



ORGANISATION EUROPEENNE  
ET MEDITERRANEENNE  
POUR LA PROTECTION DES PLANTES

EUROPEAN AND MEDITERRANEAN  
PLANT PROTECTION  
ORGANIZATION

# EPPO Reporting Service

No. 9 PARIS, 2009-09-01

## CONTENTS

*Pests & Diseases*

- [2009/169](#) - New additions to the EPPO Lists
- [2009/170](#) - First report of *Tuta absoluta* in Albania
- [2009/171](#) - First report of *Tuta absoluta* in Portugal
- [2009/172](#) - *Tuta absoluta* found in Puglia and Veneto regions, Italy
- [2009/173](#) - *Anoplophora chinensis* found on *Cornus* and *Crataegus* in the Netherlands
- [2009/174](#) - *Anoplophora chinensis* detected in Germany
- [2009/175](#) - *Dryocosmus kuriphilus* reported from Calabria and Marche regions, Italy
- [2009/176](#) - First report of *Anastrepha grandis* in Panama
- [2009/177](#) - Detailed distribution of *Halyomorpha halys* in the USA
- [2009/178](#) - First report of *Xanthomonas arboricola* pv. *pruni* in the Netherlands on ornamental *Prunus laurocerasus*
- [2009/179](#) - *Fusarium oxysporum* f.sp. *lactucae*: addition to the EPPO Alert List
- [2009/180](#) - Successful eradication of *Tomato yellow leaf curl virus* in the Netherlands
- [2009/181](#) - *Tobacco ringspot nepovirus* and *Tomato ringspot nepovirus* are absent from Argentina
- [2009/182](#) - New data on quarantine pests and pests of the EPPO Alert List
- [2009/183](#) - EPPO report on notifications of non-compliance
- [2009/184](#) - QBOL: a new EU project focusing on DNA barcoding of quarantine organisms

*Invasive Plants*

- [2009/185](#) - *Gymnocoronis spilanthoides* in the EPPO region: addition to the EPPO Alert List
- [2009/186](#) - Invasive aquatic plants in Japan
- [2009/187](#) - The situation of *Eragrostis curvula* in the EPPO region

2009/169 New additions to the EPPO Lists

In September 2009, the EPPO Council approved the addition of the following pests to the EPPO A1 and A2 Lists of pests recommended for regulation. In order to draw the attention of NPPOs to these newly added pests, they have also been placed on the EPPO Action List. The later displays management measures which are recommended to the EPPO member countries and brief descriptions of the areas endangered by these pests. As some A1 pests are now found with a limited distribution in the EPPO region, they were transferred to the A2 List. The EPPO Council also agreed the deletion of *Lysichiton americanus* from the EPPO A2 List.

Addition to the A1 List (pests absent from the EPPO region):

- *Xanthomonas axonopodis* pv. *allii*

Additions to the A2 List (pests locally present in the EPPO region):

- *Heracleum persicum* (Apiaceae)
- *Heracleum sosnowskyi* (Apiaceae)
- *Metamasius hemipterus* (Coleoptera: Curculionidae)

Transfers from the A1 List to the A2 List:

- *Agrilus planipennis* (Coleoptera: Buprestidae)
- *Aleurocanthus spiniferus* (Homoptera: Aleyrodidae)
- *Tuta absoluta* (Lepidoptera: Gelechiidae)

Deletion from the A2 List:

- *Lysichiton americanus* (Araceae)

For each individual pest, datasheets and distribution maps are being prepared and will be available in due course on the EPPO web site.

Source: EPPO Secretariat, 2009-09.  
 EPPO A1 List: <http://www.eppo.org/QUARANTINE/listA1.htm>  
 EPPO A2 List: <http://www.eppo.org/QUARANTINE/listA2.htm>  
 EPPO Action List: [http://www.eppo.org/QUARANTINE/Action\\_List/action\\_list.htm](http://www.eppo.org/QUARANTINE/Action_List/action_list.htm)

Additional key words: EPPO Lists

Computer codes: AGR IPL, ALECSN, GNORAB, HERPE, HERSO, METAHE, XANTAA

2009/170 First report of *Tuta absoluta* in Albania

The presence of *Tuta absoluta* (Lepidoptera: Gelechiidae - EPPO A2 List) has now been confirmed in Albania. Samples were collected from tomato fields in August and September 2009 near Romanat (County of Durrës), Levan (County of Fier) and Rrogozhinë (County of Tirana). On the basis of the morphological characteristics of the adults (male genitalia), pupae and larvae, the pest was identified as *T. absoluta*. It is noted that suspect mines had been observed in 2008, but the identity of the insect could not be ascertained at that time. This is the first report of *T. absoluta* in Albania.

The situation of *Tuta absoluta* in Albania can be described as follows: Present, first recorded in 2009, found along the coastal part of the country (Counties of Durrës, Fier and Tirana).

Source: NPPPO of Albania (2009-09).

Personal communication with Dr Ejup Çota, Plant Protection Institute, Durrës (2009-09).

Additional key words: new record

Computer codes: GNORAB, AL

### 2009/171 First report of *Tuta absoluta* in Portugal

The NPPPO of Portugal recently informed the EPPO Secretariat of the first record of *Tuta absoluta* (Lepidoptera: Gelechiidae - EPPO A2 List) on its territory. In May 2009, the pest was observed in a glasshouse producing tomato fruits (*Lycopersicon esculentum*) in the Algarve region (South of Portugal). Following this first discovery, a survey was carried out in Algarve, and the insect was found on several tomato crops (glasshouse and outdoor crops) but not in nurseries. Appropriate measures, including cultural and chemical control measures, are currently being taken to eradicate *T. absoluta*.

The situation of *Tuta absoluta* in Portugal can be described as follows: Present, first found in May 2009 in Algarve, under eradication.

Source: NPPPO of Portugal, 2009-08.

Additional key words: new record

Computer codes: GNORAB, PT

### 2009/172 *Tuta absoluta* found in Puglia and Veneto regions, Italy

In Italy, *Tuta absoluta* (Lepidoptera: Gelechiidae - EPPO A2 List) was first reported in spring 2008 in Calabria, and then on tomato crops in several other Italian regions (EPPO RS 2009/023, 2009/106 and 2009/153). The NPPPO of Italy has informed the EPPO Secretariat of the detection of *T. absoluta* in two additional regions, Puglia and Veneto.

- Puglia

The presence of *T. absoluta* in Puglia was detected by the regional Plant Protection Organization at the end of June 2009. Adults of *T. absoluta* were trapped in a glasshouse producing tomato fruits in the Province of Lecce.

- Veneto

The regional Plant Protection Organization found *T. absoluta* at the end of July 2009 on glasshouse tomatoes in the municipalities of Verona, Cavallino Treporti (Province of Venezia) and Lusia (Province of Rovigo).

The situation of *Tuta absoluta* in Italy can be described as follows: Present, first found in 2008, now reported from Abruzzo, Calabria, Campania, Lazio, Liguria, Sardegna, Sicilia, Puglia, Umbria, and Veneto, under official control.

Source: NPPPO of Italy, 2009-08 and 2009-09.

Additional key words: detailed record

Computer codes: GNORAB, IT

2009/173    *Anoplophora chinensis* found on *Cornus* and *Crataegus* in the Netherlands

In December 2007, isolated findings of *Anoplophora chinensis* (Coleoptera: Cerambycidae - EPPO A2 List) had been made in the Netherlands (EPPO RS 2008/002) and were subjected to eradication measures. In mid-August 2009, 3 infested plants were detected in the municipality of Westland very close to the former located *Acer* and *Corylus* trees (within a radius of 5 m) that had been found infested by *A. chinensis* at the end of 2007 and subsequently removed. Two larvae were found in 2 *Cornus* plants (1 larva per plant) and 2 fresh exit holes were observed in a neighbouring plant of *Crataegus* sp. The infested plants were growing along a road together with other shrub species (*Rosa*, *Philadelphus*). This small row of plants was located near a company which had imported *Acer* plants from China during the period 2002-2007. So far, *Cornus* species were not known to be host plants of *A. chinensis*.

The infested area has been delimited but it remained the same as in 2007/2008 (as all new findings were made within the infested zone) and phytosanitary measures were taken according to Commission Decision 2008/840/EC of 7 November 2008. Pictures of the demarcated area and eradication campaign can be viewed on the PD website. By the end of 2009, all outdoor deciduous trees and shrubs growing within the infested zone and within a radius of 100 m around it will be removed, inspected and destroyed. One crop of *Hydrangea* spp. for cut flower production located near the infested zone will be pruned and inspected under official supervision of the NPPO. Surveillance of the demarcated area will continue until 2013. At a national level, surveillance activities will also include *Cornus* and *Crataegus* species in addition to the host species listed in the Commission Decision 2008/840/EC.

The pest status of *Anoplophora chinensis* in the Netherlands is officially declared as: Transient, isolated outbreak, only detected on *Acer* sp., *Cornus* sp., *Corylus* sp., and *Crataegus* sp., under eradication.

Source: NPPO of the Netherlands, 2009-09.  
INTERNET (last accessed 2009-09)  
Commission Decision 2008/840/EC of 7 November 2008 on emergency measures to prevent the introduction into and the spread within the Community of *Anoplophora chinensis* (Forster). [http://www.eppo.org/ABOUT\\_EPPO/EPPO\\_MEMBERS/phytoreg/eu\\_texts/2008-840-EC-e.pdf](http://www.eppo.org/ABOUT_EPPO/EPPO_MEMBERS/phytoreg/eu_texts/2008-840-EC-e.pdf)  
Plantenziektenkundige Dienst. Pest report - Update: Findings of *Anoplophora chinensis* on *Cornus* sp. and *Crataegus* sp. (2009-09-03). [http://www.minlnv.nl/portal/page?\\_pageid=142,2268041&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=41933](http://www.minlnv.nl/portal/page?_pageid=142,2268041&_dad=portal&_schema=PORTAL&p_file_id=41933)

Additional key words: detailed record

Computer codes: ANOLCN, NL

2009/174    *Anoplophora chinensis* detected in Germany

*Anoplophora chinensis* (Coleoptera: Cerambycidae - EPPO A1 List) was observed for the first time in Germany in June 2008. Single findings of recently hatched beetles were made on imported plants of *Acer palmatum* but did not lead to the establishment of the pest. Infested plants were subsequently destroyed and no further findings were made (EPPO RS 2008/115 and 2008/156). However, isolated findings have been again reported by the German NPPO.

