggesting that young trees are not attractive to the beetle. In the Chinese province of Liaoning, field studies concluded that 3 years were necessary for *M. raddei* to complete one generation. Six larval instars were observed with a total duration of more than 1021 days. During the first year, larvae overwinter as 2nd and 3rd larval stages, in the second year as 4th and 5th instars, and during the third winter all larvae enter the 6th instar (fully

grown larvae). The life cycle appears to be synchronous with mass adult emergence every 3 years.
Adults are large brownish longhorn beetles (approximately 35 to 52 mm long) with whitish larvae (fully grown larvae are approximately 65 mm long). Pictures can be viewed on the Internet:
http://www.zin.ru/ANIMALIA/COLEOPTERA/rus/neoradzi.htm
http://homepage3.nifty.com/kaa44/hibikoutyuunikki2014.htm

Dissemination: there is no data on the natural spread of the insect but adults can fly. Over long distances, as is the case for other wood borers, *M. raddei* can be transported on wood and wood products, including wood packaging material.

Pathway: Plants for planting (trees above a certain size?), wood, wood products, packaging wood material, hitchhiking?

Possible risks: Oak and chestnut trees are widely planted in the EPPO region for forestry, and amenity purposes, as well as for fruit production in the case of *C. sativa*. In China, *M. raddei* is considered to be a pest of oaks, mainly *Q. liaotungensis* and *Q. mongolicus*. However, there is no data on the susceptibility of oak species (e.g. *Q. ilex, Q. petraea, Q. robur, Q. suber*) present in the Euro-Mediterranean region to this pest. Data is also generally lacking on the severity of damage caused by *M. raddei* (i.e. tree mortality) and its economic impact. As for other wood borers, control is rendered difficult by the hidden mode of life of the larval and pupal stages. In China, research is being carried out on the possible use of biocontrol agents (e.g. *Dastarcus helophoroides* (Coleoptera: Bothrideridae), *Sclerodermus pupariae* (Hymenoptera: Bethylidae) or *Cerchysiella raddei* (Hymenoptera: Encyrtidae)). Although there are many uncertainties on the biology, host range, and economic impact of *M. raddei*, the recent experience with the introductions of wood borers (e.g. *Anoplophora* spp., *Aromia bungii*) from Asia into the EPPO region advocates for a precautionary approach. It can be noted that although *M. raddei* does not occur in the USA, it has been included in early detection programmes for alien forestry pests at least in some states.

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EPPO RS 2015/046
Panel review date - Entry date 2015-03

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

2015/047 First report of *Aleurocanthus spiniferus* in Croatia

In May 2012, *Aleurocanthus spiniferus* (Hemiptera: Aleyrodidae – EPPO A2 List) was observed for the first time in Croatia on ornamental potted orange seedlings (*Citrus aurantium*). The pest was detected during a regular phytosanitary inspection in one nursery of a garden centre located in Split. The owner had noticed signs of the infestation at the beginning of 2012, but the pest was misidentified as a scale insect. During the inspection, leaf samples were collected and *A. spiniferus* was identified on the basis of its morphological characteristics. The origin of this infestation is unknown but it is suspected that *A. spiniferus* was introduced into Croatia with infested plant material. The Croatian NPPO has ordered the destruction of infested orange seedlings to prevent any further spread. In addition, pest specific surveys will be conducted in Croatia, in particular in the citrus-growing area of the Neretva river valley.
The situation of *Aleurocanthus spiniferus* in Croatia can be described as follows: **Transient, first found in 2012 in 1 garden centre in Split, under eradication.**

Source: Šimala M, Masten Milek T (2013) First record of the orange spiny whitefly, *Aleurocanthus spiniferus* Quaintance, 1903 (Hemiptera: Aleyrodidae), in Croatia. Poster presented at the Conference 'Zbornik Predavanj in Referatov, 11. Slovenskega Posvetovanja o Varstvu Rastlin Z Mednarodno Udelezbo (Bled, SI, 2013-03-0/06) http://dvrs.bf.uni-lj.si/spvr/2013/60Simala.pdf

Additional key words: new record **Computer codes:** ALECSN, HR

2015/048 First report of *Aleurocanthus spiniferus* in Montenegro

In October 2013, *Aleurocanthus spiniferus* (Hemiptera: Aleyrodidae – EPPO A2 List) was observed for the first time in Montenegro. The pest was found in citrus orchards in several locations in the Bay of Kotor (Boka Kotor) on the Adriatic Sea: in Baošići (on *Citrus sinensis*

and *C. reticulata*), Herceg Novi (on *C. reticulata*) and Kumbor (on *C. sinensis*). As *A. spiniferus* is a quarantine pest for the country, the NPPO of Montenegro was officially informed about its first detection and surveys of the citrus producing areas in Montenegro were carried out in October, November and December 2013. As a result, *A. spiniferus* was also found in Djnovići on a small number of *C. reticulata* and *C. limon* trees. Its pathway of introduction into Montenegro is unknown. As *A. spiniferus* has been recorded in established citrus orchards (more than 10 years old), with no recent import connection, the origin of this introduction could not be traced. However, it is assumed *A. spiniferus* has been introduced into Montenegro with imports of infested plant material.
The situation of *Aleurocanthus spiniferus* in Montenegro can be described as follows: **Present, first found in 2013 in citrus orchards in the Bay of Kotor.**

Source: Radonjić S, Hrnčić S, Malumphy C (2014) First record of *Aleurocanthus spiniferus* (Quaintance) (Hemiptera Aleyrodidae) in Montenegro. *Redia* **77**, 141-145.

