ORGANISATION EUROPEENNE
ET MEDITERRANEENNE
POUR LA PROTECTION DES PLANTES

EUROPEAN AND MEDITERRANEAN
PLANT PROTECTION
ORGANIZATION

EPPO Reporting Service

NO. 10 PARIS, 2021-10

21 Bld Richard Lenoir
75011 Paris

Tel: 33 1 45 20 77 94
E-mail: hq@eppo.int

Web: www.eppo.int
GD: gd.eppo.int

2021/207 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 French Guyana, after the finding of *Diaphorina citri* (Hemiptera: Liviidae, EPPO A1 List) in July 2021 (RS 2021/185), further surveys detected a '*Candidatus* Liberibacter sp.' (one of the agents of Huanglongbing disease) in two plant samples in August 2021. Surveys are being intensified. Official measures are applied to control the disease and its vector (Arrêté préfectoral, 2021).

In North Macedonia, *Corythucha arcuata* (Hemiptera: Tingidae – formerly EPPO Alert List) was first found in July 2019 near Skopje on *Quercus petraea*. Further surveys detected the pest in three other locations near Skopje (Sotirovski *et al.*, 2019).

Corythucha arcuata (Hemiptera: Tingidae – formerly EPPO Alert List) occurs in the Czech Republic where it was first found in 2019 (Paulin *et al.*, 2020).

Garella musculana (Lepidoptera: Noctuidae - EPPO A2 List) was trapped during a faunistic survey in a nature reserve in Myasnikovsky district (Rostov region, Southern Russia). No damage on *Juglans* trees was observed. This is the first record for Russia (Romanchuk & Kolesnikov, 2021).

- **Detailed records**

In Australia, the serpentine leafminer *Liriomyza trifolii* (Diptera: Agromyzidae - EPPO A2 List) has been found on two separate occasions in Kununurra (northern Western Australia) in March 2021, as well as in Torres Strait (Queensland) in May 2021 and near Bamaga (Queensland). Eradication is considered unlikely to be feasible. While the final decision on an eradication response is still pending, *L. trifolii* is currently under regional official control in Queensland and Western Australia (IPPC, 2021).
The pest status of *Liriomyza trifolii* in Australia is officially declared as: **Present: not widely distributed and under official control (2021-07)** (IPPC, 2021).

In Serbia, *Ralstonia solanacearum* (EPPO A2 List), causal agent of potato brown rot, was first recorded in 2011. Surveys in 2013-2018 analyzed 3524 samples from 17 localities and detected the bacterium in 344 samples from 5 localities in the province of Vojvodina (Northern Serbia), and also in Bolec, near Belgrade (Marković *et al.*, 2021).

- **Host plants**

In Ecuador, during studies on mites conducted in the province Tungurahua, *Eotetranychus lewisi* (Acari: Tetranychidae – EU Annexes) was found on *Rubus glaucu*s (Sánchez *et al.*, 2021).

- **New pests and taxonomy**

The taxonomy and nomenclature of the Western spruce budworm, *Choristoneura occidentalis* Freeman (Lepidoptera: Tortricidae - EPPO A1 List) has been the subject of controversy. *C. occidentalis* is a North American pest of conifers. In 2008, it was proposed to rename it *Choristoneura freemani* Razowski to avoid confusion with an African species feeding on citrus which was originally described as *Cacoecia occidentalis* Walsingham, but then transferred into the genus *Choristoneura* (EPPO RS 2014/171). Recent molecular studies led to the redescription of the genus *Choristoneura* and reinstated the original name of the Western spruce budworm *Choristoneura occidentalis* Freeman. The African species was excluded from the *Choristoneura* genus and found to be more closely related to the genus *Cacoecimorpha*, although its final placement into this genus remains to be confirmed (Fagua *et al.*, 2019). Other studies (Brunet *et al.*, 2017) proposed that *Choristoneura occidentalis* (univoltine populations) and *Choristoneura biennis* (biennial populations) should be referred to as *Choristoneura occidentalis occidentalis* and *Choristoneura occidentalis biennis*, respectively.

Taxonomic studies on the genus *Neofusicoccum* have been carried out in Japan, and it is proposed that the causal agent of shoot blight of larch (*Physalospora laricina*, synonym *Botryosphaeria laricina* – EPPO A2 List) should be transferred to the genus *Neofusicoccum*, and therefore called *Neofusicoccum laricinum* (Hattori *et al.*, 2021).

Sources:

Arrêté préfectoral relatif à la lutte contre la maladie du Huanglongbing (citrus greening) dans la région de Guyane. https://www.guyane.gouv.fr/Politiques-publiques/Alimentation-agriculture-foret/Agriculture/Arrete-prefectoral-Lutte-contre-le-psylle-des-agrumes-Diaphorina-citri

Brunet BM, Blackburn GS, Muirhead K, Lumley LM, Boyle B, Levesque RC, Cusson M, Sperling FA (2017) Two's company, three's a crowd: New insights on spruce budworm species boundaries using genotyping-by-sequencing in an integrative species assessment (Lepidoptera: Tortricidae). *Systematic Entomology* **42**(2), 317-28.

Fagua G, Condamine FL, Dombroskie J, Byun BK, Deprins J, Simonsen TJ, Baez M, Brunet BMT, Sperling FAH (2019) Genus delimitation, biogeography and diversification of *Choristoneura* Lederer (Lepidoptera: Tortricidae) based on molecular evidence. *Systematic Entomology* **44**, 19-38.

Hattori Y, Ando Y, Nakashima C (2021) Taxonomical re-examination of the genus *Neofusicoccum* in Japan. *Mycoscience* **62**, 250-259.

IPPC website. Official Pest Reports. Australia (AUS-104/1 of 2021-07-30) *Liriomyza trifolii* (American serpentine leafminer) in Queensland and Western Australia. https://www.ippc.int/fr/countries/australia/pestreports/2021/07/liriomyza-trifolii-american-serpentine-leafminer-in-queensland-and-western-australia/

Marković S, Stanković S, Iličić R, Veljović Jovanović S, Milić Komić S, Jelušić A, Popović T (2021) *Ralstonia solanacearum* as a potato pathogen in Serbia: characterization of strains and influence on peroxidase activity in tubers. *Plant Pathology* **70**(8), 1945–1959.

Paulin M, Hirka A, Eötvös CB, Gáspár C, Fürjes-Mikó Á, Csóka G (2020) Known and predicted impacts of the invasive oak lace bug (*Corythucha arcuata*) in European oak ecosystems – a review. *Folia Oecologica* **47**(2), 131–139.

Romanchuk RV, Kolesnikov SI (2021) Report on the detection of *Garella musculana* (Erschov, 1874) (Lepidoptera: Nolidae) – a new pest species for the Rostov region from the Chulekskaya Balka specially protected natural area. *Ученые записки Крымского федерального университета имени ВИ Вернадского. Биология. Химия*,***7***(2), pp.145-157. http://sn-biolchem.cfuv.ru/wp-content/uploads/2021/07/14_Romanchuk.pdf

Sánchez M, Colmenárez Y, Manobanda M, Vásquez C (2021) Chaetotaxic variation in *Tetranychus urticae* Koch, 1836 and *Eotetranychus lewisi* (Mc Gregor, 1943)

populations (Acari: Tetranychidae) from different crops and locations in Province of of Tungurahua, Ecuador. *Revista Chilena de Entomología* **47**(1), 19-33.
Sotirovski K, Srebrova K, Nacheski S (2019) First records of the oak lace bug *Corythucha arcuata* (Say, 1832) (Hemiptera: Tingidae) in North Macedonia. *Acta Entomologica Slovenica* **27**(2), 91-98.

