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2023/194 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 8.

- **New records**

Cucurbit yellow stunting disorder virus (Crinivirus, CYSDV - EPPO A2 List) is first reported from India. It was detected during surveys conducted in 2021-2022 in Uttar Pradesh and Cucurbit chlorotic yellows virus (Crinivirus, CCYV) was also detected (Nagendran *et al.*, 2023).

Eutetranychus orientalis (Acari: Tetranychidae – EPPO A2 List) is first reported from Burkina Faso. The mite was identified during surveys done in 2019-2020 on *Carica papaya*. During this survey, *Tetranychus truncatus* (Acari: Tetranychidae) was also reported for the first time in Burkina Faso and in Africa. *T. truncatus* is a polyphagous crop pest in Asia. In Burkina Faso, it was reported on new host plants including *Allium cepa* and *Solanum macrocarpon* (Drabo *et al.*, 2023).

Megalurothrips usitatus (Thysanoptera: Thripidae) was first recorded in three bean (*Phaseolus vulgaris*) growing areas in Costa Rica in 2022 (Rodríguez-Arrieta *et al.*, 2023).

Takahashia japonica (Hemiptera: Coccidae - string cottony scale) is first reported from Ukraine. A large population was observed in July 2022 on *Carpinus orientalis* in the Crimean Peninsula (Balaklava district) (Gavrilov-Zimin & Volkova, 2022).

In Indonesia, bacterial leaf spot on chilli pepper (*Capsicum* spp.) has occurred for some time but the causal agent had not been identified. Utami *et al.* (2023) conducted tests on diseased *Capsicum* in Yogyakarta (Java) in 2022 and identified the causal agent as *Xanthomonas euvesicatoria* pv. *euvesicatoria* (EPPO A2 List).

- **Detailed records**

In Sicilia (IT), *Ceratocystis ficicola* (EPPO Alert List) has been detected (using molecular methods) in samples collected in 2022 in the municipality of Noto from *Ficus carica* showing trunk necrosis (Crous *et al.*, 2023).

In August 2023, *Cydalima perspectalis* (Lepidoptera: Crambidae - formerly EPPO Alert List) was reported for the first time in Massachusetts (US). The pest was found in Cape Cod, Barnstable county (Massachusetts Introduced Pests Outreach Blog, 2023-08).

In Italy, *Heterodera glycines* (EPPO A2 List - soybean cyst nematode) was first found in 2000 in Lombardia (province of Pavia). Subsequently, it was found in 2018 in one soybean (*Glycine max*) field in the municipality of San Stino di Livenza (Veneto), and in 2020 in one soybean field in the municipality of Montereale Valcellina (Friuli Venezia Giulia) (Perin *et al.*, 2021).

In India, *Meloidogyne graminicola* (EPPO Alert List) has been found in rice (*Oryza sativa*) in Uttarakhand. The nematode was detected during a survey conducted in 2019-2020 in an experimental farm located in the Kumaon hills (mid-Indian Himalayan region) (Singh *et al.*, 2023).

- **Absence**

The NPPO of Argentina recently informed the EPPO Secretariat that *Xanthomonas citri* pv. *aurantifolii* (EPPO A1 List) no longer occurs on its territory. It was first recorded in the 1920s (as cancrosis B or B-type strains). In later studies, it has been shown that B-type strains have gradually been replaced (from the 1970s to 1990s) by the more aggressive A-type strains (*Xanthomonas citri* pv. *citri*) which were first found in Argentina in 1974. Since 1991, *X. citri* pv. *aurantifolii* has not been detected in the field, and therefore should be considered as absent from Argentina (NPPO of Argentina, 2023-08).

- **Host plants**

Austropuccinia psidii (formerly EPPO Alert List), the causal agent of myrtle rust can infect *Myrtus communis*. *M. communis* is the sole Myrtaceae species native to Europe and it is an important component of vegetation in Mediterranean regions (Paap *et al.*, 2023).

In inoculation studies, *Trichoderma afroharzianum* (EPPO Alert List), causal agent of ear rot in maize, produced disease symptoms (discoloration of ear and spikelets, reduction of number of grain) on barley (*Hordeum vulgare*), and wheat (*Triticum aestivum*) (Pfordt *et al.*, 2023).

- **Epidemiology**

Citrus yellow vein clearing virus (*Potexvirus*, CYVCV, EPPO Alert List) is transmitted from Persian lime (*Citrus latifolia*) to Eureka lemon (*C. limon)* by citrus aphids (*Aphis spiraecola, A. gossypii,* and *A. aurantii*) under controlled conditions. This is the first report of *A. aurantii* as vector of CYVCV (Maghsoudi *et al.*, 2023).

Sources:

Crous PW, Akulov A, Balashov S, Boers J, Braun U, Castillo J, Delgado MA, Denman S, Erhard A, Gusella G, Jurjević Ž, Kruse J, Malloch DW, Osieck ER, Polizzi G, Schumacher RK, Slootweg E, Starink-Willemse M, van Iperen AL, Verkley GJM, Groenewald JZ (2023) New and Interesting Fungi. 6. *Fungal Systematics and Evolution* **11**, 109–156. https://doi/org/10.3114/fuse.2023.11.09

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Gavrilov-Zimin LA, Volkova MV (2022) *Takahashia japonica* (Homoptera: Coccinea), a new adventive species for eastern Europe. *Zoosystematica Rossica* **31**(2), 332–335.

Maghsoudi R, Nassrollahnejad S, Aghajanzadeh S, Bani Hashemian SM (2023) Transmissibility of Citrus yellow vein clearing virus by three dominant citrus aphids. *Iranian Journal of Plant Protection Science* **54**(1), 101-113. DOI:10.22059/IJPPS.2023.353042.1007016

Massachusetts Introduced Pests Outreach Blog (2023-08-30) Box tree moth found in Barnstable County. https://massnrc.org/pests/blog/?p=3254

Nagendran K, Kumari S, Pandey S, Karmakar P, Chaubey T, Kumar R, Vignesh S, Karthikeyan G, Behera TK (2023) Emergence of yellowing disease in cucurbitaceous vegetables caused by Crinivirus and Polerovirus in India. *Virology* **587**, 109876. https://doi.org/10.1016/j.virol.2023.109876

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Perin S, Governatori G, Braghin A (2021) Primo ritrovamento del nematode cisticolo della soia (*Heterodera glycines*) in Friuli Venezia Giulia. *Notiziaro ERSA* no. 1, 28-30. http://www.ersa.fvg.it/export/sites/ersa/aziende/in-formazione/notiziario/allegati/2021/1/8_NEMATODE.pdf

