ORGANISATION EUROPEENNE
ET MEDITERRANEENNE
POUR LA PROTECTION DES PLANTES

EUROPEAN AND MEDITERRANEAN
PLANT PROTECTION
ORGANIZATION

EPPO Reporting Service

NO. 3 PARIS, 2011-03-01

CONTENTS _____ *Pests & Diseases*

_____ *Invasive Plants*

21 Bld Richard Lenoir
75011 Paris

Tel: 33 1 45 20 77 94
Fax: 33 1 70 76 65 47

E-mail: hq@eppo.fr
Web: www.eppo.org

2011/050 Eradication of *Anoplophora glabripennis* from the Netherlands

As reported in EPPO RS 2010/200, an outbreak of *Anoplophora glabripennis* (Coleoptera: Cerambycidae – EPPO A1 List) was detected in November 2010 in the Netherlands. During pruning activities, the pest was detected in lane trees of *Acer pseudoplatanus* in an industrial area of the city of Almere. In total, 9 *Acer pseudoplatanus* and 1 *Salix aurita* were found to be infested within a range of 70 m. The plants were dissected and as a result, approximately 60 exit holes, 11 adults beetles (9 dead, 2 alive), and 7 living larvae were found (no eggs were observed). The date for formation of the exit holes ranged between 2007 and 2010. The majority of exit holes had been formed in 2008 and 2009 suggesting that the pest population was in a state of decline. This was the first outbreak of *A. glabripennis* in the Netherlands.
From November 2010 to February 2011, eradication measures were implemented. These measures included a clear-cut area, destructive sampling, specific surveillance and restrictions on the movements of host plant material. By the end of February 2011, all symptomatic trees and deciduous trees/shrubs located within a range of 100 m from infested trees were destroyed (in total 100 trees and 7 groups of shrubs). Specific surveillance was carried out within a radius of 1 000 m around the infected trees. In total more than 5 500 trees were inspected (tree climbers/trucks with aerial work platform) and no further specimens or signs of infestation were found. The NPPO of the Netherlands considered that *A. glabripennis* has been successfully eradicated. In the coming years, surveillance and restrictions on movement of host plant material will continue in the delimited area.
The pest status of *Anoplophora glabripennis* in the Netherlands is officially declared as: **Absent – eradicated.**

Source: NPPO of the Netherlands (2011-04).
Website of the Netherlands Plant Protection Service. Pest Reporting.
http://www.vwa.nl/onderwerpen/english/dossier/pest-reporting/pest-reports

Additional key words: eradication **Computer codes:** ANOLGL, NL

2011/051 Eradication of *Chrysanthemum stem necrosis virus* from the United Kingdom

The NPPO of the United Kingdom informed the EPPO Secretariat of another incursion of *Chrysanthemum stem necrosis virus* (*Tospovirus,* CSNV – EPPO A1 List) on its territory. It can be recalled that in 2002, the virus had been detected in glasshouse chrysanthemums in South West England and successfully eradicated (EPPO RS 2003/057 and RS 2003/123).
In 2010, a new outbreak was detected in the South West of England. It is most likely that the virus arrived on the nursery in chrysanthemum cuttings from Brazil, with the virus then being transmitted from one crop to the next by a local population of *Frankliniella occidentalis*. Due to the isolated nature of the nursery, spread to other sites was considered to be unlikely. Eradication measures were taken and included the destruction of symptomatic plants and chemical control of the thrips to reduce the vector population. The aim was that there must be 135 days without a finding of CSNV in either plants or thrips before the outbreak could be considered as eradicated. This was considered to be the maximum life span of an individual thrips (plus a safety margin). As of 2009-11-11 and 2009-01-21, CSNV could no longer be detected in plants and thrips, respectively. Therefore, the NPPO of the United Kingdom considered that this outbreak was eradicated.

The pest status of *Chrysanthemum stem necrosis virus* in the United Kingdom is officially declared as: **Absent, pest eradicated.**

Source: NPPO of UK (2010-03 and 2010-07).

Additional key words: incursion, eradication **Computer codes:** CSNV00, GB

2011/052 Eradication of *Tomato spotted wilt virus* and *Zucchini yellow mosaic* in Finland

In Finland, *Tomato spotted wilt virus* (*Tospovirus*, TSWV – EPPO A2 List) is occasionally found in glasshouse crops but is always subject to eradication measures to prevent its establishment (EPPO RS 2001/201, 2003/167, 2009/139). In 2010, TSWV was detected in 50 places of production on pot plants of *Osteospermum*. Tracing-back studies showed that TSWV had spread with infected planting material of *Osteospermum*. The virus was detected with a diagnostic kit (lateral flow) and DAS-ELISA. Appropriate treatments and quarantine measures were taken and TSWV was successfully eradicated.
The pest status of *Tomato spotted wilt virus* in Finland is officially declared as: **Absent, pest eradicated.**

In 2010, another virus, *Zucchini yellow mosaic virus* (*Potyvirus,* ZYMV), was reported by the NPPO of Finland (EPPO RS 2011/01). ZYMV was detected in one production site (glasshouse) of cucumber (*Cucumis sativus*). Appropriate treatments and quarantine measures were taken and ZYMV was successfully eradicated.
The pest status of *Zucchini yellow mosaic virus* in Finland is officially declared as: **Absent, pest eradicated.**

Source: NPPO of Finland (2011-01).

Additional key words: eradication **Computer codes:** TSWV00, ZYMV00, FI

2011/053 Citrus blight disease does not occur in Turkey

As reported in EPPO RS 2009/200, it has been suspected that citrus blight disease (EPPO A1 List) might occur in Turkey. Surveys were carried out during 2006-2008 in the Eastern Mediterranean region and trees showing symptoms resembling those of citrus blight (disease of unknown aetiology) were found (Kayim and Ciftci, 2009). The EPPO Secretariat contacted the NPPO of Turkey which explained that the tests conducted to detect citrus blight in the above study were only preliminary and that further research would have been needed to be able to conclude whether the disease was present. For example: zinc uptake was not studied (only water injection tests were done), and no biological indexing followed by confirmatory serological test was performed. The NPPO of Turkey considers that there is not sufficient evidence from these studies to conclude that Citrus blight disease occurs on its territory.

Source: Kayim M, Ciftci MA (2009) A survey for citrus blight disease in the Eastern Mediterranean region of Turkey. *Phytopathology* **99**(6), S62

NPPO of Turkey (2011-01).

Additional key words: absence **Computer codes:** CSB000, TR

2011/054 First report of *Pseudomonas syringae* pv. *actinidiae* in Portugal

In March 2010, symptoms of bacterial canker were observed on two-year-old plants of *Actinidia deliciosa* cv. 'Summer' in kiwifruit orchards in the province of Entre-Douro-e-Miño, North of Portugal. The symptoms were characterised by dark brown spots surrounded by yellow haloes on leaves, and cankers with copious reddish exudate on twigs and stems. In some cases, the disease incidence reached up to 30%. Laboratory analysis confirmed the presence of *Pseudomonas syringae pv. actinidiae* (EPPO Alert List) in diseased kiwi plants. This is the first report of this bacterium on *A. deliciosa* in Portugal.
The situation of *Pseudomonas syringae pv. actinidiae* in Portugal can be described as follows: **Present, first found in 2010 in kiwifruit orchards in Entre-Douro-e-Miño province.**

Source: Balestra GM, Renzi M, Mazzaglia A (2010) First report of bacterial canker of *Actinidia deliciosa* caused by *Pseudomonas syringae* pv. *actinidiae* in Portugal. *New Disease Reports* **22**, 10 [doi:10.5197/j.2044-0588.2010.022.010].