Additional key words: detailed record, new host plants, new record, taxonomy

Computer codes: 1LIBEG, ARCHOC, CHONBI, CHONOC, CRTHAR, EOTELE, ERSHMU, GUIGLA, LIBEAS, LIRITR, RALSSL, AU, CZ, EC, GF, MK, RS, RU

2021/208 New and revised dynamic EPPO datasheets are available in the EPPO Global Database

The EPPO Secretariat is in the process of revising the EPPO datasheets on pests recommended for regulation and creating new datasheets. This project is also supported by an EU grant agreement. This revision provides the opportunity to create dynamic datasheets in the EPPO Global Database in which the sections on pest identity, host range and geographical distribution are automatically generated by the database. It is planned that these dynamic datasheets will progressively replace the PDF documents that are currently stored in the database. Since the previous report (EPPO RS 2021/186), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- Citrus bark cracking viroid. https://gd.eppo.int/taxon/CBCVD0/datasheet
- *Gonipterus scutellatus* species complex. https://gd.eppo.int/taxon/GONPSC/datasheet
- *Ips duplicatus*. https://gd.eppo.int/taxon/IPSXDU/datasheet
- *Lycorma delicatula*. https://gd.eppo.int/taxon/LYCMDE/datasheet
- *Maconellicoccus hirsutus*. https://gd.eppo.int/taxon/PHENHI/datasheet
- *Melampsora medusae*. https://gd.eppo.int/taxon/MELMME/datasheet
- *Phytophthora lateralis*. https://gd.eppo.int/taxon/PHYTLA/datasheet
- *Pseudopityophthorus minutissimus*. https://gd.eppo.int/taxon/PSDPMI/datasheet
- *Pseudopityophthorus pruinosus*. https://gd.eppo.int/taxon/PSDPPR/datasheet
- *Rhagoletis indifferens*. https://gd.eppo.int/taxon/RHAGIN/datasheet

Source: EPPO Secretariat (2021-10).

Additional key words: publication

Computer codes: CBCVD0, GONPSC, IPSXDU, LYCMDE, MELMME, PHENHI, PHYTLA, PSDPMI, PSDPPR, RHAGIN

2021/209 Final report of the International Year of Plant Health

In December 2018, the United Nations General Assembly declared 2020 the International Year of Plant Health (IYPH). Despite the difficult COVID-19 situation, many national and regional initiatives took place to raise awareness about plant health and reflect on future policies. The FAO has just published the final report of the International Year of Plant Health. This report presents the key outcomes and achievement of the year and highlights its main legacies (e.g. a proposal to establish an International Day of Plant Health, a scientific review of the impact of climate change on plant pests, a Youth Declaration). The final report of the International Year of Plant Health can be downloaded from the FAO website: https://www.fao.org/3/cb7056en/cb7056en.pdf

Source: FAO (2021) International Year of Plant Health – Final report. Rome. https://doi.org/10.4060/cb7056en

Additional key words: publication, IPPC, IYPH

2021/210 IPPC Pest Status Guide – Understanding the principal requirements for pest status determination

The IPPC Secretariat recently published a new guide to help NPPOs when determining the status of a pest in an area in accordance with ISPM 8 (Determination of pest status in an area). The different steps to be followed are described and illustrated with examples. This new guide can be downloaded from the FAO website: https://doi.org/10.4060/cb6103en

Source: IPPC Secretariat (2021) Pest status guide – Understanding the principal requirements for pest status determination. Rome. FAO on behalf of the Secretariat of the International Plant Protection Convention. https://doi.org/10.4060/cb6103en

Additional key words: publication, IPPC

2021/211 New additions to the EPPO A1 and A2 Lists

In September 2021, the EPPO Council approved the following changes made to the EPPO A1 and A2 Lists of pests recommended for regulation as quarantine pests.

Additions to the A1 List (pests absent from the EPPO region)
- *Chrysobothris femorata* (Coleoptera: Buprestidae)
- *Chrysobothris mali* (Coleoptera: Buprestidae)
- *Orgyia leucostigma* (Lepidoptera: Erebidae)

Additions to the A2 List (pests locally present in the EPPO region)
- *Celastrus orbiculatus* (Celastraceae)
- *Xanthomonas citri* pv. *fuscans* [following changes in taxonomy – it is one of the bacteria associated with common bacterial blight of bean]

Transfers from A1 List to A2 List
- *Anoplophora glabripennis* (Coleoptera: Cerambycidae)
- *Aromia bungii* (Coleoptera: Cerambycidae)
- *Spodoptera frugiperda* (Lepidoptera: Noctuidae)

Transfer from A2 List to A1 List
- *Blueberry leaf mottle virus* (BLMoV) [following changes in taxonomy – BLMoV is distinct from grapevine Bulgarian latent virus and absent from the EPPO region]

Deletion from the A1 List
- *Citrus tatter leaf virus* (CTLV) [following changes in taxonomy – CTLV is considered to be a strain of apple stem grooving virus, which is widely present in the EPPO region – see EPPO RS 2021/223]

For each individual pest, PRA documents and datasheets have been prepared (or are under development) and will be available in due course in the EPPO Global Database (https://gd.eppo.int).

Source: EPPO Secretariat (2021-10).

EPPO A1 and A2 lists of pests recommended for regulation as quarantine pests. https://www.eppo.int/media/uploaded_images/RESOURCES/eppo_standards/pm1/pm1-002-30-en_A1A2_2021.pdf

Additional key words: EPPO Lists

Computer codes: ANOLGL, AROMBU, BLMOV0, CELOR, CHRBFE, CHRBMA, CTLV00, HEMELE, LAPHFR, XANTFF

2021/212 First report of *Spodoptera frugiperda* in the Solomon Islands

In August 2021, *Spodoptera frugiperda* (Lepidoptera: Noctuidae – EPPO A2 List) was first found near Honiara city (Guadalcanal Island), Solomon Islands. Eradication was not considered technically feasible but phytosanitary measures will be taken to limit the spread and impact of the pest.

The pest status of *Spodoptera frugiperda* in the Solomon Islands is officially declared as: **Present: not widely distributed and under official control.**

Source: IPPC website. Official Pest Reports – Solomon Islands (SLB-01/1 of 2021-10-06) *Spodoptera frugiperda* (fall armyworm) detections Solomon Islands. https://www.ippc.int/fr/countries/solomon-islands/pestreports/2021/10/spodoptera-frugiperda-fall-armyworm-detections-solomon-islands/

Pictures: *Spodoptera frugiperda*. https://gd.eppo.int/taxon/LAPHFR/photos

Additional key words: new record **Computer codes:** LAPHFR, SB

2021/213 First report of *Spodoptera frugiperda* from Cambodia

In Cambodia, *Spodoptera frugiperda* (Lepidoptera: Noctuidae – EPPO A2 List) was first found in May 2019 in maize (*Zea mays*) fields in the Malai district (Banteay Meanchey province), Northern Cambodia (Hadi, 2019). Newspapers mentioned that serious damage was observed in maize crops, and that, as of June 2019, more than 11 000 ha of maize were affected by the pest in four provinces.

The situation of *Spodoptera frugiperda* in Cambodia can be described as follows: **Present.**

Source: FAO (online) Global Action for Fall Armyworm Control. FAW map. https://www.fao.org/fall-armyworm/monitoring-tools/faw-map/en/ (last accessed 2021-10).
Hadi B (2019) Fall armyworm in Cambodia: Surveillance, detection and response. Abstract of a paper presented at the XIX International Plant Protection Congress IPPC 2019 (Hyderabad, IN, 2019-11-10/14). Abstract Book, p 5.
INTERNET
Cambodia News English (2019-06-14) New pest destroys thousands of hectares of crops. https://cne.wtf/2019/06/14/new-pest-destroys-thousands-of-hectares-of-crops/

Pictures: *Spodoptera frugiperda*. https://gd.eppo.int/taxon/LAPHFR/photos

Additional key words: new record **Computer codes:** LAPHFR, KH

2021/214 First report of *Spodoptera frugiperda* from Brunei Darussalam

In Brunei Darussalam, *Spodoptera frugiperda* (Lepidoptera: Noctuidae – EPPO A2 List) was first reported in 2020 in maize (*Zea mays*) crops.