Additional key words: new record **Computer codes:** ALECSN, ME

2015/049 *Ceratitis capitata* found again in Chile

In February 2015, the NPPO of Chile (Servicio Agrícola y Ganadero) officially announced that *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) has been detected on its territory. This is not the first time that *C. capitata* is detected in Chile but all previous outbreaks had been eradicated, and since 1995 the country has been officially considered as free from the pest. On 2015-01-27, a single female was caught in a trap located in the city of Iquique (Tarapacá region). A few days later, another specimen was caught in the surroundings. On 2015-03-10, it was announced that a single female was caught in a trap located in the city of Talca (Maule region). On 2015-03-25, another finding was reported near a bus terminal at La Serena (Coquimbo region). In this area, further surveys detected more specimens. As of 2015-03-30, 11 adults were caught and larvae were found on 9 sites. Phytosanitary measures (e.g. intensive surveys, trapping, insecticide treatments, restrictions on the movements of fruit) have immediately been put in place to eradicate the pest.
The situation of *Ceratitis capitata* in Chile can be described as follows: **Transient, under eradication.**

Source: INTERNET (via PestLens)
Servicio Agrícola y Ganadero (SAG) website
- SAG declara brote de mosca de la fruta en Iquique (2015-02-06). http://www.sag.cl/noticias/sag-declara-brote-de-mosca-de-la-fruta-en-iquique
- SAG detecta ejemplar de mosca del Mediterráneo en zona urbana de Talca (2015-03-10). http://www.sag.cl/noticias/sag-detecta-ejemplar-de-mosca-del-mediterraneo-en-zona-urbana-de-talca
- SAG despliega campaña de erradicación ante detección de mosca de la fruta, *Ceratitis capitata* en La Serena (2015-03-23). http://www.sag.cl/noticias/sag-despliega-campana-de-erradicacion-ante-deteccion-de-mosca-de-la-fruta-ceratitis
- Director Nacional del SAG anuncia que más de 90 personas están trabajando para el control de mosca de la fruta (2015-03-30).http://www.sag.cl/noticias/director-nacional-del-sag-anuncia-que-mas-de-90-personas-estan-trabajando-para-el-control.

Additional key words: detailed record **Computer codes:** CERTCA, CL

2015/050 First report of *Ceratitis capitata* in the Dominican Republic

In March 2015, the NPPO of the Dominican Republic confirmed that *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) has been detected on its territory. The pest was found close to the international airport of Punta Cana on an area of approximately 22 km² mainly devoted to the cultivation of sugarcane and pastures (with therefore very few host plants of *C. capitata*). Phytosanitary measures have been immediately implemented to eradicate the pest.
The situation of *Ceratitis capitata* in the Dominican Republic can be described as follows: **Transient, under eradication.**

Source: INTERNET (via PestLens)
República Dominicana. Ministerio de Agricultura.
- Agricultura establece cordón sanitario para erradicar brote focalizado en el aeropuerto de Punta Cana de la mosca del mediterráneo (2015-03-19). http://www.agricultura.gob.do/noticias/2015/03/agricultura-establece-cordon-sanitario-para-erradicar-brote-focalizado-en-el-aeropuerto-de-punta-cana-de-la-mosca-del-mediterraneo-/
- RD y Haiti acuerdan trabajar de manera conjunta para erradicar mosca del mediterraneo (2015-03-27). http://www.agricultura.gob.do/noticias/2015/03/rd-y-haiti-acuerdan-trabajar-de-manera-conjunta-para-erradicar-mosca-del-mediterraneo-/

Additional key words: new record **Computer codes:** CERTCA, DO

2015/051 First reports of *Corythauma ayyari* in Sicilia (IT), Spain, Tunisia and the United Arab Emirates

Corythauma ayyari (Hemiptera: Tingidae - jasmine lace bug) originates from Asia. This lace bug is reported as a pest of jasmine (*Jasminum* spp.) in Southern India, but other host plants are also recorded in the literature (e.g. *Althaea officinalis, Clerodendrum inerme, Eranthemum pulchellum, Hedychium, Lantana, Musa, Ocimum, Trachelospermum)*. On *Jasminum* spp., feeding by nymphs and adults results in small chlorotic spots on the upper leaf surface. Attacked leaves may curl up, desiccate and fall prematurely. During the last decade, the presence of *C. ayyari* has been reported on jasmine (*Jasminum* spp.) from Israel (2004), France (2009) and Italy (2012) (see EPPO RS 2013/057). More recently, *C. ayyari* has been observed in Sicilia (IT), Spain, Tunisia and the United Arab Emirates.

