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CONTENTS _____ *Pests & Diseases*

_____ *Invasive Plants*

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2009/061 First record of *Erwinia amylovora* in Lithuania

In Lithuania, the first symptoms of fireblight (*Erwinia amylovora* – EPPO A2 List) were observed in 2005 on a 30-year old *Crataegus monogyna* growing in a hedge. This first detection was made in the north of the country (Šiauliai region) at the beginning of June. In 2005, 17 outbreak sites were subsequently confirmed in 7 regions (Šiauliai, Klaipėda, Telšiai, Vilnius, Panšvežys, Kaunas and Tauragė) on *Crataegus, Cotoneaster* and *Malus domestica* (apple). Despite strict eradication measures (all infected trees and shrubs were burned), new outbreaks were found in Lithuania in 2006 and 2007. In 2006, *E. amylovora* was detected in 10 outbreak sites in 6 regions, and in 2007 it was found in 11 outbreak sites in 5 regions. In 2008, 209 orchards and private gardens (covering approximately 1095 ha), 111 fruit trees nurseries (62 ha), and 99 ornamental tree nurseries (194 ha) were surveyed for the presence of fireblight across the whole territory of Lithuania. In 2008, only 3 new outbreak sites were identified: 1 pear tree (*Pyrus communis*) in a private garden (Šiauliai region), and 2 pear trees at 2 different locations in Tauragė region. All infected pear trees were destroyed. In 2008, 13 outbreak sites remained under the quarantine regime in Lithuania. However, the NPPO noted that the number of new outbreaks was much reduced in 2008 compared to previous years and it considered that this could be explained by both the effective use of phytosanitary measures and the unfavourable weather conditions in 2008.
The situation of *Erwinia amylovora* in Lithuania can be described as follows: **Present, first detected in 2005, 13 outbreak sites in 2008, under eradication.**

Source: Baranauskaitė L, Jogaitė V, Jankuvienė L (2008) A three-year study of fireblight in Lithuania. *Zemdirbyste-Agriculture* **95**(3), 19-26.

NPPO of Lithuania, 2009-02.

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

2009/062 First report of *Citrus tristeza virus* in Syria

In Syria, the main citrus-growing areas of Lattakia (Jableh, Aledyye, Eseelya, Siano, and Hresoon provinces) and Tartous (Almintar, Aljammase, Karto, Majdaloonelbahr, Yahmour, Amreet, Althawra, and Safita provinces) were surveyed to assess the presence of *Citrus tristeza virus* (*Closterovirus*, CTV – EPPO A2 List) during spring 2006. Eight nurseries (approximately 130 plants per nursery), 2 budwood source fields (approximately 230 trees per field), and 19 orchards (approximately 60 trees per orchards) were visually inspected and sampled for serological assays. Out of the 2 653 tested samples, 89 (4%) were found to be infected by CTV, but no conspicuous symptoms could be observed during visual inspections. The highest disease incidence was found in *Citrus limon* cv. Meyer (16%), many sweet orange varieties (*Citrus sinensis*) were found infected in the field but only Washington navel sweet orange was found infected in the nurseries. This is the first report of CTV in Syria.
The situation of *Citrus tristeza virus* in Syria can be described as follows: **Present, first found in 2006, present in the main citrus-growing areas of Lattakia and Tartous.**

Source: Abou Kubaa R, Djelouah K, D'Onghia AM, Addante R, Jamal M (2008) First report from Syria of *Citrus tristeza virus* in *Citrus* spp. *Plant Disease* **92**(10), p 1468.

Additional key words: new record **Computer codes:** CTV000, SY

2009/063 First report of *Meloidogyne chitwoodi* in Turkey

In September 2006, *Meloidogyne chitwoodi* (EPPO A2 List) was identified from potatoes (*Solanum tuberosum*) collected from the Niğde Province in Turkey (Central Anatolia). The identification was based on the morphological characteristics of the nematode and molecular tests (PCR, RFLP). This is the first report of *M. chitwoodi* in Turkey, and it is suspected that the pest has been introduced with imports of seed potatoes. The distribution of *M. chitwoodi* in potato fields in Turkey still remains to be determined.
The situation of *Meloidogyne chitwoodi* in Turkey can be described as follows: **Present, first found in 2006 on potatoes in the Niğde Province, Central Anatolia.**

Source: Ozarslandan A, Devran Z, Mutlu N, Elekcioglu IH (2009) First report of Columbia root-knot nematode (*Meloidogyne chitwoodi*) in potato in Turkey. *Plant Disease* **93**(3), p 316.

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

2009/064 First report of *Puccinia hemerocallidis* in South Africa

In February 2007, rust symptoms were observed on *Hemerocallis* spp. plants (daylilies) in a garden near Paarl in the Western Cape Province of South Africa. In November 2007, similar symptoms were also observed on *Hemerocallis* spp. plants in a garden near Franschhoek. In February 2008, more diseased plants were found in nurseries in Stellenbosch, Buffeljagsrivier and George (all in Western Cape Province). The rust fungus was identified as *Puccinia hemerocallidis* (EPPO A1 List). It is noted that the alternate host, *Patrinia* spp. is not endemic in South Africa and apparently not sold by nurseries. This is the first report of *P. hemerocallidis* in South Africa.
The situation of *Puccinia hemerocallidis* in South Africa can be described as follows: **Present, first found in 2007 in several gardens and nurseries in the Western Cape Province.**

Source: Mostert L, Bester W, Coertze S, Wood AR (2008) First report of daylily rust caused by *Puccinia hemerocallidis* in the Western Cape Province of South Africa. *Plant Disease* **92**(7), p 1133.

Additional key words: new record **Computer codes:** PUCCHM, ZA

2009/065 *Gibberella circinata* occurs in the Republic of Korea

In the Republic of Korea, the occurrence of pitch canker caused by *Gibberella circinata* (anamorph *Fusarium circinatum* – EPPO A1 List) was identified causing dieback on *Pinus rigida* in Incheon city in the mid-1990s. *P. rigida* was introduced into South Korea from Japan in 1907 and was planted across the country from the 1960s to the 1980s for reforestation, soil stabilization and to reduce the impacts of floods. Pitch canker is now common in forest plantations of *P. rigida*, in managed landscapes on *P. thunbergii* (e.g. on golf courses), in urban forests and seed orchards of *P. rigida* and *P. taeda x P. rigida* hybrids. However, the disease remains uncommon in nurseries. It is reported that thousands of *P. rigida*, *P. taeda x P. rigida* hybrids and *P. thunbergii* have been infected and killed by *G. circinata*, mainly in the western part of Korea. The EPPO Secretariat had previously no data on the occurrence of *G. circinata* in this country.

The situation of *Gibberella circinata* in the Republic of Korea can be described as follows: **Present, first detected in the mid-1990s. Mainly found in the western part of Korea in urban and forest plantations (rarely in nurseries).**

Source: Kim YS, Woo KS, Koo YB, Yeo JK (2008) Variation in susceptibility of six pine species and hybrids to pitch canker caused by *Fusarium circinatum*. *Forest Pathology* **38**(6), 419-428.