The situation of *Spodoptera frugiperda* in Brunei Darussalam can be described as follows: **Present.**

Source: Ministry of Primary Resources and Tourism of Brunei Darussalam. Agriculture and Agrifood Department. [Outbreak of fall armyworm (FAW) on maize plants in Brunei Darussalam] (in Malay). http://www.agriculture.gov.bn/Lists/Latest%20News/NewDisplay.aspx?ID=585

Pictures: *Spodoptera frugiperda*. https://gd.eppo.int/taxon/LAPHFR/photos

Additional key words: new record **Computer codes:** LAPHFR, KH

2021/215 Possible occurrence of *Spodoptera eridania* in India (and Asia)

Spodoptera eridania (Lepidoptera: Noctuidae – EPPO A1 List) is a polyphagous pest native to the Americas, occurring from Southern USA to Argentina. It was first recorded in Africa in 2018 (EPPO RS 2018/091).

The pest was first reported from India based on a finding in 2019. This is also the first report for Asia. In September 2019, larvae of a *Spodoptera* sp. were noticed damaging soybean (*Glycine max*) fields in the village of Tamgaon (Maharashtra). The species was different from *S. litura* (EPPO A1 List) which usually occurs in this region. On the basis of morphological characters of the larvae the author concludes that the species is *S. eridania*. However, no adults could be observed to confirm this identification. In addition, the author of the report indicated that the species had not been observed in 2020 and 2021.

Source: Gaikwad SM (2021) First report of *Spodoptera eridania* (Stoll) (Lepidoptera: Noctuidae) on soybean [*Glycine max* (L.) Merrill] from Kolhapur, Maharashtra, India. *Journal of Entomology and Zoology Studies* **9**(2), 1419-1422.

Personal communication with SM Gaikwad (2021-10).

Additional key words: Incursion **Computer codes:** PRODER, IN

2021/216 Update on the situation of *Agrilus planipennis* in Ukraine

The NPPO of Ukraine recently informed the EPPO Secretariat of the current situation of *Agrilus planipennis* (Coleoptera: Buprestidae - EPPO A2 List) on its territory. The pest was first detected in 2019 in the area of Starokozhiv (Markivske forest, Luhansk region) and eradicated (EPPO RS 2019/202). Further monitoring detected two other small outbreaks also in the Luhansk region at the end of 2019 and eradication measures have been applied in a demarcated area of 13.3 ha (RS 2020/070). In 2020 further surveys were conducted and detected new outbreaks. As a result, an area of 536.8 ha had been delimited and subjected to quarantine measures. In September 2021, 2 new outbreaks were detected further west in the region of Kharkiv (Kupiansk district) in an area of 84 ha.

As of October 2021, the demarcated area covers 620.8 ha in total and is located in the region of Luhansk (districts of Svativskiy and Starobilskiy) and in the region of Kharkiv (district of Kupiansk). The outbreaks are under eradication.
A map of the outbreaks in the region of Luhansk is available in Meshkova *et al*. (2021). The authors note that *Fraxinus pennsylvanica* are preferred hosts compared to *F. excelsior* but both species are attacked.

The pest status of *Agrilus planipennis* in Ukraine is officially declared as: **Present, not widely distributed and under official control.**

Source: NPPO of Ukraine (2021-10).

Meshkova VL, Kucheryavenko TV, Skrylnyk YE, Zinchenko OV, Borysenko AI (2021) Beginning of the spread of *Agrilus planipennis* Fairmaire (Coleoptera: Buprestidae) on the territory of Ukraine. Izvestia Sankt-Peterburgskoj Lesotehniceskoj Akademii no. 236, pp. 163–184 (in Russian with English summary).

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

Additional key words: detailed record **Computer codes:** AGRLPL, UA

2021/217 *Phyllocoptes arcani* sp. nov., a potential new vector of rose rosette emavirus

Rose rosette emaravirus (RRV- EPPO A1 List) causes a damaging disease on roses (*Rosa* sp.) in the USA and Canada. It is known to be vectored by *Phyllocoptes fructiphilus* (Acari: Eriophyidae - EPPO A1 List). In a recent study, the rose-inhabiting *Phyllocoptes* spp. in the USA were surveyed. Morphological, molecular and phylogenetic analyses identified a new species, tentatively named *Phyllocoptes arcani* sp. nov. This species was found in several locations, in rose rosette symptomatic plants as the only inhabiting species. As RRV was recovered from individual specimens of *P. arcani* sp. nov. it is suspected that this species may act as a vector of RRV, although transmission studies on rose still need to be conducted.

Source: Druciarek T, Lewandowski M, Tzanetakis I (2021) Molecular phylogeny of Phyllocoptes associated with roses discloses the presence of a new species. *Infection, Genetics and Evolution* **95**, 105051.

Additional key words: etiology **Computer codes:** PHYCAR, RRV000

2021/218 First report of *Corythucha arcuata* in Germany

The NPPO of Germany recently informed the EPPO Secretariat of the first record of the oak lace bug, *Corythucha arcuata* (Hemiptera: Tingidae – formerly EPPO Alert List) on its territory. In Baden-Württemberg, a member of the public found *C. arcuata* on oak trees in a forest next to a railway line. The Plant Protection Service then carried out a survey. The outbreak was found to cover an area of at least several km wide. As the pest is already present in many neighbouring countries south of Germany, it is presumed that *C. arcuata* has spread from there and is expected to spread further. In addition, there are no appropriate phytosanitary measures available to eradicate or contain the outbreak. A

preliminary pest risk assessment was carried out and the pest was not classified as a potential quarantine pest.

The pest status of *Corythucha arcuata* in Germany is officially declared as: **Present, restricted distribution.**

Source: NPPO of Germany (2021-10).

Pictures: *Corythucha arcuata*. https://gd.eppo.int/taxon/CRTHAR/photos

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

2021/219 *Eotetranychus lewisi* eradicated from Germany

In Germany, *Eotetranychus lewisi* (Acari: Tetranychidae - EU Annexes) was first reported in August 2020 in 2 nurseries producing poinsettias (*Euphorbia pulcherrima*) in greenhouses in Schleswig-Holstein (EPPO RS 2020/245). The NPPO conducted trace-back studies and initiated an awareness campaign for producers. As a result, further outbreaks were identified on poinsettias in other greenhouses: one in Berlin (October 2020), one in Brandenburg (October 2020), two in Hessen (November and December 2020), one in Rheinland-Pfalz (December 2020) and one in Sachsen (November 2020).
In all cases, official phytosanitary measures were taken, including acaricide treatments, destruction of infested plants, prevention of movement of plants, thorough cleaning of the greenhouses. As of July 2021, all outbreaks were considered eradicated.

The pest status of *Eotetranychus lewisi* in Germany is officially declared as: **Absent, pest eradicated.**

Source: NPPO of Germany (2020-12, 2021-04, 2021-07).

Pictures: *Eotetranychus lewisi*. https://gd.eppo.int/taxon/EOTELE/photos

Additional key words: eradication, absence **Computer codes:** EOTELE, DE

2021/220 Studies on the *Gonipterus scutellatus* species complex

Gonipterus species are native to Australia and are defoliators of eucalyptus. For many years, *Gonipterus scutellatus* (Coleoptera: Curculionidae – EPPO A2 List- eucalyptus snout beetle) has been considered as a single species. However, phylogenetic studies have shown that it is a species complex which includes *G. balteatus, G. platensis, G. pulverulentus, G. scutellatus* sensu stricto, and at least eight other species which remain to be described. Among these species, three have been introduced into other parts of the world and are considered to be invasive: *G. platensis*, *G. pulverulentus* and an undescribed species *Gonipterus* sp. n. 2. Other species of this complex, including in particular *G. scutellatus* sensu stricto, have not been recorded outside Australia.

These taxonomic changes imply that all past knowledge about the *G. scutellatus* species complex has to be critically reviewed and further studies are needed on the individual species to better understand their biology and ecology. Taxonomic studies are needed to describe and name the species which are part of the complex. These changes also have consequences on management strategies, and in particular on the use of *Anaphes nitens*, an

egg parasitoid which has been used throughout the invaded range of the different pest species. Finally, the quarantine status of the *G. scutellatus* species complex and its individual members might need to be re-assessed.
In the meantime, the EPPO Secretariat has tried to collect information on the geographical distribution and host range of the three species of the *G. scutellatus* complex which have shown invasive behaviour.

