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POUR LA PROTECTION DES PLANTES

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EPPO *Reporting Service*

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Invasive Plants

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2006/158 First report of *Clavibacter michiganensis* subsp. *sepedonicus* in Bulgaria

The NPPO of Bulgaria recently informed the EPPO Secretariat of the first finding of potato ring rot (*Clavibacter michiganensis* subsp. *sepedonicus* – EPPO A2 list') on its territory. During the official annual survey of potato crops ('Phytosanitary control of potatoes – 2005), the presence of *C. michiganensis* subsp. *sepedonicus* was detected in samples collected in producers' warehouses. This corresponded to 1 outbreak in seed potato production plots and 3 in ware potatoes. The presence of the bacterium was confirmed by two IF tests (using different antisera), biological tests on aubergine and PCR assays. Phytosanitary measures have immediately been taken to prevent any further spread and eradicate the disease. Infected plots (20.9 ha) have been placed under quarantine. All agricultural machinery, equipment, warehouses or any object which had been in contact with infected tubers were disinfected with formalin and sodium hypochloride solutions. Potato production on infested land is prohibited for 3 years. Infected crops (230 tons) were destroyed by deep burial or burning. Investigations are continuing to trace-back all potato lots which may be related to the infested ones.
The situation of *Clavibacter michiganensis* subsp. *sepedonicus* in Bulgaria can be described as follows: **Present, first found in 2005, few outbreaks in both seed and ware potatoes (4 outbreaks on 20.9 ha), under eradication.**

Source: NPPO of Bulgaria, 2006-09.

Additional key words: new record **Computer codes:** CORBSE, BG

2006/159 Isolated finding of *Potato spindle tuber viroid* on *Solanum jasminoides* in Germany

The NPPO of Germany informed the EPPO Secretariat of an isolated finding of *Potato spindle tuber viroid* (PSTVd - EPPO A2 list). The German NPPO was informed by an EU member state that a consignment of *Solanum jasminoides* was supplied to Germany from a company where PSTVd had been identified. Plants were tested for PSTVd and found infected. At the time of testing, plants did not show any symptoms. They were kept outdoors in pots, in the surroundings of a training centre for gardeners, but as there were no other Solanaceae in their vicinity it was assumed that further spread of the viroid has not taken place. As soon as test results were obtained, all infected plants were immediately destroyed.
The pest status of *Potato spindle tuber viroid* in Germany is officially declared as follows: **Absent, single finding eradicated.**

Source: NPPO of Germany, 2006-09.

Additional key words: phytosanitary incident, eradication **Computer codes:** PSTVD0, DE

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2006/160 New pests found in Slovenia

The NPPO of Slovenia informed the EPPO Secretariat of the occurrence of the following new pests on its territory.

***Dasineura oxycoccana* (Diptera: Cecidomyidae - formerly on the EPPO Alert List)**
In September 2004, during regular inspections of planting material moving in trade, *Dasineura oxycoccana* was found on a consignment of *Vaccinium corymbosum* (36 plants) originating from Germany. Damage on young shoots and leaves was observed, as well as living larvae. *Vaccinium* growers and amateurs from the surroundings of Ljubljana and Maribor indicated that similar damage had been repeatedly observed during the past few years. Until this finding, *D. oxycoccana,* which originates from North America, had only been reported from Italy (see EPPO RS 99/045).
The situation of *Dasineura oxycoccana* in Slovenia can be described as follows: **Present, intercepted in 2004 on *Vaccinium corymbosum* plants; probably more widespread but detailed distribution data is not available.**

***Leptoglossus occidentalis* (Heteroptera: Coreidae)**
In autumn 2003, *Leptoglossus occidentalis* (leaf-footed conifer seed bug) was found for the first time in Slovenia at Brje, a village near Komen. This forest insect of American origin feeding on seeds of several conifer species was first reported in Europe in northern Italy. It was first collected in 1999 in Friuli-Venezia Giulia. It is now spreading in the area along the Slovenian-Italian border. In 2004, some specimens were caught in Ljubljana, in the central part of the country, which indicated its rapid spread towards the east. No damage has been noticed yet, as there is no important pine seed production in this area.
The situation of *Leptoglossus occidentalis* in Slovenia can be described as follows: **Present in some areas in the western part of the country.**