Additional key words: new record **Computer codes:** GIBBCI, KR

2009/066 First record of *Chalara fraxinea* in Slovenia

In Slovenia, the first symptoms of ash dieback appeared in autumn 2006 in the eastern part of the country, near the Hungarian border. In some places, more than 60% of the young trees (up to 2 m high) were dead. In spring 2007, ash dieback was noticed on a much wider area. It affected not only young trees but mature trees which were also dying. Investigations showed that the disease was present in most areas of the Slovenian territory, and that the eastern part was more affected. First attempts to identify the causal agent were made in 2007 but were unsuccessful (most probably because of the slow growth of the fungus which was overgrown in culture by other saprophytic fungi). In July 2008, *Chalara fraxinea* (EPPO Alert List) was isolated from samples of bark and wood of *Fraxinus excelsior* collected from various sites across Slovenia. The fungus species was determined by the officially approved laboratory of the Slovenian Forestry Institute. Surveys will be implemented to determine the geographical extent of the disease and research will be carried out, in particular on the biology of *C. fraxinea* and the development of molecular diagnostic tools. This is the first report of *C. fraxinea* in Slovenia.
The pest status of *Chalara fraxinea* in Slovenia is officially declared as: **Present, in all parts of the area where host plants are grown.**

Source: NPPO of Slovenia, 2009-01.

Additional key words: first record **Computer codes:** CHAAFR,SI

2009/067 First report of *Mycosphaerella pini* in Estonia

In autumn 2006, the presence of *Mycosphaerella pini* (anamorph *Dothistroma septosporum* – EU Annexes) was observed for the first time in Estonia in a stand of *Pinus nigra* in Järvselja (South-Eastern Estonia). The fungus was then detected on native Scots pines (*P. sylvestris*) in several young plantations in the south of the country. During the autumn 2007, *M. pini* was found on one *P. ponderosa* tree and on several ornamental *P. mugo* and *P. sibirica* trees which were severely affected. During the first year of observations in Estonia, only the anamorph stage was observed. This is the first report of *M. pini* in Estonia.
The situation of *Mycosphaerella pini* in Estonia can be described as follows: **Present, first detected in 2006, found in Southern and South-Eastern parts in forest plantations and ornamental *Pinus* trees.**

Source: Hanso M, Drenkhan R (2008) First observations of *Mycosphaerella pini* in Estonia. *Plant Pathology* **57**(6), p 1177.

Additional key words: new record **Computer codes:** SCIRPI, EE

2009/068 Studies on the causal agents, distribution and host range of red band needle blight

During the last decades, serious outbreaks of red band needle blight have increasingly been reported from different parts of the world, in particular on *Pinus radiata* in the Southern hemisphere (e.g. Chile, Kenya, New Zealand), and in the Northern hemisphere on *P. nigra* subsp. *laricio* in France and the United Kingdom, on *P. contorta* var. *latifolia* in British Columbia (Canada), and on *P. nigra* in Hungary and the Czech Republic. Until recently, the cause of red band needle blight was attributed to *Dothistroma septosporum* (teleomorph *Mycosphaerella pini* – EU Annexes) and the name *Dothistroma pini* was considered as a synonym. However, comparison studies of DNA sequences (32 isolates from 13 countries) have demonstrated that two distinct fungal species were associated with the disease: *Dothistroma septosporum* (teleomorph *Mycosphaerella pini*) and *Dothistroma pini* (teleomorph unknown). These two species present some small differences in conidial morphology and dimensions but these characteristics cannot be used to differentiate them reliably. *D. septosporum* and *D. pini* can be distinguished on the basis of DNA sequence comparisons of nuclear gene regions (rDNA ITS, ß-tubulin, TEF 1-α).

During these comparison studies, both pathogens have been detected on new hosts and from new countries. *D. septosporum* has been detected in Austria on *P. peuce* (new host record), on *P. mugo* in Hungary, on *P. radiata* and *P. wallichiana* (new host record) in Bhutan (new country record). To date, *D. pini* has been identified on *Pinus nigra* in USA (Illinois, Nebraska, Michigan and Minnesota) where it is causing severe damage, particularly in Christmas tree plantations. *D. pini* has also been detected on *P. pallasiana* (similar to *P. nigra* and considered by some authors as *P. nigra* var. *pallasiana*) in Ukraine and Russia. In Ukraine, *D. pini* has been detected near Tsyurupinsk (Kherson Oblast). In Russia, *D. pini* has been detected in 2 localities near Rostov (Southern Russia). It is noted that since 2004, red band needle blight has become a problem in *P. pallasiana* forests in Ukraine and South-Western Russia. The disease is noticeable on *P. pallasiana* in the Rostov and Volgograd regions and its distribution expands to most areas which are located along the basins of the Don and Donets rivers, as well as the Belaya Kalitva and Chir rivers. But in these regions it is not known whether *D. pini* occurs alone or in combination with *D. septosporum*. Further studies are now needed to better understand the geographical distribution and host range of both pathogens, and their respective role in the disease severity.

Source: Barnes I, Crous PW, Wingfield BD, Wingfield MJ (2004) Multigenes phylogenies reveal that red band needle blight of *Pinus* is caused by two distinct species of *Dothistroma, D. septosporum* and *D. pini*. *Studies in Mycology* **50**, 551-565.

Barnes I, Kirisits T, Akulov A, Chhetri DB, Wingfield BD, Bulgakov TS, Wingfield MJ (2008) New host and country records of the *Dothistroma* needle blight pathogens from Europe and Asia. *Forest Pathology* **38**(3), 178-195.

Barnes I, Wingfield MJ, Groenewald M, Kirisits T, Crous PW, Wingfield BD (2007) Exposing the enigma of *Dothistroma* needle blight using molecular markers – a progress report. *Acta Silvica and Lignaria Hungaria, special edition, 239-240*.

Additional key words: new records, host plants **Computer codes:** SCIRPI, BT

2009/069 Situation of *Phytophthora kernoviae* in the United Kingdom

Since the first discovery of *Phytophthora kernoviae* (EPPO Alert List) in Cornwall in 2003 (EPPO RS 2005/165) intensive surveys have been carried out in the United Kingdom. Between October 2003 and December 2008, *P. kernoviae* was found at 69 sites in England and Wales, mainly affecting rhododendron (*Rhododendron ponticum* and other rhododendron hybrids) in small areas of woodland in Cornwall. The pathogen has also been detected on a number of trees species. In addition to Cornwall, P. *kernoviae* has been found once in Devon, and in 6 locations in South Wales and 1 location in north-west England (on a single mature rhododendron plant – now eradicated). In nurseries, only 3 findings have been made: 2 in Cornwall (still under official control) and 1 in Cheshire which was subsequently eradicated. In January 2008, *P. kernoviae* was detected for the first time in Scotland on 2 established rhododendron plants (10 to 15 years old) in a private garden in Argyll (west of Scotland). In February 2008, 2 rhododendrons and 1 *Drimys winteri* plant in a garden were found infected by *P. kernoviae* on the Isle of Arran (west coast of Scotland). So far, *P. kernoviae* has not been detected in Northern Ireland.
In the United Kingdom, rhododendrons are probably the most commonly affected plants but *P. kernoviae* has been found on many other species belonging to the families Aquifoliaceae, Araliaceae, Ericaceae, Fagaceae, Magnoliaceae, Podocarpaceae, Proteaceae, Rosaceae and Winteraceae. Symptoms include bleeding cankers on trees of *Fagus sylvatica* (beech), *Quercus robur* (oak) and *Liriodendron tulipifera* (tulip tree), foliar blights and shoot dieback on trees and ornamentals as well as bud blast on *Magnolia*. Symptoms have been observed on stems of *Hedera helix* (ivy), and leaves of *Drimys winteri, Gevuina avellana, Ilex aquifolium,* and *Podocarpus salignus*. Leaf and stem symptoms have been seen on *Prunus laurocerаus* and *Vaccinium myrtillus* (blueberry). Concerning blueberries, mildly symptomatic plants were sampled from a mixed broad-leaved woodland in a valley in Cornwall and Kochs postulates were completed in 2008, confirming that *V. myrtillus* is host plant of *P. kernoviae*.
The situation of *Phytophthora kernoviae* in the United Kingdom can be described as follows: **Present, England and Wales (mainly found in Cornwall) and Scotland, under official control.**