Gonipterus platensis
Native to Tasmania and invasive in New Zealand, North and South America, and parts of Europe.
EPPO region: Portugal, Spain (including Islas Canarias).
North America: USA (California, Hawaii).
South America: Argentina, Brazil (Espirito Santo, Parana, Rio Grande do Sul, Santa Catarina, Sao Paulo), Chile, Colombia.
Oceania: Australia (Tasmania, Western Australia), New Zealand.
https://gd.eppo.int/taxon/GONPPL/distribution

Hosts: *Eucalyptus globulus, E. grandis, E. longifolia, E. nitens, E. propinqua, E. obliqua.*

Gonipterus pulverulentus
Native to Australia (New South Wales, Tasmania) and invasive in South America.
EPPO region: Absent.
South America: Argentina, Brazil (Parana, Rio Grande do Sul, Santa Catarina), Uruguay.
Oceania: Australia (New South Wales, Queensland, South Australia, Tasmania).
https://gd.eppo.int/taxon/GONPPU/distribution

Hosts: *Eucalyptus amygdalina, E. globulus.*

Gonipterus sp. n. 2
Native to eastern mainland Australia, and invasive in Western Australia, Tasmania, Africa and parts of Europe.
EPPO region: France, Italy.
As *Gonipterus* sp. n. 2 is considered to be the species which has been introduced in the 1910s in South Africa and which then spread northwards along the eastern side of the continent, its distribution in Africa is probably as follows.
Africa: Eswatini, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Saint Helena, South Africa, Tanzania, Uganda, Zimbabwe.
Oceania: Australia (New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia).

Hosts: *Eucalyptus amplifolia, E. benthamii, E. camaldulensis, E. cornuta, E. dunnii, E. dalrympleana, E. globulus, E. grandis, E. kirtoniana, E. longifolia, E. maideni, E. microcorys, E. nitens, E. nicholii, E. propinqua, E. punctata, E. robusta, E. scoparia, E. smithii, E. tereticornis, E. urnigera, E. urophylla, E. viminalis.*

NOTE: a revised EPPO datasheet on the *Gonipterus scutellatus* species complex has just been published in the EPPO Global Database. https://gd.eppo.int/taxon/GONPSC/datasheet

Source: Garcia A, Allen GR, Oberprieler RG, Ramos AP, Valente C, Reis A, Franco JC & Branco M (2019) Biological control of *Gonipterus*: Uncovering the associations between

eucalypts, weevils and parasitoids in their native range. *Forest Ecology and Management* **443**, 106-116.

Mapondera TS, Burgess T, Matsuki M, Oberprieler RG (2012) Identification and molecular phylogenetics of the cryptic species of the *Gonipterus scutellatus* complex (Coleoptera: Curculionidae: Gonipterini). *Australian Journal of Entomology* **51**(3),175-188.

Newete SW, Oberprieler RG & Byrne MJ (2011) The host range of the Eucalyptus Weevil, *Gonipterus "scutellatus"* Gyllenhal (Coleoptera: Curculionidae), in South Africa. *Annals of Forest Science* **68**, 1005–1013.

Schröder ML, Nahrung HF, de Souza NM, Lawson SA, Slippers B, Wingfield MJ, Hurley BP (2021) Distribution of *Gonipterus* species and their egg parasitoids in Australia: implications for biological control. *Forests* **12**(8), 969. https://doi.org/10.3390/f12080969

Schröder ML, Slippers B, Wingfield MJ, Hurley BP (2020) Invasion history and management of Eucalyptus snout beetles in the *Gonipterus scutellatus* species complex. *Journal of Pest Science* **93**(1), 11-25. https://www.fabinet.up.ac.za/publication/pdfs/3678-1023_schroder_slippers_wingfield_2019_journal_of_pest_science_.pdf

Tooke FGC (1955) The eucalyptus snout beetle *Gonipterus scutellatus* Gyll. A study of its ecology and control by biological means. *Entomology Memoir, Department of Agriculture South Africa* **3**, 1-282.

Pictures: *Gonipterus scutellatus* species complex. https://gd.eppo.int/taxon/GONPSC/photos

Additional key words: taxonomy, distribution, host **Computer codes:** GONPBA, GONPPL, GONPPU, GONPSC, GONPST

2021/221 First report of flavescence dorée in grapevine in Montenegro

In September 2021, the presence of grapevine flavescence dorée was reported for the first time in Montenegro. During official surveys carried out on *Scaphoideus titanus* (which occurs in Montenegro) and flavescence dorée, the phytoplasma was detected in the municipality of Bar (near Godinje) in one grapevine (*Vitis vinifera*) plant. Studies have also indicated that the genotype (Map-FD3 M51, Vectotype Vmp-III) found in the grapevine plant is the one that is commonly found in *Clematitis vitalba* and *Dictyophara europaea* samples in Serbia and Montenegro. This suggests that the infection detected in grapevine could originate from a natural reservoir.
Phytosanitary measures are being taken to prevent any further spread of the disease: an infected zone has been delimited with a radius of 1 km around the infected plant and a buffer zone of 5 km radius; the infected plant will be uprooted and destroyed, as well as other plants of the vineyard showing suspicious symptoms; surveys will be conducted, and additional samples will be collected for testing; and control measures against the vector will continue.

Source: Directorate for Food Safety, Veterinary and Phytosanitary Affairs
- Notice (2021-09-27) [First finding of *Candidatus* Phytoplasma vitis (Flavescence dorée) – the causal agent of grapevine yellows]. https://ubh.gov.me/pretraga/244873/OBAVJEsTENJE-Prvi-nalaz-fitoplazme-Candidatus-Phytoplasma-vitis-Flavescence-dor-e-prouzrokovaca-zlatne-zutice-vinove-loze.html (in Montenegrin).
- Notice (2021-10-08) [Genotyping of a vine sample confirmed that Phytoplasma *Candidatus* Phytoplasma vitis (Flavescence dorée) originated from a natural reservoir] https://ubh.gov.me/pretraga/244929/OBAVJEsTENJE-Genotipizacija-uzorka-vinove-loze-potvrdila-da-je-fitoplazma-Candidatus-Phytoplasma-vitis-Flavescence-dor-e-porijek.html (in Montenegrin).

NPPO of Montenegro (2021-10).

Pictures: Grapevine flavescence dorée phytoplasma. https://gd.eppo.int/taxon/PHYP64/photos

Additional key words: new record **Computer codes:** PHYP64, ME

2021/222 First report of tomato brown rugose fruit virus in Uzbekistan

The tomato brown rugose fruit virus (*Tobamovirus*, ToBRFV – EPPO A2 List) has recently been reported from Uzbekistan. The virus was first detected in greenhouses producing tomato fruit (*Solanum lycopersicum*) in the Ferghana region in October 2020. Official surveys also detected the virus in tomato greenhouses in the region of Davlatobod in 2021. Official measures are taken to control the virus.

The pest situation of tomato brown rugose fruit virus in Uzbekistan can be described as: **Present, not widely distributed and under official control.**

Source: Official decrees of the Republic of Uzbekistan:
https://e-qaror.gov.uz/oz/site/download-text?id=79571&lang=oz
https://e-qaror.gov.uz/oz/site/download-text?id=186410&lang=oz

Pictures: tomato brown rugose fruit virus. https://gd.eppo.int/taxon/TOBRFV/photos

Additional key words: new record **Computer codes:** TOBRFV, UZ

2021/223 *Citrus tatter leaf virus* is now considered to be a synonym of *Apple stem grooving virus*

Citrus tatter leaf virus (EPPO A1 List) was initially the name given to a virus causing leaf malformation in *Citrus excelsa*, as well as severe indentations and a brown line and crease at the bud union on trifoliate orange (*Poncirus trifoliata*), citrange (*Poncirus trifoliata x Citrus sinensis*) and citrumelo (*P. trifoliata* x *C. paradisi*) used as rootstocks. It was included in certification schemes for the production of citrus plants in the EPPO region and was regulated as a quarantine pest in many citrus producing countries.
When the positive sense, single-stranded RNA genome of CTLV was sequenced, it was realised that it showed very high sequence identity with *Apple stem grooving virus* (ASGV – Capillovirus, EU RNQP), the type species of the genus Capillovirus, in the family Betaflexiviridae. As a consequence, CTLV isolates from citrus and ASGV isolates from other hosts are today regarded by the ICTV as all belonging to a single species, ASGV (ICTV Master species list).
ASGV is present in many countries of the EPPO region, and is part of certification schemes for the production of *Malus, Pyrus* and *Cydonia* plants for planting. It is a Regulated Non-Quarantine Pest (RNQP) for *Malus, Pyrus* and *Cydonia oblonga* in the EU.
It may be noted that ASGV has recently been recorded for the first time in the EPPO region on citrus in four different regions in Cyprus (Alas *et al.*, 2019).