***Phyllocnistis vitegenella* (Lepidoptera: Gracillariidae)**
A new leafminer of grapevine (*Vitis vinifera*) originating from America, *Phyllocnistis vitegenella,* was found in Slovenia for the first time in September 2004. In Europe, the introduction of *P. vitegenella* was first reported in northern Italy in 1995 (Veneto, Friuli-Venezia Giulia). In Slovenia, pest populations are low and limited to the bordering regions with Italy. So far, no damage has been reported and no official measures have been taken.
The situation of *Phyllocnistis vitegenella* in Slovenia can be described as follows: **Present, first found in 2004 on *Vitis vinifera* along the Italian border, distribution is still limited.**

***Orientus ishidae* (Hemiptera: Cicadellidae)**
Orientus ishidae is thought to originate from Asia. In Europe, it was first reported in Switzerland in 2002. In Slovenia, it was found for the first time in 2004. So far, it is know to occur at 2 locations (Ljubljana and Nova Gorica). It was collected (with sweep nets) from willows (*Salix*) in Ljubljana while in Nova Gorica it was mainly found on various fruit trees such as apples,

cherries, and persimmon (*Diospyros kaki*). *O. ishidae* is not considered as a pest of crops, but is suspected to be a vector of phytoplasmas. It is considered to be a potential vector of phytoplasmas (such as Peach-X disease phytoplasma) in North America.
The situation of *Orientus ishidae* in Slovenia can be described as follows: **Present, limited to only 2 localities.**

Source: **NPPO of Slovenia, 2006-05.**

Additional key words: new records **Computer codes:** DASYVA, LEPLSP, PHYNSP, SI

2006/161 Incursion of *Aleurotulus nephrolepidis* in Germany

The NPPO of Germany informed the EPPO Secretariat about the first incursion of *Aleurotulus nephrolepidis* (Homoptera: Aleyrodidae) in Germany. In October 2005, typical symptoms of whitefly were observed on fern trees in a botanical garden in Brandenburg. In April 2006, the whitefly was identified as *Aleurotulus nephrolepidis*. Beneficial arthropods have been released to control the infestation and plants are not allowed to move from the infested glasshouse. The origin of this infestation is unknown.
The pest status of *Aleurotulus nephrolepidis* in Germany is officially declared as follows: **Present, single incursion; under eradication.**

EPPO note: Little information is available from the literature on this whitefly species. However, *Aleurotulus nephrolepidis* is recorded on several fern species: *Acrostichum capense, Anemia* sp., *Asplenium cuneatum, Blechnum brasiliense, B. occidentale, Cyclosorus dentatus, Diplazium proliferum, Dryopteris flaccida, Nephrodium confluens, Nephrolepis* sp., *Oleandra africana, O. articulata, Polystichum falcatum, Pteris biaurita, P. togoensis, Stenosema aurita, Tectaria molle.*
Its presence is reported in the following countries:
EPPO region: Netherlands (a population has been established on *Nephrolepis* in a botanical garden at Utrecht for more than 15 years), Portugal (Azores), Spain (Islas Canarias), United Kingdom (there is an old record of a population from Kew Gardens described as a new species, *Aleuroplatus kewensis*, later considered as a synonym of *A. nephrolepidis*; no recent data). An interception was made by UK in 1998 on plants for planting of *Cyathea dregei* imported from South Africa (EPPO RS 1998/077).
Africa: Madagascar.
America: Brazil, USA (California, Florida, Pennsylvania).

Source: NPPO of Germany, 2006-07.