Source: INTERNET (last retrieved in 2009-03)
DEFRA
Revised Summary Pest Risk Analysis for *Phytophthora kernoviae (*2008)
http://www.defra.gov.uk/planth/pra/pker.pdf
Phytophthora kernoviae outbreaks in England and Wales (2008-12-11)
http://www.defra.gov.uk/planth/pkernovii2.htm

Additional key words: detailed record **Computer codes:** PHYTKE, GB

2009/070 Further details on the situation of *Mycosphaerella dearnessii* in Slovenia

Mycosphaerella dearnessii (anamorph *Lecanosticta acicola* - EPPO A2 List) has recently been detected in Slovenia (EPPO RS 2008/140). In June 2008, a symptomatic pine tree (*Pinus sylvestris*) was found in a public park near Lake Bled in the northern part of the country. One year-old needles from the lower part of the plant were dead, whereas needles of the current year were still healthy. Black conidiomata were found on both sides of the needles which had turned into a brown to grey colour. Samples of symptomatic needles (1 year-old needles) were collected and laboratory analysis following the EPPO Standard PM 7/46 confirmed that the disease symptoms and morphological characteristics of all observed fungal structures corresponded to *Lecanosticta acicola*, anamorph of *M. dearnessii*.
The pest status of *Mycosphaerella dearnessii* in Slovenia is officially declared as: **Transient, actionable, under eradication.**

Source: NPPO of Slovenia, 2009-01.

OEPP/EPPO (2008) EPPO Standards. PM 7/46(2) Diagnostics. *Mycosphaerella dearnessii* and *Mycosphaerella pini*. *Bulletin OEPP/EPPO Bulletin* **38**(3), 349-362. http://dx.doi.org/10.1111/j.1365-2338.2008.01246.x

Additional key words: detailed record **Computer codes:** SCIRAC, SI

2009/071 Insect pests recorded for the first time in Italy

The following insect species have recently been reported for the first time from Italy.

An unknown *Aclees* species damaging fig trees
In 2005, severe damage caused by an unusual weevil was noted on *Ficus carica* (fig tree) in the province of Pistoia, Toscana. The insect was first identified as *Aclees cribratus* (Coleoptera: Curculionidae) but it is now thought that it belongs to another group of species originating from Asia whose taxonomy is still unclear. Observations made in the field showed that this *Aclees* species only attacked *Ficus carica*. Females lay eggs at the collar of the fig tree. Larvae feed on the wood at the base of the trunk, mostly under the soil surface. As a consequence of the destruction of the wood at the collar of the trees by the larvae, the aerial parts show growth reduction, yellowing, dieback and eventually tree death. Adults feed on the fig inflorescence and the wood of young twigs. In case of heavy infestation, they can also attack leaves and stalks. So far, the pest has been found in nurseries, family gardens and abandoned orchards. This is the first time that an *Aclees* species is reported in Italy and in Europe.

***Lantanophaga pusillidactylus*, a pest of lantanas**
In Sicilia, *Lantanophaga pusillidactylus* (Lepidoptera: Pterophoridae) has been found for the first time on different parts of the island feeding on *Lantana camara* and *L. montevidensis* in urban areas (e.g. Acireale, Catania, Canizzarro, Furnari, Roccalumera, San Giovanni Bosco, Siracusa, Trappeto). Female moths lay eggs on the flower bracts and the larvae complete their life cycle feeding exclusively on various floral parts. *L. pusillidactylus* originates from the Americas and has been following its main host plant (*L. camara*) around the world. It now occurs wherever *Lantana* grows in the tropics and subtropics, including Africa, India, and Australia. In the EPPO region, it is reported to occur in Islas Canarias (Spain), Israel, Madeira (Portugal), and Morocco.

Phytoliriomyza jacarandae, **a leafminer of jacarandas**
During studies conducted in parks and botanical gardens in various Sicilian cities, several yellowing trees of *Jacaranda mimosifolia* were noticed. On closer examination, it was found that these trees were attacked by a leafminer which was identified as *Phytoliriomyza jacarandae* (Diptera: Agromyzidae). This pest was then also observed in Liguria, in Northern Italy. Young larvae produce short linear brown mines in the jacaranda leaflets, which then develop into irregular blotches. Affected leaves fall prematurely and larvae pupate in the soil. *P. jacarandae* is a South American species which is known to occur in Argentina, Australia, New Zealand, South Africa, and USA (Southern California). This is the first report of *P. jacarandae* in Italy and in Europe.

Source: Bella S, Marchese G (2007) First record of *Lantanophaga pusillidactylus* (Walker, 1864) for the Italian fauna (Lepidoptera Pterophoridae). *Bollettino di Zoologia Agraria e di Bachicoltura, Serie II*, **39**(1), 71-74.
Bella S, Mazzeo G, Süss L (2007) First record for the European fauna of *Phytoliriomyza jacarandae* Steyskal & Spencer, 1978 (Diptera Agromyzidae) leafminer of *Jacaranda mimosifolia* D. Don. (Bignoniaceae). *Bollettino di Zoologia Agraria e di Bachicoltura, Serie II*, **39**(1), 75-78.
Ciampolini M, Regalin R, Farnesi I, Lorenzi C (2007) [First observations on the bioethology of *Aclees* sp. (Curculionidae, Molytinae) damaging *Ficus carica* L. in Italy]. *Bollettino di Zoologia Agraria e di Bachicoltura, Serie II*, **39**(1), 51-60 (in Italian).

Additional key words: new record **Computer codes:** IT

2009/072 New data on quarantine pests and pests of the EPPO Alert List

By browsing 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**

During faunistic studies carried out on scale insects in Croatia from 2005 to 2008, the presence of *Aulacaspis yasumatsui* (Hemiptera: Diaspididae – formerly EPPO Alert List) was detected in Croatia. The pest was found in May 2006 on imported *Cycas revoluta* in a glasshouse near Split (Masten Milek *et al.*, 2008). **Transient, found in 2006 in** *Cycas revoluta* **in one glasshouse**.