- **Sicilia (Italy)**

At the beginning of summer 2004, *C. ayyari* was found on several plants of *J. grandiflorum* cultivated in gardens and on balconies of the Southwestern part of the city of Palermo, Sicilia. In this area, at the end of the summer several plants were infested with hundreds of specimens and suffered rather severe damage (Carapezza, 2014).

- **Spain**

At the end of 2014, several specimens of *C. ayyari* were collected on *J. grandiflorum* in Puigmoltó (Sant Pere de Ribes), 45 km southwest of Barcelona (Cataluña). On 2014-09-27 and on 2014-12-06, 4 specimens (2 males and 2 females) and 24 specimens (11 males and 13 females) were found, respectively. These specimens were collected in a small private garden (10 m²) in a periurban residential area, close to natural woods and uncultivated land. It is noted that the circumstances of this finding are similar to those in Italy (a single

plant of *J. sambac* on a balcony) or France (small green area in a highway resting area) (Roca-Cusachs & Goula, 2014).

- **Tunisia**

In Tunisia, the first signs of the presence of *C. ayyari* were noticed on a plant of *J. grandiflorum* in October 2013 in the locality of M'saken. This plant showed desiccation of the foliage and low flower production. In 2014, the same plant was inspected and the first signs of infestation were seen in August 2014. By November 2014, a large part of the plant was brown and desiccated with a significant decrease in flower production. Following this first detection, the presence of *C. ayyari* was also observed during 2014 at 3 other locations (Ariana, Akouda and Kantaoui) on *J. grandiflorum* and *J. sambac*. In these other locations, no major impacts on flower production were noticed. However, considering the particular importance of jasmine in the Tunisian culture, it is considered that this invasive insect could potentially be a threat to the production of *J. grandiflorum* and *J. sambac* in Tunisia (Haouas *et al*., 2015).

- **United Arab Emirates**

According to Carapezza (2014), *C. ayyari* has recently been introduced into the United Arab Emirates but no further details could be found.

Source: Carapezza A (2014) *Corythauma ayyari* (Drake, 1933) new pest of jasmine in Italy (Heteroptera Tingidae). *Naturalista siciliano* Serie IV **38**(2), 381-384.

Haouas D, Guilbert E, Ben Halima-Kamel M (2015) First report of *Corythauma ayyari* (Drake) (Hemiptera: Tingidae) on Arabian and Spanish jasmine in Tunisia. *Bulletin OEPP/EPPO Bulletin* **45**(1), 4 pp (early view DOI: 10.1111/epp.12187)

Roca-Cusachs, Goula M (2014) First record of the invasive tingid species *Corythauma ayyari* (Drake, 1933) in the Iberian Peninsula (Insecta: Hemiptera: Heteroptera: Tingidae). *Butlletí de la Institució Catalana d'Història Natural* **78**, 119-123.

Additional key words: new record, detailed record **Computer codes:** COTMAY, AE, ES, IT, TN

2015/052 *Liberibacter crescens*: the first cultured member of the genus *Liberibacter*

During recent studies, a new *Liberibacter* species has been recovered from a mountain papaya (*Carica stipulata* x *C. pubescens*) plant in Puerto Rico showing symptoms of papaya bunchy top. For the first time, it has been possible to culture and characterize this bacterium which has been called *Liberibacter crescens*. At the same time, the genus *Liberibacter* has been created (with *L. crescens* as the only member). All other species which have not yet been cultured and characterized remain in the category '*Candidatus'* (e.g. '*Ca*. L. americanus', '*Ca*. L. africanus', '*Ca*. L. asiaticus', '*Ca*. L. europaeus', '*Ca*. L. solanacearum').

Source: Fagen JR, Leonard MT, Coyle JF, McCullough CM, Davis-Richardson AG, Davis MJ, Triplett EW (2014) *Liberibacter crescens* gen. nov., sp. nov., the first cultured member of the genus *Liberibacter. International Journal of Systematic and Evolutionary Microbiology* **64**(7), 2461-2466.

Additional key words: taxonomy **Computer codes:** 1LIBEG, LIBECR

2015/053 Surveys on '*Candidatus* Liberibacter asiaticus' in India

From 2007 to 2012, surveys have been conducted in 16 states in India to confirm the distribution of huanglongbing (associated with '*Candidatus* Liberibacter asiaticus' – EPPO A1 List) with molecular methods (real-time PCR). All commercially important citrus species (*Citrus aurantifolia, C. grandis, C. jambhiri, C. limon, C. limonia, C. macroptera, C. nobilis x C. deliciosa, C. reticulata, C. sinensis)* were found to be infected by '*Ca*. L. asiaticus'. Results also showed that huanglongbing is widespread in India. The presence of '*Ca*. L. asiaticus' was confirmed by real-time PCR in all studied states (except Arunachal Pradesh): Andhra Pradesh, Assam, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, **Mizoram*, Nagaland*,** Punjab, Rajasthan, Sikkim, Tamil Nadu, **Tripura*,** West Bengal.
The situation of '*Candidatus* Liberibacter asiaticus' in India can be described as follows: **Present, widespread.**

* The EPPO Secretariat had previously no data about the occurrence of '*Ca*. L. asiaticus' in these marked Indian states.