Jansen MGM, Loosman AJM (2004) An annotated list of whiteflies of the Netherlands (Hemiptera: Aleyrodidae). Abstract of a paper presented at the 2nd European Whitefly Symposium (EWSII), 2004-10-05/09. Available on-line http://www.whitefly.org/ews/ewsii-

AbsCompendium.pdf
Martin JH, Mifsud D, Rapisarda C (2000) The whiteflies (Hemiptera: Aleyrodidae) of Europe and the Mediterranean Basin. *Bulletin of Entomological Research* **90**, 407-448.
Website - Whitefly fauna of the world – USDA-APHIS.
http://www.lucidcentral.org/keys/v3/whitefly/Homepage.htm

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

2006/162 Incursion of *Helicoverpa armigera* in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat of an isolated finding of *Helicoverpa armigera* (Lepidoptera: Noctuidae – EPPO A2 list). During routine surveillance, 1 L3 larva of *H. armigera* was found in a bean field (*Phaseolus vulgaris*) in the province of Zuid-Holland, near Oude-Tonge. A survey was then conducted within a radius of 1 km around the first finding. In total, 14 fields and 2 glasshouses of host plants were visually inspected. No further findings were made. Phytosanitary measures were applied in the infested field (complete destruction of the crop followed by an early ploughing).
The pest status of *Helicoverpa armigera* in the Netherlands is officially declared as follows: **Absent, pest eradicated. Surveillance confirms that the pest has not established.**

Source: **NPPO of the Netherlands, 2006-10.**

Additional key words: phytosanitary incident, eradication **Computer codes:** HELIAR, NL

2006/163 *Anastrepha manizaliensis*: a new fruit fly species in Colombia

In Colombia, a new species of fruit fly called *Anastrepha manizaliensis* (Diptera: Tephritidae) has recently been described. *A. manizaliensis* can breed on fruit of *Juglans neotropica* (Juglandaceae) which is the only known host plant, so far. It has been found in the Andean region of Colombia and specimens were collected from localities from middle elevations up to 2150 m altitude. This new species was previously confused with *Anastrepha ludens* leading to a few doubtful records of this species in Colombia. It is now considered that the currently known southern limit of *A. ludens* is western Panama and that it does not occur in Colombia.

Source: Norrbom AL, Korytkosski CA, Gonzlez F, Orduz B (2005) A new species of *Anastrepha* from Colombia related to Mexican fruit fly (Diptera: Tephritidae). *Revista Colombiana de Entomología* **31**(1), 67-70.

Additional key words: new pest, absence **Computer codes:** ANSTLU, ANSTSP, CO

2006/164 Details on the situation of forestry pests in Chile

The Ministry of Agriculture in Chile provides useful information in a recent newsletter about the situation of forestry pests on its territory.

***Gonipterus scutellatus* (Coleoptera: Curculionidae – EPPO A2 list)**
In 2005, the pest was detected in region VI, Region Metropolitana (provincia de Santiago) and region IX. In previous years, the distribution of the pest included regions IV, V, VII, VIII and the province of Chacabuco in Region Metropolitana.

***Glycaspis brimblecombei* (Homoptera: Psyllidae – EPPO Alert List)**
In February 2006, *G. brimblecombei* was detected in region IX (previously it had been also found in regions IV and VIII).

***Phoracantha recurva* (Coleoptera: Cerambycidae – formerly on the EPPO Alert List)**
In addition to regions V and VII, *P. recurva* has been found in region XII.

***Ophelimus* sp. (Hymenoptera: Eulophidae)**
In Chile, an unidentified species of *Ophelimus*, a pest of eucalyptus, was first found in February 2003 in region V, and then in regions VI, VII and Metropolitana, mainly on *Eucalyptus globulus* and to a lesser extent on *E. camaldulensis*. In 2005, it was also found in region IV.

Source: Anonymous (2006) Informativo Fitosanitario Forestal. Servicio Agricola y Ganadero. no. 3, Ministero de Agricultura, Santiago, Chile, 4 pp.