Source: Alas T, Baloglu S, Caglar BK, Gunes A (2019) Detection and characterization of citrus tatter leaf virus (CTLV) and citrus yellow vein clearing virus (CYVCV) in citrus trees from Cyprus. *Saudi Journal of Biological Sciences* **26**(5), 995-998. https://doi.org/10.1016/j.sjbs.2019.02.001

EFSA PLH Panel (EFSA Panel on Plant Health), Jeger M, Bragard C, Caffier D, Dehnen-Schmutz K, Gilioli G, Gregoire J-C, Jaques Miret JA, MacLeod A, Navajas Navarro M, Niere B, Parnell S, Potting R, Rafoss T, Rossi V, Urek G, Van Bruggen A, Van der Werf W, West J, Chatzivassiliou E, Winter S, Catara A, Duran-Vila N, Hollo G and Candresse T (2017) Scientific Opinion on the pest categorisation of Tatter leaf virus. *EFSA Journal* **15**(10), 5033, 22 pp. https://doi.org/10.2903/j.efsa.2017.5033

International Committee on Taxonomy of Viruses (2020) ICTV Master species list https://talk.ictvonline.org/files/master-species-lists/m/msl

Additional key words: taxonomy, regulation **Computer codes:** CTLV00, ASGV00

2021/224 First reports of beech leaf disease in New Jersey, West Virginia and Virginia (US)

In North America, beech leaf disease (EPPO Alert List) was first reported in 2012 in Lake County, Ohio (US) on American beech trees (*Fagus grandifolia*) and recent research has shown that a foliar nematode *Litylenchus crenatae mccannii* was involved in this emerging disease (EPPO RS 2021/067). Since 2012, beech leaf disease has been reported from Ohio, Pennsylvania, New York, Connecticut, Rhode Island, Maine, and Ontario (Canada).
In 2020, it was also found in New Jersey and West Virginia (Martin & Volk, 2021). In June 2021, symptoms of beech leaf disease were observed on *F. grandifolia* trees in Prince William Forest Park, Virginia (Kantor *et al.*, 2021). Affected leaves contained nematode females, males and juveniles resembling those of *Litylenchus crenatae mccannii*. Molecular tests confirmed the identity of the nematode. It is noted that this new record in Virginia (more

than 400 km away from the recent detection in West Virginia) currently represents the southernmost detection of beech leaf disease and *L. crenatae mccannii* in North America.

Source: Kantor M, Handoo Z, Carta L, Li S (2021) First report of beech leaf disease, caused by *Litylenchus crenatae mccannii*, on American beech (*Fagus grandifolia*) in Virginia. *Plant Disease* (first view). https://doi.org/10.1094/PDIS-08-21-1713-PDN

Martin DK, Volk D (2021-01) Pest Alert. Beech Leaf Disease. USDA, Forest Service. Eastern Region State and Private Forestry (R9-PR-001-21), 2 pp. http://www.dontmovefirewood.org/wp-content/uploads/2019/02/Beech-Leaf-Disease-Pest-Alert.pdf

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

2021/225 *Petrakia liobae* a novel leaf disease of beech in Europe

A novel leaf disease of beech was first observed in Switzerland and Germany in 2008 and was first thought to be the Japanese fungal species *Pseudodidymella fagi* (EPPO RS 2017/138). Further investigations have shown that it is a species new to science whose origin is unknown, named *Petrakia liobae*. Phylogenetic analysis and the re-evaluation of the two species morphological characteristics lead to the reclassification of *Pseudodidymella fagi* as *Petrakia fagi* comb. nov.
P. liobae is only known from Europe, and is currently reported from Austria, France (Pyrenees), Germany, Slovakia, Slovenia, and Switzerland on *Fagus sylvatica* and on *F. orientalis*. In Slovenia, damage to common hornbeam *(Carpinus betulus)* were observed in the immediate vicinity of heavily infected beech trees but pathogenicity tests were not conducted.
It is still not clear whether *P. liobae* is an overlooked pathogen that is causing more evident damage throughout Europe due to climatic changes or a newly introduced invasive species.

Source: Beenken L, Gross A, Queloz V (2020) Phylogenetic revision of *Petrakia* and *Seifertia* (Melanommataceae, Pleosporales): new and rediscovered species from Europe and North America. *Mycological Progress* **19**(5), 417-440.
Czachura P, Owczarek-Kościelniak M, Piątek M (2018) *Pseudodidymella fagi* in Slovakia: first detection, morphology and culture characteristics. *Forest Pathology* **49**(1), e12479.
Ogris N, Brglez A, Piškur B (2019) *Pseudodidymella fagi* in Slovenia: first report and expansion of host range. *Forests* **10**(9), 718. https://doi.org/10.3390/f10090718

Additional key words: taxonomy, detailed record **Computer codes:** PDIDFA, PTRKLIE, AT, CH, DE, FR, SI, SK

2021/226 First confirmed report of *Lecanosticta acicola* in Slovakia

In Slovakia, a first report of *Lecanosticta acicola* (EPPO A2 List) was made in 2010, indicating that the fungus had been detected in 2 out of 128 samples collected from *Pinus nigra* trees in the city of Nitra. The fungus had been identified on the basis of its morphological characteristics, but no molecular tests were performed at that time.
More recently, further studies (Adamčíková *et al.*, 2021) were conducted to determine the distribution and host range of *L. acicola* in Slovakia and to characterize its populations (genetic diversity, mating type). From 2018 to 2020, samples of symptomatic pine needles were collected from 84 different locations across the country and *L. acicola* was found in 17

samples from 13 locations. Positive samples had mainly been collected from urban environments, but one came from a forest plantation. The identity of the fungus was confirmed with molecular methods (PCR with specific primers, sequencing). This study could also verify that the 2 isolates previously collected from Nitra corresponded to *L. acicola*. However, when the sites of these two initial findings were studied again in 2020, the fungus could not be found. Concerning host plants, *L. acicola* was most frequently detected in *P. nigra* (7 samples) and *P. mugo* (7), but it was also found in *P. sylvestris* (2) and *P. cembra* (1). The authors noted that this is the first time that *L. acicola* is detected in *P. cembra* and considered that its host status should be further investigated. Finally, it was shown that all studied Slovakian isolates were of the same mating type and could be grouped into a single lineage.

The situation of *Lecanosticta acicola* in Slovakia can be described as follows: **Present, not widely distributed.**

Source: Adamčíková K, Jánošíková Z, Adamčík S, Ostrovský R, Pastirčáková K, Kobza M, Ondrušková E (2021) Host range, genetic variability, and mating types of *Lecanosticta acicola* in Slovakia. *Scandinavian Journal of Forest Research* **36**(5), *325-332*. https://doi.org/10.1080/02827581.2021.1941236

Ivanová H, Bernadovičová S (2010) Species diversity of microscopic fungi on Austrian pines growing in urban greenery of Nitra town. *Folia Oecologica* **37**, 168–171.