Pfordt A, Gaumann P, von Tiedemann A (2023) Pathogenicity of *Trichoderma afroharzianum* in cereal crops. *Pathogens* **12**(7), 936. https://doi.org/10.3390/pathogens12070936

Rodríguez-Arrieta JA, Chaves-Barrantes NF, Hernández-Fonseca JC, González-Herrera (2023) First report of common bean flower thrips *Megalurothrips usitatus* Bagnall in Costa Rica. *Tropical and Subtropical Agroecosystems* **26**(2), #37. https://www.revista.ccba.uady.mx/ojs/index.php/TSA/article/view/4521/2009

Singh AK, Paschapur AU, Kushwaha AK, Mishra K, Kant L (2023) Detection of *Meloidogyne graminicola* (RRKN) in Kumaon region of the Indian Himalayas. *Indian Journal of Agricultural Sciences* **93**(7), 710-714. https://doi.org/10.56093/ijas.v93i7.135351

Utami D, Jayasanti NN, Meale SJ, Young AJ (2023) First report of *Xanthomonas euvesicatoria* pv. *euvesicatoria* causing bacterial leaf spot in chilli pepper (*Capsicum* sp.) in Indonesia. *New Disease Reports* **48**, e12208. https://doi.org/10.1002/ndr2.12208

Additional key words: absence, detailed records, epidemiology, host plant, new record

Computer codes: CCYV00, CERAFC, CSYV00, CYSDV0, DPHNPE, EUTEOR, HETDGL, MELGGC, PUCCPS, TAKAJA, TETRTC, TRCDAF, XANTAU, AR, BF, IN, IT, IT, UA

2023/195 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 2023/155), the following new and revised EPPO datasheets have been published in the EPPO Global Database:

- *Anisogramma anomala*. https://gd.eppo.int/taxon/CRSPAN/datasheet
- *Cherry rusty mottle associated virus*. https://gd.eppo.int/taxon/CRMAV0/datasheet
- *Grapholita packardi*. https://gd.eppo.int/taxon/LASPPA/datasheet
- *Monochamus carolinensis*. https://gd.eppo.int/taxon/MONCCA/datasheet
- *Scirtothrips dorsalis*. https://gd.eppo.int/taxon/SCITDO/datasheet
- *Xylotrechus namanganensis*. https://gd.eppo.int/taxon/XYLONM/datasheet

Source: EPPO Secretariat (2023-09).

Additional key words: publication

Computer codes: CRMAV0, CRSPAN, LASPPA, MONCCA, SCITDO, XYLONM

2023/196 Update on the situation of *Diaphorina citri* in Cyprus

Diaphorina citri (vector of '*Candidatus* Liberibacter asiaticus' - Hemiptera: Psyllidae, EPPO A1 List) was first reported in Cyprus in August 2023 in the municipality of Asómatos in Limassol District (EPPO RS 2023/178). Further surveys were conducted, and the psyllid was detected in citrus orchards in the southern coastal part of the island (Limassol, Larnaca, Paphos and Ammochostos districts). *D. citri* was not detected in the area of Nicosia and in the northern part of Cyprus (Polis Chrysochous area in Paphos district) where citrus are cultivated. All samples were tested for *Liberibacter* species causing huanglongbing following EPPO Diagnostic Protocol PM 7/121and the results were negative.

The pest status of *Diaphorina citri* in Cyprus is officially declared as: **Present, only in some parts of the Member State concerned, under eradication.**

Source: NPPO of Cyprus (2023-09).

EPPO Standard PM7/121(2) Diagnostic Protocol for '*Candidatus* Liberibacter africanus', '*Candidatus* Liberibacter americanus' and '*Candidatus* Liberibacter asiaticus'. Available at https://gd.eppo.int/taxon/LIBEAS/documents

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

Additional key words: detailed record **Computer codes:** DIAACI, LIBEAS, LIBEAF, CY

2023/197 Incursions of *Bactrocera dorsalis* in Belgium

The NPPO of Belgium recently informed the EPPO Secretariat of findings of *Bactrocera dorsalis* (Diptera: Tephritidae – EPPO A1 List) on its territory.
In August 2023, an adult male was caught in a trap as part of the annual survey in an outdoor public market in the city centre of Antwerp (Province of Antwerp). The pest was identified by morphological and molecular tests. The NPPO considered that the pest most likely escaped from a batch of imported exotic fruits (present at or near the market) but surveys were conducted to verify the presence of *B. dorsalis* on the territory. Additional traps were installed in the surroundings, and sites producing host plants in the area were inspected. A campaign was conducted to raise awareness of professional operators and citizens.
In September 2023, three adult males were caught: one in a public market in an urban area in the municipality of Anderlecht (province of Brussels), one in an outdoor public market in a semi-urban area in the municipality of Courcelles (province of Hainaut), and one in Antwerp (5 km away from the first finding).

The pest status of *Bactrocera dorsalis* in Belgium is officially declared as: **Absent, isolated post entry findings in traps near points of entry/(exotic) fruit markets, under further surveillance, climate not suitable for establishment.**

Source: NPPO of Belgium (2023-08, 2023-09).

Pictures: *Bactrocera dorsalis*. https://gd.eppo.int/taxon/DACUDO/photos

Additional key words: incursion **Computer codes:** DACUDO, BE

2023/198 Absence of *Ips duplicatus* in Slovenia

In Slovenia *Ips duplicatus* (Coleoptera: Curculionidae: Scolytinae - EU Annexes) was first found in 2020: one beetle was caught in a trap in April 2020 in a forest in the Central Slovenia region (EPPO RS 2020/168). Surveys were continued but no further specimens were caught.

The pest status of *Ips duplicatus* in Slovenia is officially declared as: **Absent, pest no longer present.**

Source: NPPO of Slovenia (2023-09).

Additional key words: absence **Computer codes:** IPSXDU, SI

2023/199 Situation of *Scirtothrips dorsalis* in Mexico

In Mexico, *Scirtothrips dorsalis* (Thysanoptera: Thripidae – EPPO A2 List) was found for the first time in 2019 in blueberry (*Vaccinium* spp.) fields in Michoacan state, and in 2021 on citrus in the state of Colima (EPPO RS 2020/215, RS 2022/181). Surveys conducted in 2021 detected the thrips in the states of Jalisco, Michoacan, Nayarit, Sinaloa, and Veracruz. Plant reproductive hosts were blackberry (*Rubus* sp.), blueberry (*Vaccinium* sp.), Persian lime (*Citrus latifolia*), mango (*Mangifera indica*), and pear (*Pyrus communis*) (López-Lima *et al.*, 2023). *S. dorsalis* was also reported causing damage on grapevine (*Vitis vinifera*) in Jalisco (Zamora-Landa *et al.*, 2023).