Additional key words: detailed records **Computer codes:** CL

2006/165 PCR-RFLP assay to differentiate *Liriomyza huidobrensis* from *L. bryoniae, L. trifolii* and *Chromatomyia horticola* in lettuce crops

In northern Italy, *Liriomyza huidobrensis* (EPPO A2 list) is a serious pest of lettuce crops grown in open fields. In lettuce crops, it coexists with other agromyzid species, in particular *Liriomyza bryoniae* (EU Annexes), *Liriomyza trifolii* (EPPO A2 list) and *Chromatomyia horticola* but these species have never been reported to cause yield losses. The rapid detection of *L. huidobrensis* is crucial for effective management strategies. Studies have been made in Italy to develop a PCR-RFLP assay to differentiate *L. huidobrensis* from other species commonly present in lettuce crops (*L. bryoniae, L. trifolii, C. horticola*). The possible effect of the presence of DNA belonging to the parasitic wasp *Dacnusa* spp. was also investigated. A region (approximately 1,031-bp) of the mitochondrial genome was amplified by PCR and digested by the enzymes *Pvu*II and *Sna*BI separately. Both endonucleases cut the amplicons of *L. huidobrensis* in two fragments, whereas the original band was not cleaved in the other analyzed species. The presence of parasitic wasp did not bias the assay. This PCR-RFLP assay was found rapid and reliable in separating *L. huidobrensis* (adults, pupae or larvae) from *L. bryoniae, L. trifolii* and *C. horticola*.

Source: Maseti A, Luchetti A, Mantovani B, Burgio G (2006) Polymerase Chain Reaction-restriction fragment length polymorphism assays to distinguish *Liriomyza huidobrensis* (Diptera: Agromyzidae) from associated species lettuce cropping systems in Italy. *Journal of Economic Entomology* **99**(4), 1268-1272.

Additional key words: diagnostic **Computer codes:** LIRIHU

2006/166 First report of *American plum line pattern ilarvirus* in Lebanon

In Lebanon, during a survey carried out in spring 2005, leaf symptoms ranging from mild to bright line patterns were observed in several cherry trees (*Prunus avium* cv. Feraouni) in one orchard located in the central part of Bekaa Valley. 54 samples were collected from symptomatic and asymptomatic trees, and tested by DAS-ELISA for the presence of *American plum line pattern ilarvirus* (APLPV – A2 list). 26 samples tested positive and these results were confirmed by RT-PCR. This is the first report of APLPV in Lebanon.
The situation of *American plum line pattern ilarvirus* in Lebanon can be described as follows: **Present, first detected in 2005 in 1 orchard, central part of Bekaa Valley.**

Source: Choueiri E, Myrta A, Herranz MC, Hobeika C, Digiaro M, Pallás (2006) First report of *American plum line pattern virus* in Lebanon. *Journal of Plant Pathology* **88**(2), 227.

Additional key words: new record **Computer codes:** APLPV0, LB

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2006/167 First report of stolbur phytoplasma causing bois noir on grapevine in Bulgaria

A monitoring programme for quarantine pests of grapevine was carried out in Bulgaria from 2003 to 2005. Typical symptoms of grapevine yellows were observed on samples of *Vitis vinifera* cv. Merlot in the region of Sliven. Molecular tests (PCR) confirmed the presence of stolbur phytoplasma. During this survey, grapevine flavescence dorée (EPPO A2 list) and its vector *Scaphoideus titanus* were not detected. This is the first time that stolbur phytoplasma causing bois noir on grapevine is reported from Bulgaria.

Source: NPPO of Bulgaria, 2006-09.

Additional key words: new record **Computer codes:** PHYP10, BG

2006/168 Interception of *Metamasius hemipterus* in the Netherlands on imported palm trees: addition to the EPPO Alert List

In the Netherlands, larvae of *Metamasius hemipterus* (Coleoptera: Curculionidae) were intercepted on a consignment of *Phoenix* plants for planting from Costa Rica. Serious damage was observed on the intercepted consignment. Emergency action was taken to prevent the entry of the pest. Considering the risk which may be presented by *M. hemipterus*, especially for ornamental palm species, the NPPO of the Netherlands suggested that it should be added to the EPPO Alert List.

