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2016/108 New data on quarantine pests and pests of the EPPO Alert List

By searching through the literature, the EPPO Secretariat has extracted the following new data concerning quarantine pests and pests included (or formerly included) on the EPPO Alert List, and indicated in bold the situation of the pest concerned using the terms of ISPM no. 8.

- **New records**

In August 2015, 4 maple trees (*Acer campestre*) displaying large cankers were observed in Hungary in a lowland oak forest. The cankers showed the characteristics of Eutypella canker of maple: the bark was firmly attached to the stem; mycelial fans were present in the bark at the edge of the cankers; and perithecial necks protruded abundantly from the canker surface. Laboratory analysis (morphological, PCR, sequencing) confirmed the presence of *Eutypella parasitica* (formerly EPPO Alert List). As some large cankers (up to 1 m in length) were observed, it is estimated that the fungus has been present for approximately 30 years. The authors considered that specific surveys for *E. parasitica* should be performed to assess the current distribution of the disease in Europe and evaluate its impact (Jurc *et al*., 2016). **Present, only in some areas.**

The presence of *Potato mop-top virus* (*Pomovirus*, PMTV) is reported for the first time from Chile. PMTV has been detected on potato samples which had been collected in 2012 on native potatoes from several locations in the Chiloé Archipelago (Chiloé province), Southern Chile (Peña *et al*., 2016). **Present, only in some areas.**

Since the initial detection of the Ug99 strain of *Puccinia graminis* f.sp. *tritici* (black stem rust) in Uganda in 1998, 10 variants of the Ug99 race group have been detected in the following 12 countries: Uganda, Kenya, Ethiopia, Sudan, Tanzania, Eritrea, Rwanda, South Africa, Zimbabwe, Mozambique, Yemen, and Iran. During the 2014 wheat growing season, the presence of this virulent race group of *P. graminis* f.sp. *tritici* was suspected in Egypt. Laboratory analysis confirmed that several Egyptian isolates belonged to the Ug99 race group (Patpour *et al.*, 2016). **Present, no details.**

Bacterial spot of tomato caused by *Xanthomonas gardneri* (EPPO A2 List) is reported for the first time from Malaysia. Symptoms were observed in May 2013 in several commercial tomato (*Solanum lycopersicum*) fields in Cameron Highlands near Pahang (Peninsular Malaysia). Laboratory tests (PCR, sequencing, pathogenicity) confirmed the identity of the bacterium (Rashid *et al.*, 2016). **Present, only in some areas.**

- **Detailed records**

Tuta absoluta (Lepidoptera: Gelechiidae – EPPO A2 List) was first observed in Egypt in 2009 and rapidly spread across the country (El-Rahman Salama, 2015). Surveys conducted in Egypt from 2010 to 2011 in 12 governorates showed that it was causing severe damage to tomato (*Solanum lycopersicum*) crops (Moussa *et al*., 2013).

During studies conducted in 2013 and 2015 *Tomato chlorosis virus* (Crinivirus, TocV – EPPO A2 List) was found on aubergine crops in several Brazilian states. ToCV has been detected in samples of aubergine (*Solanum melongena* cvs 'Napoli' and 'Ciça') showing interveinal yellowing on older leaves. These samples had been collected from fields that were heavily infested by *Bemisia tabaci* in Canguçu (Rio Grande do Sul) and Formosa (Goiás). The virus was also found in symptomatic aubergines (*Solanum aethiopicum* cv. 'Comprido') collected in Venda Nova do Imigrante (Espírito Santo), Bragança Paulista (São Paulo), and Brasília–

Federal District. It is noted that this is also the first time that both *S. melongena* and *S. aethiopicum* are reported as a natural hosts of ToCV in Brazil (Fonseca *et al*., 2016).

In Louisiana (US), bacterial spot of tomato was observed during autumn 2013 and spring 2014 in 3 parishes (Livingston, East Baton Rouge, and Tangipohoa). Disease incidence was 100% and foliar disease severity ranged from 20 to 80%. Laboratory analysis (molecular, pathogenicity tests) confirmed the presence of *Xanthomonas perforans* (EPPO A2 List) (Lewis Ivey, 2016).

- **New host plants**

In the vicinity of a sweet cherry (*Prunus avium*) orchard located in Chelan county (Washington state, USA), *Cherry rasp leaf virus* (*Cheravirus*, CRLV – EPPO A1 List) was detected in elderberry trees (*Sambucus nigra* subsp. *caerulea*) showing chlorotic ring patterns, leaf blotch, and leaf deformations. The orchard had a large proportion of trees affected by cherry rasp leaf disease (approximately 30%). CRLV was also detected in weed samples (*Malva* spp.). It is considered that both *Sambucus nigra* and *Malva* spp. could act as potential reservoirs of CRLV and should be taken into account in disease control strategies (Villamor and Eastwell, 2016).

Meloidogyne enterolobii (EPPO A2 List) was detected in banana (*Musa nana* cv. 'Baxi') root samples collected from an orchard in Xuemei Village (Changtai county, Zhangzhou region), Fujian province, China. The collected root samples exhibited classical symptoms of infestation by root-knot nematodes. It is noted that further research should be carried out on the potential economic impact of *M. enterolobii* on banana cultivation (Zhou *et al*., 2016).