Source: Bayardo-Cambero GS, Zamora-Landa A, Estrada-Virgen MO, Lemus-Soriano B, Robles-Bermúdez A, Isiordia-Aquino N, Cambero-Ayón CB, Cambero-Campos O (2023) Identification and biorrational management of thrips (Thysanoptera) on blueberry (*Vaccinium corymbosum* L.) in Nayarit, Mexico. *Revista Bio Ciencias* **10**, e1490. https://doi.org/10.15741/revbio.10.e1490.

López-Lima D, Tejeda-Reyes MA, Rodríguez-Málaga RD, López-Bautista E, Salinas-Castro A, Illescas-Riquelme CP (2023) New hosts, distribution, and color trap preferences of the invasive thrips *Scirtothrips dorsalis* (Thysanoptera: Thripidae) in Mexico. *Journal of Entomological Science* **58**(4), 400-411. https://doi.org/10.18474/JES23-11

Zamora-Landa ÁI, Estrada-Virgen MO, Lemus-Soriano BA, Morales-Hernández M, Martínez-Magaña M, Cambero-Campos OJ (2023) Primer reporte de *Scirtothrips dorsalis* causando daños al cultivo de vid en Jalisco, México. *Southwestern Entomologist* **48**(1), 283-286.

Pictures: *Scirtothrips dorsalis*. https://gd.eppo.int/taxon/SCITDO/photos

Additional key words: detailed record **Computer codes:** SCITDO, MX

2023/200 Situation of *Scirtothrips dorsalis* in the USA

Scirtothrips dorsalis (Thysanoptera: Thripidae – EPPO A2 List) is a cryptic species complex of at least 9 species. Surveys conducted in the USA in 2015-2021 have shown that at least two of them (South Asia 1 and East Asia 1) occur in the country on a wide range of host plants (more than 50 species) and that they are expanding their range. The South Asia 1 species is polyphagous and established in most of the southern and western states of the USA, including North Carolina and Tennessee where it has been found recently. The East Asia 1 species is found mainly on hydrangea in northeastern states, as it has a greater cold tolerance and it is newly reported from Pennsylvania, and Massachusetts (Kumar *et al.*, 2023).

Source: Kumar V, Xiao Y, Borden MA, Ahmed MZ, McKenzie CL, Osborne LS (2023) Distribution of *Scirtothrips dorsalis* (Thysanoptera: Thripidae) cryptic species complex in the United States and reproductive host assessment of its dominant member. *Journal of Economic Entomology*, toad138. https://doi.org/10.1093/jee/toad138

Pictures: *Scirtothrips dorsalis*. https://gd.eppo.int/taxon/SCITDO/photos

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

2023/201 Update on the situation of *Chilo partellus* in Türkiye

The maize spotted stem borer *Chilo partellus* (Lepidoptera: Crambidae) is a damaging pest of maize (*Zea mays*), sorghum (*Sorghum vulgare*), sugarcane (*Saccharum officinarum*), rice (*Oryza sativa*) and millets (*Pennisetum* spp.) in Asia and Eastern Africa. It was first recorded in the EPPO region in 2011 in Israel (EPPO RS 2011/197), and in 2014 in Türkiye in the East Mediterranean region (provinces of Adana, Hatay and Osmaniye) (RS 2015/101). It was further reported in Mersin province in 2018.
A study conducted in Adana province in 2019-2020 on the dynamics of the three maize stem borers present in this region (*Chilo partellus, Ostrinia nubilalis* and *Sesamia nonagrioides*) concluded that *C. partellus* has become an important pest of maize, in particular for the first cropping season of the year. The authors consider that the long and warmer winters aggravated by climate change could be the reason for the dominance of *C. partellus* over the other stem borers.

Source: Achiri TD, Atakan E, Pehlivan S (2022) Invasive maize spotted stem borer *Chilo partellus* Swinhoe 1885 (Lepidoptera: Crambidae) is the dominant pest in maize agro-system in the Mediterranean Region of Turkey. *Journal of Asia-Pacific Entomology* **25**(4), 101972. https://doi.org/10.1016/j.aspen.2022.101972

Öztemİz S, Akmeşe V (2018) An invasive pest in maize of Mersin: *Chilo partellus* (Swinhoe, 1885)(Lepidoptera: Crambidae). *KSÜ Tarim ve Doga Dergisi* **21**(4), 489-491.

Additional key words: detailed record **Computer codes:** CHILZO, TR

2023/202 First report of *Solenopsis invicta* in Sicily (Italy), and notes on another invasive fire ant, *Wasmannia auropunctata*

- ***Solenopsis invicta***

The red imported fire ant, *Solenopsis invicta* (Hymenoptera: Formicidae) is reported for the first time in Sicily, Italy. This is also the first report of this invasive species in the EPPO region. *S. invicta* is native to tropical/subtropical South America and has spread to North and Central America, East Asia and Australia. It is an opportunistic and omnivorous species which can prey on invertebrates, vertebrates, and plants. In addition to its negative impacts on biodiversity and agriculture, it is a nuisance to humans, as its stings are particularly painful and may cause allergic reactions. Since 2022, *S. invicta* has been listed on the EU List of Invasive Alien Species of Union Concern.

During winter 2022/2023, 88 nests of *S. invicta* were found near the city of Syracuse (Sicily) in an area covering approximately 4.7 ha. It is noted that the invaded area, bordering a river estuary, is heavily disturbed, although it is part of a larger regional protected site. In this area, the local population has reported frequent ant stings since at least 2019, suggesting that *S. invicta* has been present there for several years. The pathway of introduction of *S. invicta* into Sicily is unknown, but the infested area is close to one of the main cargo harbours of the island (i.e. Augusta port, located approximately 13 km northward).

- ***Wasmannia auropunctata***

Another invasive ant species, *Wasmannia auropunctata* (little fire ant) has also been recently introduced into the EPPO region. It originates from South America and has spread to other parts of the world. In the EPPO region, it was first found in Israel at the end of 2005 in the Jordan river valley. Small established populations have been recorded in urban areas in Southern Spain (2018 in Marbella, province of Málaga) and Southern France (August 2022 in Toulon, Var department). *W. auropunctata* is also listed on the EU List of Invasive Alien Species of Union Concern.