During summer 2006, studies were carried out in Poland on the occurrence of little cherry disease (EU Annexes) in cherry orchards. Leaf samples were collected from 27 sweet and sour cherry trees (*Prunus avium* and *P. cerasus*) in different regions of Poland. Samples were taken from both symptomatic and asymptomatic trees and tested for the presence of *Little cherry virus 1* (LChV-1) and *Little cherry virus 2* (LChV-2). RT-PCR results showed that 6 of the 27 tested trees were infected by LChV-1 (5 trees, all *P. avium*) or by LChV-2 (1 tree, *P. avium* cv. Elton). The presence of LChV-2 was confirmed by graft transmission to the woody indicator *P. avium* cv. Canindex. This is the first report of LChV-2 in Poland (Komorowska and Cieślińska, 2008). **Present, no details.**

In 2007, a new bacterial disease was observed in glasshouse cherry tomatoes (*Lycopersicon esculentum*) in the provinces of Cheorwon and Iksan, in the Republic of Korea. On the basis

of physiological, genetic and pathological characteristics all bacterial strains isolated from diseased tomatoes were identified as *Clavibacter michiganensis* subsp *michiganensis* (EPPO A2 List). This is the first report of bacterial canker in the Republic of Korea (Myung *et al*., 2008). **Present, first detected in 2007 on glasshouse tomatoes in the provinces of Cheorwon and Iksan**.

- **Detailed records**

In August and September 2007, disease symptoms (stunting, deformation, interveinal chlorosis, and leaf mottling) were observed on watermelon plants (*Citrullus lanatus*) in commercial fields in Florida (US). *Bemisia tabaci* biotype B was also present in the affected fields. Laboratory analysis (RT-PCR, comparison of sequences) confirmed the presence of *Cucurbit yellow stunting disorder virus* (*Crinivirus,* CYSDV – EPPO A2 List). In October 2007, CYSDV was also detected in 2 fields of squash plants (*Cucurbita pepo*) and disease symptoms have been observed with increasing frequency throughout the Manatee and Hillsborough counties. This is the first report of CYSDV in Florida, which follows its recent emergence in other US states (Arizona, California, Texas) and in Sonora, Mexico (Polston *et al*., 2008).

In June 2008, the presence of *Heterodera glycines* (EPPO A1 List) was detected for the first time in the province of Zheijiang in China, in 2 soybean growing areas of Hangzhou and Xiaoshan. Soybean plants at the Hangzhou site showed symptoms of stunting and chlorosis, whereas no above ground or root symptoms were observed at the Xiaoshan site (Zheng *et al.*, 2009).

So far, 5 strains of *Pepino mosaic virus* (*Potexvirus*, PepMV – EPPO Alert List) have been described: European tomato (EU), Peruvian (PE), Chilean 2 (CH2), and 2 American strains US1 (including CH1) and US2. In Europe, studies have showed that field populations of PepMV belonged to EU, US2 or CH2 strains. However, in February 2007 the occurrence of US1 strains was detected for the first time in infected tomatoes from Tenerife, Islas Canarias (Spain). According to the authors, this is the first time that US1 strains are detected in Europe (Alfaro-Fernández *et al*., 2008).

Spodoptera frugiperda (Lepidoptera: Noctuidae – EPPO A1 List) occurs in the state of Maranhão, Brazil (Silva *et al*., 2008).

In May 2008, a severe outbreak of *Tomato infectious chlorosis virus* (*Crinivirus* – EPPO A2 List) was observed in glasshouse tomatoes (*Lycopersicon esculentum* cv. Lancelot) in Battipaglia, Campania region, Italy. The disease affected an area of approximately 1 ha and reached more than 80 % incidence (Barone *et al*., 2008).

- **Host plants**

In the Republic of Korea, the main host trees of *Bursaphelenchus xylophilus* (EPPO A1 List) are *Pinus densiflora* and *P. thunbergii*, which are also the most common pine trees in the country. Pine wilt disease was first reported in Busan city in 1998, and it is now damaging more than 7 800 ha, in more than 60 cities. In 2006, pine wilt disease was observed in a forest of *P. koraiensis* located in Gwangju city (Gyeonggi province). Studies (morphology, molecular and pathogenicity tests) confirmed that *B. xylophilus* was the cause of pine wilt disease. *P. koraiensis* is an endemic pine species in Korea and its distribution is limited to

the northern Korean Peninsula and some locations in Russia. Although earlier inoculation studies had indicated that *P. koraiensis* was susceptible to *B. xylophilus*, this is the first record of a natural infestation in the field (Han *et al.*, 2008).

In order to study the occurrence of viroids (other than *Potato spindle tuber viroid*) in *Solanum jasminoides*, samples were collected from symptomless plants in Belgium (3 composite samples ranging from 75 to 150 plants), Germany (3 samples ranging from 1 to 200 plants), and the Netherlands (2 samples ranging from 2 to 200 plants). Molecular tests (PCR, sequencing) showed that *Citrus exocortis viroid* (CEVd) was present in 1 sample from Germany and in 1 sample from the Netherlands. *Tomato apical stunt viroid* (TASVd - EPPO Alert List) was detected in 1 sample from Germany and 1 sample from Belgium (*S. jasminoides* plants had originally been imported from Israel). According to the authors this is the first time that both CEVd and TASVd are detected in *S. jasminoides* (Verhoeven *et al.*, 2008).

Xylella fastidiosa (EPPO A1 List) has been detected for the first time on *Nerium oleander* in Costa Rica. Symptoms of oleander leaf scorch have been observed in different localities in the Central Valley (Montero-Astúa *et al.*, 2008).

Source: Alfaro-Fernández A, Cebrián MC, Córdoba-Sellés C, Herrera-Vásquez JA, Jordá C (2008) First report of the US1 strain of *Pepino mosaic virus* in tomato in the Canary Islands, Spain. *Plant Disease* **92**(11), p 1590.

Barone M, Senatore M, Zoina A, Alioto D (2008) A severe outbreak of *Tomato infectious chlorosis virus* in tomato crops in Campania, Southern Italy. *Journal of Plant Pathology* **90**(3), 585-589.

Han H, Chung YJ, Shin SC (2008) First report of pine wilt disease on *Pinus koraiensis* in Korea. *Plant Disease* **92**(8), p 1251.

Komorowska B, Cieślińska M (2008) First report of *Little cherry virus 2* from sweet cherry in Poland. *Plant Disease* **92**(9), p 1366.

Masten Milek T, Šimala M, Novak A (2008) Species of genus *Aulacaspis* Cockerell, 1836 (Hemiptera: Coccoidea: Diaspididae) in Croatia, with emphasis on *Aulacaspis yasumatsui* Takagi, 1977. *Entomologia Croatica*, **12**(1), 55-64.

Montero-Astúa, Saborío G, Chacón-Díaz C, Villalobos W, Rodríguez CM, Moreira L, Rivera C (2008) First report of *Xylella fastidiosa* in *Nerium oleander* in Costa Rica. *Plant Disease* **92**(8), p 1249.

Myung IS, Kim DG, An SH, Lee YK, Kim WG (2008) First report of bacterial canker of tomato caused by *Clavibacter michiganensis* subsp. *michiganensis* in Korea. *Plant Disease* **92**(10), p 1472.

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Additional key words: new records, detailed records, new host plants

Computer codes: AULSYA, BURSXY, CEVD00, CORBMI, CYSDV0, HETDGL, LCHV10, PEPMV0, TASVD0, TICV00, XYLEFA, CN, CR, ES, HR, IT, KR, PL, US

2009/073 Modifications to the EU Annexes I and II of EU Directive 2000/29

The Annexes I and II of the EU Directive 2000/29 which lists the quarantine pests for the European Union have recently been modified as follows.