Pictures: *Lecanosticta acicola*. https://gd.eppo.int/taxon/SCIRAC/photos

Additional key words: new record **Computer codes:** SCIRAC, SK

2021/227 First report of *Phytophthora pluvialis* in the United Kingdom

The NPPO of the United Kingdom recently informed the EPPO Secretariat of the first record of *Phytophthora pluvialis* on its territory. *P. pluvialis* was discovered during routine surveys in a woodland in Cornwall in September 2021, where it was found to be affecting mature western hemlock (*Tsuga heterophylla*) and Douglas-fir (*Pseudotsuga menziesii*) trees. This is the first record of *T. heterophylla* as a host of *P. pluvialis*. *P. pluvialis* was described as a new species in 2012 in mixed tanoak-Douglas fir forests (*Notholithocarpus densiflorus* - *Pseudotsuga menziesii*) in the USA (Oregon) (EPPO RS 2015/169) and was reported to be the cause of red needle cast on *Pinus radiata* in New Zealand in 2014 (RS 2016/215).
A risk assessment has been done by the UK Plant Health Risk Group, which has concluded that *Phytophthora pluvialis* meets the criteria to be classified as a GB quarantine pest for regulatory purposes. Official measures are being taken and include the prohibition of movement of any wood, isolated bark and trees (including live trees, felled or fallen trees, fruit, seeds, leaves or foliage) of the genera *Tsuga, Pseudotsuga, Pinus* and *Notholithocarpus*, that originated within the demarcated area.

The pest status of *Phytophthora pluvialis* in the United Kingdom is officially declared as: **Present, under eradication.**

Source: NPPO of the United Kingdom (2021-10).
Forestry Commission (2021-10-21) Guidance on *Phytophthora pluvialis* https://www.gov.uk/guidance/phytophthora-pluvialis

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

2021/228 *Phytophthora ramorum* eradicated from Spain

In Spain, *Phytophthora ramorum* (EPPO A2 List) has occasionally been found since the 2000s in nurseries on the mainland (EPPO RS 2003/133, RS 2004/172, RS 2005/050, RS 2007/137). From 2011 to 2017 it had been detected in the autonomous communities of País Vasco (4 outbreaks), Galicia (3 outbreaks), Navarra (2 outbreaks), and Cataluña (1 outbreak). All cases have been subject to eradication measures. The NPPO of Spain recently informed the EPPO Secretariat that all those outbreaks have been eradicated and that official annual surveys have not detected *P. ramorum* since 2017.
In Islas Baleares, *P. ramorum* had been found on rhododendron in two nurseries in the framework on a scientific study in 2002 in Mallorca (RS 2002/160). The infected material was immediately destroyed and since 2002, *P. ramorum* has not been detected in annual surveys carried out on consignments, in registered professional operations, public parks and gardens, and forests. These surveys involved 56 374 visual examinations and 501 samples analyzed during the period 2008-2021. This outbreak is also declared eradicated.

The pest status of *Phytophthora ramorum* in Spain is officially declared as: **Absent, pest eradicated.**

Source: NPPO of Spain (2021-08).

Pictures: *Phytophthora ramorum*. https://gd.eppo.int/taxon/PHYTRA/photos

Additional key words: eradication, absence **Computer codes:** PHYTRA, ES

2021/229 *Neopestalotiopsis* species are causing emerging strawberry diseases worldwide

Several recent articles report *Neopestalotiopsis* species causing damaging diseases in strawberry production. The spread of these diseases is associated with the trade of transplants. There is some confusion within the taxonomy of *Neopestalotiopsis* species as the genus has gone through multiple reclassifications over the years. *Neopestalotiopsis* species cause leaf blight or spots, shoot dieback, fruit rots and postharvest diseases on a wide range of hosts. They can also be isolated as endophytes or occur as saprobes on plants.

As strawberry disease was first reported to be caused by *Pestalotia longisetula* (later renamed as *Pestalotiopsis longisetula)* in Florida and Israel in the 1970s. In these initial reports, the pathogens were mainly associated with fruit rot. More recent reports also include root and crown rot which can lead to crop failure. They involved at least 4 different species that are closely related: *Neopestalotiopsis clavispora, N. mesopotamica, N. rosae,* and a new *Neopestalotiopsis* sp. However, as noted by Baggio *et al.* (2021), some species may have been misidentified.

Neopestalotiopsis clavispora was identified in 2016-2019 as causing crown and rot root in strawberry in China, the Republic of Korea, Uruguay, Spain, Argentina and Italy.

Neopestalotiopsis rosae was identified on strawberries in Egypt, China, Mexico, the USA (Florida) and Taiwan. Analyses conducted by Baggio *et al.* (2021) concluded that the isolate identified as *Neopestalotiopsis clavispora* in Spain by Chamorro *et al.* (2016) should be considered as *N. rosae*. Baggio *et al.* (2021) also suggest that *N. rosae* is a synonym of *Pestalotiopsis longisetula*. *N. rosae* was also recently identified as causing stem blight and

dieback of blueberry plants (*Vaccinium corymbosum*) in Peru, and foliar and fruit spot of pomegranate (*Punica granatum*).
A tentative distribution map is available at https://gd.eppo.int/taxon/NPESRS/distribution

Neopestalotiopsis mesopotamica was identified as causing crown and root rot in strawberry in Ecuador and Iran.

Finally, a new *Neopestalotiopsis* sp. has recently been observed causing severe outbreaks in the USA (Florida, Georgia) and Canada (Ontario). All transplants originated from the same nursery in North Carolina.

Source:

Baggio JS, Peres NA (2020) Pestalotia leaf spot and fruit rot of strawberry. IFAS Extension, 2 pp.

Baggio JS, Forcelini BB, Wang NY, Ruschel RG, Mertely JC, Peres NA (2021) Outbreak of leaf spot and fruit rot in Florida strawberry caused by *Neopestalotiopsis* spp. *Plant Disease* **105**(2), 305-315.

Chamorro M, Aguado A, De los Santos B (2016) First report of root and crown rot caused by *Pestalotiopsis clavispora (Neopestalotiopsis clavispora*) on strawberry in Spain. *Plant Disease* **100**(7), 1495.

Essa TA, Kamel SM, Ismail A, El-Ganainy S (2018) Characterization and chemical control of *Neopestalotiopsis rosae* the causal agent of strawberry root and crown rot in Egypt. Egyptian *Journal of Phytopathology* **46**(1), 1-9.

Goldenhar K, Pate E (2021) Pest Alert: *Neopestalotiopsis* – an emerging strawberry disease in North America. Available online https://onfruit.ca/2021/03/11/pest-alert-neopestalotiopsis-an-emerging-strawberry-disease-in-north-america/

Hidrobo J, Ramirez-Villacis D, Barriga-Medina N, Herrera K, Leon-Reyes A (2021) First report of *Neopestalotiopsis mesopotamica* causing root and crown rot on strawberry in Ecuador. *Plant Disease* https://doi.org/10.1094/PDIS-06-21-1278-PDN

Rebollar-Alviter A, Silva-Rojas HV, Fuentes-Aragón D, Acosta-González U, Martínez-Ruiz M, Parra-Robles BE (2020) An emerging strawberry fungal disease associated with root rot, crown rot and leaf spot caused by *Neopestalotiopsis rosae* in Mexico. *Plant Disease* **104**(8), 2054-2059.

Maharachchikumbura SS, Hyde KD, Groenewald JZ, Xu J, Crous PW (2014) *Pestalotiopsis* revisited. *Studies in Mycology* **79**, 121-186.

Rodríguez-Gálvez E, Hilário S, Lopes A, Alves A (2020) Diversity and pathogenicity of *Lasiodiplodia* and *Neopestalotiopsis* species associated with stem blight and dieback of blueberry plants in Peru. *European Journal of Plant Pathology* **157**(1), 89-102.

Sun Q, Harishchandra D, Jia J, Zuo Q, Zhang G, Wang Q, Yan J, Zhang W, Li X (2021) Role of *Neopestalotiopsis rosae* in causing root rot of strawberry in Beijing, China. *Crop Protection* **147**, 105710.