Source:

AntWeb
Solenopsis invicta.
https://www.antweb.org/description.do?rank=species&name=invicta&genus=solenopsis&project=floridaants
Wasmannia auropunctata.
https://www.antweb.org/description.do?genus=wasmannia&species=auropunctata&rank=species

Centre de Ressources Espèces Exotiques Envahissantes. Premier signalement de la petite fourmi de feu ou fourmi électrique (*Wasmannia auropunctata*) en Métropole (Département du Var). http://especes-exotiques-envahissantes.fr/premier-signalement-de-la-petite-fourmi-de-feu-ou-fourmi-electrique-wasmannia-auropunctata-en-metropole-departement-du-var/?lang=en

Espadaler X, Pradera C, Santana JA (2018) The first outdoor-nesting population of *Wasmannia auropunctata* in continental Europe (Hymenoptera, Formicidae). *Iberomyrmex* **10**, 1-8.
https://desinsectador.files.wordpress.com/2018/09/espadaler-et-al-the-first-outdoor-nesting-population-of-wasmannia-auropunctata-in-continental-europe-2018.pdf

Gov.il. Ministry of Environmental Protection. Little fire ant.
https://www.gov.il/en/departments/guides/little_fire_ant_wasmannia_auropunctata

Menchetti M, Schifani E, Alicata A, Cardador L, Sbrega E, Toro-Delgado E, Vila R (2023) The invasive ant *Solenopsis invicta* is established in Europe. *Current Biology* **33**, R879–R897.

Additional key words: new record **Computer codes:** SOLEIN, WASMAU, ES, FR, IL, IT

2023/203 Eradication of *Globodera pallida* in Slovenia

In Slovenia *Globodera pallida* (EPPO A2 List) was first found in autumn 2011 in 3 fields near Ivančna Gorica (Central Slovenia) (EPPO RS 2012/164). A delimiting survey was conducted, and eradication measures were applied, including a prohibition to grow host plants for a period of 6 years in the infested zone. Official surveys at the end of this period could not detect the pest. This outbreak is now declared eradicated.

The pest status of *Globodera pallida* in Slovenia is officially declared as: **Absent, pest eradicated.**

Source: NPPO of Slovenia (2023-09).

Pictures: *Globodera pallida*. https://gd.eppo.int/taxon/HETDPA/photos

Additional key words: absence, eradication **Computer codes:** HETDPA, SI

2023/204 New record of *Lissachatina fulica* in Italy

In Italy *Lissachatina fulica* (Gastropoda: Achatinidae - giant African snail) was first recorded in October 2018 in a small urban park in Emilia-Romagna region and subsequently eradicated (EPPO RS 2019/039, RS 2020/112).

In September 2022, one adult specimen of *L. fulica* was captured live by a park ranger in the Avigliana Lakes Nature Park (Piemonte region), near the shore of the Great Lake. This protected area is part of the European Natura 2000 network. The specimen was identified by morphological and molecular tests.

Following the first finding, a systematic survey was organized to identify any other individuals and/or signs of their presence (e.g. broken shells). No other specimens and/or signs of their presence were found. The authors hypothesized that the specimen was a pet that had been released in the wild and underline the need to raise awareness of this invasive species, as it could establish and cause damage in Mediterranean countries.

Source: Gabetti A, Maganza A, Prearo M, Riina MV, Nodari S, Rizzioli B, Mangini V, Di Tizio L, Acutis P, Dondo A, Esposito G (2023) First report of giant African snail (*Lissachatina fulica*) in a protected area of the Cottian Alps, Northwest Italy. Sustainability **15**(11), 8633. https://doi.org/10.3390/su15118633

Pictures: *Lissachatina fulica*. https://gd.eppo.int/taxon/ACHAFU/photos

Additional key words: incursion **Computer codes:** ACHAFU, IT

2023/205 First record of *Lissachatina fulica* in Islas Canarias, Spain

In Spain *Lissachatina fulica* (Gastropoda: Achatinidae - giant African snail) occurs in Andalucia since 2006. In July 2023, the invasive snail was first recorded from three sites in the island of Tenerife (Islas Canarias). *L. fulica* is listed in the Spanish Catalogue of Exotic invasive Species and it is therefore prohibited to trade it or transport it.

Source: REDEXOS (2023-07-12) Alerta: caracol gigante africano
https://www3.gobiernodecanarias.org/cptss/sostenibilidad/biodiversidad/redexos/app/news/25

Canarias7 (2023-07-17) Detectan el 'superchuchango' africano en tres zonas de Tenerife
https://www.canarias7.es/sociedad/ciencia/medio-ambiente/detectan-caracol-gigante-africano-tres-ubicaciones-diferentes-20230718231527-nt.html

Catálogo Español de Especies Exóticas Invasoras
https://www.miteco.gob.es/es/biodiversidad/temas/conservacion-de-especies/especies-exoticas-invasoras/ce-eei-catalogo.html

Pictures: *Lissachatina fulica*. https://gd.eppo.int/taxon/ACHAFU/photos

Additional key words: incursion **Computer codes:** ACHAFU, ES

2023/206 First findings of *Lissachatina fulica* in Chile

Lissachatina fulica (Gastropoda: Achatinidae - giant African snail) is first reported from Chile. One specimen was detected in ornamental plants illegally imported in the Tarapacá region and the second specimen was detected in the Arica y Parinacota region, after tourists brought back a shell as a souvenir from a trip to Brazil. In both cases, the specimens were destroyed and *L. fulica* is still considered as absent from Chile (SAG, 2023).

Source: SAG (Servicio Agrícola y Ganadero) (2023-07-26) SAG levanta alerta fitosanitaria por peligroso caracol gigante africano no presente en el país
https://www.sag.gob.cl/noticias/sag-levanta-alerta-fitosanitaria-por-peligroso-caracol-gigante-africano-no-presente-en-el-pais

Pictures: *Lissachatina fulica*. https://gd.eppo.int/taxon/ACHAFU/photos

Additional key words: absence, incursion **Computer codes:** ACHAFU, CL

2023/207 First report of *Lissachatina fulica* in Nicaragua

Lissachatina fulica (Gastropoda: Achatinidae - giant African snail) is first reported from Nicaragua (IPPC, 2023). The snail was detected in August 2023 in the municipality of Ticuantepe, Managua.