Additional key words: new record **Computer codes:** PSDMAK, PT

2011/055 First report of *Pseudomonas syringae* pv. *actinidiae* in Chile

The presence of *Pseudomonas syringae* pv. *actinidae* is reported for the first time from Chile. Suspicious symptoms of bacterial canker were observed in December 2010 and January 2011 in kiwi orchards (*Actinidia* sp.) in the regions of O'Higgins and Maule (regions VI and VII, respectively). Surveillance will continue to delimit the extent of the disease in Chile.
The situation of *Pseudomonas syringae pv. actinidiae* in Chile can be described as follows: **Present, first found in 2010 in kiwifruit orchards in O'Higgins and Maule regions.**

Source: ProMed posting (no. 20110325.0940) of 2011-03-25. Bacterial canker, kiwifruit – Chile: first report: (O'Higgins, Maule). http://www.promedmail.org

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

2011/056 Possible transmission of *Pseudomonas syringae* pv. *actinidiae* by pollen

In November 2010, the Ministry of Agriculture and Forestry (MAF Biosecurity) of New Zealand announced that samples of pollen collected (in 2009 and 2010) from the Bay of Plenty and South Auckland tested positive for *Pseudomonas syringae* pv. *actinidiae* (EPPO Alert List). Although it was acknowledged that this finding did not provide sufficient evidence to consider that infected pollen can spread the disease, MAF advised kiwifruit growers to use only tested pollen before implementing artificial pollination. Data on the epidemiology of *Pseudomonas syringae* pv. *actinidiae* is generally lacking, but infection is thought to occur through natural openings and wounds. Spread is probably ensured by heavy rain, strong winds, mechanical means (including animal and human activities), and infected planting material. For the moment, the possibility that infected pollen could spread the disease cannot be excluded but more research is needed.

Source: Biosecurity New Zealand. New Zealand pollen tests positive for Psa. Media release of 2010-10-20. http://www.biosecurity.govt.nz/media/20-11-10/new-Zealand-pollen-tests-positive-for-Psa

Additional key words: epidemiology **Computer codes:** PSDMAK

2011/057 *Drosophila suzukii* found in Campania and Liguria regions, Italy

The NPPO of Italy recently informed the EPPO Secretariat about the presence of *Drosophila suzukii* (Diptera: Drosophilidae – EPPO Alert List) in Campania region. In 2010, the pest was found on greenhouse strawberries (*Fragaria ananassa*) in the province of Salerno, Campania region. Surveys are being carried out to delimit the extent of the infestation in the region.

The presence of *D. suzukii* in Liguria region is reported by Süss & Costanzi (2010). In autumn 2010, a heavy infestation caused by larvae of a Diptera species was observed on greenhouse strawberries and field raspberries (*Rubus idaeus*) near Savona. Larvae were reared in the laboratory and emerging flies were identified as *D. suzukii*. In the area of Savona, farmers had already noticed sporadic and similar damage in 2009 but they were considered unimportant. In 2010, pest outbreaks attributed to *D. suzukii* increased, causing 30%-40% damage to strawberry crops (attaining 80% in some crops). The strawberry cultivar 'Mara des bois' was the most infested but other cultivars such as 'Annabel', 'Diamante' and 'Sant' Andrea' were also damaged.

The situation of *Drosophila suzukii* in Italy can be described as follows: **Present, first detected in 2009, it now occurs in Campania (Salerno province), Liguria (Savona province), Trentino-Alto Adige (Trento, Bolzano provinces), Piemonte (Cuneo, Torino provinces), Toscana.**

Source: NPPO of Italy (2010-01).

Süss L, Costanzi M (2010) Presence of *Drosophila suzukii* (Matsumura, 1931) (Diptera Drosophilidae) in Liguria (Italy). *Journal of Entomological and Acarological Research* **42**(3), 185-188.

Additional key words: detailed record **Computer codes:** DROSSU, IT

2011/058 Insect pests newly recorded in the EPPO region

The following insect pests have recently been reported in the EPPO region (or part of it).

- *Ataenius picinus* **(Coleoptera: Aphodiidae)**

The NPPO of Italy reported in 2010 the occurrence of *Ataenius picinus* (Coleoptera: Aphodiidae) in Lazio region. This is the first record of this species in Italy and in Europe. *A. picinus* originates from North America but it also occurs in South America, the Caribbean and Oceania. *A. picinus* adults are coprophagous but larvae have occasionally been reported as minor pests of cultivated plants (NPPO of Italy, 2010). **Present, first found in Lazio in 2010.**

- *Greenidea ficicola* **(Hemiptera: Greenideidae)**

Greenidea ficicola is an aphid originating from Asia which mainly feeds on *Ficus* spp. (there are also some records on guavas (*Psidium guajava*)). It presence has recently been reported in several EPPO countries, as well as in Africa and the Americas, probably being spread with its host plants in trade. In the EPPO region, it was first reported from Southern Italy (Calabria and Sicilia) in the early 2000s, on different species of ornamental *Ficus* (Barbagallo *et al.*, 2005). In Spain, *G. ficicola* was observed for the first time in 2004 in Andalucía (Torremolinos, Málaga province) and then in other provinces of Andalucía (Almería, Sevilla) and Comunidad Valenciana (Alicante, Valencia) on several *Ficus* species. In Malta, it was observed for the first time in 2007 on *F. microcarpa* (Mifsud, 2008). Finally, it was reported in 2008 from Tunisia (Ben Halima-Kamel, 2009).
The currently known distribution of *G. ficicola* is the following:
EPPO region: Italy (mainland and Sicilia), Malta, Russia (Far East), Spain, Tunisia.
Africa: Burundi, Tunisia.
Asia: Bangladesh, China, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, Philippines, Russia (Far East), Taiwan.
North America: USA (Florida).
South America: Brazil (Sao Paulo), Colombia, Peru.
Oceania: Australia, Papua New Guinea.

- *Trioza alacris* **(Hemiptera: Triozidae)**

In November 2009, damage caused by a psyllid, *Trioza alacris*, was noticed on container *Laurus nobilis* (bay laurel) in the Arboretum of Buda (Budapest), in Hungary. It is suspected that *T. alacris* has been introduced on imported plants. This is the first record of *T. alacris* in Hungary. *T. alacris* is recorded in several European countries (particularly in the Mediterranean region) and it has been introduced in Argentina, Chile, and the USA (California and New Jersey).

Source: Barbagallo S, Bella S, Cocuzza G (2005) *Greenidea ficicola*, a new aphid record for Southern Italy. *Informatore Fitopatologico* **55**(2), 25-29.

Ben Halima-Kamel M (2009) First report of *Greenidea ficicola* in Tunisia. *Tunisian Journal of Plant Protection* **4**, 107-110.

Haltrich A, Rédei D, Pénzes B, Vétek G (2010) First occurrence of bay sucker (*Trioza alacris* Flor, 1861) (Sternorrhyncha: Triozidae) in Hungary. *Növényvédelem* **46**(8), 365-369.

Mifsud D (2008) A new tree dwelling aphid, *Greenidea ficicola* Takahashi, 1921 for Malta (Hemiptera: Aphidoidea: Greenideidae) *Bulletin of the Entomological Society of Malta* **1**, 39-41.

NPPO of Italy (2010-06).

Pérez Hidalgo N, Sousa-Silva CR, del Estal Padillo P (2009) The presence of the Asian aphid, *Greenidea ficicola* (Takahashi) [Aphididae: Greenideinae: Greenideini] in Spain. *Boletin de Sanidad Vegetal, Plagas* **35**(4), 581-584.