In Greece, *Tomato infectious chlorosis virus* (*Crinivirus*, TICV – EPPO A2 List) has been detected in the weed species *Dittrichia viscosa* (Asteraceae). These plants were installed in a tomato greenhouse to attract and sustain populations of *Macrolophus caliginosus* a biocontrol agent used against the whitefly *Trialeurodes vaporariorum* (Orfanidou *et al*., 2016).

Sources: El-Rahman Salama HS, Ismail IAK, Fouda M, Ebadah I, Shehata I (2015) Some ecological and behavioral aspects of the tomato leaf miner *Tuta absoluta. Ecologia Balkanica* **7**(2), 35-44.

Fonseca MEN, Boiteux LS, Lima MF, Mendonça JL, Costa AF, Fontes MG, Costa H, González-Arcos M (2016) First report of *Tomato chlorosis virus* infecting eggplant and scarlet eggplant in Brazil. *Plant Disease* **100**(4), p 867.

Jurc D, Ogris N, Piškur B, Csóka G (2016) First report of *Eutypella* canker of maple (*Eutypella parasitica*) in Hungary. *Plant Disease* **100**(6), p 1241.

Lewis Ivey ML, Strayer A, Sidhu JK, Minsavage GV (2016) Bacterial leaf spot of tomato (*Solanum lycopersicum*) in Louisiana is caused by *Xanthomonas perforans*, tomato race 4. *Plant Disease* **100**(6), p 1233.

Moussa S, Sharma A, Baiomy F, El-Adi F (2013) The status of tomato leaf miner: *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae) in Egypt and potential effective pesticides. *Academic Journal of Entomology* **6**(3), 110-115.

Orfanidou CG, Maliogka VI, Katis NI (2016) False yellowhead (*Dittrichia viscosa*), a banker plant as source of *Tomato infectious chlorosis virus* in Greece. *Plant Disease* **100**(4), p 869.

Patpour M, Hovmøller MS, Shahin AA, Newcom M, Olivera P, Jin Y, Luster D, Hodson D, Nazari K, Azab M (2016) First report of the Ug99 race group of wheat stem rust, *Puccinia graminis* f. sp. *tritici*, in Egypt in 2014. *Plant Disease* **100**(4), p 863.

Peña E, Gutiérrez M, Montecinos A, Muñoz M, Vargas E, Acuña I, Gutiérrez RA,

Rosales IM (2016) First report of *Potato mop-top virus* in Chile. *Plant Disease* **100**(6), p 1250.
Rashid TS, Kamaruzaman S, Golkhandan E, Nasehi A, Awla HK (2016) First report of *Xanthomonas gardneri* causing bacterial spot of tomato in Malaysia. *Plant Disease* **100**(4), p 854.
Zhou X, Cheng X, Xiao S, Liu GK, Zhang SS (2016) First report of *Meloidogyne enterolobii* on banana in China. *Plant Disease* **100**(4), p 863.

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

Computer codes: ETPLPA, GNORAB, MELGMY, PMTV00, PUCCGT, TOCV00, XANTGA, XANTPF, BR, CL, CN, EG, EG, HU, MY, US

2016/109 Situation of several quarantine pests in Lithuania in 2015

The NPPO of Lithuania has recently informed the EPPO Secretariat of the results of national surveys conducted in 2015 on several quarantine pests. The pest status officially declared by the NPPO is indicated in bold.

- **Bacteria**

Clavibacter michiganensis* subsp. *sepedonicus (EPPO A2 List): in 2015, 17 outbreaks of potato ring rot were detected. All were found on ware potatoes grown in small scale farms (with the exception of 2 growers who had potato fields of more than 50 ha). All infected potatoes had been grown from farm-saved seed potatoes. All infected potatoes have been destroyed and phytosanitary measures have been applied in accordance with EU Directive 2006/56/EC. These measures will be implemented during the next 4 years.
Present: only in some areas where host crop(s) are grown.

Erwinia amylovora (EPPO A2 List): in 2015, 1 outbreak was detected in the Kaunas region. Eradication measures were applied. All infected trees and potential hosts located within a radius of 10 or 20 m around them were destroyed (uprooted and burned). Restrictions on the movement of host plants will be applied in demarcated areas (focus and buffer zones) for the next 2 vegetative periods.
Present: except in specified pest-free areas.

- **Nematode**

Globodera rostochiensis (EPPO A2 List): in 2015, 18 outbreaks were detected. The nematode was detected in soil samples collected from several ware potato farms. The size of infested fields varied from 0.1 ha to 2.5 ha. The majority of outbreaks were found in the region of Vilnius. Official phytosanitary measures have been applied in accordance with EU Directive 2007/33/EC. In the infested areas, the cultivation of potatoes and other host plants is prohibited for the next 6 years.
Present: only in some areas where host crop(s) are grown.

- **Fungus**

Dothistroma septosporum (teleomorph = *Mycosphaerella pini* – EU Annexes): in 2015, 4 outbreaks were detected in the regions of Vilnius and Kaunas. Phytosanitary measures were taken to prevent the spread of the disease. All infected plants have been destroyed by incineration. Phytosanitary measures will be applied for the next 2 years.
Present: at low prevalence.