- **Additions to EU Annexes I and II**

Annex I/AI

- *Dendrolimus sibiricus*
- *Diabrotica virgifera zeae* (the former entry *D. virgifera* has been split into *D. virgifera zeae* which does not occur in Europe and *D. virgifera virgifera* which has been introduced into Europe).
- *Rhynchophorus palmarum*

Annex II/AI

- *Agrilus planipennis* (on plants of *Fraxinus, Juglans mandshurica, Ulmus davidiana, Ulmus parvifolia, Pterocarya rhoifolia* from Canada, China, Japan, Mongolia, Republic of Korea, Russia, Taiwan and the USA).
- *Chrysanthemum stem necrosis virus* (on plants of *Dendranthema and Lycopersicon esculentum*).
- *Scrobipalpopsis (Tecia) solanivora* (on tubers of *Solanum tuberosum*).
- *Stegophora ulmea* (on plants of *Ulmus* and *Zelkova*).

Annex I/AII

- *Diabrotica virgifera virgifera*

Annex II/AII

- *Helicoverpa armigera* transferred from Annex I to Annex II (on plants of *Dendranthema, Dianthus, Pelargonium* and Solanaceae).
- *Paysandisia archon* (on 11 genera of Palmae: *Brahea, Butia, Chamaerops, Jubaea, Livistona, Phoenix, Sabal, Syagrus, Trachycarpus, Trithrinax, Washingtonia*).

- **Deletions from EU Annex II**
  - *Colletotrichum acutatum* (considering its widespread distribution, it is no longer listed as a quarantine pest).
  - *Thaumetopoea pityocampa* (considering that now occurs in Ibiza (Spain) which was previously considered as a protected zone, *T. pityocampa* is no longer considered as a quarantine pest).

- **Changes in taxonomy and nomenclature:**
  - *Heliothis armigera* is now listed as *Helicoverpa armigera.*
  - *Saissetia nigra* is now listed as *Parasaissetia nigra.*

Source: Commission Directive 2008/64/EC of 27 June 2008 amending Annexes I to IV to Council Directive 2000/29/EC on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. *Official Journal of the European Union* **L 168**, 31-35.

Commission Directive 2009/7/EC of 10 February 2009 amending Annexes I, II, IV and V to Council Directive 2000/29/EC on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community. *Official Journal of the European Union* **L 40**, 12-18.

Additional key words: phytosanitary regulations

Computer codes: AGRLPL, COLLAC, CSNV00, DENDSI, DIABVI, DIABVZ, GNOMUL, HELIAR, PAYSAR, RHYCPA, SAISNI, TECASO, THAUPI, EU

2009/074 Central Science Laboratory (CSL) is now part of the Food and Environment Research Agency (Fera)

In the United Kingdom, the Central Science Laboratory (CSL) became part of the Food and Environment Research Agency (Fera) on the 2009-04-01. This new agency brought together CSL, Plant Health Division, Plant Health and Seeds Inspectorate, and the Plant Variety Rights Office and Seeds Division. The Agency's main science laboratories will be located at Sand Hutton near York (where CSL was located), with seed offices in Cambridge, a wildlife study centre in Gloucestershire and around 40 other small shared office facilities for its plant health inspectorate around the United Kingdom.

More information can be found on the Internet: http://www.fera.defra.gov.uk/

Source: EPPO Secretariat, 2009-04.

Additional key words: **Computer codes:**

2009/075 International Colloquium on the 'Management of phytosanitary risks', Marrakech, MA, 2009-11-09/11

An International Colloquium on the management of phytosanitary risks ('Gestion des risques phytosanitaires') will be orgazined by AMPP, AFPP (Moroccan and French Associations for Plant Protection) and AFIPP (International Francophone Association for Plant Protection), in Marrakech, Morocco on 2009-11-09/11.
The main topics will be:
- Management of phytosanitary risks
- New standards and phytosanitary regulations
- Biology and ecology of plant pests
- Emerging phytosanitary problems
- Strategies for pest surveillance and control
- Pesticides and bio-pesticides
- New technologies in plant protection

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For more information: http://www.amppmaroc.org/index.html

Source: EPPO Secretariat, 2009-04.

Additional key words: conference

2009/076 New records of *Galinsoga ciliata* and *Sida spinosa* in Greece

Two invasive alien plants species have recently been reported from Greece.

Galinsoga ciliata (Asteraceae) is an annual plant originating from South and Central America. It is considered a weed in the United States and in Canada, it is also present in Africa and is very widespread in Europe (Austria, Portugal (Azores only), Belgium, Bulgaria, Czech Republic, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Italy, Latvia, Lithuania, the Netherlands, Norway, Poland, Romania, Russia, Serbia, Sweden, Switzerland, the United Kingdom).
This annual plant, reproducing by seeds, was discovered in October 2003 in cabbage crops in the area of Marathon, a vegetable producing area near Athens in Greece. The species is established in vegetable fields where it is abundant in summer and autumn, and has occasionally been found in glasshouses of vegetable and ornamental plants, as well as on uncultivated land. As *G. ciliata* resembles *G. parviflora* which is also found in Greece, it is likely that *G. ciliata* has been present in Greece for a longer period but remained unnoticed.

Sida spinosa (Malvaceae) is native to tropical countries of South America. It is an annual species, reproducing by seeds, which may infest any agricultural cultivated land, especially cotton and soybean fields, as well as pastures, meadows and uncultivated land. It is considered a weed in the USA, Mexico, Argentina, Chile, Peru, Uruguay and Australia. In Europe, it has only been reported from Romania and Italy. It is regarded as an invasive weed mainly presenting a risk for the Mediterranean region.
In Greece, the species was first found in a cotton field in the valley of Louros river, near Preveza (South Western Greece) in September 2003 in a small acreage of cotton crop. The species was then found in summer 2004 in a cotton crop in the area of Palamas, near Kardista (Central Greece). Monitoring in these aeras indicated the continuing presence of the plant at low densities, with no evidence to suggest a rapid spread.

Source: EPPO (2002) Draft datasheet on *Sida spinosa.* http://www.eppo.org/QUARANTINE/Pest_Risk_Analysis/PRAdocs_plants/draftds/02-9188%20DS%20SIDSP.doc

Kabuce N (2006) NOBANIS – Invasive Alien Species Fact Sheet – *Galinsoga quadriradiata*. – Online Database of the North European and Baltic Network on Invasive Alien Species – NOBANIS www.nobanis.org, Internet last access 2009-04-15.

Lymperopoulou S, Giannopolitis CN (2009) *Galinsoga ciliata* (Raf.) S.F. Blake and *Sida spinosa* L., two new weed records from Greece. *Hellenic Plant Protection Journal* **2**, 37-40.