- Berlin

On 2009-07-06, 1 living beetle was found in a hedgerow in Berlin-Pankow (Bundesland Berlin), and it was identified as *A. chinensis*. A survey has been carried out around the

place of finding. No symptoms on plants and no further beetles could be detected. The source of this introduction is unknown, but it is noted that in May/June 2008 a supermarket chain had sold approximately 10 000 *Acer palmatum* plants imported from China in Berlin and its surroundings. During this period, several similar consignments imported from China had been notified in Bayern and Nordrhein-Westfalen due to infestations by *A. chinensis*. Leaflets, press releases and the internet were used to inform the public and relevant stakeholders.

- Hesse

On 2009-06-20, 1 living beetle of *A. chinensis* was found on a balcony in Hanau (Bundesland Hesse). On this balcony, a potted plant of *Acer palmatum* showed a fresh exit hole. The plant was dead at that time but it had been sold by a garden centre in spring 2008. The origin of the plant is unknown. The public and relevant stakeholders have been informed and a survey has been carried out around the place of finding. No further beetles and no further symptoms on plants have been detected. The pest status of *Anoplophora chinensis* in Bundesland Hesse (DE) is officially declared as: Transient, single finding, non actionable; surveillance ongoing.

The situation of *Anoplophora chinensis* in Germany can be described as follows: Transient, isolated findings were made in 2008 and 2009, all infested plants were destroyed.

Source: NPPO of Germany, 2009-08 and 2009-09.

Additional key words: incursion

Computer codes: ANOLCN, DE

### 2009/175 *Dryocosmus kuriphilus* reported from Calabria and Marche regions, Italy

In Italy, the presence of *Dryocosmus kuriphilus* (Hymenoptera: Cynipidae - EPPO A2 List) was first reported in the Piemonte region in spring 2008 (Cuneo province - EPPO RS 2003/061) and then in several other regions (EPPO RS 2006/027, 2008/195, 2009/156). The NPPO of Italy recently provided updated information for the following 2 regions:

- Calabria

The Regional Plant Protection Organization has found an outbreak of *D. kuriphilus* in the municipality of San Luca (Province of Reggio di Calabria).

- Marche

The Regional PPO has found an outbreak of *D. kuriphilus* in the municipalities of Talamello, Novafeltria and Sant'Agata Feltria (Province of Pesaro e Urbino).

The situation of *Dryocosmus kuriphilus* in Italy can be described as follows: Present, first found in 2008 near Cuneo, scattered outbreaks reported from Abruzzo, Calabria, Campania, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Liguria, Lombardia, Marche, Toscana, Trentino-Alto Adige, Piemonte, Sardegna, Umbria, and Veneto; under official control.

Source: NPPO of Italy, 2009-08.

Additional key words: detailed record

Computer codes: DRYCKU, IT

2009/176 First report of *Anastrepha grandis* in Panama

The NPPO of Panama informed the EPPO Secretariat of the first record of *Anastrepha grandis* (Diptera: Tephritidae - EU Annexes as 'non-European Tephritidae') on its territory. *A. grandis* is a pest of Cucurbitaceae which occurs in South America (Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, and Venezuela). In Panama, *A. grandis* is listed as a quarantine pest and was not known to occur until recently. In May 2009, it was caught for the first time in sentinel traps placed in the province of Darién near the border with Colombia (where the pest occurs). Trapping studies showed that *A. grandis* occurs in the eastern part of the Province of Panamá (at Quebrada Cali in the district of Chepo) and in the Province of Darién (several locations in the districts of Chepigana and Pinogana). The NPPO of Panama stressed that the commercial cucurbit-growing areas (and in particular those for export) are located in the western part of the country and are still free from the pest. Trapping will be intensified and samples of potential host fruits, both wild and cultivated species, will be collected to delimit the area infested. Phytosanitary measures are being taken to contain the pest: chemical treatments are applied in the infested areas and movements of host fruits from infested areas to pest-free areas are prohibited. The situation of *Anastrepha grandis* in Panama can be described as follows: Present, first found in 2009 in the eastern part (Darién and Panamá Provinces), under official control.

Source: NPPO of Panama, 2009-06.

Additional key words: new record

Computer codes: ANSTGR, PA

2009/177 Detailed distribution of *Halyomorpha halys* in the USA

*Halyomorpha halys* (Heteroptera: Pentatomidae - EPPO Alert List) is a highly polyphagous pest of Asian origin which was recently introduced into the USA and Europe (Switzerland in 2007; see EPPO RS 2008/200). In the USA, it was first discovered in 2001 in Pennsylvania and it rapidly spread to other states. According to a recent US datasheet, *H. halys* is now reported from the following states: Connecticut\*, Delaware, Idaho\*, Indiana\*, Illinois\*, Iowa\*, Maine, Maryland, Minnesota\*, Mississippi\*, Montana\*, New Jersey, New York, Nevada\*, Ohio, Oregon, Pennsylvania, South Dakota\*, Tennessee\*, Utah\*, Virginia, Washington\*, West Virginia, Wisconsin\*, and Wyoming\*. *H. halys* is reported as intercepted only in California and Florida.

\* New state records are marked with an asterisk.

Source: Gyelshen J, Bernon G, Hodges (2009) *Halyomorpha halys*. Featured Creatures. University of Florida Institute of Food and Agricultural Sciences and Florida Department of Agriculture and Consumer Services, USA.  
[http://entomology.ifas.ufl.edu/creatures/veg/bean/brown\\_marmorated\\_stink\\_bug.htm](http://entomology.ifas.ufl.edu/creatures/veg/bean/brown_marmorated_stink_bug.htm)

Additional key words: detailed record

Computer codes: HALYHA, US

2009/178 First report of *Xanthomonas arboricola* pv. *pruni* in the Netherlands on ornamental *Prunus laurocerasus*

During 2008, Dutch growers reported an increasing incidence of foliar spot diseases on ornamental plants for planting of *Prunus laurocerasus*. In November 2008, samples were collected from 6 companies and tested positive for the presence of *Xanthomonas arboricola* pv. *pruni* (EPPO A2 List). The identity of the bacterium was determined on the basis of the EPPO diagnostic protocol (EPPO Standard PM 7/64(1), 2006). According to these results, only a limited number of plants are affected by *X. arboricola* pv. *pruni* in the northern and southern parts of the Netherlands. However, considering the increasing number of disease reports made by growers of *P. laurocerasus*, it is presumed that the bacterium might occur in other parts of the country. So far, *X. arboricola* pv. *pruni* has only been detected in the ornamental species, *P. laurocerasus*. Intensive surveys will be carried in the Netherlands to determine the extent of the disease and appropriate phytosanitary measures (restrictions on plant movements) will be applied to prevent any further spread. This is the first record of *X. arboricola* pv. *pruni* in the Netherlands. The pest status of *Xanthomonas arboricola* pv. *pruni* in the Netherlands is officially declared as: Present, in some parts of the area only on *Prunus laurocerasus*.

Source: NPPO of the Netherlands, 2009-09.

INTERNET (last accessed 2009-09)  
Plantenziektenkundige Dienst. Pest report - Pest report - *Xanthomonas arboricola* pv. *pruni* (2009-07-02).  
[http://www.minlnv.nl/portal/page?\\_pageid=142,2268041&\\_dad=portal&\\_schema=PORTAL&p\\_file\\_id=39832](http://www.minlnv.nl/portal/page?_pageid=142,2268041&_dad=portal&_schema=PORTAL&p_file_id=39832)

Additional key words: new record

Computer codes: XANTPR, NL

2009/179 *Fusarium oxysporum* f.sp. *lactucae*: addition to the EPPO Alert List

A fusarium wilt of lettuce caused by *Fusarium oxysporum* f.sp. *lactucae* was first described in Japan in 1955. Its presence was then reported from other Asian countries: Iran in 1995, Taiwan in 1998, and the Republic of Korea in 2006. The disease was also discovered in the USA, first in the San Joaquin Valley of California in 1990, and in Arizona in 2001. Although it is not known why the disease appeared in the USA, it was suspected that the pathogen was transported from California to Arizona on soil adhering to agricultural machinery. In Europe, *F. oxysporum* f.sp. *lactucae* was detected for the first time in Italy in 2002. Diseased lettuce crops were observed in the region of Lombardia (provinces of Bergamo and Brescia) and later in Piemonte, Veneto and Emilia Romagna (provinces of Forlì-Cesena and Rimini). In 2004, the disease was also reported from Portugal. Today, 3 different races of the fungus have been described in Japan (for the moment, only race 1 has been found in Italy, USA and Taiwan), considering the fact that the greatest diversity was observed in Japan, it is suspected that Asia could be the centre of origin of this pathogen. Because *F. oxysporum* f.sp. *lactucae* is an emerging disease in several parts of the world which can cause crop losses, the Panel on Phytosanitary measures suggested that it should be added to the EPPO Alert List.