- **Virus**

Plum pox virus (*Potyvirus*, PPV - EPPO A2List): in 2015, 4 outbreaks of PPV were detected on plum trees (*Prunus domestica*) in the regions of Kaunas, Vilnius and Marijampolė. All

infected plum trees have been destroyed by incineration. Phytosanitary measures will be implemented in infected areas for the next 3 years.
Present: under eradication.

Source: NPPO of Lithuania (2016-05).

Additional key words: detailed record **Computer codes:** CORBSE, ERWIAM, HETDRO, PPV000, SCIRPI, LT

2016/110 Conference on 'Innovation in Plant Biosecurity 2017' (York, GB, 2017-03-15/16)

A Conference on 'Innovation in Plant Biosecurity 2017' organized by Fera will take place in York (GB) on the 15th and 16th of March 2017. This conference is addressed to plant health professionals, as well as to animal health and invasive species experts. The following four main topics will be addressed:

- Emerging risks
- Movement and borders
- Behaviours
- Technology

For more information about this Conference visit the website: http://fera.co.uk/agriculture-horticulture/biosecurity.cfm

Source: EPPO Secretariat (2016-06).

Additional key words: conference **Computer codes:** GB

2016/111 First report of *Diaphorina citri* in Tanzania

In Tanzania, intensive surveys on huanglongbing (associated with '*Candidatus* Liberibacter africanus' – EPPO A1 List) and its vector *Trioza erytreae* (Hemiptera: Triozidae – EPPO A2 List) were conducted in 2014-2015 in 4 regions (Tanga, Coast, Morogoro and Kagera). These surveys were conducted in citrus orchards and on backyard citrus trees at various altitudes: high (>700 m), medium (300-600 m) and low (<200m). Trees were inspected for the presence of huanglongbing symptoms and leaf galls caused by *T. erytreae*. Symptomatic leaf samples and psyllid specimens were also collected for further testing. Results showed that *T. erytreae* adults and nymphs were abundant in the highlands and less abundant at medium altitudes. Unexpectedly, adults and nymphs of the other known psyllid vector of huanglongbing, *Diaphorina citri* (Hemiptera: Liviidae – EPPO A1 List), were found at medium altitudes around Morogoro. No psyllid vectors of huanglongbing were observed at low altitudes. The presence of *D. citri* in Tanzania is also a first record for mainland Africa. Severe huanglongbing symptoms, including tree decline, were observed at high altitudes, while only occasional and mild symptoms were observed at medium and low altitudes. Leaf and psyllid samples were collected and tested (different PCR methods with several primer sets, sequencing and phylogenetic analysis) for the presence of '*Candidatus* Liberibacter spp.' '*Ca*. L. africanus' was detected in leaf and *T. erytreae* samples collected from high and medium altitudes. The presence of '*Ca*. L. asiaticus' could not be confirmed by all methods. Preliminary positive results were obtained by qPCR on 4 adult specimens of *T. erytreae* but were not confirmed by other methods and are therefore suspected to be cross-reactions with '*Ca*. L. africanus'. It is also recalled that during another study, the presence of '*Ca*. L. asiaticus' had been reported once in Ethiopia (where *D. citri* has not been found). Finally, all *D. citri* specimens tested negative for the presence of '*Ca*. L. asiaticus and '*Ca*. L. africanus'. In addition to these surveys, the potential distribution of *D. citri* and '*Ca*. L. asiaticus' in Africa and Europe has been studied using two predictive models (Maxent and Multi-Model-Framework). Both models predicted that most of the citrus-growing areas in Africa and some in Europe are suitable for the establishment of *D. citri*. Some areas were predicted as being unsuitable such as the Balkans, Egypt, Greek islands, Northern Italy, Central Spain, central parts of South Africa, and Turkey (except for the coast). In addition, some areas within Algeria, Morocco and Tunisia were also predicted as being unsuitable for *D. citri* establishement.
It is concluded that more tests should be conducted on psyllids in Tanzania for the presence of '*Ca*. L. asiaticus', as for the moment it cannot be concluded whether it is present or not in Tanzania. It is also noted that the Morogoro area where *D. citri* has been found is also an area where citrus nurseries are located. The arrival of *D. citri* in mainland Africa represents a serious threat to African citriculture, and possibly to other continents and Europe in particular. It is stressed that phytosanitary measures should be undertaken to prevent movement of *D. citri* within and outside Tanzania.