Additional key words: invasive alien plants, new records **Computer codes:** GASCI, SIDSP, GR

2009/077 *Salvinia molesta* originates from South America

While it was mentioned in the EPPO RS 2009/057 that "*S. molesta* is considered to be a hybrid between *S. biloba* and *S. herzogii*, originating from the botanical garden of Rio de Janeiro", additional information has been received that contradicts this statement. The plant is incapable of sexual reproduction, but it is though to have hybridized centuries ago, well before the botanical garden of Rio de Janeiro was created (M Julien, pers. comm., 2009). Then, an element which corroborates the fact that the species has not artificially been created, is that Julien *et al*. (2002) have identified the native range of *Salvinia molesta.* This area consists of a relatively small area (20,000 km²) in South-Eastern Brazil, including the states of São Paulo, Paraná, Santa Catarina and Rio Grande do Sul. It occurs between the latitudes 24°05' S and 32°05' S. Natural enemies which are currently being used as biological control agents were found in this area.

Source: Julien MH, Center TD & Tipping PW (2002) Floating fern (*Salvinia*). In: Van Driesche R, Blossey B, Hoddle M, Lyon S and Reardon R (eds), Biological Control of Invasive Plants in the Eastern United States. USDA Forest Service Publication FHTET-2002-04, 17–32.

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

2009/078 Invasive Alien Plants in European Macaronesia

The potential of invasiveness of 195 alien species (plants and animals) from European Macaronesia (Azores (PT), Madeira (PT) and the Islas Canarias (ES)) was assessed using two series of questions (table 1 & 2 below) about their noxiousness and feasibility of control:

Table 1: Measures of noxiousness, known and potential effect of IAS on native biodiversity and on natural and semi-natural habitats:
- affected biodiversity value
- impact on the affected biodiversity values
- present status and trend of the invasion
- invasive potential

Table 2: Measures of feasibility of control, probability of successful control or eradication
- invasion traits
- feasibility of control or eradication with available resources
- support for control or eradication action
- impact of control or eradication actions.

Each question was scored from 1 to 4 to allocate a final score to each species targeted. Several workshops with experts from all the archipelagos were organized, in order to standardize the attribution of scores. For each species, an average of the scores obtained in the different archipelagos was then calculated. The TOP 100 invasive species of European Macaronesia was determined among the 195 species under evaluation, and on the 100 most invasive species, 83 were plants.

For each species of the TOP 100, extensive information is provided on: morphology, distribution in the islands of European Macaronesia, habitats, general impacts on habitats and on other species, protected areas impacted, affected species and existing legislation.

The invasive alien plants included in the TOP 100 are listed below in the order of their scoring, with their origin, their occurrence in the EPPO region (checked against the EPPO and DAISIE databases), their general impacts on habitats and other species in European Macaronesia.
The following impacts were recorded and are indicated in the table as abbreviations (see brackets):

- on habitats:
  - Changes in vegetation structure, or in the abundance of native or endemic species, or on the natural succession of native vegetation (structure, abundance, succession);
  - Other changes in the environment such as: hydrology, nutrient dynamics, light availability, changes in salinity, pH (other changes);
  - Alteration of the fire regime (fire regime);
  - Alterations on geomorphology such as: erosion rate, sedimentation rate (geomorphology).
- on species:
  - Competition for space and resources (competition)
  - Impede or reduce the recruitment or the regeneration of endemic or native species (recruitment)
  - Facilitate the success of other invasive species (facilitate invasion)

Invasive Alien Plants among the top 25:

Species	**Origin**	**EPPO**	**Impacts on habitats**	**Impacts on species**
Carpobrotus edulis (Aizoaceae) (EPPO List of Invasive Alien Plants)	S-Af.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Ageratina adenophora (Asteraceae)	C-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Ulex europaeus (Fabaceae)	W & C-Eur.	Yes*	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Agave americana (Agavaceae)	Mexico	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Hedychium gardnerianum (Zingiberaceae)	India	Yes (only PT)	Geomorphology; Structure, abundance, succession; Other changes	Competition; Recruitment.
Cyrtomium falcatum (Dryopteridaceae)	S-Af., Asia, Pacif.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Pittosporum undulatum (Pittosporaceae)	SW Aus.	Yes (only PT)	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Opuntia ficus-indica (Cactaceae)	C-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Salpichroa origanifolia (Solanaceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Cytisus scoparius (Fabaceae)	S, C & C Eur.	Yes*	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment.
Delairea odorata (Astercaeae) (EPPO Alert List)	S- Af.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Hydrangea macrophylla (Hydrangeaceae)	Asia	Yes	Geomorphology; Structure, abundance, succession; Other changes	Competition; Recruitment.
Nicotiana glauca (Solanaceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Opuntia stricta (Cacataceae)	N & C Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Eschscholzia californica (Papaveraceae)	N-Am.	Yes	Structure, abundance, succession; Other changes	Recruitment; Facilitate invasion
Adiantum raddianum (Adianthaceae)	C & S-Am.	No	Structure, abundance, succession	Competition; Recruitment.
Oxalis pes-caprae (Oxalidaceae) (EPPO List of IAP)	S-Af.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Erigeron karvinskianus (Asteraceae)	C-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Spartium junceum (Fabaceae)	S & W Eur.	Yes*	Structure, abundance, succession; Other changes	Competition; Recruitment.
Pennisetum setaceum (Poaceae) (EPPO Alert List)	NE Afr.	Yes	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment.
Paraserianthes lophantha (Fabaceae)	Aus.	Yes	Structure, abundance, succession	Competition; Recruitment; Facilitate invasion

Invasive alien plants in the top 26-75:

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Conyza canadensis (Asteraceae)	N-Am.	Yes	Structure, abundance, succession	Competition; Recruitment.
Conyza bonariensis (Asteraceae)	C & S Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Lantana camara (Verbenaceae)	C & S Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Aptenia cordifolia (Aizoaceae)	S-Af.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Solanum mauritianum (Solanaceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Chasmanthe aethiopica (Iridaceae)	S-Af.	Yes	Structure, abundance, succession	Competition; Recruitment.
Tetragonia tetragonoides (Aizoaceae)	Asia, Aus., S-Am.	Yes	Structure, abundance, succession	Competition; Recruitment.
Cyathea cooperi (Cyatheaceae)	NW Aus.	No	Structure, abundance, succession; Other changes	Competition; Recruitment.
Symphyotrichum subulatum (Asteraceae)	N, C & S Am.	No	Structure, abundance, succession	Competition; Recruitment.
Ipomoea indica (Convolvulaceae)	Pantrop.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Tradescantia fluminensis (Commelinaceae)	Brasil	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Drosanthemum floribundum (Aizoaceae)	S-Af.	Yes	Structure, abundance, succession	Competition; Recruitment.