*Fusarium oxysporum* f.sp. *lactucae*, a fusarium wilt of lettuce

Why	A wilt disease of lettuce caused by <i>Fusarium oxysporum</i> f.sp. <i>lactucae</i> was first described in Japan in 1955. This disease was then detected in other Asian countries, in the USA (California and later in Arizona, which are the main lettuce-growing areas of the country) and finally in Europe (Italy and Portugal). Because this fusarium wilt of lettuce is apparently spreading across different continents and causing significant economic losses, especially in the highly profitable sector of pre-processed lettuce, the Panel on Phytosanitary Measures suggested its addition to the EPPO Alert List.
Where	EPPO region: Italy (first found in 2002 in Lombardia, and then in Piemonte, Veneto and Emilia Romagna), Portugal (found in 2004 in Entre Douro e Minho). Asia: Iran (1995), Japan (1955; Hokkaido, Honshu, Kyushu), Korea Republic (Gyeonggi Province in 2006), Taiwan (1998). North America: USA (Arizona in 2001, California in 1990).
On which plants	<i>Lactuca sativa</i> and <i>Valerianella locusta</i> (lamb's lettuce). Most cultivar groups of lettuce, such as butterhead, iceberg, oak leaf, romaine, Batavia, are susceptible to the disease. In Northern Italy, outbreaks mainly occurred on spring and summer leaf lettuce, particularly on cultivars belonging to the Batavia type and grown for the production of pre-processed lettuce.
Damage	Affected plants show leaf yellowing and wilting. Crown tissues and upper roots usually show a reddish brown necrosis followed by decaying. Vascular necrosis can often be seen on leaf veins. Infected plants are stunted and often die, resulting in significant losses for the growers. In Northern Italy, <i>F. oxysporum</i> f.sp. <i>lactucae</i> is considered as one of the limiting factors for commercial production of lettuce during the summer season, particularly when lettuce is grown as a monoculture (e.g. in the production of pre-processed lettuce). In Italy, up to 70% losses in contaminated lettuce fields have been observed. Under favourable climatic conditions (the optimum soil temperature is between 24-28°C), infection may lead to total destruction of the crop. In many cases, growers have been obliged to stop growing lettuce on infested plots.
Transmission	<i>F. oxysporum</i> f.sp. <i>lactucae</i> is a soil-borne disease. It is thought that the fungus penetrates the plants via natural apertures or wounds on the roots, and that its chlamydospores can remain viable in the soil or on plant debris for a long time. In addition, studies carried out in Italy have showed that this fusarium wilt was also transmitted through seeds. Over long distance, it is considered that the most important mode of transmission is through infected seeds, and it is hypothesized that the disease was introduced in this way into Europe. Over smaller distances (i.e. within a country or region) infected transplants can rapidly spread the disease, and on a smaller scale (from field to field) the disease is probably spread by soil attached to machinery, agricultural tools, water, and plant debris.
Pathway	Plants for planting and seeds of <i>Lactuca sativa</i> and <i>Valerianella locusta</i> , soil attached to plants or machinery. The risk of spreading the disease via infected vegetables seems very low but cannot be totally excluded (in particular, more information would be needed to assess the risk of spreading the disease while processing lettuce for the final consumers and whether infected plant debris or soil might be released into the environment).
Possible risks	Lettuce is an important vegetable crop in the EPPO region (the main producers are Spain, Italy, France and the United Kingdom) and its commercial production is increasing. In most areas where <i>F. oxysporum</i> f.sp. <i>lactucae</i> has emerged, economic losses have been observed. Although data is lacking on its potential of establishment in other European countries, its presence in Italy and Portugal strongly suggests that the fungus has the potential to establish in many lettuce-growing areas. In general, control of soilborne diseases is difficult. In the case of <i>F. oxysporum</i> f.sp. <i>lactucae</i> , research is being carried out on the effects of crop rotation (probably 5 years without lettuce crops would be necessary), crop management (e.g. planting dates), soil disinfection (e.g. solarization), use of tolerant/resistant cultivars, and of biological control measures (e.g.

*Streptomyces griseoviridis*, *Trichoderma harzianum* and hypovirulent strains of *Fusarium*). The fact that the fungus is seed-transmitted adds to the risk of spreading the disease across continents. It is thought that the use of healthy planting material (seeds, transplants) produced in the framework of certification schemes would probably be an essential tool to prevent further spread of the disease through trade.

- Source(s) Antoniacci L, Montuschi C, Gengotti S, Censi D (2006) [Solutions for the fusarium wilt of lettuce]. *L'informatore Agrario* no. 43, 39-41 (in Italian).
- Etebarian HR, Milani MJ, Alizadeh A (2001) Reaction of lettuce cultivars to *Fusarium wilt* (*Fusarium oxysporum* f.sp. *lactucum*). *Seed and Plant* 17(3), 275-285 (abst.).
- Garibaldi A, Gilardi G, Gullino ML, Omodei M (2002) [Severe attacks of *Fusarium wilt* on lettuce near Bergamo (Northern Italy)]. *Informatore Fitopatologico* no. 7-8, 53-55 (in Italian).
- Garibaldi A, Gilardi G, Gullino ML (2004) First report of *Fusarium oxysporum* causing vascular wilt of lamb's lettuce (*Valerianella olitoria*) in Italy. *Plant Disease* 88(1) p 83.
- Garibaldi A, Gilardi G, Gullino ML (2004) Seed transmission of *Fusarium oxysporum* f.sp. *lactucae*. *Phytoparasitica* 32(1), 61-65.
- Gilardi G, Gullino ML, Garibaldi A (2006) [New diseases on processed salads]. *Informatore Fitopatologico* no. 12, 15-19.
- Hong C F, Chang PFL, Huang JL, Wan YL, Huang JW (2008) Identification for physiological races of *Fusarium oxysporum* f.sp. *lactucae* and screening of lettuce cultivars resistant to *Fusarium wilt*. *Plant Pathology Bulletin* 17(3), 233-242.
- Kim JY, Hong SS, Lee JG, Lee HJ, Lim JW, Kim JW, Kim HG (2008) [Occurrence of fusarium wilt caused by *Fusarium oxysporum* f.sp. *lactucae* and cultivar susceptibility on lettuce]. *Research in Plant Disease* 14(2), 79-84 (abst.) (in Korean).
- Marques Ramalhete M de L, Gonçalves Bastos C, Matias Furtado AJ (2006) [New diseases of lettuce in the region of Entre Douro e Minho]. O Minho, a Terra e o Homem, Ministério da Agricultura, do Desenvolvimento Rural e das Pescas, pp 61-65 (in Portuguese). [http://www.drapn.min-agricultura.pt/draedm/centrodocumentacao/revista\\_pdf/13.M.Ramalhete.pdf](http://www.drapn.min-agricultura.pt/draedm/centrodocumentacao/revista_pdf/13.M.Ramalhete.pdf)
- Matheron ME, Koike ST (2003) First report of fusarium wilt of lettuce caused by *Fusarium oxysporum* f.sp. *lactucae* in Arizona. *Plant Disease* 87(10) p 1265
- Matheron ME, McCreight JD, Tickes BR, Porchas M (2005) Effect of planting date, cultivar, and stage of plant development on incidence of *Fusarium wilt* of lettuce in desert production fields. *Plant Disease* 89(6), 565-570.
- Mbofung GY, Hong SG, Pryor BM (2007) Phylogeny of *Fusarium oxysporum* f.sp. *lactucae* inferred from mitochondrial small subunit, elongation factor 1- $\alpha$ , and nuclear ribosomal intergenic spacer sequence data. *Phytopathology* 97(1), 87-98.
- McCreight JD, Matheron ME, Tickes BR, Platts B (2005) *Fusarium wilt* race 1 on lettuce. *HortScience* 40(3), 529-531.
- Millani MJ, Erebarian HR, Alizadeh A (1999) Occurrence of *Fusarium wilt* of lettuce in Shahr-Ray, Varamin and Karaj areas. *Iranian Journal of Plant Pathology* 35(1/4), p 121 (abst.).
- Montuschi C, Antoniacci L (2006) [*Fusarium wilt* a new disease of lettuce]. *Agricoltura*, May 2006, 94-95 (in Italian). <http://www.ermesagricoltura.it/wcm/ermesagricoltura/rivista/2006/maggio/ra0605094s.pdf>
- Pasquali M, Dematheis F, Gullino ML, Garibaldi A (2007) Identification of race 1 of *Fusarium oxysporum* f.sp. *lactucae* on lettuce by inter-retrotransposon sequence-characterized amplified region technique. *Phytopathology* 97(8), 987-996.
- Yamauchi N, Shimazu J, Satou M, Horiuchi S, Shirakawa T (2004) Physiological races and vegetative compatibility groups of butterhead lettuce isolates of *Fusarium oxysporum* f.sp. *lactucae* in Japan. *Journal of General Plant Pathology* 70(6), 308-313 (abst.).

EPPO RS 2009/179

Panel review date

-

Entry date 2009-09

2009/180 Successful eradication of *Tomato yellow leaf curl virus* in the Netherlands

In 2007, *Tomato yellow leaf curl virus* (TYLCV, *Begomovirus* - EPPO A2 List) was detected for the first time in the Netherlands in small number of tomato (*Lycopersicon esculentum*) glasshouses (EPPO RS 2007/173). All infected tomato plants were destroyed, and treatments were applied against the insect vector, *Bemisia tabaci* (EPPO A2 List). At the end of the growing season, all infected tomato glasshouses were disinfected. Results of surveys carried out in 2007/2008 at the infected sites and across the whole country showed that TYLCV has been successfully eradicated from the Netherlands.

The pest status of *Tomato yellow leaf curl virus* in the Netherlands is officially declared as: Absent, pest eradicated.

Source: NPPO of the Netherlands, 2009-06.

Additional key words: eradication

Computer codes: TYLCV0, NL

2009/181 *Tobacco ringspot nepovirus* and *Tomato ringspot nepovirus* are absent from Argentina

In the EPPO RS 2004/118 it was stated that *Tobacco ringspot nepovirus* and *Tomato ringspot nepovirus* (both EPPO A2 list) were detected on *Fraxinus americana* in Argentina on the basis of an abstract of a publication from Dal Bó *et al.* (2003). On behalf of the authors, the NPPO of Argentina informed the EPPO Secretariat that this was a misinterpretation because the paper did not refer to the particular situation in Argentina but to viruses affecting forest trees which are of interest for Argentina. The NPPO confirmed that these two viruses have never been reported in Argentina. The two records should therefore be considered as erroneous.

Source: NPPO of Argentina, 2009-09.

Dal Bó, E.; Enrico, J.M.; Sisterna M.; Carranza, M. (2003) The virus in forest species. *Revista de la Facultad de Agronomía (Universidad de Buenos Aires)*, 23(1), 93-98. In *Review of Plant Pathology*, 83(3) March 2004, abstr. 2129, p 331.