Source: Shimwela MM, Narouei-Khandan, HA, Halbert SE, Keremane ML, Minsavage GV, Timilsina S, Massawe DP, Jones JB, van Bruggen AHC (2016) First occurrence of *Diaphorina citri* in East Africa, characterization of the *Ca*. Liberibacter species causing huanglongbing (HLB) in Tanzania, and potential further spread of *D. citri* and HBL in Africa and Europe. *European Journal of Plant Pathology* doi: 10.1007/s10658-016-0921-y

Pictures: *Diaphorina citri*.https://gd.eppo.int/taxon/DIAACI/photos

Additional key words: new record **Computer codes:** DIAACI, TRIZER, LIBEAF, LIBEAS, TZ

2016/112 First report of *Drosophila suzukii* in Chile

In Chile, *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) has been caught in traps baited with fruits (bananas and plums) placed in the wild near Valparaiso (Central Valley). Traps were placed in native Chilean shrubs growing in humid and shaded habitats (ravines and gullies). It is considered that *D. suzukii* has been able to adapt to these humid habitats and probably has the potential to invade fruit orchards located nearby.
The situation of *Drosophila suzukii* in Chile can be described as follows: **Present, first reported in 2015 in wild habitats near Valparaiso.**

Source: Medina-Muñoz MC, Lucero X, Severino C, Cabrera N, Olmedo D, Del Pino F, Alvarez E, Jara C, Godoy-Herrera R (2015) *Drosophila suzukii* arrived in Chile. *Drosophila Information Service* no. 98, p 75.

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

Additional key words: new record **Computer codes:** DROSSU, CL

2016/113 First report of *Drosophila suzukii* in Uruguay

During summer 2013, studies on drosophilids were conducted in Montevideo city and in a rural area (Empalme Maldonado) in the department of Canelones, Uruguay. In Montevideo, flies were collected using banana-baited traps. In the rural area, over-ripened, decayed or damaged blueberries (*Vaccinium ashei*) were collected from the ground and taken to the laboratory. Trapped and emerging flies were then identified. As a result, several specimens of *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) were found. In traps, *D. suzukii* represented only a small percentage among drosophilid species (0.5%) but was the most abundant species (96%) emerging from blueberries. This is the first time that *D. suzukii* is reported from Uruguay.
The situation of *Drosophila suzukii* in Uruguay can be described as follows: **Present, first found in 2013 in the southern part of the country (Montevideo city, department of Canelones).**

Source: González G, Mary AL, Goñi B (2015) *Drosophila suzukii* (Matsumura) found in Uruguay. *Drosophila Information Service* no. 98, 103-107.

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

Additional key words: new record **Computer codes:** DROSSU, UY

2016/114 First report of *Drosophila suzukii* in Iran

In Iran, the presence of *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) was incidentally detected in October 2015 during a survey targeting the olive fruit fly (*Bactrocera oleae*). In traps placed in olive groves on the southern slopes of Elburz Mountains (near the village of Ghoushchi, Qazvin province), several specimens of *D. suzukii* were identified. This is the first time that *D. suzukii* is reported from Iran, as well as from the Middle East.
The situation of *Drosophila suzukii* in Iran can be described as follows: **Present, first found in 2015, several specimens were caught in one location in Qazvin province.**

Source: Parchami-Araghi M, Gilasian E, Keyhanian AA (2015) Spotted wing drosophila, *Drosophila suzukii* (Matsumura) (Dip.: Drosophilidae) an invasive fruit pest new to the Middle East and Iran. *Drosophila Information Service* no. **98**, 59-60.

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

Additional key words: new record **Computer codes:** DROSSU, IR

2016/115 Biological control against *Agrilus planipennis* in Canada and the USA

In North America, *Agrilus planipennis* (Coleoptera: Buprestidae - EPPO A1 List) was first found in southeastern Michigan and adjacent areas of Canada in 2002. It is suspected that it was introduced in the early 1990s via wood packaging material from Asia. As of March 2016, *A. planipennis* occurs in 25 US states (Arkansas, Colorado, Connecticut, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin) and 2 Canadian provinces (Ontario and Québec). In the USA, it is estimated that federal and state resource managers are spending 29.5 million USD per year to manage *A. planipennis* populations. Considering the severity of damage to ash trees (*Fraxinus* spp.) eradication measures were implemented soon after the first detection of *A. planipennis*. However, due to the rapid spread of the pest and general lack of effective detection and control methods, strategies shifted from eradication to containment programmes. In particular, the current strategies are focusing on the use of biocontrol agents, and several hymenopteran parasitoids collected from China, the Republic of Korea and Russia have been identified as potential candidates. Four species (*Oobius agrili, Spathius agrili, Spathius galinae,* and *Tetrastichus planipennisi*) have been approved for release as biocontrol agents in the USA, and others are under consideration. During recent studies a new species, *Oobius primorskyensis* n. sp., has been described. This egg parasitoid has been collected from *A. planipennis* near Vladivostok in Russia.

- *Oobius agrili* (Hymenoptera: Encyrtidae) is an egg parasitoid of *A. planipennis*. In China, it can parasitize up to 60% of the pest eggs during summer. Each female can parasitize up to 80 eggs during its lifetime.
- *Spathius agrili* (Hymenoptera: Braconidae). It has been observed that this species could parasitize up to 90% of *A. planipennis* larvae in ash trees in Tianjin (China). Females parasitize larvae by drilling through the bark and laying an average of 8 eggs on the host larva.
- *Spathius galinae* (Hymenoptera: Braconidae) has a similar biology to *S. agrili* but has been collected from Russia and the Republic of Korea. In Russia, *S. galinae* can parasitize up to 60 % of the larvae inside ash trees.
- *Tetrastichus planipennisi* (Hymenoptera: Eulophidae) is a larval parasitoid. In some areas of China, it can parasitize up to 50% of the pest larvae. Its life cycle is similar to that of *Spathius* species but females lay eggs inside the larvae.