Van Hemelrijck W, Ceustermans A, Van Campenhout J, Lieten P, Bylemans D (2016) Crown rot in strawberry caused by Pestalotiopsis. In *VIII International Strawberry Symposium 1156* (pp. 781-786). *Acta Horticulturae* 1156. ISHS 2017. https://doi.org/10.17660/ActaHortic.2017.1156.115

Wu HY, Tsai CY, Wu YM, Ariyawansa HA, Chung CL, Chung PC (2020) First report of *Neopestalotiopsis rosae* causing leaf blight and crown rot on strawberry in Taiwan. *Plant Disease* **105**(2), 487. https://doi.org/10.1094/PDIS-05-20-1045-PDN

Additional key words: new record

Computer codes: NPESRS, NPESSP, PESPCL, PESTLO, US, MX, CN, ES, EC, PE, CA, IT, BE, TW, UY

2021/230 *Phyllachora maydis*, the causal agent of tar spot of maize: addition to the EPPO Alert List

Why: Tar spot is a foliar fungal disease of maize (*Zea mays*) which is emerging in the USA and causing economic damage to maize crops. There is some debate about the causal agents of this disease. In Latin America where the disease is thought to be endemic, tar spot has been associated with several fungal species: *Phyllachora maydis*, *Monographella maydis* and *Coniothyrium phyllachorae*. In Mexico, it was reported that on maize plants, infections by *Phyllachora maydis* were then followed by *Monographella maydis* infections, and that the latter was responsible for the appearance of 'fisheye' lesions on the foliage. However, in the USA, where this type of foliar symptoms is also observed, only *P. maydis* has been detected in maize plants affected by tar spot. Considering the importance of maize and the absence of tar spot in the EPPO region, as well as the fact that the disease is causing economic damage in its introduced range, the EPPO Secretariat considered that *Phyllachora maydis* could usefully be added to the EPPO Alert List.

Where: *P. maydis* was initially described in 1904 in Mexico and occurs in several countries of Central and South America. In 2015, the fungus was first recorded in the USA, in Illinois and Indiana (EPPO RS 2016/016), and then spread to other states.
EPPO region: Absent.
North America: Mexico, USA (Florida, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin).
Central America and the Caribbean: Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Puerto Rico, Trinidad and Tobago, Virgin Islands (US).
South America: Bolivia, Colombia, Ecuador, Peru, Venezuela.

On which plants: maize (*Zea mays*) is the only known host.

Damage: Initial symptoms of tar spot are small chlorotic lesions, followed by the development of brown to black stromata (0.5-2.5 mm diameter – fruiting bodies of *P. maydis*) scattered across the upper and lower leaf surfaces. In severe cases, these symptoms can also be observed on leaf sheaths and husks. Stromata are sometimes surrounded by brown, elliptical, necrotic halos (fisheye lesions). In severe cases, these lesions coalesce, causing extensive necrosis and leaf blight leading to premature senescence and death of maize plants. Tar spot can reduce maize grain yield, quality of silage, stover and husks. Yield loss has been attributed to reduced ear weight, poor kernel filling, loose kernels, and vivipary (germination of seeds before they reach maturity). In Latin America, grain losses ranging from 10 to 45% have been observed in case of severe epidemics. In the USA, up to 30% grain yield losses have been reported.

Dissemination: The disease cycle is not fully understood. *P. maydis* overwinters (as ascospores and conidia in stromata) on decaying maize leaves or residues remaining in the fields. It is thought that infected plant residues are the source of primary inoculum. Ascospores are released from stromata and are dispersed by wind and rain during periods of moderate temperature (16 to 23°C), leaf wetness duration of more than 7 h per night, and relative humidity of more than 75%. Ascospores then infect nearby maize plants and this cycle is repeated multiple times during the growing season. It has been shown that ascospores could be dispersed as far as 31 m from the inoculum sources. *S. maydis* is not known to be seedborne, and it is not known how *P. maydis* reached the USA. It is suggested that infected leaf/husk residues contaminating traded grains could be a pathway to spread the disease over long distances.

Pathways: contaminating plant residues associated with maize seeds? soil?

Possible risks: Maize is widely grown in the EPPO region and is an economically important crop. Tar spot is an emerging disease of maize in the USA and is considered there as a threat to maize production. Control strategies against the disease are currently limited and further research is needed. It is estimated that control will probably have to rely on good cultural practices (e.g. rotation, removal of infected plant residues), biological control or appropriate fungicide treatments and use of tolerant/resistant maize varieties (none are available at present). As there is a general lack of information about tar spot and *P. maydis*, the possible risks for the EPPO region are difficult to assess. In particular, the pathways for introducing the fungus into new areas would need to be better understood. However, the recent emergence in the USA and the economic damage observed advocate for caution, and the EPPO Secretariat felt that the attention of NPPOs should be attracted to this maize disease.

Sources

CABI. Invasive Species Compendium. *Phyllachora maydis* (black spot of maize). https://www.cabi.org/isc/datasheet/40876 (last accessed 2021-10).

Chalkley D (2021) Systematic Mycology and Microbiology Laboratory, ARS, USDA. Invasive Fungi. Tar spot of corn-*Phyllachora maydis*. https://nt.ars-grin.gov/taxadescriptions/factsheets/index.cfm?thisapp=Phyllachoramaydis (last accessed 2021-10).

Dalla Lana F, Plewa DE, Phillippi ES, Garzonio D, Hesterman R, Kleczewski NM, Paul PA (2019) First report of tar spot of maize (*Zea mays*), caused by *Phyllachora maydis*, in Ohio. *Plant Disease* **103**(7), p 1780. https://doi.org/10.1094/PDIS-01-19-0070-PDN

Hock J, Dittrich U, Renfro BL, Kranz J (1992) Sequential development of pathogens in the maize tarspot disease complex. *Mycopathologia* **117**(3), 157–161.

Hock J, Kranz J, Renfro BL (1995) Studies on the epidemiology of the tar spot disease complex of maize in Mexico. *Plant Pathology* **44**(3), 490–502.

INTERNET

- CGIAR. Tar spot complex in Latin America. http://maize.org/tar-spot-in-latin-america/ (last accessed 2021-10).
- Corn. IPM-PIPE. Tar spot of corn (*Phyllachora maydis*). https://corn.ipmpipe.org/tarspot/ (last accessed 2021-10).

Kleczewski NM, Plewa DE, Bissonnette KM, Bowman ND, Byrne JM, LaForest J, Dalla-Lana F, Malvick DK, Mueller DK, MI Chilvers, Paul PA, Raid RN, Robertson AE, Ruhl GE, Smith DL, Telenko DEP (2020) Documenting the establishment, spread, and severity of *Phyllachora maydis* on corn, in the United States. *Journal of Integrated Pest Management* **11**(1), 1-5. https://doi.org/10.1093/jipm/pmaa012

Malvick DK, Plewa DE, Lara D, Kleczewski NM, Floyd CM, Arenz BE (2020) First report of tar spot of corn caused by *Phyllachora maydis* in Minnesota. *Plant Disease* **104**(6), p 1865. https://doi.org/10.1094/PDIS-10-19-2167-PDN

Maublanc A (1904) Espèces nouvelles de champignons inférieurs. *Bulletin de la Société Mycologique de France* **20**, 72-74.

McCoy AG, Romberg MK, Zaworski ER, Robertson AE, Phibbs A, Hudelson BD, Smith DL, Beiriger RL, Raid RN, Byrne JM, Chilvers MI (2018) First report of tar spot on corn (*Zea mays*) caused by *Phyllachora maydis* in Florida, Iowa, Michigan, and Wisconsin. *Plant Disease* **102**(9), p.1851. https://doi.org/10.1094/PDIS-02-18-0271-PDN

McCoy AG, Roth MG, Shay R, Noel ZA, Jayawardana MA, Longley RW, Bonito G, Chilvers MI (2019) Identification of fungal communities within the tar spot complex of corn in Michigan via Next-Generation Sequencing. *Phytobiomes* **3**(3), 235–243. https://doi.org/10.1094/PBIOMES-03-19-0017-R

Ruhl G, Romberg MK, Bissonnette S, Plewa D, Creswell T, Wise KA (2016) First report of tar spot on corn caused by *Phyllachora maydis* in the United States. *Plant Disease* **100**(7), 1496-1497. https://10.1094/PDIS-12-15-1506-PDN

Valle-Torres J, Ross TJ, Plewa D, Avellaneda MC, Check J, Chilvers MI, Cruz AP, Dalla Lana F, Groves C, Gongora-Canul C, Henriquez-Dole L, Jamann T, Kleczewski N, Lipps S, Malvick D, McCoy AG,

Mueller DS, Paul PA, Puerto C, Schloemer C, Raid RN, Robertson A, Roggenkamp EM, Smith DL, Telenko DEP, Cruz CD (2020) Tar spot: An understudied disease threatening corn production in the Americas. *Plant Disease* **104**(10), 2541-2550.