Additional key words: new record, geographical distribution

Computer codes: GREEFI, TRIZAL, HU, IT

2011/059 First record of *Tomato chlorosis virus* in Costa Rica

At the beginning of 2007, severe yellowing and chlorosis symptoms were observed in field-grown and glasshouse tomatoes (*Lycopersicon esculentum*) in Costa Rica. Large populations of whiteflies (several species including *Trialeurodes vaporariorum*) were also observed in affected crops. Laboratory analysis confirmed the presence of *Tomato chlorosis virus* (*Crinivirus*, ToCV - EPPO A2 List) in 9 samples out of 47 symptomatic samples collected from the Central Valley near Cartago. This is the first record of ToCV in Costa Rica. The economic impact of this virus on tomato crops has not yet been determined and studies are being carried out to determine its incidence.
The situation of *Tomato chlorosis virus* in Costa Rica can be described as follows: **Present, first found in 2007 on a limited number of tomato samples from the Central Valley (near Cartago).**

Source: Castro RM, Hernandez E, Mora F, Ramirez P, Hammond RW (2009) First report of *Tomato chlorosis virus* in tomato in Costa Rica. *Plant Disease* **93**(9), p 970.

Additional key words: new record **Computer codes:** TOCV00, CR

2011/060 First report of *Fusarium foetens* in Japan

In August 2005, leaf and stem rot, vein yellowing, and wilting of Begonia elatior hybrids (*Begonia x hiemalis*) were observed in Miyagi Prefecture, Japan. *Fusarium foetens* (EPPO A2 List) was consistently isolated from diseased plants. This was the first record of *F. foetens* in Japan. In August 2006, the disease was also detected on Begonia elatior hybrids growing in a nursery in Gunma Prefecture.
The situation of *Fusarium foetens* in Japan can be described as follows: **Present, first found in 2005, detected on Begonia elatior hybrids in Miyagi and Gunma Prefectures (Honshu).**

Source: Sekine T, Kanno H, Aoki T (2008) [Occurrence of leaf and stem rot caused by *Fusarium foetens* on begonia elatior hybrids (*Begonia x hiemalis*)]. *Japanese Journal of Phytopathology* **74**, 164-166 (in Japanese).

Timote VM, Kubo H, Hirooka Y, Shinohara H, Negishi H, Suyama K (2009) Detection of *Fusarium foetens* from *Begonia elatior* plants producing root symptoms in Japan. *Journal of the International Society for Southeast Asian Agricultural Sciences* **15**(2), 1-11.

Additional key words: new record **Computer codes:** FUSAFO, JP

2011/061 *Fusarium oxysporum* f.sp. *palmarum:* a new disease of ornamental palm trees

Since 2004, a new lethal disease of two ornamental palm species, *Syagrus romanzoffiana* (queen palm) and *Washingtonia robusta* (Mexican fan palm), has been observed in the South of Florida (US). *S. romanzoffiana* and *W. robusta* are widely planted in Florida landscapes because they are relatively cold tolerant and resistant to Coconut lethal yellowing phytoplasma (EPPO A1 List). On affected *S. romanzoffiana* and *W. robusta*, the initial foliar symptom is a one-sided chlorosis or necrosis of older palms, with a distinct

reddish brown stripe along the petiole and rachis, associated with a discoloration of internal tissues. The entire canopy then becomes dessicated and necrotic but does not collapse. Palm trees are rapidly killed within 2 to 3 months of the onset of symptoms (pictures can be viewed on the Internet, see link below). Studies (morphology, molecular characteristics, pathogenicity) showed that the causal agent is a new forma specialis of *Fusarium oxysporum* which has been designated as *Fusarium oxysporum* f.sp. *palmarum*. Comparison with other Fusarium wilt disease agents (i.e. *F. oxysporum* f.sp. *albedinis* (EPPO A2 List), *F. oxysporum* f.sp. *canariensis, F. oxysporum* f.sp. *elaeidis*) showed that its closest relative was *F. oxysporum* f.sp. *canariensis*. In these studies, most samples were obtained from palm trees that had been planted in the landscape for 5 to 20 years. However, some juvenile palm trees showing disease symptoms have also been found in three nurseries (1 container nursery and 2 field nurseries), but as affected plants quickly died they could not be marketed. It is not known how the disease spreads in the landscape, but it is suspected that wind-blown spores could play a major role and that contaminated pruning tools could also transmit the pathogen from one tree to another. More studies are needed to better understand the epidemiology of the disease and to determine possible control measures.

Source: Elliott ML, Des Jardin EA, O'Donnell K, Geiser DM, Harrison NA, Broschat TK (2010) *Fusarium oxysporum* f.sp. *palmarum*, a novel forma specialis causing a lethal disease of *Syagrus romanzoffiana* and *Washingtonia robusta* in Florida. *Plant Disease* **94**(1), 31-38.

Internet (last accessed 2010-11)
University of Florida. Fusarium wilt of queen palm and Mexican fan palm by ML Elliott (dated June 2010). http://edis.ifas.ufl.edu/pdffiles/PP/PP27800.pdf