Additional key words: denied record

Computer codes: TORSV0, TRSV00, AR

2009/182 New data on quarantine pests and pests of the EPPO Alert List

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

- New records

*Euphorbia mosaic virus* (*Begomovirus* - EU Annexes) has been detected in the Yucatan peninsula, Mexico (Hernández-Zepeda *et al.*, 2007). Present, in the Yucatan peninsula.

*Scaphoideus titanus* (Hemiptera: Cicadellidae) occurs in the south of Bosnia and Herzegovina (Delić *et al.*, 2007). Present, in the south of the country.

- Detailed records

In Portugal, *Cryphonectria parasitica* (EPPO A2 List) was first observed in 1929 on bark samples collected from branches of *Castanea crenata* in the Beira Interior Province. These initial infections were probably eradicated, as no further reports were made until 1989 when two outbreaks were found on *C. sativa* in the Trás-os-Montes province (which is the main chestnut-growing area in Portugal). In recent surveys, *C. parasitica* was detected across four mainland provinces (Minho, Trás-os-Montes, Beira Interior, Alentejo), Azores (Pico, San Miguel, Terceira) and Madeira (Bragança *et al.*, 2007).

In Belarus, *Ditylenchus destructor* (EU Annexes) is unevenly distributed and occurs mainly in the region of Minsk (Ilyashenka & Ivaniuk, 2008).

*Heterodera glycines* (EPPO A2 List) occurs in the state of Maranhão, Brazil (Cunha *et al.*, 2008).

A survey carried out in Northern Iran showed that *Heterodera glycines* (EPPO A2 List) occurs in Mazandaran and Golestan provinces, the main soybean-producing areas of the country (Maafi *et al.*, 2008).

In Spain, *Monilinia fructicola* (EPPO A2 List) was first reported in 2006 on peach trees (*Prunus persica*) in two adjacent localities: Ivars de Noguera (Provincia de Lleida, Cataluña) and Castillonroy (Provincia de Huesca, Aragón). In March 2006, *M. fructicola* was also found in mummified peach fruits (*P. persica* cv. 'Autumn Free') in orchards located at Sudanel (Provincia de Lleida, Cataluña), approximately 30 km south of the initial findings (De Cal *et al.*, 2009).

In Argentina, *Nacobbus aberrans* (EPPO A1 List) was detected on potatoes in Jujuy province during surveys carried out in 2003 and 2004 (Muruaga de l'Argentier *et al.*, 2007).

*Meloidogyne fallax* (EPPO A2 List) was detected for the first time in Victoria, Australia. The nematode was detected on potatoes (Nambiar *et al.*, 2008).

*Mycosphaerella pini* (EU Annexes) has become frequent in recent years on *Pinus nigra* and *Pinus mugo* in the continental part of Slovenia (Jurc, 2007).

*Potato spindle tuber viroid* (Pospiviroid - EPPO A2 List) was found in several potato cultivars in Primor'e (Far East of Russia). PSTVd was detected in combination with *Potato virus Y* (Romanova *et al.*, 2007).

*Xanthomonas oryzae* pv. *oryzae* (EPPO A1 List) occurs in Rajasthan, India (Nayak *et al.*, 2009).

In summer 2004, bacterial leaf scorch caused by *Xylella fastidiosa* (EPPO A1 List) was first found in Oklahoma (US) in *Ulmus americanus*. Additional infections were then reported on other tree species (e.g. *Quercus* spp., *Morus* spp., *Platanus occidentalis*). In July 2008, the bacterium was detected on *Vitis labrusca* cv. 'Concord' showing symptoms of Pierce's disease. This is the first time that Pierce's disease is reported from Oklahoma (Smith *et al.*, 2009).

- Taxonomy

*Ascochyta pisi* is one of the causal agent of *Ascochyta* blight of pea (*Pisum sativum*). The teleomorph of *A. pisi* has recently been obtained in laboratory conditions and called *Didymella pisi* sp. nov. (Chilvers *et al.*, 2009).

A new nematode species, *Bursaphelenchus macromucronatus* sp.nov. has recently been described. It was isolated from Taiwanese and Indian packaging wood (Gu *et al.*, 2008). Its separation from other species of the 'xylophilus' group is mainly based on female tail shape, spicules size and the mucro length. *B. macromucronatus* can be differentiated from *B. xylophilus*, *B. mucronatus*, *B. fraudulentus*, *B. conicaudatus*, *B. luxunosae*, *B. doui* and *B. singaporensis* by molecular tests (RFLP, sequencing of the ITS region).

- Source:
- Bragança H, Simões S, Onofre N, Tenreiro R, Rigling D (2007) *Cryphonectria parasitica* in Portugal: diversity of vegetative compatibility types, mating types, and occurrence of hypovirulence. *Forest Pathology* 37(6), 391-402.
- Chilvers MI, Rogers JE, Dugan FM, Stewart JE, Chen W, Peever TL (2009) *Didymella pisi* sp. nov., the teleomorph of *Ascochyta pisi*. *Mycological Research* 113(3)391-400.
- Cunha RP, Maia GL, Rodacki MEP, da Silva GS, Meyer MC (2008) [Life cycle of the *Heterodera glycines* race 9 on soybean in Maranhão State, Brazil]. *Summa Phytopathologica* 34(3), 262-264 (abst.).
- De Cal A, Gell I, Usall J, Viñas I, Melgarejo P (2009) First report of brown rot caused by *Monilinia fructicola* in peach orchards in Ebro Valley, Spain. *Plant Disease* 93(7), p 763.
- Delić D, Seljak G, Martini M, Ermacora P, Carraro L, Myrta A, Durić G (2007) Surveys for grapevine yellows phytoplasmas in Bosnia and Herzegovina. *Bulletin of Insectology* 60(2), 369-370.
- Gu J, Zheng W, Braasch H, Burgermeister W (2008) Description of *Bursaphelenchus macromucronatus* sp.n. (Nematoda: Parasitaphelenchidae) in packaging wood from Taiwan and India - a new species in the 'xylophilus' group. *Journal of Nematode Morphology and Systematics* 11(1), 31-40 (abst.).
- Hernández-Zepeda C, Idris AM, Carnevali G, Brown JK, Moreno-Valenzuela OA (2007) Preliminary identification of coat protein gene phylogenetic relationships of begomoviruses associated with native flora and cultivated plants from the Yucatan Peninsula of Mexico. *Virus Genes* 35(3), 825-833 (abst.).
- Ilyashenka D, Ivaniuk V (2008) Potato stem nematode in Belarus. *Žemdirbystė (Agriculture)* 95(3), 74-81 (abst.).
- Jurc D (2007) [Pines - *Pinus* spp. Diseases of needles. *Lophodermium seditiosum*, *Mycosphaerella pini*, *Mycosphaerella dearnessii*, *Cyclaneusma minus*]. *Gozdarski Vestnik* 65(7/8), 209-224 (abst.).
- Maafi ZT, Salati M, Riggs RD (2008) Distribution, population density, race and type determination of soybean cyst nematode, *Heterodera glycines*, in Iran. *Nematology* 10(6), 919-924 (abst.).
- Muruaga de l'Argentier S, Doucet M, Gallardo C, Lax P, Quintana de Quinteros S (2007) [Detection of detrimental phytophagous nematodes in plots devoted to andine potatoes cultivation in the province of Jujuy, NW Argentina]. *Acta Zoologica Lilloana* 51(1), 87-89 (abst.).
- Nambiar L, Quader M, Nobbs JM, Cobon JA, Campbell PR, Gulino LM (2008) First record of *Meloidogyne fallax* in Victoria, Australia. *Australasian Plant Disease Notes* 3(1), 141-142 (abst.)
- Nayak D, Reddy PR, Nayak P (2009) Variability in *Xanthomonas oryzae* pv. *oryzae*, the incitant of bacterial blight disease of rice. *Journal of Plant Protection Research* 49(1), 15-26.
- Romanova SA, Volkov Y, Kakareka N, Pleshakova TI, Koslovskaya ZN (2007) Potato disease caused by combined infection with potato spindle tuber viroid and potato

virus Y necrotic strain. *Russian Agricultural Sciences* 33(3), 162-165 (abst.).  
 Smith DL, Dominiak-Olson J, Sharber CD (2009) First report of Pierce's disease of grape caused by *Xylella fastidiosa* in Oklahoma. *Plant Disease* 93(7), p 762.

Additional key words: new records, detailed records, taxonomy

Computer codes: DITYDE, ENDOPA, EUMV00, HETDGL, MELGFA, MONIFC, NACOBAB, PSTVDO, SCAPLI, SCIRPI, XANTOR, XYLEFA, AR, AU, BA, BR, BY, ES, IN, IR, MX, PT, RU, SI, US

## 2009/183 EPPO report on notifications of non-compliance

The EPPO Secretariat has gathered below the notifications of non-compliance for 2009 received since the previous report (EPPO RS 2009/144). Notifications have been sent directly to EPPO by Switzerland and via Europhyt for the EU countries. The EPPO Secretariat has selected notifications of non-compliance made because of the detection of pests. Other notifications of non-compliance due to prohibited commodities, missing or invalid certificates are not indicated. It must be pointed out that the report is only partial, as many EPPO countries have not yet sent their notifications. When a consignment has been re-exported and the country of origin is unknown, the re-exporting country is indicated in brackets. When the occurrence of a pest in a given country is not known to the EPPO Secretariat, this is indicated by an asterisk (\*).