EPPO RS 2016/016, 2021/230

Panel review date – Entry date 2021-10

2021/231 Report of *Heptapleurum arboricola* naturalising in Sicily (IT)

Heptapleurum arboricola (synonym: *Schefflera arboricola:* Araliaceae) is native to China and Taiwan where it grows in forests and along riverbanks below altitudes of 900 m. It is considered to be invasive in the United States (Hawaii and Florida), the Fiji Islands, Singapore and Brazil. Where the species is invasive, birds have been reported as spreading the species via the consumption of seeds. *S. arboricola* has been recorded as naturalized in the EPPO region in the Canary Islands (Spain) and Turkey. The species was introduced into the EPPO region approximately 100 years ago via Kew Gardens (GB). Since then it has been widely utilised as an ornamental species in gardens. In 2017, three self-sown seedlings of *H. arboricola* were observed in urban areas at Castellammare del Golfo, on the north-west coast of Sicily (IT). These plants were observed growing from cracks in the pavement and no other specimens were found in the surrounding area. Climate is likely to be a limiting factor for the establishment of *H. arboricola* in the natural environment in the Mediterranean area of the EPPO region. The species requires high levels of rainfall and humidity: the annual rainfall where the species was observed in Italy is only half the minimum annual rainfall (≈ 1 600 mm) where the species is regarded as invasive. The authors of the current study suggest that *H. arboricola* should be monitored to ensure the species does not establish in the Mediterranean region.

Source: Badalamenti E (2021) First record of *Heptapleurum arboricola* Hayata (Araliaceae) as a casual non-native woody plant in the Mediterranean area. *BioInvasions Records* **10** (in press).

Additional key words: invasive alien plant **Computer codes**: SCHAR, IT

2021/232 Weed seed contamination in seed shipments to New Zealand

EPPO Pest Risk Analyses on invasive alien plants highlight the import of seed as important pathways for the introduction of invasive alien plants (e.g. *Amaranthus palmeri*, *A. tuberculatus* and *Ambrosia trifida*). Effective management of this pathway is a significant means of reducing future plant introductions and can help to minimise agricultural losses. The current study examined a national border inspection database that contained data on the frequency, origin and identity of contaminant seeds within seed for sowing shipments entering New Zealand between 2014–2018. The study assessed 41 610 seed lots across 1 420 crop seed species from over 90 countries. Overall, contamination was rare, occurring in only 1.9% of all seed lots. Among the different crop types, arable seeds had the lowest average percentage of seed lots contaminated (0.5%) compared to forage seeds which had the highest average level of contamination (12.6%). Crop seeds *Capsicum*, *Phaseolus* and *Solanum* had the lowest contamination rates (0.0%) whereas forage crops *Medicago* (27.3%) and *Trifolium* (19.8%) had the highest contamination rates. Out of 191 genera recorded as contaminants, *Chenopodium* was the most common. Regulated quarantine weeds were the rarest contaminant type, only occurring in 0.06% of seed lots. *Sorghum halepense* was the most common quarantine species and was only found in vegetable seed lots. Vegetable crop seed lots accounted for approximately half of all quarantine species detections, *Raphanus sativus* being the most contaminated vegetable crop (by quarantine species). Larger seed lots were more contaminated and more likely to contain a quarantine species than smaller seed lots.

Sources: Rubenstein JM, Hulme PE, Buddenhagen CE, Rolston MP. Hampton JG (2021) Weed seed contamination in imported seed lots entering New Zealand. *PLoS ONE* **16**(8), e0256623. https://doi.org/10.1371/journal.pone.0256623

Additional key words: invasive alien plant **Computer codes:** AMAPA, AMATU, AMBTR, SORHA

2021/233 Seed germination of *Acacia dealbata* and *Acacia mearnsii*

Acacia dealbata (Fabaceae: EPPO List of Invasive Alien plants) and *A. mearnsii* are both native to Australia and are invasive in Africa, Asia, the Americas, the EPPO region and New Zealand. In the EPPO region, both species are invasive in coastal and riparian Mediterranean habitats. Seed biology, ecology, seedbank density, and seed longevity are important drivers of plants' competitive performance, contributing to the invasion success. Invasive plant species with persistent soil seedbanks are particularly difficult to manage as, even after mature individuals are removed, seeds remain in the soil. Mature pods of *A. dealbata* and *A. mearnsii* were collected from six locations in the Mediterranean region, three from France, two from Italy and one from Portugal. All seeds were stored under controlled conditions for a period of 2 weeks and non-scarified seeds were sown on a 1 % water agar substrate in Petri-dishes and incubated in a growth chamber at 15, 20, and 25°C, in light (12 h light per day). Scarified seeds, where the seed coats were manually chipped with a scalpel were incubated in growth chambers with constant temperature and light (5, 10, 15, 20, and 25°C) (12 h of light per day). Both species showed a higher germination capacity at 25°C in non-scarified seeds; *A. dealbata* reached a germination maximum of 55 %, while *A. mearnsii* reached 40 %. Scarified seeds of both species reached germination percentages >95 % at all temperatures except at 5°C in dark conditions. Scarification was important to break dormancy and promote germination. The study confirms that *A. dealbata* and *A. mearnsii* have physical dormancy, a trait that promotes the establishment of a persistent soil seed bank. Seeds are highly dependent on scarification for germination, an adaptation that allows the seeds to germinate when conditions are more suitable, promoting the survival of seedlings in nature.

Source: Dessì L, Podda L, Brundu G, Lozano V, Carrouée A, Marchante E, Marchante H, Petit Y, Porceddu M, Bacchetta G (2021) Seed germination ecophysiology of *Acacia dealbata* Link and *Acacia mearnsii* De Wild.: Two invasive species in the Mediterranean Basin. *Sustainability* **13**, 11588.

Pictures: *Acacia dealbata*. https://gd.eppo.int/taxon/ACADA/photos

Additional key words: invasive alien plant **Computer codes**: ACADA, ACAMR, FR, IT, PT

2021/234 Herbicide trials for *Cabomba caroliniana* in New Zealand

Cabomba caroliniana (Cabombaceae: EPPO List of Invasive Alien Plants) is an obligate submersed macrophyte native to South America. It is a perennial species and primarily reproduces by vegetative fragmentation. The species, commonly known as fanwort, has been traded as an aquarium plant and is naturalised in several regions globally (Asia, Europe, North America and Oceania). In the EPPO region the species is established in Austria, France, Germany, Hungary, the Netherlands and the United Kingdom (England). In the EU, the species is listed as a species of Union concern (Regulation (EU) 1143/2014). In New Zealand, *C. caroliniana* has been cultivated as an aquarium plant for at least 30 years and around the late 2000s it became established. In New Zealand, herbicide trials on the species were conducted in contained conditions using the following herbicides: carfentrazone, endothall, flumioxazin, and triclopyr. All four herbicides were shown to reduce fanwort biomass though viable plant material remained following the application of all herbicides. This indicates that there is the potential for rapid regrowth following treatment, and there is a high degree of uncertainty of the outcome where the herbicides are to be used for the management of field populations. The current study highlights that none of the herbicides are recommended for use in eradication programs against *C. caroliniana* without a clear understanding that

multiple applications will likely be required, and there is a degree of uncertainty regarding the level of efficacy that can be achieved.

Source: Hofstra DE, Clements D, Rendle DM, Champion PD (2021) Response of fanwort (*Cabomba caroliniana*) to selected aquatic herbicides in New Zealand. *Journal of Aquatic Plant Management* **59**, 35-39.

Additional key words: invasive alien plant **Computer codes:** CABCA, NZ