Additional key words: new pest **Computer codes:** FUSAOX, US

2011/062 EPPO report on notifications of non-compliance

The EPPO Secretariat has gathered below the notifications of non-compliance for 2010 received since the previous report (EPPO RS 2010/190). Notifications have been sent 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
Agromyzidae	*Apium graveolens*	Vegetables	Thailand	Switzerland	1
	Apium graveolens	Vegetables	Vietnam	Switzerland	1
	Gypsophila	Cut flowers	Israel	France	1
Aleyrodidae	*Polygonum odoratum*	Vegetables (leaves)	Vietnam	France	1
Aphelenchoides, Rotylenchus reniformis	Unspecified	Plants for planting	Thailand	United Kingdom	1
Bemisia	*Eryngium foetidum*	Vegetables (leaves)	Thailand	France	2
	Limnophila	Vegetables (leaves)	Vietnam	France	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Bemisia tabaci	*Apium graveolens*	Vegetables	Thailand	United Kingdom	2
	Corchorus olitorius	Vegetables	Lebanon	France	1
	Eryngium foetidum	Vegetables (leaves)	Thailand	France	12
	Eryngium foetidum	Vegetables (leaves)	Vietnam	France	1
	Euphorbia pulcherrima	Cuttings	Netherlands	Finland	1
	Hygrophila	Plants for planting	Singapore	United Kingdom	1
	Lantana	Cuttings	Tunisia	France	1
	Limnophila	Vegetables (leaves)	Sri Lanka	France	1
	Limnophila aromatica	Vegetables (leaves)	Thailand	France	1
	Manihot esculenta	Vegetables	Cameroon	France	2
	Manihot esculenta	Vegetables	Congo	France	2
	Mentha piperita	Vegetables (leaves)	Mexico	France	1
	Ocimum	Vegetables (leaves)	Thailand	Switzerland	3
	Ocimum basilicum	Vegetables (leaves)	Israel	France	5
	Ocimum basilicum	Vegetables (leaves)	Israel	Ireland	3
	Ocimum basilicum	Vegetables (leaves)	Israel	Switzerland	2
	Ocimum basilicum	Vegetables (leaves)	Thailand	France	1
	Ocimum basilicum	Vegetables (leaves)	Thailand	United Kingdom	1
	Ocimum tenuiflorum	Vegetables (leaves)	Thailand	France	1
	Solanum melongena	Vegetables	Tunisia	France	1
***Cerambycidae* (suspect *Oemona hirta*)**	*Wisteria*	Plants for planting	New Zealand	United Kingdom	1
Ceratitis capitata	*Fortunella*	Fruits	South Africa	France	1
Ceratitis cosyra	*Mangifera indica*	Fruits	Burkina Faso	France	2
	Mangifera indica	Fruits	Côte d'Ivoire	France	1
	Mangifera indica	Fruits	South Africa	France	1
Cryptophlebia leucotreta	*Citrus sinensis*	Fruits	South Africa	Spain	3
Dialeurodes citri, Phyllocnistis citrella	*Citrus hystrix*	Leaves	Hong Kong	United Kingdom	1
Diaphania indica	*Momordica charantia*	Vegetables	Kenya	Germany	1
Diaphania indica, Thrips palmi	*Momordica*	Vegetables	Dominican Rep.	United Kingdom	1
Elsinoe australis	*Citrus reticulata*	Fruits	Uruguay	United Kingdom	1
Globodera pallida, Globodera rostochiensis	*Solanum tuberosum*	Ware potatoes	Italy	Ireland	8
Guignardia citricarpa	*Citrus*	Fruits	Ghana*	United Kingdom	1
	Citrus aurantium	Fruits	Ghana*	United Kingdom	1
	Citrus limon	Fruits	Argentina	Spain	1
	Citrus reticulata	Fruits	South Africa	Netherlands	1
	Citrus sinensis	Fruits	Brazil	Netherlands	2
	Citrus sinensis	Fruits	Ghana*	United Kingdom	2
	Citrus sinensis	Fruits	South Africa	Netherlands	1
	Citrus sinensis	Fruits	South Africa	Spain	1
	Citrus sinensis	Fruits	Swaziland*	Netherlands	1
Hirschmanniella	*Vallisneria*	Aquarium plants	Singapore	France	1
	Vallisneria	Aquarium plants	Singapore	France	1
Lepidoptera	*Phaseolus*	Plants for planting	(Thailand)	Germany	1
	Sorghum	Seeds	Serbia	Italy	1
Leucinodes orbonalis	*Solanum aethiopicum*	Vegetables	Ghana	Germany	4
Liriomyza	*Amaranthus viridis*	Vegetables (leaves)	Nigeria	Ireland	1
	Dendranthema x grandiflorum	Cut flowers	Colombia	United Kingdom	2
	Ocimum	Vegetables (leaves)	Thailand	Sweden	1
	Ocimum americanum	Vegetables (leaves)	Thailand	France	1
	Ocimum americanum, Ocimum basilicum, Ocimum tenuiflorum	Vegetables (leaves)	Thailand	France	1
	Ocimum basilicum	Vegetables (leaves)	Israel	France	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
***Liriomyza* (cont.)**	*Ocimum basilicum*	Vegetables (leaves)	Thailand	France	12
	Ocimum basilicum	Vegetables (leaves)	Thailand	Germany	1
	Ocimum tenuiflorum	Vegetables (leaves)	Thailand	France	1
	Spinacia	Vegetables (leaves)	Congo	France	1
Liriomyza huidobrensis	*Gypsophila*	Cut flowers	Ecuador	Netherlands	1
	Lisianthus	Cut flowers	Kenya*	Netherlands	1
	Mentha	Cuttings	Kenya*	Spain	1
	Trachelium	Cut flowers	Ecuador	Netherlands	1
Liriomyza sativae	*Dianthus*	Cut flowers	India	Netherlands	1
	Ocimum americanum	Vegetables (leaves)	Thailand	France	2
	Ocimum americanum, Ocimum basilicum	Vegetables (leaves)	Thailand	France	1
	Ocimum basilicum	Vegetables (leaves)	Israel	Latvia	2
	Ocimum basilicum	Vegetables (leaves)	Thailand	France	6
	Ocimum basilicum	Vegetables (leaves)	Thailand	United Kingdom	1
Liriomyza trifolii	*Gypsophila*	Cut flowers	Israel	Belgium	1
	Gypsophila	Cut flowers	Israel	Netherlands	1
***Monilinia fructicola* (suspected)**	*Prunus avium*	Fruits	USA	Belgium	1
Pepino mosaic virus	*Lycopersicon*	Vegetables	Netherlands	Ireland	1
Phytophthora ramorum	*Rhododendron catawbiense*	Plants for planting	Denmark	Finland	1
	Rhododendron catawbiense	Plants for planting	Netherlands	Ireland	1
Pratylenchus	*Copernicia alba*	Plants for planting	Thailand	France	1
Ralstonia solanacearum	*Pelargonium*	Cuttings	Ethiopia	Belgium	1
	Solanum tuberosum	Ware potatoes	Turkey	Bulgaria	1
Spodoptera littoralis	*Ocimum*	Vegetables (leaves)	India	Netherlands	1
	Rosa	Cut flowers	Uganda	Netherlands	1
Spodoptera litura	*Asparagus officinalis*	Vegetables	Thailand	Netherlands	1
***Spodoptera litura*, Pyralidae**	*Cabomba*	Plants for planting	Singapore	United Kingdom	1
Termitidae	*Mangifera*	Fruits	Pakistan	United Kingdom	1
Thaumetopoea processionea	*Quercus robur*	Plants for planting	Netherlands	United Kingdom	1
Thripidae	*Momordica*	Vegetables	Bangladesh	United Kingdom	1
	Momordica	Vegetables	India	United Kingdom	1
	Momordica	Vegetables	Pakistan	United Kingdom	1
	Momordica	Vegetables	Pakistan	United Kingdom	1
Thrips	*Calendula*	Cut flowers	Israel	Czech Republic	2
	Calendula	Cut flowers	Israel	Czech Republic	1
	Dendrobium	Cut flowers	Thailand	Italy	1
	Ocimum	Vegetables (leaves)	Thailand	Denmark	1
	Ocimum	Vegetables (leaves)	Thailand	Sweden	1
***Thrips* (suspect *T. palmi*)**	*Momordica charantia*	Vegetables	Ghana	Germany	1
Thrips palmi	*Dendrobium, Mokara*	Cut flowers	Thailand	Netherlands	1
	Momordica	Vegetables	Bangladesh	United Kingdom	1
	Momordica	Vegetables	Dominican Rep.	United Kingdom	1
	Momordica charantia	Vegetables	Thailand	Denmark	1
	Solanum melongena	Vegetables	Ghana	United Kingdom	1
	Solanum melongena	Vegetables	Surinam	Netherlands	2
Thysanoptera	*Dendrobium, Solanum melongena*	Cut flowers	Thailand	Switzerland	1
	Momordica	Vegetables	Dominican Rep.	France	1
	Momordica charantia	Vegetables	Dominican Rep.	France	5

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Thysanoptera (cont.)	*Momordica charantia*	Vegetables	Dominican Rep.	Switzerland	1
	Momordica charantia	Vegetables	India	France	1
	Momordica charantia	Vegetables	Sri Lanka	Switzerland	1
	Momordica charantia	Vegetables	Thailand	France	2
	Momordica charantia	Vegetables	Vietnam	France	1
	Momordica charantia, Solanum melongena	Vegetables	Dominican Rep.	France	1
	Solanum melongena	Vegetables	Dominican Rep.	France	1
	Solanum melongena	Vegetables	Mauritius	France	1
Tortricidae	*Capsicum annuum*	Vegetables	Uganda	Spain	2
Tuta absoluta	*Lycopersicon*	Vegetables	Morocco	Spain	3
	Lycopersicon esculentum	Vegetables	Turkey	Slovenia	1
Tylenchorhynchus	*Veitchia merrillii*	Plants for planting	Thailand	France	1
Xanthomonas axonopodis* pv. *citri	*Citrus*	Fruits	Bangladesh	United Kingdom	6
	Citrus aurantifolia	Fruits	Bangladesh	United Kingdom	2
	Citrus, Mangifera	Fruits	Bangladesh	United Kingdom	1