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b>Agromyzidae</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Kenya	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	3
<b>Aleyrodidae</b>	<i>Eryngium foetidum</i>	Vegetables (leaves)	Thailand	France	2
<b>Anoplophora</b>	<i>Acer</i>	Plants for planting	China	Netherlands	1
	<i>Acer palmatum</i>	Plants for planting	China	Germany	1
<b>Aphididae, Bemisia tabaci, Coccidae, Lepidoptera, Mesostigmata, Thripidae</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
<b>Bemisia</b>	<i>Rosa</i>	Cut flowers	Kenya	Sweden	1
<b>Bemisia tabaci</b>	<i>Agastache</i>	Cuttings	Ethiopia	Netherlands	1
	<i>Alternanthera</i>	Aquarium plants	Singapore	France	1
	<i>Eryngium foetidum</i>	Vegetables (leaves)	Thailand	France	18
	<i>Eryngium foetidum</i>	Vegetables (leaves)	Vietnam	France	3
	<i>Hygrophila corymbosa</i>	Aquarium plants	Singapore	Ireland	1
	<i>Hygrophila corymbosa</i>	Aquarium plants	Singapore	United Kingdom	1
	<i>Hygrophila polysperma, Hygrophila corymbosa, Hygrophila</i>	Aquarium plants	Indonesia	France	1
	<i>Hygrophila salicifolia</i>	Aquarium plants	Singapore	France	1
	<i>Limnophila</i>	Vegetables (leaves)	Sri Lanka	France	2
	<i>Mangifera indica</i>	Fruits	India	Ireland	1
	<i>Murraya</i>	Vegetables (leaves)	India	Ireland	1
	<i>Ocimum</i>	Vegetables (leaves)	Thailand	Netherlands	1
	<i>Ocimum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Ethiopia	United Kingdom	2
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	France	4
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	Ireland	2
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	Switzerland	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Netherlands	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	3
	<i>Ocimum sanctum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Piper sarmentosum</i>	Vegetables	Thailand	Sweden	1
	Unspecified	Aquarium plants	Singapore	Ireland	1
	Unspecified	Cuttings	Singapore	United Kingdom	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b>Bemisia tabaci, Liriomyza</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	United Kingdom	2
<b>Clavibacter michiganensis subsp. michiganensis</b>	<i>Lycopersicon esculentum</i>	Seeds	Thailand*	France	2
<b>Clavibacter michiganensis subsp. sepedonicus</b>	<i>Solanum tuberosum</i>	Seed potatoes	Poland	Germany	1
<b>Coleoptera</b>	Unspecified	Cut trees with foliage	Cameroon	Spain	1
<b>Criconematidae, Helicotylenchus, Meloidogyne, Pratylenchus</b>	<i>Phoenix roebelenii</i>	Plants for planting	Costa Rica	Netherlands	1
<b>Curculionidae</b>	<i>Polygonum odoratum</i>	Vegetables (leaves)	Vietnam	Czech Republic	1
<b>Diaphania indica</b>	<i>Momordica charantia, Solanum melongena</i>	Vegetables	Kenya	Germany	1
<b>Ditylenchus destructor</b>	<i>Solanum tuberosum</i>	Ware potatoes	Turkey	Bulgaria	1
<b>Globodera pallida</b>	<i>Solanum tuberosum</i>	Ware potatoes	Cyprus	Finland	3
<b>Globodera rostochiensis</b>	<i>Solanum tuberosum</i>	Ware potatoes	Cyprus	Finland	2
<b>Guignardia citricarpa</b>	<i>Citrus limon</i>	Fruits	Brazil	Greece	2
	<i>Citrus limon</i>	Fruits	South Africa	Netherlands	1
	<i>Citrus sinensis</i>	Fruits	Bangladesh*	United Kingdom	1
	<i>Citrus sinensis</i>	Fruits	Ghana*	United Kingdom	3
<b>Helicotylenchus dihystera, Helicotylenchus</b>	<i>Trachycarpus fortunei</i>	Plants for planting	China	Netherlands	1
<b>Helicoverpa zea</b>	<i>Asparagus</i>	Vegetables	Peru	Netherlands	1
<b>Heliothis, Liriomyza</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	Czech Republic	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Vietnam	Czech Republic	1
<b>Hirschmanniella</b>	<i>Cryptocoryne beckettii</i>	Aquarium plants	Singapore	France	1
	<i>Echinodorus bleheri</i>	Aquarium plants	Indonesia	Germany	1
<b>Hymenoptera</b>	<i>Gypsophila paniculata</i>	Cut flowers	Kenya	France	1
<b>Lepidoptera</b>	<i>Lycopersicon esculentum</i>	Vegetables	Tunisia	France	1
	Unspecified	Fruits	Sri Lanka	Cyprus	4
	<i>Vigna</i> , unspecified plant	Vegetables (leaves)	Sri Lanka	Cyprus	1
<b>Leucinodes orbonalis</b>	<i>Solanum</i>	Vegetables	Sri Lanka	Cyprus	1
	<i>Solanum melongena</i>	Vegetables	Thailand	Germany	1
<b>Liriomyza</b>	<i>Apium graveolens</i>	Vegetables	Thailand	Denmark	1
	<i>Apium graveolens</i>	Vegetables	Thailand	France	1
	<i>Dianthus</i>	Cut flowers	Israel	France	1
	<i>Gypsophila paniculata</i>	Cut flowers	Kenya	France	2
	<i>Mentha</i>	Vegetables (leaves)	Vietnam	Czech Republic	3
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand	Denmark	1
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand	France	14
	<i>Ocimum americanum, Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum americanum, Ocimum basilicum, Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Czech Republic	3
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	44
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Sweden	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Vietnam	France	1
	<i>Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	5
	<i>Trigonella, Vigna unguiculata</i>	Vegetables (leaves)	India	France	1
	<i>Vigna unguiculata</i>	Vegetables (leaves)	India	France	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b><i>Liriomyza huidobrensis</i></b>	<i>Eustoma grandiflorum</i>	Cut flowers	Kenya*	Netherlands	6
	<i>Eryngium</i>	Cut flowers	Kenya*	Netherlands	1
	<i>Eryngium</i>	Cut flowers	Zimbabwe*	Netherlands	1
	<i>Gypsophila</i>	Cut flowers	Ecuador	Netherlands	2
	<i>Gypsophila</i>	Cut flowers	Kenya*	Netherlands	1
	<i>Gypsophila paniculata</i>	Cut flowers	Kenya*	France	1
	<i>Molucella</i>	Cut flowers	Israel	Ireland	1
<b><i>Liriomyza sativae</i></b>	<i>Ocimum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand	Sweden	5
	<i>Ocimum americanum, Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Egypt*	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	India	Netherlands	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	5
<b><i>Liriomyza trifolii</i></b>	<i>Apium graveolens</i>	Vegetables	Thailand*	Netherlands	1
	<i>Apium graveolens</i>	Vegetables	Thailand*	Sweden	1
	<i>Gypsophila</i>	Cut flowers	Israel	Netherlands	3
	<i>Ocimum</i>	Vegetables (leaves)	Thailand*	Sweden	1
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand*	France	1
	<i>Ocimum americanum</i>	Vegetables (leaves)	Thailand*	Sweden	1
<b><i>Meloidogyne</i></b>	<i>Enkianthus perulatus</i>	Plants for planting	Japan	Netherlands	1
	<i>Trachycarpus fortunei</i>	Plants for planting	China	France	1
<b><i>Pepino mosaic virus</i></b>	<i>Lycopersicon esculentum</i>	Seeds	China*	Belgium	1
	<i>Lycopersicon esculentum</i>	Vegetables	Morocco*	United Kingdom	1
	<i>Lycopersicon esculentum</i>	Vegetables	Spain (Canary Isl.)	United Kingdom	1
<b><i>Phytophthora ramorum</i></b>	<i>Rhododendron</i>	Plants for planting	Netherlands	Estonia	1
	<i>Rhododendron</i>	Plants for planting	Netherlands	Slovenia	1
<b><i>Potato spindle tuber viroid</i></b>	<i>Solanum jasminoides</i>	Plants for planting	Italy	Germany	1
	<i>Solanum rantonnetii</i>	Plants for planting	(Germany)	Austria	1
<b><i>Pratylenchus, Tylenchorhynchus</i></b>	<i>Olea</i>	Plants for planting	Syria	United Kingdom	1
<b><i>Radopholus similis</i></b>	<i>Anubias</i>	Aquarium plants	Thailand	Netherlands	2
	<i>Anubias barteri</i>	Aquarium plants	Singapore	France	1
<b><i>Ralstonia solanacearum</i></b>	<i>Solanum tuberosum</i>	Ware potatoes	Bangladesh	United Kingdom	1
	<i>Solanum tuberosum</i>	Ware potatoes	Egypt	Italy	1
	<i>Solanum tuberosum</i>	Ware potatoes	Egypt	Netherlands	6
<b><i>Scirtothrips dorsalis</i></b>	<i>Crinum</i>	Plants for planting	Thailand	Netherlands	1
	<i>Momordica</i>	Vegetables	Kenya	United Kingdom	1
<b><i>Spodoptera</i></b>	<i>Verbena</i>	Plants for planting	Tunisia	France	1
<b><i>Spodoptera littoralis</i></b>	<i>Eryngium</i>	Cut flowers	Zimbabwe	Netherlands	1
	<i>Rosa</i>	Cut flowers	Kenya	Netherlands	1
	<i>Rosa</i>	Cut flowers	Uganda	Netherlands	1
	<i>Rosa</i>	Cut flowers	Zambia	Netherlands	2
	<i>Rosa</i>	Cut flowers	Zimbabwe	Netherlands	30
	<i>Solidago</i>	Cut flowers	Zimbabwe	Netherlands	1
<b><i>Spodoptera litura</i></b>	<i>Rosa</i>	Cut flowers	India	Netherlands	3
<b><i>Synchytrium endobioticum</i></b>	<i>Solanum tuberosum</i>	Ware potatoes	Turkey	Bulgaria	2
<b>Tetranychidae</b>	<i>Viola</i>	Cuttings	Australia	United Kingdom	1
<b>Thripidae</b>	<i>Momordica</i>	Vegetables	Dominican Rep.	United Kingdom	2
	<i>Momordica</i>	Vegetables	India	United Kingdom	1
	<i>Solanum melongena</i>	Vegetables	Dominican Rep.	United Kingdom	2