Source: Das AK, Nerkar S, Bawage S, Kumar A (2014) Current distribution of huanglongbing (citrus greening disease) in India as diagnosed by real-time PCR. *Journal of Phytopathology* **162**(6), 402-406.

Additional key words: detailed record **Computer codes:** LIBEAS, IN

2015/054 *Dothistroma pini* and *D. septosporum* occur in Switzerland

In Switzerland, red band needle blight (disease associated with *Dothistroma pini* and *D. septosporum*) was recorded for the first time in 1989, but the species of *Dothistroma* involved could not be determined. Since then, only damage to pine trees (mainly *Pinus mugo* and *P. nigra*) planted in urban environments has been reported. In September 2012 and April 2013, several mature planted trees and naturally regenerated young trees of *P. nigra* presenting symptoms of red band needle blight were observed in a forest along the shore of Lake Walensee. Symptomatic needles were collected from the litter and from a *P. nigra* tree (2 m tall, naturally regenerated) and tested in the laboratory (isolation on growing media, comparison of ITS sequences, characterization of mating types). Results confirmed the presence of *D. pini* and of *D. septosporum* (EU Annexes) in symptomatic needles. Interestingly, *D. pini* and *D. septosporum* were found on the same tree but not on the same needles. This is the first time that the presence of *D. pini* is reported from Switzerland. It is also noted that although symptoms of red band needle blight have been repeatedly observed on the studied site over the last 20 years, disease level always remained low and no tree mortality was noted.

Source: Queloz V, Wey T, Holdenrieder O (2014) First record of *Dothistroma pini* on *Pinus nigra* in Switzerland. *Plant Disease* **98**(2), p 1744.

Additional key words: new record, detailed record **Computer codes:** SCIRPI, DOTSPI, CH

2015/055 First report of Grapevine pinot gris virus in France

Grapevine Pinot gris virus (*Trichovirus*, GPGV) is a newly described virus which was originally identified in a grapevine plant (*Vitis vinifera* cv. 'Pinot gris') showing symptoms of chlorotic mottling and leaf deformations in the Autonomous Province of Trento, in Italy. The virus was then detected in the Republic of Korea, as well as in other European countries (Czech Republic, Slovakia and Slovenia - see EPPO RS 2014/006 and 2014/208). However, the pathogenicity of GPGV remains to be clarified, as it is not consistently associated with symptomatic plants. In 2014, GPGV was detected (molecular tests) for the first time in France. It was found in a leaf sample collected from a plant (*Vitis vinifera* cv. 'Merlot' grafted onto Gravesac rootstock) growing in a vineyard of the Bordeaux region. Additional RT-PCR tests detected GPGV in 2 symptomatic grapevine plants (cv. 'Carignan) originating from a French grapevine collection. It is concluded that large-scale studies are needed to determine the world distribution of GPGV, to evaluate its potential impact on yield and wine quality, as well as to better understand its epidemiology.

Source: Beuve M, Candresse T, Tannières M, Lemaire O (2015) First report of Grapevine pinot gris virus (GPGV) in grapevine in France. *Plant Disease* **99**(2), 293-294.

Additional key words: new record **Computer codes:** GPGV00, FR

2015/056 Characterization of a new virus infecting potatoes in China

During surveys on viruses of potato (*Solanum tuberosum*) conducted from August 2009 to November 2012 in 6 Chinese provinces, a new virus species was fortuitously discovered in a potato leaf sample from Hohhot, Inner Mongolia Autonomous Region (Neimenggu). This new carlavirus was tentatively called Potato virus H (PVH). The analysis of additional potato leaf samples have showed that PVH could be detected in several samples from Hebei, Heilongjiang, Liaoning, Neimenggu, Xinjiang, and Yunnan; often in mixed infections with other potato viruses (*Potato virus X, Potato virus Y, Potato leaf roll virus*). These results suggest that PVH is probably widespread in China. Transmission studies have also indicated that PVH is readily transmitted mechanically and occurs in seed tubers. It is noted that when only PVH was present, the expressed symptoms were often latent, or corresponded to a mild leaf curl and mottling on *S. tuberosum* cv. 'Shepody' and on the herbaceous indicator *Nicotiana glutinosa*. In subsequent studies, the presence of PVH was also detected in symptomless plantlets of *Solanum muricatum* (pepino) in Beijing. It is concluded that the origin of this new virus, its geographical distribution, epidemiology and impact on potato crops, in particular when occurring with other potato viruses such as PVX and PLRV, still need to be clarified.

Source: Abouelnasr H, Li YY, Zhang ZY, Liu JY, Li SF, Li DW, Yu JL, McBeath JH, Han CG (2014) First report of Potato virus H on *Solanum muricatum* in China. *Plant Disease* **98**(7), 1016-1016.