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Stenotaphrum secundatum (Poaceae)	W Af., Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Ageratina riparia (Asteraceae)	Mexico	No	Structure, abundance, succession	Competition; Recruitment.
Acacia melanoxylon (Fabaceae)	Aus.	Yes	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Doodia caudata (Blechnaceae)	Aus.	No	Structure, abundance, succession	Competition; Recruitment.
Nassella neesiana (Poaceae)	S-Am.	Yes (only ES)	Structure, abundance, succession	Competition; Recruitment.
Colocasia esculenta (Araceae)	Malaysia	No	Structure, abundance, succession; Other changes	Competition; Recruitment.
Eucalyptus globulus (Myrtaceae)	Aus.	Yes	Geomorphology; Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment.
Anredera cordifolia (Basellaceae)	S-Am.	Yes	Structure, abundance, succession	Competition; Facilitate invasion
Phytolacca americana (Phytolaccaceae)	N-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Adiantum hispidulum (Adianthaceae)	SW Af.	No	Structure, abundance, succession	Competition; Recruitment.
Leycesteria formosa (Caprifoliaceae)	India, SW China	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment.
Cardiospermum grandiflorum (Sapindaceae)	Am., W India, Af.	Yes (only IT)	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Ricinus communis (Euphorbiaceae)	Af.	Yes	Structure, abundance, succession	Competition; Recruitment.
Ailanthus altissima (Simaroubaceae)	China	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion; Allelopathy
Bidens pilosa (Asteraceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Centranthus ruber (Valerianaceae)	Medit.	Yes	Structure, abundance, succession	Competition; Recruitment; Facilitate invasion
Tropaeolum majus (Tropaeolaceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Pelargonium inquinans (Geraniaceae)	S-Af.	Yes (only FR)	Structure, abundance, succession	Competition; Recruitment
Opuntia tuna (Cactaceae)	Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Gunnera tinctoria (Gunneraceae)	WS Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Phormium tenax (Hemerocallidaceae)	NZ	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Egeria densa (Hydrocharitaceae) (EPPO List of IAP)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Gomphocarpus fruticosus (Asclepiadaceae)	Af.	Yes	Structure, abundance, succession	Competition; Recruitment

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Cytisus striatus (Fabaceae)	Iberia, N-Af.	Yes	Fire regime; Structure, abundance, succession	Competition; Recruitment
Nicotiana paniculata (Solanaceae)	Am.	No	Structure, abundance, succession	Competition
Cotula australis (Astercaeae)	Aus, NZ	Yes	Structure, abundance, succession	Competition
Crassula multicava (Crassulaceae)	S-Af.	Yes (only ES)	Structure, abundance, succession	Competition
Deparia petersenii (Dryopteridaceae)	Asia	No	Structure, abundance, succession; Other changes	Competition; Recruitment
Araujia sericifera (Asclepiadaceae) (EPPO Alert List)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition

Invasive alien plants in the top 76-100:

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Cirsium vulgare (Asteraceae)	Eurasia, N-Af.	Yes*	Structure, abundance, succession	Competition; Recruitment
Solanum bonariense (Solanaceae)	S-Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Crassula tillaea (Crassulaceae)	S-Af.	Yes	Structure, abundance, succession	Recruitment
Acacia saligna (Fabaceae)	Aus	Yes	Structure, abundance, succession; Other changes	Competition; Facilitate invasion
Solanum lycopersicum var. *lycopersicum* (Solanaceae)	Am.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Nephrolepis cordifolia (Lomariopsidaceae)	Pantrop, Himal., Aus	No	Structure, abundance, succession; Other changes	Competition; Recruitment
Pennisetum clandestinum (Poaceae)	W-Af.	Yes	Structure, abundance, succession; Other changes	Competition; Recruitment
Hedychium coronarium (Zingiberaceae)	SE Asia	No	Structure, abundance, succession; Other changes	Competition; Recruitment
Passiflora tripartita (Passifloraceae)	S-Am.	No	Structure, abundance, succession	Competition; Recruitment
Paspalum distichum (Poaceae)	Am.	Yes	Structure, abundance, succession	Competition; Recruitment; Facilitate invasion
Coronopus didymus (Brassicaceae)	S-Am.	Yes	Structure, abundance, succession	Competition
Conyza floribunda (Asteraceae)	S-Am.	Yes	Structure, abundance, succession	Competition; Recruitment
Pinus pinaster (Pinaceae)	S-Eur.	Yes*	Structure, abundance, succession	Competition; Recruitment
Soleirolia soleirolii (Urticaceae)	Corse, Sardinia, Baleares	Yes	Structure, abundance, succession	Competition; Recruitment
Agapanthus praecox (Agapanthaceae)	S-Af.	Yes (only UK)	Structure, abundance, succession	Competition; Recruitment
Duchesnea indica (Rosaceae)	Asia	Yes	Structure, abundance, succession	Recruitment

Species	Origin	EPPO	Impacts on habitats	Impacts on species
Crocosmia x crocosmiflora (Iridaceae)	Hybrid	Yes	Structure, abundance, succession	Competition; Recruitment
Aloe vera (Aloaceae)	NE Af.	Yes	Structure, abundance, succession	Competition; Recruitment
Leptospermum scoparium (Myrtaceae)	Aus, NZ	Yes (only UK)	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment
Ulex minor (Fabaceae)	W Eur.	Yes, ind	Fire regime; Structure, abundance, succession; Other changes	Competition; Recruitment; Facilitate invasion
Wigandia urens (Hydrophyllaceae)	C & S Am.	Yes	Structure, abundance, succession	Competition; Recruitment

*: the species in indigenous at least in part of the EPPO region.

Source: Delivering Alien Invasive Species Inventories for Europe (DAISIE). http://www.europe-aliens.org/

Silva L, Ojeda Land E & Rodríguez Luengo JL (eds.) (2008) *Invasive Terrestrial Flora & Fauna of Macaronesia. TOP 100 in Azores, Madeira and Canaries.* ARENA, Ponta Delgada, 546 pp. http://www.uac.pt/~lsilva/Flora_e_Fauna.pdf

Additional key words: Invasive alien plants

Computer codes: ACAME, ACASA, ADIHI, ADIRA, AGVAM, AGPPR, AILAL, AJASE, ALFVE, APJCO, ASTSU, BIDPI, BOGCO, CBSED, CIRVU, CNERU, COPDI, CRIGR, CSBMC, CSBTI, CSHAE, CULAU, CWUFA, CXSES, CZACO, CZSST, DDACA, DEQPE, DRUFL, DUCIN, ELDDE, EUCGL, EUPAD, ERIBO, ERICA, ERIFL, ERIKA, ESHCA, EUPRI, GUATI, GOPFR, HEYCO, HEYGA, HYEMA, IPOAC, LANCA, LEKSC, LEYFO, LYPES, NEHCO, NIOGL, NIOPA, OPUFI, OPUST, OPUTN, OXAPC, PAQTR, PASDS, PELIQ, PESCL, PESSA, PHMTE, PHTAM, PIUIPI, PSZLO, PTUUN, RIICO, SAOCS, SAPOR, SENMI, SOLBO, SOLMR, SPUJU, SQLSO, STDNE, STPSE, TEATE, TOPMA, TRAAL, TTRCR, ULEEU, ULEMI, WIGUR

2009/079 *Pennisetum setaceum* in the EPPO region: addition to the EPPO Alert List

Pennisetum setaceum (Fountain grass, Poaceae) is a perennial grass originating from Northern Africa which is used as an ornamental plant. Within the EPPO region, its distribution is still limited. Because this plant has shown invasive behaviour in all continents and is of limited distribution in the EPPO region, it can be considered an emerging invader in Europe.

Geographical distribution

EPPO region: Algeria (native), France, Israel (native), Italy (including Sardinia), Morocco (native), Spain (including Balreares and Islas Canarias), Tunisia (native).

Africa: Egypt (native), Eritrea (native), Ethiopia (native), Djibouti (native), Kenya (native), Libya (native), Sudan (native), Somalia (native), Swaziland, Tanzania (native), Zambia (native), Zimbabwe (native).

Asia: Indonesia, Lebanon (native), Oman (native), Saudi Arabia (native), Syria (native), Yemen (native).