Pest	Consignment	Type of commodity	Country of origin	Destination	nb	
<b><i>Thrips palmi</i></b>	<i>Dendrobium</i>	Cut flowers	Thailand	Belgium	9	
	<i>Dendrobium</i>	Cut flowers	Thailand	Netherlands	6	
	<i>Momordica</i>	Vegetables	Bangladesh	Sweden	1	
	<i>Momordica</i>	Vegetables	Dominican Rep.	Netherlands	1	
	<i>Momordica</i>	Vegetables	Dominican Rep.	United Kingdom	2	
	<i>Momordica</i>	Vegetables	India	Sweden	2	
	<i>Momordica</i>	Vegetables	India	United Kingdom	1	
	<i>Momordica</i>	Vegetables	Thailand	Netherlands	1	
	<i>Momordica</i>	Vegetables	Thailand	United Kingdom	2	
	<i>Momordica charantia</i>	Vegetables	Dominican Rep.	Netherlands	1	
	<i>Momordica charantia</i>	Vegetables	Thailand	France	1	
	<i>Ocimum basilicum</i>	Vegetables (leaves)	India	Netherlands	1	
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	United Kingdom	1	
	<i>Ocimum basilicum, Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	1	
	<i>Oncidium</i>	Cut flowers	Thailand	Netherlands	1	
	<i>Orchidaceae</i>	Cut flowers	Malaysia	Netherlands	1	
	<i>Orchidaceae</i>	Cut flowers	Singapore	Austria	1	
	<i>Orchidaceae</i>	Cut flowers	Thailand	Austria	10	
	<i>Solanum melongena</i>	Vegetables	Dominican Rep.	Netherlands	1	
	<i>Solanum melongena</i>	Vegetables	Dominican Rep.	United Kingdom	3	
	<i>Solanum melongena</i>	Vegetables	India	Netherlands	1	
	<i>Solanum melongena</i>	Vegetables	Surinam	Netherlands	3	
	<i>Solanum melongena</i>	Vegetables	Thailand	Netherlands	1	
	Unspecified	Fruits	Sri Lanka	Cyprus	1	
	<b><i>Thrips palmi, Scirtothrips</i></b>	<i>Momordica</i>	Vegetables	India	United Kingdom	1
	<b>Thysanoptera</b>	<i>Dendrobium</i>	Cut flowers	Thailand	Germany	1
<i>Dendrobium</i>		Cut flowers	Thailand	Switzerland	1	
<i>Dendrobium, Solanum melongena</i>		Cut flowers	Thailand	Switzerland	1	
<i>Momordica charantia</i>		Vegetables	Dominican Rep.	France	1	
<i>Momordica charantia</i>		Vegetables	India	France	1	
<i>Momordica charantia</i>		Vegetables	Sri Lanka	France	1	
<i>Momordica charantia</i>		Vegetables	Thailand	France	31	
<i>Momordica charantia, Solanum melongena</i>		Vegetables	Dominican Rep.	France	1	
<i>Momordica charantia, Solanum melongena</i>		Vegetables	Thailand	France	4	
<i>Solanum melongena</i>		Vegetables	Bangladesh	France	1	
<i>Solanum melongena</i>		Vegetables	Dominican Rep.	France	3	
<i>Solanum melongena</i>		Vegetables	Ghana	France	1	
<i>Solanum melongena</i>		Vegetables	India	France	1	
<i>Solanum melongena</i>		Vegetables	Mauritius	France	1	
<i>Solanum melongena</i>		Vegetables	Thailand	France	38	
<b>Tomato chlorotic dwarf viroid</b>	<i>Petunia</i>	Cuttings	Israel*	Finland	1	
<b><i>Tuta absoluta</i></b>	<i>Lycopersicon esculentum</i>	Vegetables	Tunisia	France	3	
<b><i>Unaspis citri</i></b>	<i>Citrus sinensis</i>	Fruits	China	United Kingdom	1	
<b><i>Xanthomonas</i></b>	<i>Citrus</i>	Fruits	Bangladesh	United Kingdom	1	
	<i>Citrus</i>	Fruits	Thailand	United Kingdom	1	
	<i>Citrus, Solanum melongena</i>	Fruits	India	United Kingdom	1	
	<i>Citrus, Syzygium samarangense</i>	Fruits	Thailand	United Kingdom	1	
<b><i>Xanthomonas axonopodis</i> pv. <i>citri</i></b>	<i>Citrus</i>	Fruits	India	United Kingdom	1	
	<i>Citrus aurantiifolia</i>	Fruits	Bangladesh	United Kingdom	1	
<b><i>Xiphinema</i></b>	<i>Ilex crenata</i>	Plants for planting	Japan	Netherlands	1	
	<i>Pinus</i>	Plants for planting	Japan	Netherlands	1	

## • Fruit flies

Pest	Consignment	Country of origin	Destination	nb
<b>Anastrepha</b>	<i>Diospyros kaki</i>	Brazil	France	1
	<i>Mangifera indica</i>	Costa Rica	United Kingdom	1
	<i>Mangifera indica</i>	Dominican Rep.	United Kingdom	2
	<i>Mangifera indica</i>	Dominican Rep.	Netherlands	1
<b>Anastrepha obliqua</b>	<i>Mangifera indica</i>	Peru	France	1
<b>Bactrocera</b>	<i>Mangifera indica</i>	Burkina Faso	France	2
	<i>Mangifera indica</i>	Cameroon	France	2
	<i>Mangifera indica</i>	Côte d'Ivoire	France	1
	<i>Mangifera indica</i>	Ghana	United Kingdom	1
	<i>Mangifera indica</i>	Mali	France	5
	<i>Mangifera indica</i>	Pakistan	United Kingdom	1
	<i>Mangifera indica</i>	Thailand	United Kingdom	1
	<i>Psidium guajava</i>	Pakistan	United Kingdom	2
	<i>Syzygium samarangense</i>	Thailand	France	1
	<b>Bactrocera correcta</b>	<i>Psidium guajava</i>	Thailand	France
<i>Syzygium samarangense</i>		Thailand	France	5
<b>Bactrocera cucurbitae</b>	<i>Momordica charantia</i>	Thailand	France	2
<b>Bactrocera dorsalis</b>	<i>Annona muricata</i>	Vietnam	France	1
	<i>Annona squamosa</i>	Vietnam	France	2
	<i>Annona squamosa,</i> <i>Mangifera indica</i>	Vietnam	France	1
	<i>Mangifera indica</i>	Cameroon	France	2
	<i>Mangifera indica</i>	India	France	1
	<i>Mangifera indica</i>	Thailand	France	3
	<i>Mangifera indica</i>	Vietnam	France	3
	<i>Syzygium samarangense</i>	Thailand	France	1
<b>Bactrocera zonata</b>	<i>Mangifera indica</i>	India	France	1
	<i>Mangifera indica</i>	Pakistan	France	1
	Unspecified	Sri Lanka	Cyprus	4
<b>Ceratitis</b>	<i>Annona squamosa</i>	Vietnam	France	1
	<i>Mangifera indica</i>	Burkina Faso	France	1
<b>Ceratitis capitata</b>	<i>Mangifera indica</i>	Peru	France	1
<b>Ceratitis cosyra</b>	<i>Mangifera indica</i>	Burkina Faso	France	2
	<i>Mangifera indica</i>	Kenya	France	1
<b>Non-European Tephritidae</b>	<i>Annona muricata</i>	Vietnam	France	1
	<i>Annona squamosa</i>	Vietnam	France	1
	<i>Capsicum annuum</i>	Thailand	France	2
	<i>Capsicum frutescens</i>	Thailand	France	4
	<i>Capsicum frutescens,</i> <i>Syzygium samarangense</i>	Thailand	France	1
	<i>Diospyros kaki</i>	Brazil	France	1
	<i>Mangifera indica</i>	Cameroon	France	2
	<i>Mangifera indica</i>	Dominican Rep.	United Kingdom	1
	<i>Mangifera indica</i>	Dominican Rep.	Netherlands	1
	<i>Mangifera indica</i>	Ghana	Netherlands	1
	<i>Mangifera indica</i>	Pakistan	United Kingdom	1
	<i>Mangifera indica</i>	Philippines	Netherlands	1
	<i>Mangifera indica</i>	Sri Lanka	Netherlands	1
	<i>Mangifera indica</i>	Thailand	France	1
	<i>Psidium</i>	Pakistan	United Kingdom	2
	<i>Syzygium</i>	Dominican Rep.	Netherlands	1
	<i>Syzygium samarangense</i>	Thailand	Netherlands	1
	<i>Syzygium samarangense</i>	Thailand	France	1

• Wood

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<i>Anoplophora</i>	Unspecified	Wood packing material	China	Netherlands	3
<b>Bostrichidae</b>	Unspecified (crate)	Wood packing material	Thailand	Germany	1
<i>Bursaphelenchus</i>	Unspecified (pallet)	Wood packing material	Portugal	Austria	1
<i>Bursaphelenchus xylophilus</i>	Unspecified	Wood packing material	Portugal	Ireland	1
	Unspecified	Dunnage	USA	Denmark	1
	Unspecified (crate)	Wood packing material	Portugal	Sweden	2
<b><i>Bursaphelenchus</i>, Cerambycidae, Scolytidae</b>	Unspecified (pallet)	Wood packing material	Portugal	Austria	1
<b>Coleoptera</b>	Unspecified	Wood packing material	China	Germany	1
<i>Monochamus</i>	Unspecified	Wood packing material	China	Poland	1
<i>Monochamus alternatus</i>	Unspecified (crate)	Wood packing material	China	Netherlands	1
<b>Scolytidae</b>	Unspecified (crate)	Wood packing material	India	Germany	1
<i>Sinoxylon</i>	Unspecified	Wood packing material	India	Germany	1
	Unspecified (crate)	Wood packing material	India	Germany	1
	Unspecified (pallet)	Wood packing material	Hong Kong	Germany	1
	Unspecified (pallet)	Wood packing material	India	Germany	2
	Unspecified (pallet)	Wood packing material	Japan	Germany	1
	Unspecified (pallet)	Wood packing material	Malaysia	Netherlands	3

• Bonsais

Pest	Consignment	Country of origin	Destination	nb
<i>Anoplophora</i>	<i>Acer</i>	China	France	1
	<i>Ilex</i>	China	France	1
<b><i>Ditylenchus</i>, <i>Helicotylenchus dihystra</i>, <i>Helicotylenchus</i>, <i>Meloidogyne</i></b>	<i>Zelkova</i>	China	United Kingdom	1
<b><i>Gymnosporangium asiaticum</i></b>	<i>Junipenus chinensis</i> , <i>Juniperus rigida</i> , unspecified plant	Japan	United Kingdom	1
	<i>Juniperus chinensis</i>	Japan	United Kingdom	3
<b><i>Helicotylenchus dihystra</i></b>	<i>Bougainvillea</i>	China	United Kingdom	1
	<i>Eugenia</i>	China	United Kingdom	1
	<i>Ilex</i>	China	United Kingdom	1
	<i>Ligustrum</i>	China	United Kingdom	1
	<i>Portulacaria</i>	China	United Kingdom	1
	<i>Sageretia thea</i>	China	United Kingdom	1
	<i>Serissa</i>	China	United Kingdom	1
<i>Zanthoxylum</i>	China	United Kingdom	1	
<b><i>Helicotylenchus dihystra</i>, <i>Meloidogyne</i></b>	<i>Fraxinus</i>	China	United Kingdom	1
<b><i>Helicotylenchus dihystra</i>, <i>Tylenchorhynchus annulatus</i></b>	<i>Ficus</i>	China	United Kingdom	1
<b><i>Helicotylenchus</i>, <i>Tylenchorhynchus</i></b>	<i>Ilex crenata</i> , <i>Podocarpus macrophyllus</i>	Japan	Netherlands	1
<b><i>Helicotylenchus</i>, <i>Tylenchorhynchus annulatus</i></b>	<i>Zelkova</i>	China	United Kingdom	1

Source: EPPO Secretariat, 2009-08.