The pest status of *Lissachatina fulica in* Nicaragua is officially declared as: **Transient, actionable, under eradication**.

Source: IPPC website. Official Pest Reports- Nicaragua (NIC-31/1 of 2023-09-01) Primer reporte oficial de caracol gigante africano *Achatina fulica*. https://www.ippc.int/fr/countries/nicaragua/pestreports/2023/09/primer-reporte-oficial-de-caracol-gigante-africano-achatina-fulica/

Pictures: *Lissachatina fulica*. https://gd.eppo.int/taxon/ACHAFU/photos

Additional key words: new record **Computer codes:** ACHAFU, NI

2023/208 First report of *Erwinia amylovora* in China

Fire blight, caused by *Erwinia amylovora* (EPPO A2 List) occurs in China. It was first observed in 2016 in Yili, Xinjiang province. Since then, the disease has spread to most pear-producing areas in Xinjiang province and parts of Gansu province. It is noted that *E. amylovora* has caused severe damage to the Chinese apple and pear (*Malus domestica, Pyrus* spp.) production. In 2017, a severe outbreak in Korla (Xinjiang) caused yield losses of 30 to 50 % and the destruction of more than one million pear trees. Measures are being taken to limit the spread of the disease. The EPPO Secretariat previously had no information about the situation of *E. amylovora* in China.

The situation of *Erwinia amylovora* in China can be described as follows: **Present, not widely distributed.**

Source: Sun W, Gong P, Zhao Y, Ming L, Zeng Q, Liu F (2023) Current situation of fire blight in China. *Phytopathology* (early view). https://doi.org/10.1094/PHYTO-05-23-0170-RVW (abstract).

Pictures: *Erwinia amylovora*. https://gd.eppo.int/taxon/ERWIAM/photos

Additional key words: new record **Computer codes:** ERWIAM, CN

2023/209 Potato is a host of '*Candidatus* Arsenophonus phytopathogenicus' and its vector, *Pentastiridius leporinus*

'Syndrome des basses richesses' (formerly EPPO Alert List) is an emerging disease of sugar beet *(Beta vulgaris*) in the EPPO region. It is mainly associated with a γ-proteobacterium '*Candidatus* Arsenophonus phytopathogenicus' and it is transmitted by a planthopper, *Pentastiridius leporinus* (Hemiptera: Cixiidae). In some cases, '*Candidatus* Phytoplasma solani' has been detected but its role in the disease remains to be clarified. 'Syndrome des basses richesses' was first observed in France in 1991, and then in Hungary (2005), Germany (2009), and Switzerland (2017). In 2020 and 2021, potato (*Solanum tuberosum*) fields infested with planthoppers and showing leaf yellowing, wilting and rubbery tubers were observed in Germany. Molecular tests confirmed the presence of '*Ca*. Arsenophonus phytopathogenicus' in diseased potato samples and in *P. leporinus*. This is the first time that potato is reported to be a host of both the proteobacterium and its vector.

Source: Behrmann SC, Rinklef A, Lang C, Vilcinskas A, Lee KZ (2023) Potato (*Solanum tuberosum*) as a new host for *Pentastiridius leporinus* (Hemiptera: Cixiidae) and *Candidatus* Arsenophonus phytopathogenicus. *Insects* **14**(3), 281. https://www.mdpi.com/2075-4450/14/3/281

Additional key words: new host plant **Computer codes:** ARSEPH, PNSTLE

2023/210 Citrus yellow vein clearing virus no longer occurs in Türkiye

In Türkiye, citrus yellow vein clearing virus (*Potexvirus*, CYVCV – EPPO Alert List) was first detected in the 2000s in citrus production areas in Adana. The NPPO of Türkiye informed the EPPO Secretariat that eradication measures were immediately taken and that infected plants were destroyed. Citrus producers were also informed about this new virus disease. Since 2014, surveys have been carried out in citrus-producing provinces of Türkiye (Adana, Antalya, Hatay, Mersin and Osmaniye). CYVCV was not detected during these surveys.

The situation of citrus yellow vein clearing virus can be described as follows: **Absent, pest no longer present.**

Source: NPPO of Türkiye (2023-08).

Pictures: *Citrus yellow vein clearing virus*. https://gd.eppo.int/taxon/CSYV00/photos

Additional key words: absence **Computer codes:** CSYV00, TR

2023/211 Sooty bark disease of sycamore is spreading in Europe

Sooty bark disease of sycamore (*Acer pseudoplatanus*) is caused by *Cryptostroma corticale*, a fungus considered to be native to Eastern North America. Other species of *Acer* (*A. campestre, A. platanoides*), as well as ash trees (*Fraxinus excelsior*) may also be affected to a lesser extent. In Europe, sooty bark disease of sycamore was first reported in England (United Kingdom) in 1945 and in France in 1951, followed by sporadic records in other European countries. After 2000, the disease has been more frequently reported in Europe (e.g. Czech Republic, France, Germany, Switzerland) with more severe damage. An updated distribution map of is available in EPPO Global Database https://gd.eppo.int/taxon/CRPSCO/distribution.

Cryptostroma corticale may be an endophyte on sycamore, as well as on ash trees (*F. excelsior*). Recent research underlined the role of climate change in the emergence of the disease with severe outbreaks being observed after periods of drought. As drought periods are predicted to increase in the Mediterranean basin and Western and Central Europe in the following decades, a further expansion and intensification of this disease can be expected. Spores (conidia) of the fungus can be spread over 300 km in the air. Aerobiological surveillance with suction traps appears to be an effective tool for early detection.

It may be noted that, in addition to impact on plant health, *C. corticale* has impacts on human health as workers processing infected wood can develop hypersensitivity pneumonitis (maple bark strippers' lung).

Source:
Kespohl S, Riebesehl J, Grüner J, Raulf M (2022) Impact of climate change on wood and woodworkers—Cryptostroma corticale (sooty bark disease): A risk factor for trees and exposed employees. *Frontiers in Public Health* **10**, https://doi.org/10.3389/fpubh.2022.973686

Langer GJ, Peters S, Bußkamp J, Bien S (2023) *Cryptostroma corticale* and fungal endophytes associated with *Fraxinus excelsior* affected by ash dieback. *Journal of Plant Diseases and Protection*. https://doi.org/10.1007/s41348-023-00750-8.