North America: Bermuda, USA (Arizona, California, Colorado, Florida, Hawaii, Louisiana, New Mexico, Oregon, Tennessee).

Carribean: Guadeloupe, Puerto Rico.

Oceania: Australia (New South Wales, Queensland), Fiji, French Polynesia, Guam, New Caledonia, New Zealand, Palau.

Note: the species is listed as a State Noxious Weed in the USA. In Australia, the plant is prohibited in Queensland and in New South Wales.
In the Spanish mainland, the species has escaped into the wild in the provinces of Alicante, Granada, Malaga and Valencia.

Morphology
P. setaceum is a perennial grass with erect stems growing up to 1.3 m high. Leaves are 30 cm long and 3 cm wide. Their coloration may depend on water availability: they are green in winter and brown in summer. The small flowers are grouped in pink or purple, long feathery inflorescences up to 8-30 cm long. Fruits are small achenes.

Biology and ecology
The species grows rapidly and can live to up to 20 years. The plant flowers between March and September in Islas Canarias and reproduces by seeds. It reaches maturity in the first year, and produces seeds every year. Each plant may produce on average 100 seeds dispersed by wind which may remain viable in the soil for 6 years or longer. After 18 months, the viability of seeds decreased from 80% to 44% in laboratory experiments. Apomixis (asexual seed formation) may occur. An ornamental cultivar "Rubrum" or "Cupreum" is recognized, which does not produce seeds.

P. setaceum requires open space, warm temperatures and prefers full sun, but it can tolerate partial shade. Germination requires natural seasonal disturbance such as seasonal rainfall. The species has a wide elevational range but is limited to areas with a median annual rainfall of less than 127 cm. It can grow on all types of soils (clay to sandy), acid to slightly alkaline, but does not tolerate saline conditions. *P. setaceum* is considered to become facultatively inactive with extended drought, freezing, or near freezing temperatures. The species is very aggressive in dry habitats. In wet habitats however, it is out competed by other grasses.

Habitats
The species is known to occur in deserts, grasslands and disturbed sites such as roadsides. According to the Corine Land Cover nomenclature, these habitats correspond to: Pastures, Natural grassland; Deserts (sparsely vegetated areas); Road and rail networks and associated land; Other artificial surfaces (wastelands).

Pathways
The plant is used as a landscape ornamental plant, and is used for soil stabilisation. In Las Palmas (Islas Canarias), it is hypothesised that seeds of the plant were carried during the construction of the airport with machinery coming from the Western Sahara. Seeds are dispersed by the wind, by water and possibly by birds. Seeds may also be dispersed by vehicles and livestock. It has been observed that new infestations may occur at more than 1 km from parent plants.

Impacts

P. setaceum has been the object of a Weed Risk Assessment done by PIER (Pacific Islands Ecosystems at Risk) concluding that the species represents a high risk (the score obtained was 26, a species representing risk when the score reaches 7).

P. setaceum is a poor pasture grass because of its coarse rough leaves, and is considered a weed in many dry habitats. It is a very aggressive plant forming monospecific stands and out competing native plants by reducing available space and taking scarse water and nutrients. It also raises fuel loads, and becomes extremely inflammable in winter, increasing the intensity and spread of fire, resulting in severe damage to native dry forest species adapted to less extreme fire regimes. Fires that follow invasions impact ground nesting birds and terrestrial animals and have the ability to change the structure of deserts. In Hawaii, *P. setaceum* dominates areas that formerly supported native *Heteropogon contortus* (Poaceae). *P. setaceum* is thought to have higher photosynthetic rate, to produce more total biomass, and to allocate more biomass to leaves compared to *Heteropogon contortus*. Once in desert grassland where fire is part of the ecology, the presence of *P. setaceum* is not as serious an ecological threat. In Macaronesia, the species is known to affect endangered species and other vulnerable species. Additionally, infestations may impede pedestrian and vehicle access.

Control

Planting native species after the removal of *P. setaceum* will help to prevent re-establishment of the plant. Monitoring for seedlings and removing them is a good practice as they are easy to pull up when young.

The species has been subject to eradication plans in Islas Canarias.

The long lived seeds of the plant make the control extremely difficult. Small infestations may be managed by uprooting plants by hand or by digging them out destroying the inflorescences in order to prevent seed dispersal. Removal by hands may need to be repeated several times per year. Seed heads may be removed to slow the spread of the plant, taking into consideration that the plant seeds several times a year.

Extensive infestations may be controlled with systemic herbicides such as hexazinone.

Source:

California Exotic Pest Plant Council – Plant assessment form for *Pennisetum setaceum*
http://sbsc.wr.usgs.gov/research/projects/swepic/SWVMA/PLANTPDF/Pennisetum_setaceum_AZ_PAF.pdf

Global Invasive Species Database – *Pennisetum setaceum*
http://www.issg.org/database/species/ecology.asp?si=309&fr=&sts=tss

Invasiveness and Impact assessment of *Pennisetum setaceum* in Victoria
www.dpi.vic.gov.au/DPI/Vro/vrosite.nsf/pages/impact_fountain_grass
www.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/invasive_fountain_grass

Medio Ambiente Canarias (1999) [Eradication of *Pennisetum setaceum* on the Island of La Palma]. Issue 15/1999. (In Spanish)
http://www.gobiernodecanarias.org/cmayot/medioambiente/centrodocumentacion/publicaciones/revista/1999/15/217/index.html

Pacific Island Ecosystems at Risk (PIER) – Weed Risk Assessment for *Pennisetum setaceum*
http://www.hear.org/pier/wra/pacific/pennisetum_setaceum_htmlwra.htm

Additional key words: alert list **Computer codes:** PESSA

2009/080 International Day for Biological Diversity (2009-05-22) on invasive alien species in Sardinia (IT)

The United Nations proclaimed the 22nd of May 2009 'The International Day for Biological Diversity (IBD)' to increase understanding and awareness of biodiversity issues, and this special day will be dedicated to invasive alien species (see EPPO RS 2008/233).
The University of Sassari and the Conservatoire Botanique de Corse have united their efforts to organize an open and free symposium on invasive alien species. This will be held on the 22nd of May in Sassari and followed by 2 days of field trip to discover invasive alien species in forests and in coastal areas. The Council of Europe, the Società Botanica Italiana and the Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA) support this initative.

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Source: EPPO Secretariat, 2009-04

Additional key words: invasive alien plants, biodiversity day **Computer codes:** IT

2009/081 Symposium on invasive aquatic plant species in Europe - Düsseldorf (DE), 2009-08-20

The number of invasive aquatic plants in Europe has increased rapidly during the few last years, and the aims of this symposium are:
- to improve communication within the scientific community, and between scientists and policy makers on this topic.
- to summarize the knowledge of invasive aquatic plants in Europe
- to summarize the effects of optimized management strategies for different species.

Calls for papers are open on the following topics:
1) Distribution of invasive aquatic plants in Europe
2) Ecology of non-native aquatic plants and their impact on the infested water bodies
3) Prevention and management.
The number of participants is limited to 50 persons.

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For further information: www.aquatischeneophyten.de

Source: EPPO Secretariat, 2009-04

Additional key words: invasive alien plants, conference **Computer codes:** DE