2009/184 QBOL: a new EU project focusing on DNA barcoding of quarantine organisms

A new EU funded project (QBOL) was recently initiated on DNA barcoding of important plant pests. An international consortium, coordinated by Dr. Peter Bonants from the Plant Research International (Wageningen, NL), will collect DNA barcodes from many plant quarantine organisms, store these sequences in a database accessible via Internet, develop a DNA bank, and train end-users. All these activities should help National Plant Protection Services to perform correct identification and detection of quarantine organisms. Persons interested in collaborating with the consortium are invited to contact the coordinator.

Project full title: Development of a new diagnostic tool using DNA barcoding to identify quarantine organisms in support of plant health.

Project website: [www.QBOL.org](http://www.QBOL.org)

Contact: Dr. PJM Bonants  
Plant Research International BV  
Business Unit Biointeractions & Plant Health  
PO BOX 69  
6700 AB Wageningen, The Netherlands  
Tel: +31 317 480649  
Mob: +31 6 10895161  
Fax: +31 317 418094  
E-mail: [peter.bonants@wur.nl](mailto:peter.bonants@wur.nl)  
Internet: [www.pri.wur.nl](http://www.pri.wur.nl)

Source: Personal communication with Dr P Bonants, Plant Research International BV, Wageningen (NL), 2009-09.

Additional key words: diagnostics

Computer codes: EU

2009/185 *Gymnocoronis spilanthoides* in the EPPO region: addition to the EPPO Alert List

*Gymnocoronis spilanthoides* (Asteraceae, common name Senegal tea) is a semi-aquatic emergent perennial plant native to South America. The species is used in aquarium trade. Within the EPPO region, it is not recorded as naturalized. Because this plant has shown invasive behaviour where it has been introduced elsewhere in the world, it can be considered a potential future invader in Europe.

Geographical distribution

Asia: India, Japan (Kyushu, Honshu).

North America (native): Mexico.

South America (native): Argentina (listed as a main weed), Bolivia, Brazil, Paraguay, Peru, Uruguay.

Oceania: Australia (Queensland, New South Wales, South Australia, Tasmania, Victoria, Western Australia), New Zealand.

Note: the species is casual in Hungary. The species is classified as unwanted in South Africa.

Morphology

*G. spilanthoides* is a freshwater or marsh-growing emergent perennial herb forming rounded bushes up to 1 to 1.5 m tall or mats of stems extending from the banks. Young stems are 5-10 mm in diameter, increasing to 20 mm with age. Thin and numerous roots can develop from leaf veins or from any node in contact with moist soil or water. Larger stems are hollow between the nodes, and float on water, reaching 1.5 m in length. The leaves are opposite, dark green, 50 to 200 mm long. Flowers are numerous and occur at the end of stems, they are white, ball shaped and 15 to 20 mm in diameter. The seeds are 0.8-1.2 mm in diameter, ribbed, yellow-brown.

Biology and ecology

Most seeds germinate in spring, although some germination may continue into summer. A germination rate of 83% has been reported. Seedling growth is rapid. Flowering starts in late spring or early summer and lasts until the cooler weather of late autumn. *G. spilanthoides* reproduces both vegetatively and by seeds. Seed formation occurs one month after flowering. Vegetative reproduction occurs when any part of the stem that includes a node breaks, or even when a leaf breaks away from the main plant. Broken stem fragments or leaves are spread by water currents, and can also be accidentally spread by machinery (e.g. boats, trailers, etc.) or animal hooves, and grow into a new plant when settling in a stream bed, and then form new colonies. Seeds are relatively heavy and are usually dropped near the parent plant, but they can also be spread by water currents, or by mud attached to machinery and animals. Plants are dormant during winter and new growth reshoots from the crown and nodes during the following spring. The species is recorded to be very hardy, and to be able to have a growth rate exceeding 15 cm per week. Although it is shade tolerant, it requires light to colonize a new location.

### In which habitats

The species occurs in lakes, water courses, wetlands, and prefers still or very slow flowing waters. According to the Corine Land Cover nomenclature, the following habitats are invaded: coastal wetlands, banks of continental water, riverbanks/canalsides (dry river beds).

### Pathways

The plant is imported and used for aquaria. It is recorded to have been introduced into Australia and India by the aquarium industry. Imports are reported in small quantities in Austria, Estonia, France, Hungary, the Netherlands and Switzerland, but their quantities may increase in the future. In Japan, the species has also been sold as a “water purification plant”, although there is no scientific evidence of this fact. Moreover, the fragrant flowers of the plant attract butterflies (Monarchs in particular), and the plant may therefore be intentionally spread by butterfly enthusiasts. Additionally, natural spread occurs through water, machinery and animals.

### Impacts

As *G. spilanthisoides* grows very quickly, floating mats rapidly cover water bodies, excluding other plants and animals such as wetland birds. The plant is known to be particularly detrimental to wetland ecosystems. Infestations block drainage channels and worsen flooding; this may also affect recreational activities and irrigation. When large quantities of the plant die off and rot under water, this may also alter water quality.

### Control

The species is difficult to manage, and long term experience with glyphosate alone has proven to be ineffective. In general, herbicides only kill the upper part of the plant, and material below the water line can regrow. Hand pulling also results in regeneration and further spread. A combined management strategy has given good results in Australia. Herbicide was applied first, and 7 to 10 days later, all silt and plant material down to 1 m depth was mechanically removed, dried and burnt.

Considering the invasive behaviour of this species elsewhere in the world, including in its native range, it is considered that slow flowing water bodies of the whole EPPO region are at risk, and that the species should usefully be monitored, particularly in countries currently importing this species as an aquarium plant (Austria, Estonia, France, Hungary, the Netherlands and Switzerland). *G. spilanthisoides* is therefore added to the Alert List.

Source: Victoria Department of Primary Industries (2009) Impact Assessment - Senegal Tea Plant (*Gymnocoronis spilanthisoides*) in Victoria.

[http://www.land.vic.gov.au/dpi/vro/vrosite.nsf/pages/impact\\_senegal\\_tea\\_plant](http://www.land.vic.gov.au/dpi/vro/vrosite.nsf/pages/impact_senegal_tea_plant)

Global invasive species database (2009) *Gymnocoronis spilanthisoides*.

<http://www.issg.org/database/species/distribution.asp?si=863&fr=1&sts=&lang=EN>

Weed Science Society of America (2009) Fact sheet on *Gymnocoronis spilanthisoides*.

<http://www.wssa.net/Weeds/Invasive/FactSheets/Gymnocoronis%20spilanthisoides.pdf>

Additional key words: invasive alien plants, alert list

Computer codes: GYNP

2009/186 Invasive aquatic plants in Japan

In Japan, alien aquatic plants have been introduced since the 1800s, for example *Cabomba caroliniana*, *Egeria densa*, *Eichhornia crassipes*, *Iris pseudoacorus*, *Myriophyllum aquaticum*, and *M. brasiliense*. In the past few decades, more and more alien aquatic plants have been newly introduced and commercially sold by various routes due to massive demand for aquarium and gardening. Amongst the more than 300 aquatic plants available on the market as aquarium plants, over 40 species are naturalized in Japan, and some of them have shown invasive behaviour. Thirty seven of these species are listed below with their families, origin and distribution in the EPPO region when available. Species are classified according to their status in Japan.