- **Fruit flies**

Pest	Consignment	Country of origin	Destination	nb
Anastrepha	*Mangifera*	Costa Rica	Spain	1
	Mangifera	Dominican Rep.	United Kingdom	2
	Mangifera indica	Dominican Rep.	Netherlands	2
Anastrepha obliqua	*Mangifera indica*	Dominican Rep.	France	1
	Mangifera indica	Peru	France	1
Bactrocera	*Annona squamosa*	Vietnam	France	1
	Mangifera indica	Burkina Faso	France	3
	Mangifera indica	Cameroon	France	6
	Mangifera indica	Côte d'Ivoire	France	1
	Mangifera indica	Mali	France	1
	Mangifera indica	Senegal	France	1
	Mangifera indica	Togo	France	1
	Psidium guajava	Thailand	France	1
	Solanum melongena	Thailand	France	1
	Syzygium samarangense	Thailand	France	1
	Syzygium samarangense	Thailand	France	1
	Ziziphus mauritiana	Thailand	France	3
Bactrocera cucurbitae	*Benincasa hispida*	India	France	1
	Momordica charantia	Sri Lanka	France	1
Bactrocera dorsalis	*Annona muricata*	Vietnam	France	3
	Annona squamosa	Vietnam	France	2
	Mangifera	Vietnam	France	1
	Mangifera indica	Cameroon*	France	1
	Mangifera indica	India	France	4
	Mangifera indica	Pakistan	France	1
	Mangifera indica	Thailand	France	6
	Mangifera indica	Vietnam	France	4
	Psidium guajava	Thailand	France	1
	Syzygium samarangense	Thailand	France	2
Bactrocera latifrons	*Capsicum annuum*	Thailand	France	8
	Capsicum annuum	Vietnam	France	1
	Capsicum frutescens	Thailand	France	4
Bactrocera zonata	*Mangifera*	Pakistan	United Kingdom	1
	Mangifera indica	India	France	1
	Psidium guajava	Pakistan	France	1

Pest	Consignment	Country of origin	Destination	nb
Tephritidae (Non-European)	*Capsicum*	Vietnam	France	1
	Capsicum annuum	Thailand	France	21
	Capsicum annuum, Capsicum frutescens	Thailand	France	1
	Capsicum frutescens	Thailand	France	5
	Capsicum frutescens, Momordica charantia	Thailand	France	1
	Citrus sinensis	South Africa	France	1
	Mangifera	Guinea	Spain	1
	Mangifera	Pakistan	United Kingdom	4
	Mangifera indica	Cameroon	France	1
	Mangifera indica	Dominican Rep.	France	2
	Mangifera indica	Jamaica	United Kingdom	1
	Mangifera indica	Mali	France	2
	Mangifera indica	Peru	France	2
	Psidium guajava	Pakistan	United Kingdom	1
	Psidium guajava	Thailand	France	2
	Syzygium	Thailand	Netherlands	1
	Syzygium samarangense	Thailand	France	3
	Ziziphus mauritiana	Thailand	France	2

- **Wood**

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Anoplophora glabripennis	Unspecified	Wood packing material	China	Germany	1
	Unspecified	Wood packing material (pallet)	China	Netherlands	1
Aphelenchoides	Unspecified	Wood packing material (crate)	India	Germany	1
Bostrichidae	Unspecified	Wood packing material	India	Germany	3
	Unspecified	Wood packing material (crate)	India	Germany	2
	Unspecified	Wood packing material (pallet)	India	Germany	4
	Unspecified	Wood packing material (crate)	Pakistan	Germany	2
	Unspecified	Wood packing material (pallet)	Peru	Spain	1
Bursaphelenchus mucronatus	Unspecified	Wood packing material (pallet)	Ukraine	Latvia	2
Coleoptera	*Copaifera religiosa*	Wood and bark	Gabon	Spain	2
	Pinus sylvestris	Wood and bark	Ukraine	Greece	1
Coleoptera, Platypodidae	Unspecified	Wood packing material	China	Germany	1
Heterobostrychus aequalis	Unspecified	Wood packing material	India	Germany	1
Lyctus, Sinoxylon	Unspecified	Wood packing material (crate)	India	Germany	1
Nematoda	Unspecified	Wood packing material	Taiwan	Finland	1
Platypodidae, Scolytidae	*Entandrophragma cylindricum*	Wood and bark	Cameroon	Spain	1
	Entandrophragma cylindricum	Wood and bark	Central African Republic	Spain	1
Sinoxylon	Unspecified	Wood packing material (pallet)	China	Germany	1
	Unspecified	Wood packing material	India	Germany	7
	Unspecified	Wood packing material (crate)	India	Germany	7
	Unspecified	Wood packing material (pallet)	India	Germany	7
	Unspecified	Wood packing material (crate)	Indonesia	Germany	1
	Unspecified	Wood packing material (pallet)	Singapore	Germany	1
	Unspecified	Wood packing material (crate)	Vietnam	Germany	3
Siricidae	*Pinus sylvestris*	Wood and bark	Mongolia	France	1
Xylotrechus smei	*Julbernardia, Brachystegia bussei, Pterocarpus angolensis*	Wood and bark	Tanzania	Latvia	1

- **Bonsais**

Pest	Consignment	Country of origin	Destination	nb
Pratylenchus	*Taxus cuspidata*	Japan	France	1
	Juniperus chinensis	Korea Republic	Switzerland	1

Source: EPPO Secretariat, 2011-02.

2011/063 New organizational structure of the Dutch Plant Protection Service

The Plant Protection Service of the Netherlands is becoming part of the Food and Consumer Product Safety Authority. In April 2011 the new organizational structure has been launched to finalize a merger between three agencies of the Ministry of Economic Affairs, Agriculture and Innovation. All three agencies are specialised in official inspections and were part of the former Ministry of Agriculture, Nature and Food Quality. The merger should be carried out at the beginning of 2012 and concerns the following three agencies:

1. the Plant Protection Service (NPPO of the Netherlands under the IPPC and responsible official body in relation with EU Council Directive 2000/29/EC on protective measures against the introduction into the Community of organisms harmful to plants or plant products)
2. the General Inspection Service (Enforcement agency on food safety, animal welfare and the environment)
3. the current Food and Consumer Product Safety Authority (Inspection agency for the protection of human and animal health)

The merger is foremost targeting improved efficacy and integration of official inspections in all related fields. All current tasks of the Plant Protection Service will be incorporated into the new organisation.

The new website link for the Plant Protection Service of the Netherlands:
http://www.vwa.nl/onderwerpen/english/dossier/organization-plant-protection-service

Source: NPPO of the Netherlands, 2011-04.

Additional key words: NPPOs **Computer codes:** NL

2011/064 Recent introductions of weeds in Tunisia

The flora of Tunisia counts nearly 1400 native plants. Approximately 1000 introduced species have become naturalized in natural and artificial ecosystems. Some of these species have been introduced recently and pose a serious problem to Tunisian agriculture. Among these species, the following are described, with their situation in Tunisia:

- *Bidens tripartita* (Asteraceae) originates from Eurasia and is considered a weed in many crops. It is recorded in citrus orchards in Tunisia where it currently does not exhibit invasive behaviour.
- *Cuscuta australis* (Convolvulaceae) originates from North America and has a worldwide distribution. In Tunisia, the species is widespread and parasitises both cultivated and wild plants, causing negative impact on crops, in particular vegetables.
- *Cyperus bulbosus* (Cyperaceae) is native to Australia and is considered a weed where it has been introduced (e.g. India, Kenya). In Tunisia, the species is widespread in olive orchards in the Sahel region.
- *Datura ferox* (Solanaceae) originates from Asia and is now widespread in the Mediterranean Basin. In Tunisia, the species has invaded vineyards in Cap Bon where it is difficult to manage with herbicides. It has also invaded riverbeds and orchards.
- *Eleusine indica* (Poaceae), native to the tropics and subtropics, has a worldwide distribution (including the EPPO region) and it is known as a weed. It was recently found in a pomegranate (*Punica granatum*) orchard in Tunisia.
- *Galinsoga parviflora* (Asteraceae) originates from South America and is reported in Australia, Europe, the Mediterranean Basin, Africa and Asia. In general it is considered as a weed, particularly of vegetable crops. An outbreak of the species has been reported in a citrus orchard in Cap Bon.
- *Ipomoea imperati* (Convolvulaceae) originates from southern North America. In the EPPO region, the species has a limited distribution (prior to this record, it was only recorded in Spain and the Azores). In Tunisia, the species occurs in sand dunes. Although not posing a problem to agriculture so far, its progression should be monitored.
- *Nothoscordum gracile* (Liliaceae) is an ornamental plant originating from South and Central America and recorded in the Mediterranean Basin. In Tunisia, its distribution is still limited but should be monitored as the species could be spread with plants for planting as a contaminant of their growing media.
- *Oxalis articulata* (Oxalidaceae) is native to South America and occurs in Mediterranean countries. In Tunisia, it escaped from gardens and can be a problem in nurseries, from which it could spread with plants for planting accompanied by growing media.
- *Salpichroa origanifolia* (Solanaceae) is native to South America and occurs in the Mediterranean Basin. The species has been introduced as an ornamental plant in Tunisia and has escaped into arable fields where it is a weed.
- *Solanum elaeagnifolium* (Solanaceae, EPPO A2 List) originates from the Americas, and is present and considered a weed in the 5 continents. In Tunisia, the plant was first collected in 1989 in the Kairouan region, and has since spread to the whole governorate, in particular orchards, arable fields in particular vegetable.