Li YY, Zhang RN, Xiang HY, Abouelnasr H, Li DW, Yu JL, McBeath JH, Han CG (2013) Discovery and characterization of a novel Carlavirus infecting potatoes in China. *PLoS ONE* **8**(6), e69255. doi:10.1371/journal.pone.0069255

Additional key words: new pest **Computer codes:** PVH000, CN

2015/057 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**

In Brazil, plants of *Beta vulgaris* subsp*. vulgaris* cv. 'Boro' (red table beet) showing severe root symptoms resembling those of rhizomania were observed in November 2012 in a commercial field located in the municipality of São José do Rio Pardo (São Paulo state). The incidence of diseased plants was around 70%. Laboratory analysis (RT-PCR, sequencing) and pathogenicity tests confirmed the presence of *Beet necrotic yellow vein virus* (*Benyvirus*, BNYVV – EPPO A2 List) in diseased plants. This is the first record of BNYVV from Brazil (Rezende *et al*., 2015). **First found in 2012 on red table beet (*Beta vulgaris* subsp*. vulgaris)* in the state of São Paulo.**

Cucurbit yellow stunting disorder virus (*Crinivirus* , CYSDV – EPPO A2 List) occurs in Sudan. The virus was detected in symptomatic samples of pumpkin (*Cucurbita maxima*) collected from 3 locations in the states of Khartoum and Gezira (Mohammed *et al*., 2014). **Present, detected in *Cucurbita maxima* in the states of Khartoum and Gezira.**

In Uganda, symptoms resembling those of bacterial leaf streak (*Xanthomonas oryzae* pv*. oryzae* - EPPO A1 List) were observed in June 2013 in several rice crops in the districts of Butaleja, Iganga and Namutumba. Molecular (PCR assays and sequencing) and pathogenicity tests confirmed the identity of the bacterium (Afolabi *et al*., 2014). **Present, first found in 2013 in several rice fields (Butaleja, Iganga and Namutumba districts).**

In Saudi Arabia, the presence of *Tomato chlorosis virus* (*Crinivirus*, ToCV – EPPO A2 List) was observed for the first time in January 2014 in field and greenhouse tomato crops near Riyad. Dense populations of *Bemisia tabaci* were present in all infected crops. Laboratory tests confirmed the identity of the virus (Al-Saleh *et al.*, 2014). **Present, first found in 2014 in field and greenhouse tomatoes near Riyad.**

- **Detailed records**

Since the 2000s, bacterial wilt of bean caused by *Curtobacterium flaccumfaciens* pv*. flaccumfaciens* (EPPO A2 List) has re-emerged in the Central High Plains (Nebraska, Colorado and Wyoming) where it has been identified in almost 500 bean (*Phaseolus vulgaris*) fields. Losses in both yield and quality have been observed (Urrea *et al.*, 2014).

Meloidogyne enterolobii (EPPO A2 List) has been detected in commercial crops of carrot (*Daucus carota*) in the province of Fujian (Dongshan county) in China. Many round to irregularly shaped lumps and swellings were observed on the surface of tap and fibrous roots, often with secondary roots emerging from the galls on taproots. Severe infestation caused short, stubby, forked taproots leading to losses in the quality and marketability of the carrots. This is the first time that *M. enterolobii* is reported from the province of Fujian and also the first time that it is found in carrots (Wang *et al.*, 2014).

In Tunisia, *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae – EPPO A2 List) was first found in 2011 in Carthage (EPPO RS 2011/235). Despite eradication efforts, the pest has

progressively spread to other areas near Tunis, such as Belvedere, Kram, Marsa and Soukra (Nasraoui, 2014).

In August 2013, potato plants (*Solanum tuberosum* cv. 'Banba') showing symptoms of stolbur were observed in a 2-ha field near Drama, Northern Greece. Plants were 10 weeks old and displayed reddening and upward rolling of leaflets, smaller leaves, shortened internodes, and aerial tuber formation. In the affected field, it was estimated that the disease incidence reached 40%. Four symptomatic plants were collected and tested for the presence of phytoplasmas. Results confirmed the presence of '*Candidatus* Phytoplasma solani' (EPPO A2 List). This is the first time that '*Ca*. P. solani' is found in diseased potatoes in Greece. On solanaceae, this pathogen had only been reported in *Solanum lycopersicum* (tomato) and *Datura stramonium* (Holeva *et al*., 2014).

During surveys conducted in Alsace (France), symptoms resembling those of sharka were observed in a plum orchard (*Prunus domestica* cv. 'Quetsche d'Alsace') in spring 2013. Laboratory studies confirmed the presence of *Plum pox virus* (*Potyvirus*, PPV – EPPO A2 List) in these symptomatic trees, as well as in a nearby orchard. The PPV isolate detected in Alsace was characterized as a PPV-Rec strain. This is first time that PPV-Rec is reported from France. Further surveys carried out in Alsace in 2014 did not detect PPV-Rec in other areas of the region. In the focus area, eradication measures have been taken (Svanella *et al.*, 2015).

In 2012, symptoms of *Plum pox virus* (*Potyvirus*, PPV – EPPO A2 List) were observed in 2 locations in a coastal area near Catania, Sicilia (IT). In spring 2013, samples were collected from symptomatic apricot (*Prunus armeniaca*) and peach (*P. persica*) trees. Laboratory tests confirmed the presence of PPV in diseased trees. Two PPV isolates from apricot (*P. armeniaca* cvs. 'Carmen Top' and 'Ninfa') were characterized as PPV-M. With the exception of a report from the 1980s which can no longer be traced, Sicilia was considered to be free from PPV. Eradication measures are being carried out by the regional plant protection service (Rizza *et al*., 2014).