Muller E, Dvořák M, Marçais B, Caeiro E, Clot B, Desprez-Loustau M-L, Gedda B, Lundén K, Migliorini D, Oliver G, Ramos AP, Rigling D, Rybníček O, Santini A, Schneider S, Stenlid J, Tedeschini E, Aguayo J, GomezGallego M (2023) Conditions of emergence of the Sooty Bark Disease and aerobiology of *Cryptostroma corticale* in Europe. In: Jactel H, Orazio C, Robinet C, Douma JC, Santini A, Battisti A,

Branco M, Seehausen L, Kenis M (Eds) Conceptual and technical innovations to better manage invasions of alien pests and pathogens in forests. *NeoBiota* **84**, 319-347. https://doi.org/10.3897/neobiota.84.90549

Schlößer R, Bien S, Langer GJ, Langer EJ (2023) Fungi associated with woody tissues of *Acer pseudoplatanus* in forest stands with different health status concerning sooty bark disease (*Cryptostroma corticale*). *Mycological Progress* **22**(2), 13. https://doi.org/10.1007/s11557-022-01861-6

Pictures *Cryptostroma corticale*. https://gd.eppo.int/taxon/CRPSCO/photos

Additional key words: detailed record, climate change, one health **Computer codes:** CRPSCO

2023/212 Association of tomato leaf curl New Delhi virus with seed and pollen

The seed transmissibility of begomoviruses is debated. Recent research confirmed the association of tomato leaf curl New Delhi virus (*Begomovirus*, ToLCNDV – EPPO A2 List) with seed and pollen. Transmission of ToLCNDV via seed had already been shown in courgette (*Cucurbita pepo*) (EPPO RS 2020/235) and in chayote (*Sechium edule*).

Studies conducted by Chang *et al*. (2023) showed that cucumber plants (*Cucumis sativus*) inoculated with ToLCNDV can produce infected seed (virus present in the seed coat) and those seeds will result in infected young plants, with an infection rate of 79%. ToLCNDV was also detected in pollen of infected plants, and pollen-mediated transmission tests (infected pollen on healthy plants), resulted in ToLCNDV-infected fruits. Similar results were obtained with tomato leaf curl Taiwan virus (ToLCTV) and tomato yellow leaf curl Thailand virus (TYLCTHV) in tomato (*Solanum lycopersicum*). This is the first report of pollen-mediated transmission of begomoviruses.

Another study by Fortes *et al*. (2023) on ToLCNDV on melon (*Cucumis melo*) showed that the virus was present in seed (seed cotyledons and embryo) at low levels. Treatment with a chemical disinfectant significantly reduced the detectable virus associated with melon seeds. No infected plants were obtained from infected seed.

Source:

Chang HH, Gustian D, Chang CJ, Jan FJ (2023) Seed and pollen transmission of tomato leaf curl New Delhi virus, tomato leaf curl Taiwan virus, and tomato yellow leaf curl Thailand virus in cucumbers and tomatoes. *Plant Disease* **107**(7), 2002-2008. https://doi.org/10.1094/PDIS-09-22-2164-RE

Fortes IM, Pérez-Padilla V, Romero-Rodríguez B, Fernández-Muñoz R, Moyano C, Castillo AG, De León L, Moriones E (2023) Begomovirus tomato leaf curl New Delhi virus is seedborne but not seed transmitted in melon. *Plant Disease* **107**(2), 473-479. https://apsjournals.apsnet.org/doi/10.1094/PDIS-09-21-1930-RE

Pictures *Tomato leaf curl New Delhi virus*. https://gd.eppo.int/taxon/TOLCND/photos

Additional key words: aetiology **Computer codes:** TOLCND, TOLCTW, TYLCTH

2023/213 First report of kyuri green mottle mosaic virus in Türkiye and presence in commercial seed lots

Kyuri green mottle mosaic virus (KGMMV) is a tobamovirus infecting cucurbits, first described in Japan in 1967. According to scientific literature, its presence is limited to Asia (Japan, South Korea, Indonesia) where KGMMV has been reported to cause severe yield reduction in cucurbit plants. A recent study conducted in Türkiye tested commercial seed lots for the presence of KGMMV. Locally produced and imported commercial seed samples of cucumber (*Cucumis sativus*), melon (*Cucumis melo*), watermelon (*Citrullus lanatus*), and summer squash (*Cucurbita pepo*) species were received from various seed companies. The imported seeds originated from Peru, Chile, Latvia, India, and Morocco. In melon, 9 lots out of 20 (45%) tested positive, in cucumber 5 lots out of 20 (25%), and in summer squash 2 out of 20 (10%). Locally produced seeds of bottle gourd (*Lagenaria siceraria*), and winter squash (*Cucurbita moschata*) varieties were tested and found free from the virus.
The article does not mention precisely where the positive seed originated, but states that the positive lots originated in Türkiye, North Africa and South America, suggesting that KGMMV may be more widespread than currently documented.

Source: Balsak SC (2023) Kyuri green mottle mosaic virus detected for the first time in Turkey. *Australasian Plant Disease Notes* **18**(1), 22. https://doi.org/10.1007/s13314-023-00504-3

Additional key words: new record **Computer codes:** KGMMV0, TR

2023/214 *Verticillium nonalfalfae*, a biocontrol agent against *Ailanthus altissima*

Ailanthus altissima (Simaroubaceae - EPPO List of Invasive Alien Plants) commonly known as the tree of heaven is an invasive alien plant species in the EPPO region and native to Asia. It can invade a variety of habitats including managed and unmanaged grasslands, forests, riverbanks/canal-sides, rail/roadsides, wasteland, and urban areas. The wilt pathogen *Verticillium nonalfalfae** (Sordariomycetes: Plectosphaerellaceae) was isolated from a dying *A. altissima* tree in Southern Styria (Austria) in 2011 and has subsequently undergone host range testing to evaluate its host specificity. Previous host range testing studies have shown the wilt pathogen to be highly specific to *A. altissima*. A further nine non-target tree species were testing using the *V. nonalfalfae* isolate Vert56 of strain G1/5, the particular strain used for biological control of *A. altissima*. The nine species were *Acer negundo* (Sapindaceae, *A. platanoides*, *Castanea sativa* (Fagaceae), *Prunus avium* (Rosaceae), *P. serotina* (Rosaceae), *Quercus petraea* (Fagaceae), *Q. rubra* (Fagaceae), *Sorbus aucuparia* (Rosaceae) and *Ulmus glabra* (Ulmaceae). All tested tree species exhibited vascular discolorations and the fungus could be re-isolated at varying frequencies (6—100%) from inoculated seedlings of all non-target tree species, although five species exhibited no external symptoms. Results confirmed high susceptibility of *A. altissima* to *V. nonalfalfae*, whereas *A. platanoides*, *C. sativa*, *Q. rubra*, *S. aucuparia* and *U. glabra* were considered as tolerant, and *A. negundo, P. avium*, *P. serotina* and *Q. petraea* were rated as possibly resistant due to the low rates of re-isolation.