Since 2009, parasitoids are being reared in a dedicated facility in Michigan (US). As of February 2016, more than 3 million parasitoids have been reared and released in 22 US states and 2 Canadian provinces. *Tetrastichus planipennisi* and *Oobius agrili* are establishing in multiple states. These two species are dispersing from the release sites and percentages of parasitism continue to increase. *Spathius agrili* has not been able to

establish in northern states. For the moment, *Spathius galinae* was only released in small numbers in 2015 but more releases are taking place in 2016.

Source: USDA–APHIS/ARS/FS (2016) Emerald Ash Borer Biological Control - Release and Recovery Guidelines. USDA–APHIS–ARS-FS, Riverdale, Maryland, 58 pp. http://www.nrs.fs.fed.us/disturbance/invasive_species/eab/local-resources/downloads/EAB-FieldRelease-Guidelines-2016.pdf

INTERNET
USDA-Forest Service. Emerald ash borer. http://www.nrs.fs.fed.us/disturbance/invasive_species/eab/control_management/biological_control/
Entomology Today (2016-05). USDA to release Russian wasps against the emerald ash borer. https://entomologytoday.org/2016/05/26/usda-to-release-russian-wasps-against-the-emerald-ash-borer/

Yao YX, Duan JJ, Hopper KP, Mottern JL, Gates MV (2016) A new species of *Oobius* Trjapitzin (Hymenoptera: Encyrtidae) from the Russian Far East that parasitizes eggs of emerald ash borer (Coleoptera: Buprestidae). *Annals of the Entomological Society of America*, 1-10. doi: http://dx.doi.org/10.1093/aesa/saw022

Pictures: *Agrilus planipennis*: https://gd.eppo.int/taxon/AGRLPL/photos

Additional key words: biological control **Computer codes:** AGRLPL, OOBIAG, OOBIPR, SPAHAG, SPAHGA, TETSPL, CA, US

2016/116 *Anoplophora glabripennis* detected again in Germany

The NPPO of Germany recently informed the EPPO Secretariat of a new finding of *Anoplophora glabripennis* (Coleoptera: Cerambycidae – EPPO A1 List) in Bayern (see also EPPO RS 2016/031, 2014/184). In April 2016, during a visual inspection targeting wood packaging material (carrying stones) in the harbour of Kelheim, bore holes and wood shavings were noticed by a phytosanitary inspector on a nearby maple (*Acer* sp.) tree. Further investigations were carried out and living larvae of *A. glabripennis* were found in 6 maple trees. These trees were heavily infested and had dead branches (some of these had already broken off). The identity of the pest has been confirmed by PCR. In addition, 12 other maple trees showing signs of infestation (e.g. bore holes, shavings and oviposition sites) were found and will be subject to further studies in the laboratory. The origin of this infestation is unknown but import of infested wood packing material is the most likely pathway. An intensive monitoring of all host plants (i.e. *Acer, Alnus, Betula, Corylus, Fraxinus, Populus, Prunus, Salix, Sorbus, Tilia, Ulmus*) located within a radius of 500 m around the infested site is being conducted. Eradication measures are being taken and all infested trees (18 in total) have been felled.
The pest status of *Anoplophora glabripennis* in Germany is officially declared as: **Transient, only at some locations, actionable, under eradication.**

Source: NPPO of Germany (2016-06).

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

Additional key words: detailed record **Computer codes:** ANOLGL, DE

2016/117 First report of damage to potato crops caused by *Meloidogyne incognita* in Serbia

In 2014, a potato (*Solanum tuberosum* var. 'Kuroda') crop exhibiting 70% galling of tubers was observed in Bački Vinogradi, Vojvodina Province, Serbia. Potatoes had been grown every year for 5 years on this 1-ha site of sandy soil (tomatoes had been grown on this plot before that). In 2014, yield losses of approximately 20 tonnes/ha were observed for the first time at this location. Yield loss was due to the presence of an unknown root-knot nematode (*Meloidogyne* sp.). Affected tubers showed external galling and internal necrosis just below the skin. Adult females were visible just below the surface as white, pear-shaped bodies surrounded by a yellowish layer of host tissue. However, despite heavy tuber infestation no symptoms of stunting and wilting were observed on the aerial part of potato plants. Diagnosis (morphology, molecular methods) confirmed the presence of *Meloidogyne incognita*. It is noted that during a survey carried out in the 1980s, *M. incognita* had been reported in glasshouse crops (cucumbers, carnations, tomatoes) and in field-grown tomatoes and capsicum. Damage caused by *M. incognita* had been reported on field-grown sunflower and tobacco plants but never on potato. It is supposed that the conditions prevailing in the infested area, such as sandy soils and warmer summers might explain the severity of damage observed on this potato crop. The authors concluded that climate change with increased temperatures might favour the emergence of *M. incognita* in the Balkan Peninsula and other temperate regions of the world.

Source: Bačić J, Gerič Stare B, Strajnar P, Širca S, Urek G (2016) First report of a highly damaged potato crop from Serbia caused by *Meloidogyne incognita*. *Plant Disease* **100**(5), p 1021.