Tomato chlorosis virus (*Crinivirus*, ToCV – EPPO A2 List) was detected in glasshouse tomato (*Solanum lycopersicum*) and tobacco (*Nicotiana tabacum*) plants at the Nanjing Agricultural University, Jiangsu province, China (Karwitha *et al.*, 2014).

Xanthomonas oryzae pv. *oryzicola* (EPPO A1 List) occurs in the Chinese provinces of Anhui, Guangxi, Jiangsu, Sichuan and Yunnan (Ji *et al*., 2014).

Xiphinema rivesi (EPPO A2 List) has been detected in soil samples collected in March 2013 during a survey of cherry orchards in Chelan county, Washington (US). These cherry orchards were also known to be infected by *Cherry rasp leaf virus* (*Cheravirus* – EPPO A1 List). This is the first time that *X. rivesi* is reported from Washington state (Akinbade *et al.*, 2014).

- **Diagnostics**

A new genus- and species-specific diagnostic method for pospiviroids has been developed in Italy. The method involves RT-PCR amplification of viroidal RNA using universal pospiviroid primers for genus detection, after which the amplified DNA is analysed by RFLP for identification at species level (Luigi *et al*., 2014).

A new real-time PCR assay has been developed to improve the sensitivity of the detection of *Spiroplasma citri* (EU annexes), the causal agent of citrus stubborn disease, in field samples (Wang *et al*., 2015).

Species-specific PCR primers have been developed in Taiwan for the detection of the following 10 species of thrips of agricultural and horticultural importance: *Frankliniella cephalica, F. intonsa, F. occidentalis* (EPPO A2 List), *Megalurothrips usitatius, Microcephalothrips abdominalis, Scirtothrips dorsalis* (EPPO A2 List), *Thrips hawaiiensis, T. imaginis, T. palmi* (EPPO A1 List), and *T. tabaci.* In addition, a multiplex PCR test has been developed to distinguish *F. occidentalis* from other thrips species (*T. tabaci, T. hawaiiensis* and *F. intonsa*) which are commonly found in imported agricultural products and field-collected samples (Yeh *et al*., 2014).

- **New pests**

In 2006, a new canker disease was observed on poplar trees (*Populus x euramericana* '74/16' and 'Zhonglin 46') in the provinces of Henan and Shandong, in China. Symptoms were characterized by bark cankers with white exudate dripping from the lesions. In cases of severe infection, tree mortality has been observed. Laboratory studies confirmed the presence of *Lonsdalea quercina* subsp*. populi* in diseased poplar trees (Li *et al*., 2014). This bacterium was first described from isolates collected in Hungary from oozing bark cankers on *P. x euramericana* trees (Tóth *et al*., 2013).

Source: Afolabi O, Milan B, Poulin I, Ongom J, Szurek B, Koebnik R, Silue D (2014) First report of *Xanthomonas oryzae* pv*. oryzae* causing bacterial leaf streak of rice in Uganda. *Plant Disease* **98**(11), p 1579.

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Tóth T, Lakatos T, Koltay A (2013) *Lonsdalea quercina* subsp*. populi* subsp. nov., isolated from bark canker of poplar trees. *International Journal of Systematic and Evolutionary Microbiology* 63, 2309-2313.
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Additional key words: new record, detailed record, diagnostic, new pest

Computer codes: 1POSPG, BNYVV0, CCYV00, FRANOC, LIBEAS, LNSDQP, MELGMY, PHYPSO, PPV000, PPV000, RHYCFE, SCITDO, SPIRCI, THRIPL, TOCV00, TOCV00, XANTTO, XANTTO, XIPHRI, BR, CN, CN, FR, GR, HU, IN, IT, SA, SD, TN, UG, US

2015/058 Present and future threats by invasive alien plants in Georgia

The spread and occurrence of invasive alien plant species in Georgia has increased significantly over the decades due mainly to changes in land use and habitat destruction. Recent estimates highlight 380 alien plant species in the country of which 134 are established and 16 of these are having detrimental impacts on native biodiversity. From these 16 species, Thalmann *et al.* (2015) selected the 9 most abundant species - or those species with a high potential to cause impacts - and conducted species distribution modeling to predict their future occurrence in Georgia and specifically within 43 protected areas in Georgia (Table 1). Using occurrence data for each species from the native and introduced ranges, coupled with bioclimatic data, the models were run to evaluate habitat suitability for each species. The results showed that *Ambrosia artemisiifolia* (EPPO List of IAP), *Robinia pseudoacacia* and *Ailanthus altissima* (EPPO List of IAP) had the highest potential area of distribution in Georgia. *A. altissima* was shown to have the highest potential for range expansion over the next 50 years. As a result of this study, the authors have identified two regions in Georgia that are specifically vulnerable to invasive alien plants. Tiblisi in the east of Georgia and Adjara in the west of the country are regions which have ecological conditions that are favorable to many of the invasive plant species present in the country.