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EPPO note: in several European countries (EU member states, Switzerland and the United Kingdom), *Verticillium nonalfalfae* is listed a regulated non-quarantine pest (RNQP).

Source: Lechner Y, Maschek O, Kirisits T, Halmschlager E (2023) Further pathogenicity testing of *Verticillium nonalfalfae*, a biocontrol agent against the invasive tree of heaven (*Ailanthus altissima*), on non-target tree species in Europe. *Phytoparasitica* **51**, 113-130.

Additional key words: biological control

Computer codes: ACRNE, ACRPL, AILAL, CSNSA, PRNAV, QUEPE, QUERU, SOUAU, ULMGL, VERTNO, AT

2023/215 Biological control of *Pseudococcus longispinus*

The long-tailed mealybug, *Pseudococcus longispinus* (Hemiptera: Pseudococcidae) is a polyphagous pest, native to Australia which occurs in Europe, New Zealand, America and South Africa. In Spain, *P. longispinus* is a damaging pest of the Spanish persimmon (*Diospyros kaki*). In addition to feeding damage, it also excretes honeydew that promotes the growth of sooty mould on the fruit. Before harvest, infestation of fruit with *P. longispinus* can reach up to 80 %. Parasitoids are considered the primary natural enemies of *P. longispinus* and can be highly effective in controlling *P. longispinus*, however their effectiveness in the field can be lowered by hyperparasitoids. Sixteen persimmon orchards were surveyed in the Valencia region of Spain. Eight parasitoid species were identified, including five primary parasitoids and three hyperparasitoids were found (Table 1). *Anagyrus fusciventris* was the most abundant species, accounting for 47.6% and being widely distributed in 14 of the 16 sampled orchards. The hyperparasitoids *Chartocerus* sp. and *Prochiloneurus* sp. emerged mostly from large mealybug mummies that were used by *A. fusciventris* females. Hyperparasitism did not seem to limit the affect on the population growth rate of *P. longispinus* within the same year, suggesting that the high abundance of hyperparasitoids did not disrupt the biological control of *P. longispinus*.

Table 1. Eight parasitoid species identified from *Pseudococcus longispinus* in Spain.

Species	Family	Biology	Listed in EPPO PM 6/3*
Anagyrus fusciventris	Encyrtidae	Primary solitary parasitoid	Appendix 1 & 2
Anagyrus vladimiri	Encyrtidae	Primary solitary parasitoid	Appendix 1
Anagyrus aligarhensis	Encyrtidae	Primary solitary parasitoid	
Cryptanusia comperei	Encyrtidae	Primary solitary parasitoid	
Tetracnemoidea peregrina	Encyrtidae	Primary solitary parasitoid	Appendix 1
Prochiloneurus sp.	Pteromalidae	Solitary hyperparasitoid	
Pachyneuron sp.	Pteromalidae	Solitary hyperparasitoid	
Chartocerus sp.	Signiphoridae	Gregarious hyperparasitoid	

* EPPO PM 6/3 Biological control agents safely used in the EPPO region. Appendix 1: Commercially or officially used biological control agents; Appendix 2: Classical biological control agents successfully established in the EPPO region.

Source: Plata A, Gómez-Martínez MA, Beitia FJ, Tena A (2023) Do hyperparasitoids disrupt the biological control of *Pseudococcus longispinus* in persimmon? *Biological Control*, https://doi.org/10.1016/j.biocontrol.2023.105310

Additional key words: biological control

Computer codes: ANAYFU, ANAYVL, ANAYAL, KRYTCO, PSECAD, TCNMPE, 1PAHYG, ES

2023/216 Post release monitoring of the parasitoid *Tamarixia triozae* against *Bactericera cockerelli* in New Zealand

Bactericera cockerelli (Hemiptera: Triozidae - EPPO A1 List), a vector of '*Candidatus* Liberibacter solanacearum', was first reported in New Zealand in 2006 and has since caused significant economic damage. Following host specificity testing of the solitary ectoparasitoid *Tamarixia triozae* (Hymenoptera: Eulophidae), the parasitoid was released as a classical biological control agent in more than 30 sites in New Zealand in 2016. Post-release monitoring surveys to determine if the parasitoid had survived at release sites were conducted in Hawke's Bay and Canterbury over two summer periods. *B. cockerelli* parasitized nymphs were found at 24 sites surveyed within a 25 km radius of known release sites in Hawke's Bay. In Canterbury, the parasitoid was found up to 0.6 km from a known release site. Parasitism rates of approximately 16 % were recorded at release sites. *T. triozae* also feeds on psyllid nymphs so its establishment may lead to reducing the likelihood of *B. cockerelli* populations reaching damaging levels, or delaying this event. Further long-term monitoring is needed to determine the consequences of importing *T. triozae* on populations of *B. cockerelli*.

Source: Davidson M, Sachtleben T, MacDonald F, Watkins L, Barnes AM, Drayton G, Walker M (2023) The establishment and spread of *Tamarixia triozae*, a parasitoid of the potato psyllid, in New Zealand. *BioControl* **68**, 363-373.

Additional key words: biological control

Computer codes: PARZCO, TAMRTR, NZ

2023/217 Herbicide resistant *Amaranthus palmeri* populations in Italy and Spain

Amaranthus palmeri (Amaranthaceae - EPPO A2 List) is a dioecious summer annual species native to North America. In its native range, it is a weed in agricultural fields and disturbed habitats. It has a high fecundity and a long-lived seed bank, which make management of the species difficult. In the EPPO region, it is established in a few countries and transient in others. Some populations of *A. palmeri* are known to be resistant to acetolactate synthase (ALS) inhibitors, making them resistant to herbicides. Twelve populations of *A. palmeri* were sampled (four from Italy, seven from Spain and one from North Carolina (USA)), and seed was collected from 30 mature female plants at each site. Bioassay studies were conducted on each population to determine their sensitivity to two herbicides: thifensulfuron-methyl (sulfonylurea) and imazamox (imidazolinone). Those plants that survived herbicide application had genomic DNA extracted and amplified to detect mutations. The results showed that seven populations from Spain and one from Italy have evolved resistance to ALS. It is likely that herbicide resistance did not evolve in the EPPO region but rather in the native range of *A. palmeri*. Herbicide resistant plants have entered the EPPO region via contaminant of seed or grain. ALS resistance has spread within the EPPO region, over short and long distances by seed dispersal. The implementation of management techniques to contain the spread and establishment of *A. palmeri* is recommended in countries where it occurs.