Additional key words: detailed record **Computer codes:** MELGIN, RS

2016/118 *Paratylenchus shenzhenensis*: a new pest of *Anthurium andraeanum* in China

Paratylenchus shenzhenensis is a new nematode species which has recently been described. The first specimens were collected from the rhizosphere soil of *Anthurium andraeanum* in a nursery in Shenzhen, Guangdong province, China. Later studies conducted in the Guangdong province have demonstrated that *P. shenzhenensis* is causing a slow decline on *A. andraeanum* plants. Infested commercial crops display a patchy distribution of stunted and yellowing plants. Heavily infested roots present brown to black rot, and the entire root mass is often destroyed. It is considered that the root rot symptoms caused by *P. shenzhenensis* are similar to those caused by *Radopholus similis* (EPPO A2 List). Although it seems that *P. shenzhenensis* is inducing a decline on *A. andraeanum* that develops slowly, the impacts that this nematode species might cause over the long term on the production of anthurium need to be further studied.

Source: Wang K, Li Y, Xie H, Wu WJ, Xu CL (20136) Pin nematode slow decline of *Anthurium andraeanum*, a new disease caused by the pin nematode *Paratylenchus shenzhenensis*. *Plant Disease* **100**(5), 940-945.
Wang K, Xie H, Li Y, Xu CC, Yu L, Wang DW (2013) *Paratylenchus shenzhenensis* n. sp. (Nematoda: Paratylenchinae) from the rhizosphere soil of *Anthurium andraeanum* in China. *Zootaxa* **3750**(2), 167-175. http://mapress.com/zootaxa/2013/f/z03750p175f.pdf

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

2016/119 *Rose rosette virus*: addition to the EPPO Alert List

Why: Rose rosette is a disease transmitted by an eriophyid mite (*Phyllocoptes fructiphilus, Acari: Eriophyidae)* which has been observed in North America since the 1940s on wild and cultivated roses (*Rosa* spp.). During the last decades, rose rosette disease has become widespread in North-Central, South-Central and Southeastern USA and its incidence has grown exponentially in cultivated roses (e.g. in South-Central USA). The involvement of phytoplasmas or viruses had been suspected but the etiology of rose rosette remained a mystery for many years. However, in 2011, a virus called *Rose rosette virus* (*Emaravirus*, RRV) could be consistently identified in symptomatic plants. Considering the severity of damage caused by RRV and its current spread in the USA, the EPPO Secretariat considered that this virus should be added to the EPPO Alert List.

Where: symptoms of rose rosette disease were first observed in the 1940s in Canada (Manitoba) and the USA (California and Rocky mountains) on wild roses. It is hypothesized that the spread of this disease began with the introduction and use of the multiflora roses (*Rosa multiflora*) in North America. In the USA, *R. multiflora* was introduced from Japan in 1866 as a rootstock for ornamental roses and was planted for erosion control, cattle fences and as crash protection along highways. Since multiflora roses are highly susceptible to rose rosette, the disease was at some point considered as a potential biological control against the plant which is considered to be invasive in the USA. However, the rose rosette disease started to spread from multiflora roses to other cultivated roses, and significantly expanded its geographical range and incidence. It is supposed that the incidence of rose rosette has grown exponentially in cultivated roses in the South-Central- USA because of large areas planted with shrub roses in residential and commercial landscapes.
EPPO region: Absent.
North America: Canada (Manitoba, Ontario), USA (Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Michigan, Mississippi, Missouri, Nebraska, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Wisconsin, Wyoming)
The eriophyid vector, *P. fructiphilus*, is only known to occur in North America but data is generally lacking on its distribution.

On which plants: RRV has only been reported on *Rosa* spp. *R. multiflora* is particularly susceptible but infections in other cultivated rose types have been observed, including climbers, hybrid teas, floribundas, miniatures, antique or "old-fashioned" roses, knockouts and carpet roses. Observations made in gardens suggest that some rose species might be resistant to RRV (e.g. *R. acicularis, R. arkansana, R. blanda, R. carolina, R. palustris, R. setigera, R. spinosissima*) but this remains to be verified.

Damage: Symptoms caused by RRV may vary according to climatic conditions and type of roses but they can include the development of witches' brooms, excessive thorn production, excessive lateral shoot growth, rapid stem elongation, thickened, succulent stems, leaf proliferation and malformation, mosaic, bright red pigmentation, deformed buds and flowers, and lack of winter hardiness. Infected plants lose their aesthetic value and gradually display a general decline leading to plant death. It is reported that infected plants usually die within 1 to 5 years. It is also noted that these symptoms may be confused with herbicide damage.
Pictures can be viewed on the Internet:
Disease symptoms: http://www.invasive.org/browse/subthumb.cfm?sub=4248
Phyllocoptes fructiphilus: http://entnemdept.ufl.edu/creatures/ORN/ph_fructiphilus.htm

Transmission: RRV is transmitted by *P. fructiphilus* which is a tiny an eriophyid mite (140-170 microns in length and 43 microns wide) feeding on many rose species. It is hypothesized that it was originally feeding on native rose species of North America but has then been able to adapt to multiflora and cultivated roses. *P. fructiphilus* can be passively transported by wind, clothing and equipment, and can also crawl from infested plants to adjacent ones. It is also suggested that *P. fructiphilus* might be dispersed through phoresy (attaching itself to insects). *P. fructiphilus* is most prevalent in the apex of the rose shoots where it feeds and reproduces. Females overwinter under bark or on bud scales of living roses. Females move to newly developing shoots where they lay one egg a day for about 30 days. Eggs hatch within 3-4 days, and adulthood is reached within a week depending upon temperatures. Multiple generations occur each year until the autumn when females seek overwintering sites.
RRV can also be transmitted by grafting, and possibly by mechanical means (e.g. on contaminated pruning tools).