Table 1. Invasive plant species used in the distribution modeling

Species	**Origin**	**Established in the EPPO region***
Ailanthus altissima (EPPO List of IAP)	Asia	CH, FR, GB
Ambrosia artemisiifolia (EPPO List of IAP)	N-America	Widespread
Clerodendrum bungei	Asia	GE
Miscanthus sinensis (EPPO Alert List)	Asia	Widespread
Opuntia humifusa	N-America	BG, HR, FR, GI, GR, IT, PT, ES, CH
Opuntia phaeacantha	N-America	CZ, ES
Robinia pseudoacacia	N-America	Widespread
Spiraea japonica	Asia	AT, DK, GE, NO, SE
Vitex rotundifolia	Asia	GE

* The distribution of species has been checked in the Q-bank database, as well as the DAISIE, NOBANIS and PQR databases. When the species was recorded in several countries, its distribution was approximated to 'widespread'.

Source: Thalmann DJK, Kikodze D, Khutsishvili M, Kharazishvili D, Guisan A, Broennimann O, Müller-Schärer (2015) Areas of high conservation value in Georgia: present and future threats by invasive alien plants. *Biological Invasions* **17**, 1041-1054.

Additional key words: invasive alien plant, modeling **Computer codes:** AILAL, AMBEL, CLZBU, MISSI, OPUHU, OPUPH, ROBPS, SPVJA, VIXRO, GE

2015/059 Suitability of the leaf-mining fly, *Hydrellia* sp., for the biocontrol of *Hydrilla verticillata* in South Africa

Hydrilla verticillata (Hydrocharitaceae – EPPO List of IAP) is a submerged macrophyte plant species native to Asia and recorded as invasive in many regions of the world including Africa, Central and South America and the USA. In South Africa, *H. verticillata* was first discovered in 2006 where a 600 ha infestation was found at the tourist site, Pongolapoort Dam, KwaZulu-Natal. As a result of this discovery, a biological control programme was initiated against the species. A leaf-mining fly, *Hydrellia* sp. (Diptera: Ephydridae) was collected during surveys in Singapore and imported into South Africa under quarantine conditions to undergo host range testing. The suitability of the fly was assessed through no-choice, paired choice larval development trials and host suitability tests, using 29 plant species from 9 closely related plant families. In no-choice tests, egg to adult development was significantly higher on *H. verticillata* than any of the other plant species tested. Three non-target plant species (*Lagarosiphon major*, *L. muscoides* and *L. ilicifolius*) that supported the highest percentage of larval survival from the no-choice tests were further subjected to paired-choice tests. In these tests, all larvae which had reached the adult stage developed on the target species, with the exception of two individuals that emerged on *L. major* and *L. ilicifolius*. Host suitability and productivity tests used the two native plant species that had the highest larval development in no-choice tests, namely *L. muscoides* and *L. ilicifolius*. These tests showed that the *Hydrellia* fly performed better on *H. verticillata* compared to the two natives. It is concluded that the *Hydrellia* fly has a limited capacity to establish on native plant species in South Africa and therefore should be considered as a biocontrol agent for release against the invasive plant *H. verticillata.*

Source: Bownes A (2014) Suitability of a leaf-mining fly, *Hydrellia* sp., for biological control of the invasive aquatic weed, *Hydrilla verticillata* in South Africa. *BioControl* **59**, 771-780.

Additional key words: biological control **Computer codes:** HYDRG, HYLLI, ZA

2015/060 First reports of *Gamochaeta pensylvanica* and *Verbesina encelioides* in the United Arab Emirates

Two new records of alien Asteraceae, *Gamochaeta pensylvanica* and *Verbesina encelioides* (EPPO Observation List of IAP), have been published from the United Arab Emirates during floral explorations conducted in 2013-2014. *G. pensylvanica* is native to the Americas and is present in the EPPO region in Belgium, Israel, Italy, Portugal and Spain. In the United Arab Emirates, *G. pensylvanica* was identified from the Dubai emirate in the Deira area where 20 individual plants were found growing along the roadside. Shahid (2014) notes that this is the first time this species has been identified in the Arabian Peninsula and surveys should continue as the species may cause damage in farmland.

V. encelioides was recorded along roadside habitats in Ras al-Khaimah in the Umm Urge area in the United Arab Emirates. The species is widespread throughout the EPPO region as a casual alien plant. Native to North and South America, *V. encelioides* can have negative impacts on crop production and the species has been shown to be toxic to livestock. In the Hawaiian islands, *V. encelioides* can form dense monocultures that outcompete native plant species and reduce suitable nesting habitats for ground birds. In Israel and Morocco, *V. encelioides* has invasive behaviour in cropping systems. It is underlined that careful monitoring of this plant should take place in the United Arab Emirates to enable appropriate measures and avoid negative impacts on agriculture and biodiversity.

Source: Shahid M (2014) New records for the alien Asteraceae species in the United Arab Emirates. *Journal on New Biological Reports* **3**(2): 115-119.