Source: Omezine A (2011) Introduction récente de certaines adventices des cultures en Tunisie. *Bulletin OEPP/EPPO Bulletin* **41**(1), 77-84.

Additional key words: invasive alien plants, records

Computer codes: BIDTR, CVCAU, CYPBU, DATFE, ELEIN, GASPA, IPOST, NOTFR, OXAAR, SAPOR, SOLAL, TN

2011/065 Status and trends in the alien flora of Corse (FR)

Different aspects of the alien flora of Corse (FR), such as diversity (species richness), abundance, life-forms, vegetation belts, habitats and biogeographical origins were analysed on the basis of data published in Flora Corsica (Jeanmonod & Gamisans, 2007). Results showed that the alien species richness is currently high, as alien species represented 16.5% of the total flora, amongst which 37.5% were naturalized. The penetration of this alien flora mainly took place at lower altitudes, but was still low or absent in the higher altitude vegetation belts. It was also observed that penetration of this alien flora has increased over time within natural habitats.

A list of 31 invasive or potentially invasive taxa recorded in Corse is presented below (a distinction is being made between naturalized and casual species). For each species, geographical origin, status (abundance class), and year of first record on the island is provided. This list is given in order of species abundance (from high to low) and within each category, plant species are ordered by date of first record (from the oldest to the most recent).

The following twenty species are naturalized in Corse:

Taxon	Origin	Abundance class in Corse	First year of observation in Corse
Xanthium orientale subsp. *italicum (= X. italicum)* (Asteraceae)	North America	CC	1863
Gomphocarpus fruticosus (Apocynaceae)	South Africa	C	1820
Opuntia ficus-indica (Cactaceae)	Neotropics	C	1834
Carpobrotus edulis (Aizoaceae, EPPO List of Invasive Alien Plants)	South Africa	C	1877
Robinia pseudoacacia (Fabaceae)	North America	C	1913
Ailanthus altissima (Simaroubaceae, EPPO List of IAP)	Asia	C	1931
Cotula coronopifolia (Asteraceae)	South Africa	C	1954
Bidens frondosa (Asteraceae, EPPO List of IAP)	North America	C	1958
Phytolacca americana (Phytolaccaceae)	North America	PF	1834
Carpobrotus acinaciformis (Aizoaceae, EPPO List of IAP)	South Africa	PF	1978
Helianthus x laetiflorus (Asteraceae)	North America	PF	1985
Cortaderia selloana (Poaceae, EPPO List of IAP)	South America	PF	1989
Nicotiana glauca (Solanaceae)	South America	R	1900
Cytisus striatus (Fabaceae)	Mesogean region	R	1985
Elide asparagoides (Asparagaceae)	South Africa	RR	1920
Araujia sericifera (Apocynaceae, EPPO Alert List)	South America	RR	1977
Acacia dealbata (Fabaceae, EPPO List of IAP)	Australia	RR	1983
Senecio inaequidens (Asteraceae, EPPO List of IAP)	South Africa	RR	1984
Lonicera japonica (Caprifoliaceae)	Asia	RR	1990
Buddleia davidii (Scrophulariaceae)	SE Asia	RR	1991

(CC) very common; (C) common; (PF) infrequent or disseminated; (R): rare; (RR): very rare.

The following eleven species are casual in Corse:

Taxon	Origin	Abundance class in Corse	First year of observation in Corse
Senecio angulatus (Asteraceae)	South Africa	R	1979
Solidago canadensis (Asteraceae, EPPO List of IAP)	North America	R	1985
Aptenia cordifolia (Aizoaceae)	South Africa	R	1988
Cytisus multiflorus (Fabaceae)	Mesogean region	RR	1910
Paraserianthes lophantha (Fabaceae)	Australia	RR	1911
Polygala myrtifolia (Polygalaceae)	South Africa	RR	1911
Acacia saligna (Fabaceae)	Australia	RR	1977
Ambrosia artemisiifolia (Asteraceae, EPPO List of IAP)	North America	RR	1987
Acer negundo (Sapindaceae)	North America	RR	1988
Sesbania punicea (Fabaceae, EPPO Alert list)	South America	RR	1990
Myriophyllum aquaticum (Haloragaceae, EPPO List of IAP)	South America	RR	1996

(R): rare; (RR): very rare.

Several invasive species that are spreading in the Mediterranean Basin, such as *Amorpha fruticosa* (Fabaceae, EPPO List of IAP), *Baccharis halimifolia* (Asteraceae, EPPO List of IAP), *Impatiens glandulifera* (Balsaminaceae, EPPO List of IAP), *Fallopia japonica* (Polygonaceae, EPPO List of IAP), *Fallopia sachalinensis* (Polygonaceae, EPPO List of IAP), or *Heracleum mantegazzianum* (Apiaceae), have not yet been introduced in Corse. It is expected that given the great habitat diversity of Corse, it is only a matter of time before these species are recorded on the Island.

Source: Jeanmonod D & Gamisans J (2007) *Flora Corsica*. Edisud. Aix-en-Provence (FR).

Jeanmonod D, A. Schlüssel A & J. Gamisans J (2011) Status and trends in the alien flora of Corsica. *Bulletin OEPP/EPPO Bulletin* **41**(1), 85-89.

Additional key words: invasive alien plants

Computer codes:ACADA, ACASA, ACRNE, AILAL, AJASE, AMBEL, AMHFR, APJCO, ASPAS, BACHA, BIDFR, BUDDA, CBSAC, CBSED, CDTSE, CULCO, CZSMU, CZSST, GOPFR, HELLA, HERMZ, IPAGL, LONJA, MYPBR, NIOGL, OPUFI, PHTAM, POGMY, POLCU, PSZLO, REYSA, ROBPS, SEBPU, SENAN, SENIQ, SOOCA, XANSI, FR

2011/066 Pest risk analysis on invasive alien plants in the United Kingdom

Within the Great Britain non-native species risk analysis mechanism established in 2006, risk assessments are carried out by independent experts and are reviewed by a panel of experts. Following this process, risk assessments are available online for comment before being finalized. Risk assessments for the following plant species have been completed. For each species, the overall assessment and its uncertainty as well as the major conclusions are presented below.

Allium triquetrum (Amaryllidaceae) – Medium overall risk (Low uncertainty)
A. triquetrum is a highly invasive plant in areas where the climate is mild and where favorable habitats occur (i.e. road verges, hedge bases and disturbed waste ground). The

species is very likely to spread to new areas in Great Britain. Climate change is likely to markedly increase the suitable areas to be colonized by this species.

Azolla filliculoides (Salviniaceae, EPPO List of IAP) – High overall risk (Medium uncertainty)
The species represents a high risk to static and slow moving water bodies in the southern half of England and in low lying areas of Northern Ireland. The plant is spread by flood waters and by the movement of birds, animals and man. The plant has a high impact on biodiversity reducing populations of submerged macrophytes, fish and invertebrates beneath the mats. Dense infestations, which completely cover the water surface, are a danger to children, pets and livestock who may mistake water for land.