Pathway: Plants for planting of roses from countries where RRV occurs.

Possible risks: roses are widely planted in the EPPO region and are a valuable nursery product. In the USA, RRV is considered to be a serious threat to rose cultivation, and funds are being allocated to conduct research on rose rosette disease. Once plants are infected by RRV, no curative treatment is available and it is recommended to destroy them (root systems included, as RRV infection is systemic). For the moment, no resistant types of roses have been identified. IPM strategies are being developed to contain the disease and usually include: use of healthy planting material, avoiding dense plantations, use of other plants as barriers within rose gardens (to limit wind dispersal of infectious mites), disinfection of pruning tools, systematic destruction of diseased plants and disposal of potentially infested plant material. Chemical treatments might help in reducing mite populations and limit disease spread, but no experimental results could be found in the literature. In addition, the risk of developing resistance to acaricides cannot be ignored. Considering the serious damage caused by RRV to roses, it is desirable to avoid its introduction into the EPPO region.

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Additional key words: Alert List **Computer codes:** RRV000

2016/120 *Clavibacter michiganensis* subsp. *sepedonicus* detected in Finland

The NPPO of Finland recently informed the EPPO Secretariat that *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List) has been found in ware potatoes (*Solanum tuberosum* cvs. 'Asterix' and 'Annabelle') in 2 farms. It is estimated that the infected area covers 1.94 ha. The origin of this infection is not known. Phytosanitary measures have been applied in accordance with EU Directive 93/85/EC (amended by EU Directive 2006/56/EC). On the infected farms, all potato fields have been inspected and no further findings have been made.
The pest status of *Clavibacter michiganensis* subsp. *sepedonicus* in Finland is officially declared as: **Present, under eradication.**

Source: NPPO of Finland (2016-06).

Pictures *C. michiganensis* subsp. *sepedonicus*. https://gd.eppo.int/taxon/CORBSE/photos

Additional key words: detailed record **Computer codes:** CORBSE, FI

2016/121 First report of *Phytophthora ilicis* in Germany

The NPPO of Germany recently informed the EPPO Secretariat of the first finding of *Phytophthora ilicis* on its territory. The pathogen was found in a nursery located in Pinneberg (north-west of Hamburg) in Schleswig-Holstein on plants for planting of *Ilex aquifolium*. Infected plants (30 out of a total of 120) were approximately 4 m tall and showed massive leaf fall as well as shoot dieback in the lower part of the plants. These symptoms had been noticed by the grower in December 2015. The identity of the pathogen was confirmed in May 2016 by morphological and molecular (sequencing) methods. All infected plants have been destroyed, and the grower has been recommended not to replant *Ilex* spp. for the next 3 years. Intensive surveys will be carried out in adjacent areas, including small forest stands, to verify the absence of *P. ilicis*. The origin of this infection is unknown. Infected plants were purchased from a large Dutch nursery approximately 7 years ago. A Pest Risk Analysis for *P. ilicis* is under development.
The pest status of *Phytophthora ilicis* in Germany is officially declared as: **Transient, only at one location, under eradication.**

Source: NPPO of Germany (2016-06).

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

2016/122 Seedling performance of *Ambrosia artemisiifolia*

Plant growth parameters are known to vary considerably within and between populations. However, few studies, have investigated seedling growth variations and their consequences on seedling performance. In the current study, the performance of the North American native *Ambrosia artemisiifolia* (Asteraceae: EPPO List of Invasive Alien Plants) was studied amongst populations. Seeds were collected from nine populations from Western Europe and were sown in growth chambers with warmer and colder temperature treatments. During the seedling growth phrase, plant growth parameters including foliage cover and above ground biomass were measured. A high variability was seen where variation was determined by the mother plant and population source. Latitude did not have any effect. Temperature, population source and the identity of the mother plant had a significant effect on seedling performance.

Source: Ortmans W, Mahy G, Monty A (2016) Effects of seed traits variation on seedling performance of the invasive weed, *Ambrosia artemisiifolia* L. *Acta Oecologia*, **71** 39-46.