Additional key words: invasive alien plants, new record **Computer codes:** NAPE, VEEEN, AE

2015/061 First reports of *Parthenium hysterophorus* and *Bidens pilosa* in the United Arab Emirates

Parthenium hysterophorus (EPPO A2 List) and *Bidens pilosa* (both Asteraceae) have recently been recorded for the first time in the United Arab Emirates during surveys conducted in 2013-2014. Both species are native to the Americas and are established alien invasive plants in many regions of the world where they have negative impacts on native biodiversity, crop systems and pasture land. In the United Arab Emirates, *P. hysterophorus* was recorded in a home garden at Hamryah coast (1.5 m a.s.l.) in 2013. Four individual plants were recorded to have reached maturity. *B. pilosa* was recorded on farmland in April 2014 where seven individual plants were observed growing in Wadi Al Baih, Ras Al Khaimah 140 m a.s.l. It is suggested that *P. hysterophorus* and *B. pilosa* were introduced into the United Arab Emirates accidentally via imports of agricultural products. Further surveys should be conducted within the United Arab Emirates to evaluate if both species have additional occurrences, and if found, remedial actions should be taken to prevent their establishment.

Source: Mahmoud T, Gairola S, El-Keblawy A (2015) *Parthenium hysterophorus* and *Bidens pilosa*, two new records to the invasive weed flora of the United Arab Emirates *Journal on New Biological Reports* **4**(1) 26-32.

Additional key words: invasive alien plants, new record **Computer codes:** BIDPI, PTNHY AE

2015/062 *Euphorbia davidii* exhibiting invasive characteristics in Serbia

Euphorbia davidii (Euphorbiaceae) is present within the EPPO region in Belgium, Bulgaria, France, Hungary, Moldova, Italy, Romania, Russia, Serbia, Switzerland, and Ukraine. The first report from Europe was in Russia in 1968. Native to North America, this annual erect species can grow up to 50 cm tall. It is thought that the species entered Europe as a contaminant of seed shipments. *E. davidii* is most commonly found along railway lines and in agricultural fields where it can have negative impacts on yields. The species can also be a pest in vineyards. In Serbia, *E. davidii* was first found in 2007 and since this first record, studies have shown that the species is spreading within agricultural areas where it has been shown to have negative impacts on maize and sunflower production. In the Province of Vojvodina, *E. davidii* has spread from its initial distribution of 3 ha (observed in 2007) to 7 ha in 2013. Initial research tends to suggest that *E. davidii* is tolerant to many registered herbicides. Following herbicide application, visual assessments after one and four weeks did not suggest that herbicide application was effective. Further research is needed to evaluate the control methods for *E. davidii* in agricultural systems in the EPPO region.

Source: Purger D, Vajgand D, Mićić N, Vajgand K (2015) *Euphorbia davidii* Subils (Euphorbiaceae), a new alien species in the flora of Serbia. *Botanica Serbica* **39**, 49-52.
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Barina Z, Shevera M, Sirbu C, Pinke G (2013) Current distribution and spreading of *Euphorbia davidii* (E. dentat agg.) in Europe. *Central European Journal of Biology* **8**(1), 87-95.

Additional key words: invasive alien plants, detailed record **Computer codes:** EPHDV, RS

2015/063 Interactions between soil and exotic plant species

Recent studies have shown that invasive alien plant species can alter the soil conditions in which they grow through allelopathy. The resulting positive feedback(s) may provide a competitive advantage for the exotic species over native plant species enabling them to utilize resources more efficiently and thus persist and dominate an area. A meta-analysis has been conducted on plant-soil feedbacks in exotic plant species across life forms. Over 200 scientific papers were sourced from the Web of Science and Scopus using a combination of relevant keywords. Following analysis, the authors show that in general exotic plant species enhance carbon cycling and populations of soil invertebrates and nematodes. Overall, native and exotic plant species showed neutral feedback effects in soil conditioned by plants of the other origin. However, there were differences when comparing life forms; native trees were negatively affected in soil conditioned by exotic trees whereas native grasses were positively affected in soil conditioned by exotic grasses.

Source: Meisner A, Gera Hol WH, de Boer W, Krumins JA, Wardle DA, van der Putten WH (2014) Plant-soil feedbacks of exotic plant species across life forms: a meta-analysis. *Biological invasions* **16**, 2551-2561.

Additional key words: invasive alien plants

2015/064 Free download of the book 'Invasive alien plants and their management in Africa'

CABI has published a book 'Invasive alien plants and their management in Africa' which is freely available via the link below. Authored by Gordon Boy and Arne Witt, this book describes the associated problems with invasive plants in Africa, the methods and technology used to combat their spread and impact in new areas, and the importance of awareness raising and capacity building when working with invasive plant management at regional scales. The book is an output of the project - Removing Barriers to Invasive Plant Management in Africa (RBIPMA) - which was implemented in Ethiopia, Ghana, Uganda and Zambia between 2005-2010 and funded through the Global Environment Facility.

Source: CABI website. http://www.cabi.org/Uploads/CABI/publishing/promotional-materials/african-invasives-book.pdf

Additional key words: invasive alien plants, publication **Computer codes:** ET, GH, UG, ZM