Alien species naturalized and widespread in Japan:

Species	Origin	Occurrence in EPPO region
<i>Eichhornia crassipes</i> (Pontederiaceae) (EPPO A2 List)	S-Am.	ES, IL, IT, JO, PT
<i>Egeria densa</i> (Hydrocharitaceae) (EPPO List of Invasive Alien Plants)	S-Am.	Widespread
<i>Elodea nuttallii</i> (Hydrocharitaceae) (EPPO List of IAP)	N-Am.	Widespread
<i>Iris pseudacorus</i> (Iridaceae)	Eur., W Asia, N-Af.	Native, widespread
<i>Paspalum distichum</i> var. <i>distichum</i> , <i>P. distichum</i> var. <i>indutum</i> (Poaceae)	Neotrop.	CY, ES (incl. Azores, Balears, Canarias), FR (incl. Corse), GB, GR, IT (incl. Sardinia), PT (incl. Madeira), RO, TR
<i>Landoltia punctata</i> (Lemnaceae)	SE Asia, Australia	ES, IL
<i>Wolffia globosa</i> (Lemnaceae)	Asia, N & S Am.	/
<i>Cabomba caroliniana</i> (Cabombaceae) EPPO List of IAP	Am.	BE, FR, GB, HU, NL
<i>Nasturtium officinale</i> (Brassicaceae)	Eur., Asia, N-Africa	Native, widespread
<i>Myriophyllum aquaticum</i> (Haloragaceae) EPPO List of IAP	S-Am.	Widespread
<i>Nymphaea</i> spp. (Nymphaeaceae)	/	/

Species which have increased their distribution in Japan rapidly in recent years:

Species	Origin	Occurrence in EPPO region
<i>Azolla</i> spp. (Salviniaceae)	/	/
<i>Pistia stratiotes</i> (Araceae) EPPO Alert List	S-Am.	Canarias (ES)
<i>Alternanthera philoxeroides</i> (Amaranthaceae) EPPO Alert List	S-Am.	FR, IT
<i>Veronica anagallis-aquatica</i> (Scrophulariaceae)	Eur., Asia, Africa, S-Am.	Native, widespread
<i>Gymnocoronis spilanthoides</i> (Asteraceae)	S-Am.	/
<i>Hydrocotyle verticillata</i> var. <i>triradiata</i> (Apiaceae)	S-Am.	ES
<i>Hydrocotyle ranunculoides</i> (Apiaceae) EPPO A2 List	Am.	BE, DE, FR, GB, IE, IT, NL
<i>Ludwigia repens</i> (Onagraceae)	Am.	/

Species which have a limited distribution in Japan:

Species	Origin	Occurrence in EPPO region
<i>Sagittaria graminea</i> (Alismataceae)	Am.	/
<i>Vallisneria gigantea</i> (Hydrocharitaceae)	Am., Asia	Widespread
<i>Heteranthera limosa</i> (Pontederiaceae)	Am.	ES, IT (incl. Sardinia), FR, PT
<i>Bacopa rotundifolia</i> (Scrophulariaceae)	N-Am.	?
<i>Lemna gibba</i> (Lemnaceae)	Cosmop.	Native, widespread
<i>Trapa natans</i> var. <i>bispinosa</i> (Trapaceae)	Africa, Asia	/
<i>Utricularia gibba</i> (Lentibulariaceae)	N & C Am.	ES, LU
<i>Utricularia inflata</i> (Lentibulariaceae)	N-Am.	/

Species which have been observed in the wild but did not naturalize so far:

Species	Origin	Occurrence in EPPO region
<i>Salvinia molesta</i> (Salviniaceae) EPPO Alert List	S-Am.	IT, PT
<i>Limnobium laevigatum</i> (Hydrocharitaceae)	Am.	/
<i>Eichhornia azurea</i> (Pontederiaceae)	S-Am.	/
<i>Pontederia cordata</i> (Pontederiaceae)	Am.	ES, FR, GB, IE, IT, NL
<i>Thalia dealbata</i> (Marantaceae)	N-Am.	/
<i>Heteranthera zosterifolia</i> (Pontederiaceae)	S-Am.	/
<i>Lagarosiphon major</i> (Hydrocharitaceae) EPPO List of IAP	Africa	Widespread
<i>Hydrocleis nymphoides</i> (Limnocharitaceae)	S-Am.	/
<i>Neptunia oleracea</i> (Fabaceae)	Af., Asia, Am.	/
<i>Nymphoides aquatica</i> (Menyanthaceae)	N-Am.	/

Source: Kadono Y (2004) Alien aquatic plants naturalized in Japan: history and present status. *Global environment research* 8(2), 163-169.  
<http://www.airies.or.jp/publication/ger/pdf/08-02-07.pdf>

A list of naturalized alien plants in Japan can be found in:  
Mito T, Uesugi T (2004) Invasive Alien Species in Japan: The Status Quo and the New Regulation for Prevention of their Adverse Effects. *Global Environmental Research* 8(2), 171-191.  
<http://www.airies.or.jp/publication/ger/pdf/08-02-08.pdf>

Additional key words: invasive alien plants

Computer codes: 1AZOG, 1NYMG, ALRPH, BAORO, CABCA, EICAZ, EICCR, ELDE, ELDNA, HDYNY, HETLI, HETZO, HYDRA, HYDVE, GYNP, IRIPS, LEMGI, LGAMA, LUDAC, MYPBR, NAAOF, NPTPR, NYPAQ, PASDS, PIIST, SAGGR, SAVMO, SPIOL, THADA, TRPNV, UTRBI, VAIGI, VERRA, WOLGL,

2009/187 The situation of *Eragrostis curvula* in the EPPO region

*Eragrostis curvula* (Poaceae, common name African lovegrass) is a perennial plant native to Southern Africa. The species has been used for erosion control and is increasingly used for ornamental purposes. Within the EPPO region, it is present in some countries. Because this plant has shown invasive behaviour in Japan, the USA and Australia, the spread of this species could be usefully monitored in the EPPO region.

Geographical distribution

EPPO region: Belgium, France, Germany, Italy, Lebanon, Portugal (Madeira only), Spain, United Kingdom.

Asia: India, Japan, Lebanon, Myanmar.

Africa (native): Botswana, Kenya, Mozambique, Lesotho, Namibia, South Africa (Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, Northern Cape, Western Cape), Swaziland, Tanzania, Zambia, Zimbabwe.

North America: USA (Alabama, Arkansas, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Illinois, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Missouri, Mississippi, North Carolina, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, West Virginia), Puerto Rico.

South America: Colombia.

Oceania: Australia (Australian Capital territory, New South Wales, Northern Territory, Queensland, Tasmania, Victoria, Western Australia), New Zealand.

Note: The species is reported from the Canary Islands (ES) and Northern Africa, but no further details could be found. Although exotic in North America, the species is not regulated. In Australia, the species is regulated in all states, except in Queensland and Northern Territory.

Invasive monospecific populations have been observed in Cataluña, between Seu d'Urgell and Puigcerdà. In France, the species is newly reported in Leucate on a roadside (in the Aude department) (Conservatoire Botanique National Méditerranéen de Porquerolles, pers. comm. 2009).

Morphology

*E. curvula* is a densely tufted perennial grass growing up to 1.2 m high. It has a fibrous root system which mainly develops in the top 50 cm of soil. It has many long and hanging, rigid leaves of varying length (20-40 cm long and 3-5 mm wide), which are bright green to blue green. Leaves are hairless or with soft hairs, the ligule consists of a hairy rim 1 mm long. Leaves are tough to break and have distinctive parallel veins. Inflorescences are narrow panicles up to 30 cm long. The yellow brown seeds are 0.5-1 mm long.

Biology and ecology

*E. curvula* is mainly a summer growing plant, however it has the ability to grow at any time of the year provided moisture and temperature conditions are appropriate. Growth is reported to begin in the spring when minimum temperatures exceed 10°C.

*E. curvula* reproduces by seeds, producing thousands at a time.

The species is reported to be drought and frost tolerant and to grow well in hot and dry locations in full sun. It can also grow in moist soils if they are well drained. It tolerates high soil salinity levels and grazing, but cannot grow on wet soils and does not tolerate standing water. In Australia it seems to prefer acidic and light sandy soils. It is particularly dominant in low fertility soils, in dry conditions and when there is a lack of competitors. Seeds are spread by water and wind, and particularly along communication roads transported by machinery. It is also reported to be spread attached to the fur or hooves of animals. Cattle feeding on *E. curvula* have been shown to excrete viable seed up to 10 days after consumption.

#### In which habitats

*E. curvula* is mainly found in open habitats along road sides, railway lines, river banks, disturbed woodlands and other disturbed areas. It is also found in pastures. According to the Corine Land Cover nomenclature, the following habitats are invaded: pastures, and potentially natural grassland, road and rail networks and associated land, other artificial surfaces (wastelands).

#### Pathways

The species was introduced in 1927 in the USA for erosion control, and for similar purposes in Australia. The plant is increasingly used for ornamental purposes. The plant can enter new territories as a contaminant of soil and gravel (during road making) or of grain.

#### Impacts

In degraded pastures, *E. curvula* causes a reduction in preferred pasture species, being itself unpalatable, which reduces the quality of pastures. In Japan, the species has colonized floodplain habitats, and is reported to exert a strong negative influence on the development of riparian endemic plants and associated arthropods (grasshoppers). In Australia and the USA, the species forms dense monospecific stands up to 1.2 m high, threatening the regeneration of native species and posing a fire hazard during dry months.

#### Control

This species is difficult to control and an integrated management approach is required. Plants should be destroyed before they set seeds. Preventive measures consist of ensuring that fodder, stock, soil, vehicles and products purchased are free from seeds of *E. curvula*, and in avoiding disturbing soil (e.g. by ploughing) unless other competitors are sown in order to out-compete *E. curvula*. The plant can be controlled by digging out the root system in late winter or early spring. In Queensland, glyphosate and flupropanate have been used with good results in pastures and non agricultural lands, while atrazine was used in grass seed crops.

Considering that impacts are so far reported to be moderate, this plant species will not be added to the EPPO alert list. Nevertheless, as *E. curvula* seems to exhibit aggressive behaviour in Spain, its spread within the EPPO region could be usefully monitored.

Source: Gucker Corey L (2009) *Eragrostis curvula*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer).  
<http://www.fs.fed.us/database/feis/plants/graminoid/eracur/all.html>

Muranaka T, Washitani I (2004) Aggressive invasion of *Eragrostis curvula* in gravelly floodplains of Japanese rivers: current status, ecological effects and countermeasures. *Global environmental research* 8(2), 155-162.  
<http://www.airies.or.jp/publication/ger/pdf/08-02-06.pdf>

Queensland Government (2009) African Lovegrass. Queensland primary industries and fisheries. Department of employment, economic development and innovation. [http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790\\_7108\\_ENA\\_HTML.htm](http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790_7108_ENA_HTML.htm)

USDA (2009) Plants profile. *Eragrostis curvula*.  
<http://plants.usda.gov/java/profile?symbol=ERCU2>

Victoria Department of primary industries (2009) Impact Assessment - African Love Grass (*Eragrostis curvula*) in Victoria.  
[http://www.dpi.vic.gov.au/DPI/Vro/vrosite.nsf/pages/impact\\_african\\_love\\_grass](http://www.dpi.vic.gov.au/DPI/Vro/vrosite.nsf/pages/impact_african_love_grass)

Weber E (2003) Invasive Plant Species of the World. CABI Publishing Wallingford, (GB) pp. 154.

Additional key words: invasive alien plants

Computer codes: ERACU