Crassula helmsii (Crassulaceae, EPPO A2 List) - High overall risk (Low uncertainty)
The high volume of plant trade means that the plant is imported widely into the UK. Its ability to grow from fragments of stem has enabled it to spread from ponds and ornamental pools into the wild. In addition, it is very difficult to control. This species has an impact on biodiversity and increases flood risk.

Eichhornia crassipes (Pontederiaceae, EPPO A2 List) - Low overall risk (Low uncertainty)
The establishment of this species in the UK is very unlikely under current climatic conditions unless cold-hardy varieties are developed.

Fallopia japonica (Polygonaceae, EPPO List of IAP) – High overall risk (Medium uncertainty)
The species is well established throughout the UK and is still spreading. It can thrive in a wide variety of habitats and is likely to continue to establish in new sites throughout the UK. It is readily transported as fragments in soil or transported by water through river systems. It can have major impacts on biodiversity, as well as on integrity of river geomorphology in localized areas. Impact can be high in urban areas where it can damage foundations of buildings.

Fallopia sachalinensis (Polygonaceae, EPPO List of IAP) – High overall risk (Medium uncertainty)
The species is already established and widespread in the UK and climate change is likely to increase its growth, as it prefers warmer wetter conditions in summer. As *F. japonica*, it is usually transported as rhizomes in soil and down flooding rivers. It causes serious impacts on biodiversity with losses of native plants and animals due to the dense thickets formed.

Hydrocotyle ranunculoides (Apiaceae, EPPO A2 List) – High overall risk (Low uncertainty)
H. ranunculoides has been introduced into many countries worldwide for ornamental purposes. It is very widely established in the UK, having spread from its first recorded occurrence in the wild in 1990 to more than 50 km² in 2008. It has a very high capacity for vegetative reproduction through fragmentation and high potential for spread by natural or mechanical means. The most important potential economic, environmental and social impacts in the UK are the interruption of waterway use for commercial activities such as fishing, damage to conservation initiatives and species, recreational purposes, flood hazard due to build up of vegetative mass, and aesthetic problems.

Lagarosiphon major (Hydrocharitaceae, EPPO List of IAP) – High overall risk (Low uncertainty)
The potential for ecological and recreational damage caused by the presence of this species, combined with the paucity of control methods makes this species a threat to native ecosystems and the recreational use of water bodies. The ability to change dramatically the chemical status of water bodies, including nutrient and pH changes, means that water quality is also affected by the presence of the species.

Ludwigia grandiflora (Onagraceae, EPPO List of IAP) – High overall risk (Low uncertainty)
The high volume of plant trade means that *L. grandiflora* is imported widely into the UK. Its ability to grow from fragments of stem has enabled it to spread from ponds and ornamental pools into the wild. Its can establish large stands in water bodies.

Myriophyllum aquaticum (Haloragaceae, EPPO List of IAP) – High overall risk (Low uncertainty)
The species is already present and established in Great Britain. It is traded extensively in the UK, and fragmentation is important over winter. Shallow ponds and margins of all watercourses are at risk from invasion by this species.

In addition, 2 risk assessments are close to completion: one for *Elodea canadensis* (Hydrocharitaceae, EPPO List of IAP), and another for *Elodea nuttallii* (Hydrocharitaceae). Risk assessments have been initiated for the following species: *Ailanthus altissima* (Simaroubaceae, EPPO List of IAP), *Allium paradoxum* (Amaryllidaceae), *Ambrosia artemisiifolia* (Asteraceae, EPPO List of IAP), *Buddleia davidii* (Scrophulariaceae, EPPO List of IAP), *Cabomba caroliniana* (Cabombaceae, EPPO List of IAP), *Carpobrotus edulis* (Aizoaceae, EPPO List of IAP), *Egeria densa* (Hydrocharitaceae, EPPO List of IAP), *Gaultheria shallon* (Ericaceae), *Heracleum mantegazzianum* (Apiaceae, EPPO List of IAP), *Impatiens glandulifera* (Balsaminaceae, EPPO List of IAP) and *Lysichiton americanus* (Araceae, EPPO List of IAP).

Source: GB Non-native species Secretariat.
https://secure.fera.defra.gov.uk/nonnativespecies/index.cfm?sectionid=51

Additional key words: Invasive alien plants, risk assessment

Computer codes: AILAL, ALLTQ, AMBEL, AZOFI, BUDDA, CABCA, CBSED, CSBHE, EICCR, ELDCA, ELDDE, ELDNU, GAHSH, HERMZ, HYDRA, IPAGL, LGAMA, LSYAM, LUDUR, MYPBR, POLCU, REYSA, GB

2011/067 Comparison of invasive alien species in Japan and South-Eastern Australia

In spite of different histories of human occupation and land use, Japan and South-Eastern Australia host many of the same exotic plant species. South-Eastern Australia and Japan are spread over similar latitudes and the range of climates on the east coast of Australia are similar to those in Japan.
Prior to 1788, Australia had been occupied for at least 60,000 years by semi-nomadic hunter-gatherers. There was a huge flux of exotic plants into Australia in the 19th and early 20th centuries. Agricultural enterprises have been principally sheep and cattle grazing and dry-land wheat farming, although a greater range of agricultural and horticultural activities has been taking place in the last 30 years.
In Japan, agriculture has been practiced for more than 2500 years. Paddy rice was introduced around 300 years B. C. (Jomon period), but upland farming with *Echinochloa* spp., *Setaria* spp., *Fagopyrum* spp. and tropical *Japonica* spp. rice was conducted even earlier. Although there were contacts with Europe in the 16th century, Japan had remained generally isolated from external influences (by sakoku, the national seclusion), apart from neighboring Korea and China until 1853. It was therefore after this date that exotic plants have been introduced to Japan. From 1910 to 1945, Korea was a Japanese colony, and 2 million Koreans migrated to Japan in 1945, as well as Chinese in smaller numbers. Most of the naturalized plants in Japan arrived after the Second World War. The USA occupied Japan from 1945 to 1952, and it is suggested that many weeds arrived as contaminants of

wheat and soybean imported from North America to alleviate food shortages after World War II.
In spite of these contrasting histories and agricultural practices, many invasive plants are common to both countries. The total number of alien plants is similar in Japan and South-Eastern Australia, although the time of arrival of most species is more recent in Japan. Their arrival coincides with a period of rapid economic growth; with the construction of highways and the extension of the railway system providing corridors of disturbance for invasive species. Most of these invasive species originated from either the broad region of Europe/Mediterranean/Eurasia or the Americas. Invasive alien plants common to Japan and South-Eastern Australia include for instance *Alternanthera philoxeroides* (Amaranthaceae, EPPO Alert List), *Ambrosia artemisiifolia* (Asteraceae, EPPO List of IAP), *Helianthus tuberosus* (Asteraceae, EPPO List of IAP), *Pistia stratiotes* (Araceae, EPPO Alert List).
The comparison of the exotic floras of the 2 countries allows potential invaders to be highlighted. For instance, the following species are considered to be widespread invasive alien plants of recent arrival in Japan, but have not been recorded as naturalized in Australia: *Ambrosia trifida* (Asteraceae), *Bidens frondosa* (Asteraceae), *Erechtites hieracifolia* (Asteraceae), *Erigeron annuus* (Asteraceae), *Galinsoga quadriradiata* (Asteraceae), *Rudbeckia laciniata* (Asteraceae), *Solidago gigantea* var. *leiophylla* (Asteraceae), *Barbarea vulgaris* (Brassicaceae), *Ipomoea coccinea* (Convolvulaceae), *Sicyos angulatus* (Cucurbitaceae, EPPO List of IAP), *Geranium carolinianum* (Geraniaceae), *Ammannia coccinea* (Lythraceae), *Lindernia dubia* (Linderniaceae), *Solanum carolinense* (Solanaceae).