Source: Manicardi A, Scarabel L, Lienes JM, Montull JM, Osuna MD, Farré JT, Milani A (2023) Genetic basis and origin of resistance to acetolactate synthase inhibitors in *Amaranthus palmeri* from Spain and Italy. *Pest Management Science*. https://doi.org/10.1002/ps.7690

Pictures: *Amaranthus palmeri*. https://gd.eppo.int/taxon/AMAPA/photos

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

2023/218 Five-way herbicide-resistant *Amaranthus tuberculatus* population in North Carolina (USA)

Amaranthus tuberculatus (Amaranthaceae - EPPO A2 List) is an annual dioecious non-native species to the EPPO region with transient and established occurrences known from a number of EPPO countries. The species grows mainly in ruderal sites and along riverbanks, and to a lesser extent in crop fields (EPPO RS 2020/107). The species is native to the Midwestern US where it began infesting agricultural fields in the 20th century within the central portion of its range. Over this time, in North America, *A. tuberculatus* has evolved resistance to seven herbicide groups and multiple herbicide resistant populations are common. In North Carolina, *A. tuberculatus* was first reported in 2015 where it infests crop fields. In 2018, seeds were collected from 10 putative multiple herbicide resistant *A. tuberculatus* plants from a soyabean field in North Carolina. Plants from this population, and a known herbicide susceptible population from Iowa, were tested for resistance to commonly applied post-emergence herbicides. The plants from North Carolina survived the labelled dose rate applications of mazethapyr, atrazine, glyphosate, fomesafen and mesotrion, whereas the plants from Iowa were controlled. 2,4-D, dicamba and glufosinate controlled both the Iowa population and the North Carolina population.

The results suggest a five-way herbicide resistance of *A. tuberculatus* in North Carolina.

Source: Jones EAL, Andres RJ, Owen MDK, Dunne JC, Contreras DJ, Cahoon CW, Jennings KM, Leon RG, Everman WJ (2023) Confirmation of a five-way herbicide-resistant *Amaranthus tuberculatus* population in North Carolina. *Weed Research*, https://doi.org/10.1111/wre.12590

Pictures: *Amaranthus tuberculatus*. https://gd.eppo.int/taxon/AMATU/photos

Additional key words: invasive alien plants **Computer codes:** AMATU, US

2023/219 Negative impacts of *Osteospermum moniliferum* in Chile

Osteospermum moniliferum (synonym: *Chrysanthemoides monilifera*) (Asteraceae) is a shrub native to South Africa. It is considered an invasive alien species in Australia and New Zealand, and in the EPPO region it has been introduced to Italy (Sicily) and Southern France. In Chile, *O. moniliferum* has invaded the Central Valparaíso region. This region is a port area where a number of invasive alien plant species are recorded. To evaluate the potential impact of *O. moniliferum* on local biodiversity, sites were sampled with and without *O. moniliferum*. At each site, plant species were identified, and the abundance of each species was estimated. Leaves of *O. moniliferum* were collected in the field for experiments of potential allelopathic impact of *O. moniliferum* on seedling development. Seedlings of a native shrub (*Baccharis linearis:* Asteraceae) and an invasive tree (*Genista monspessulana*: Fabaceae) were grown and an aqueous solution of different concentrations (0, 25, 50 and 100%) of the leaf extract was added to developing seedlings. The field study showed that *O. moniliferum* negatively impacts plant diversity and the highest negative effect was seen on endemic species. The leaf extract inhibited the germination of the native shrub, especially at higher concentrations (50 and 100%), but did not inhibit the germination of the invasive shrub. The results suggest that *O. moniliferum* has allelopathic impacts on native species in Chile which can act to rapidly change the plant community, decreasing native species and promoting non-native invasive species.

Source: Atala C, Reyes SA, Osses J, Jeldes-Cajas O, Vargas R (2023) The invasive shrub *Chrysanthemoides monilifera* (boneseed) negatively impacts native plant communities in a Mediterranean zone in Central Chile. *Brazilian Journal of Botany*, https://doi.org/10.1007/s40415-023-00905-9

Additional key words: invasive alien plants **Computer codes:** CSMMO, TLNMO, CL

2023/220 Management of *Elodea nuttallii* in Ireland

Elodea nuttallii (Hydrocharitaceae: EPPO List of Invasive Alien Plants) is an aquatic plant species native to North America. *E. nuttallii* probably arrived in the EPPO region in the 1970s and became invasive in 2000, and the invasion is still ongoing. In Ireland, *E. nuttallii* was first reported in 1984 and occurred almost exclusively in lakes until 2000, but in the subsequent decade it was most frequently recorded in canals and rivers. In Ireland, *E. nuttallii* poses a significant threat to Natura 2000 sites. *Elodea nuttallii* has been successfully controlled in other regions of the world using jute matting. This is an environmentally friendly, biodegradable geotextile, which acts as a benthic barrier that excludes light inhibiting plant growth. In addition to controlling invasive macrophytes, this geotextile has been shown to permit the regeneration of charophytes in areas where treatment occurs as they can grow through the small apertures in this benthic barrier. A trial was carried out in Lough Arrow Lake in the north-west of Ireland where *E. nuttallii*, is a relatively recent arrival. Two experimental areas covering a total of 800 m^2 were treated by covering *E. nuttallii* with jute textile. A single layer and double layer of jute textile were trialled. respectively. The trials were successful in controlling *E. nuttallii* with either a single or double layer. For each treatment, the percentage cover of *E. nuttallii* was reduced by 60%. In addition, the percentage cover of the indigenous charophyte flora was unaffected by the jute textile.

Source: Garland D, Earle W, Caffrey J, Taylor C, Meehan S, Touzet N, Lucy F (2022) Management of the invasive Nuttall's pondweed (*Elodea nuttallii*) in Lough Arrow, a Natura 2000 designated lake in Western Ireland. *Management of Biological Invasions* **13**(1), 118–130. https://doi.org/10.3391/mbi.2022.13.1.07

Additional key words: invasive alien plants **Computer codes:** ELDNU, IE