Pictures: *Ambrosia artemisiifolia*. https://gd.eppo.int/taxon/AMBEL/photos

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

2016/123 *Ulex europaeus* changes plant community structure in subtropical forest-grasslands in southern Brazil

Ulex europaeus (Fabaceae) is listed as one of the world's worst invasive species by the Invasive Species Specialist Group. Native to Europe, the species has invaded many regions of the world and the Brazilian Campos (Southern Brazil) is one such region. Land usage significantly influences the occurrence of *U. europaeus* in the Brazilian Campos, where vulnerability to invasion was shown to be highest in heavily grazed grasslands. In such habitats, percentage cover can reach over 50 %. Intact natural forests seem to be unsuitable habitats for *U. europaeus*, however, the species invades tree plantations. In undisturbed habitats, such as ungrazed natural grasslands, *U. europaeus* cover is variable. In the Brazilian Campos, *U. europaeus* can significantly alter the community structure and composition of native species. Assemblages in the understory of *U. europaeus* canopies were comparatively species poor and more homogenous compared to uninfested nearby areas.

Source: Cordero RL, Torchelsen FP, Overbeck GE, Anand M (2016) Invasive gorse (*Ulex europaeus*, Fabaceae) changes plant community structure in subtropical forest-grassland mosaics of southern Brazil. *Biological Invasions* **18,** 1629-1643.

Additional key words: invasive alien plants **Computer codes:** ULEEU, BR

2016/124 Invasion of *Asclepias syriaca* in grasslands in Hungary

Asclepias syriaca (Asclepiadaceae, Common milkweed) is native to North America and has invaded extensive areas in Europe forming novel ecosystems. In the current study, the impact of *A. syriaca* on native flora was studied in seven grasslands in Hungary. Within and between sites, the percentage cover of *A. syriaca* was highly variable and this allowed for an assessment of potential impacts relating to the cover of this invasive alien plant.

Although no significant impact of *A. syriaca* cover was detected on total species richness and species richness of native grassland species, the cover of native grassland species decreased with increasing *A. syriaca* cover. The authors conclude that native, successional sandy grasslands invaded by *A. syriaca* form undesirable novel ecosystems because of significant negative impacts on the cover of native grassland species, especially those with low competitive ability. For these species, management of *A. syriaca* may be needed to ensure their persistence in sandy grasslands.

Source: Lelemen A, Valkó O, Kröel-Dulay G, Deák B, Török P, Tóth K, Miglécz T, Tóthmérész B (2016) The invasion of common milkweed (*Asclepias syriaca*) in sandy old-fields – is it a threat to the native flora? *Applied Vegetation Science* **19**, 218-224.

Additional key words: invasive alien plants **Computer codes:** ASCSY, HU

2016/125 Barriers to effective management of *Prosopis* species in South Africa

Some management projects against invasive alien plants have limited success, mainly due to barriers which can create obstacles or conditions that hinder, delay or divert the effectiveness of management practices. To overcome barriers it is important to identify them at an early stage, as well as from multiple viewpoints because different stakeholders are involved. Stakeholders face different challenges and all have an unique perspective which should be addressed when forming management plans and policies. The genus *Prosopis* is widely recognized as one of the worst and most widespread invasive tree taxa in the world. Several species from the genus have naturalized and/or become invasive leading to negative impacts and conflicts of interest around use and management. *Prosopis* species were first introduced into South Africa in the late 1800s and were distributed to farmers to provide fodder and shade for livestock and firewood. Since their introduction, *Prosopis* species have invaded more than 1.8 million ha of natural land in South Africa. Using a combination of questionnaires and workshops, four key stakeholder groups (academics, farmers, managers and workers) involved with different stages of the management of *Prosopis* species were engaged. More than 100 barriers were identified ranging from limited knowledge, to insufficient funds, to conflicts of interest. There were key differences to how stakeholders perceived barriers; most farmers (>80 %) placed high importance on the lack of planning and poor management as the main barriers, whereas few managers (<20 %) regarded these aspects as important. Among the most important barriers to effective management were the lack of adequate funds and factors relating to the ecology of species.

Source: Shackleton RT, Maitre DC, Wilgen BW, Richardson DM (2016) Identifying barriers to effective management of widespread invasive alien trees: *Prosopis* species (mesquite) in South Africa as a case study. *Global Environmental Change* **38**, 183-194.

Pictures: *Prosopis juliflora*. https://gd.eppo.int/taxon/PRCJU/photos

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

2016/126 LIFE project: Mitigating the threat of invasive alien plants in the EU through pest risk analysis to support the EU Regulation 1143/2014

In May 2016, an expert working group was convened to risk assess two aquatic plant species within the framework of the LIFE project. Both *Pistia stratiotes* (Araceae: EPPO List of Invasive Alien Plants) and *Salvinia molesta* (Salviniaceae: EPPO List of Invasive Alien Plants) were risk assessed by 10 experts from 7 different countries, including South Africa and the USA where the species pose significant problems. The PRAs will now undergo a full peer review before they are submitted to the European Commission. Two additional expert working groups are planned for 2016, where the first will consider two more aquatic species, namely *Gymnocoronis spilanthoides* (Asteraceae) and *Hygrophila polysperma* (Acanthaceae), followed shortly by an expert working group on *Cardiospermum grandiflorum* (Sapindaceae) and *Cinnamomum camphora* (Lauraceae).

Source: EPPO Secretariat (2016-05)
Project website: http://www.iap-risk.eu

Additional key words: invasive alien plants **Computer codes:** CINCA, CRIGR, GYNSP, HYGPO, PIIST, SAVMO