Source: Auld B, Morita H, Nishida T, Ito M, Michael P (2003) Shared exotica: plant invasions of Japan and south eastern Australia. *Cunninghamia* **8**, 147-152.

Additional key words: invasive alien plants

Computer codes: ALRPH, AMBEL, AMBTR, AMMCO, BARVU, BIDFR, EREHC, ERIAN, GASCI, GERCA, HELTU, IPOCC, LIDDU, PIIST, RUDLA, SIYAN, SOLCA, SOOGI, AU, JP

2011/068 *Parthenium hysterophorus* in the EPPO region: addition to the EPPO Alert List

Why
Parthenium hysterophorus (Asteraceae) is an annual plant (or short-lived perennial under certain conditions) native to the subtropics of North and South America. One of its English common name is "Parthenium weed". The plant has been introduced accidentally to Australia, India, etc. Within the EPPO region, its distribution is still limited. Because this plant has shown invasive behaviour where it has been introduced elsewhere in the world and is still limited in the EPPO region, it can be considered an emerging invader in the EPPO region.

Geographical distribution
EPPO region: Israel.
Asia: Bangladesh, India, Japan, Nepal, Pakistan, Sri Lanka, Taiwan.
Africa: Ethiopia, Eritrea, Kenya, Madagascar, Mauritius, Mayotte, Mozambique, Reunion, Seychelles, Somalia, South Africa, Swaziland, Uganda, Zimbabwe.
North America: Bermuda, Mexico, USA (Alabama, Arkansas, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Missouri, Mississippi, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Virginia).

Central America and Caribbean: Cuba, Dominican Republic, Guadeloupe, Guatemala, Honduras, Jamaica, Martinique, Netherlands Antilles, Puerto Rico, Saint Barthelemy, Trinidad and Tobago.
South America: Argentina, Bolivia, Brazil, Ecuador, Peru, Paraguay, Venezuela.
Oceania: Australia (Queensland, New South Wales, Northern territory), French Polynesia, New Caledonia, Papua New Guinea, Vanuatu.

Note: in Israel, the species occurs in a date palm (*Phoenix dactylifera*) plantation.

Morphology
This erect ephemeral herb can grow up to 1.5-2 m high and has a deep tap root. It is light green with branching stems, finely lobed leaves, 3-20 cm long, 2-10 cm wide. Once stem elongation is initiated, smaller leaves are produced and the plant becomes multi-branched in its extremities. Flower heads are small (4 mm across) and numerous in open panicles. Achenes are black, obovate, 2 to 2.5 mm long and light weight.

Biology and ecology
P. hysterophorus reproduces by seeds and is known to be highly prolific, as a single plant produces 15,000 seeds on average and up to 100,000 seeds (GISD Database, 2010). Germination temperatures range from 8 to 30°C, with an optimum germination temperature of 22 to 25°C in spring and early summer. Buried seeds have been found to last longer than seeds on the soil surface, and a significant proportion can still germinate after 8 to 10 years. The seeds have the ability to undergo dormancy. In addition, the species is an opportunistic germinator and seeds can germinate at any time of the year provided moisture is available but require bare soil (Parsons & Cuthbertson, 2001 in Department of Primary Industries, Undated). The plant flowers 4 to 8 weeks after germination, and flowering continues until drought or frost kills the plant. Under favorable conditions, 4 or 5 generations per year can be completed.
The species prefers neutral to alkaline pH soils, but tolerates a wide variety of soil types. *P. hysterophorus* is best suited to areas with an annual summer rainfall greater than 500 mm. Macconnachie *et al*. (2010) performed a climatic prediction with CLIMEX for *P. hysterophorus* which concluded that the Mediterranean Basin is at risk from the species (Algeria, Croatia, France, Greece, Italy, Morocco, Spain, Tunisia, Turkey, etc.).

In which habitats
P. hysterophorus is a pioneer species which can invade grazing land, summer crops, disturbed and cultivated areas, roadsides, recreation areas, as well as river banks and floodplains. According to the Corine Land Cover nomenclature, the following habitats are invaded: arable land, permanents crops (e.g. vineyards, fruit tree and berry plantations, olive), pastures, banks of continental water, riverbanks / canalsides (dry river beds), road and rail networks and associated land, other artificial surfaces (wastelands).

Pathways
P. hysterophorus is thought to have been introduced into Ethiopia and India with contaminated cereal grain, and into Australia with contaminated pasture seed from the USA. Locally, the seeds are dispersed by wind and water usually in the order of a few meters and as a contaminant of hay, seed, harvested material, soil and by vehicles, machinery or animals over longer distances.

Impacts
P. hysterophorus aggressively colonises disturbed sites and causes major negative impacts on pastures and crops. In India, it has been observed that *P. hysterophorus* can cause yield losses of up to 40% in agricultural crops. In Ethiopia, the yield in *Sorghum bicolor* grain was

reduced from 40% to 97% when *P. hysterophorus* was left uncontrolled throughout the season. In Queensland (Australia), the species has invaded 170,000 km² of high quality grazing areas and losses to the cattle industry have been estimated to be 22 million AUS dollars per year in control costs and loss of pasture
Infestations of *P. hysterophorus* can also degrade natural ecosystems, and outcompete native species. Because the plant contains sesquiterpenes and phenolics, it is toxic to cattle. In addition, meat and milk produced from livestock that has eaten the weed can be tainted. Because of these toxic substances, *P. hysterophorus* exhibits an allelopathic effect on several other plants including crops. Frequent contact with the plant or its pollen can produce serious allergic reactions such as dermatitis, hay fever and asthma in humans and livestock, especially horses.

Control
In Australia, the authorities are imposing measures on the movements of equipment and livestock to avoid any further spread into new areas. Good pasture management practices are also recommended. Several herbicides are considered to be effective against *P. hysterophorus* (e.g. 2,4-D, atrazine, hexazinone, metsulfuron, glyphosate and dicamba). Treatments have to be applied when plants are small and have not produced seeds, and when grasses are actively growing to recolonize the infested area. Ploughing the weed before plants reach flowering stage and then establishing pasture may be effective. In addition, Australian scientists are exploring possible biological control measures and several biological control agents are being studied. For example, the release of a moth, *Epiblema strenuana* (Lepidoptera: Tortricidae), is considered, as well as the use of a rust, *Puccinia abrupta* var. *partheniicola* that affects the weed in Mexico.

Source: *Department of Primary Industries (Undated) Invasiveness Assessment - Parthenium Weed (*Parthenium hysterophorus*) in Victoria. Victoria resources on line.* *http://www.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/invasive_parthenium_weed*

Global Invasive Species Database (2010) *Parthenium hysterophorus*. http://www.issg.org/database/species/ecology.asp?fr=1&si=153&sts

Macconnachie AJ, Strathie LW, Mersie W, Gebrehiwot L, Zewdie K, Abdurehim A, Abrha B, Araya T, Asaregew F, Assefa F, Gebre-Tsadik R, Nigatu L, Tadesse B, Tana T (2010) Current and potential geographical distribution of the invasive plant *Parthenium hysterophorus* (Asteraceae) in eastern and southern Africa. *Weed research* **51**, 71-84
http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3180.2010.00820.x/pdf

Natural heritage Trust (2003) Parthenium weed (*Parthenium hysterophorus*). Weed management guide. Weeds of national significance. 6 p.
http://www.weeds.org.au/docs/parthenium_weed_mgt_guide.pdf

Pacific Island Ecosystems at Risk (Undated) *Parthenium hysterophorus*.
http://www.hear.org/pier/species/parthenium_hysterophorus.htm

Additional key words: invasive alien plants, alert list **Computer codes:** PTNHY