Metamasius hemipterus (Coleoptera: Curculionidae)

Why	In 2006, larvae of *Metamasius hemipterus* (Coleoptera: Curculionidae) were intercepted by the Dutch NPPO on a consignment of plants for planting of *Phoenix* from Costa Rica. Considering the risk which may be presented by *M. hemipterus* especially for ornamental palm species, the NPPO of the Netherlands suggested that it should be added to the EPPO Alert List.
Where	**EPPO region**: Absent. It was intercepted by the Netherlands on a consignment of *Phoenix* plants from Costa Rica. There is also a record of this pest on imported banana material in the UK (Whitehead, 1991). **Africa**: Cameroon, Congo, Equatorial Guinea, Gabon, Nigeria. **Asia**: according to the CABI Crop Protection Compendium, *M. hemipterus* has a very limited distribution in Indonesia and the Philippines and is subject to phytosanitary measures. **North America**: Mexico, USA (Florida). **Central America and Caribbean**: Antigua and Barbuda, Barbados, Belize, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Montserrat, Nicaragua, Panama, Puerto Rico, Saint Lucia, St Kitts-Nevis, St Vincent and the Grenadines, Trinidad and Tobago, Virgin Islands (US). **South America**: Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Mexico, Paraguay, Peru, Suriname, Uruguay, Venezuela.

On which plants	Major hosts of *M. hemipterus* are *Cocos nucifera* (coconut), *Musa* (banana) and *Saccharum officinarum* (sugarcane), but the pest has also been recorded on other plants such as *Ananas comosus* (pineapple), *Manihot esculenta* (cassava), *Sorghum bicolor* (sorghum), *Zea mays* (maize), *Carica papaya* (papaya), *Psidium guajava* (guava), as well on many palm species (*Bactris gasipaes, Hyophorbe verschaffeltii, Iriartea ventricosa, Jessenia bataua, Phoenix canariensis, Ptychosperma macarthurii, Ravenea rivularis, Roystonea borinquena, R. regia, Washingtonia robusta*). There is no indication from the literature of whether date palm (*Phoenix dactylifera*) is a host plant of *M. hemipterus*.
Damage	Larvae bore galleries into petioles and stems of their host plants, usually in wounds but which can extend to healthy tissues. On palms, larval feeding through stems, petioles and leaves usually result in production of a gummy, amber-coloured exudate, and in chewed tissue issuing from windows in the galleries at the bases of fronds, where they break prematurely. In Florida (US), it is observed that in some cases damage can be severe on ornamental palms, but that infestations are rarely lethal. Losses in palm nursery production due to weevils (such as *M. hemipterus, Rhynchophorus cruentatus* and *Diaprepes abbreviatus*) are high and contribute to a large part of pest control costs. Adults (9 to 14 mm long) vary in colour from red to orange and black. Females are attracted to and oviposit in damaged or stressed stalks (sugarcane), ripe fruits (pineapple, mango, papaya) or palm fronds or stems. On average, a female can lay 500 eggs. Eggs hatch in about 4 days and larvae begin to feed. After about 7 weeks, larvae construct fibrous pupal cases and adults emerge 10 days later. Pictures of *M. hemipterus* and its damage can be viewed on the Internet at: http://creatures.ifas.ufl.edu/ORN/silky_cane_weevil.htm
Dissemination	Adults are mobile but there is no data on their natural spread. Over long distances, all stages living inside the plants can be moved with their host species.
Pathway	Plants for planting of host plants, cut branches.
Possible risks	Ornamental palms are important crops in the EPPO region, particularly around the Mediterranean Basin. There is no data on the susceptibility of date palm (*P. dactylifera*) to *M. hemipterus*. Data is also lacking on the climatic requirements of this species in order to evaluate its potential of establishment. Control measures are available (chemical treatments, use of biological control agents such *Beauveria bassiana* or *Steinernema carpocapsae*) but due to the cryptic habitat of the boring stages, treatments must be applied frequently and over a long period of time. Like many other palm borers, *M. hemipterus* is likely to be moved undetected in traded plants for planting. Because it might present a risk, especially to Mediterranean countries where various palm species are grown, it seems desirable that precautions should be taken to avoid its entry into the EPPO region.
Source(s)	Giblin-Davis (2001) Borers of palms. In: Insects on palms. Edited by FW Howard, Moore, D, Giblin-Davis RM, Abad, RG. CABI Publishing, Wallingford, GB, 267-304. Lepesme P (1947) Les insectes des palmiers. Edition Paul Lechevalier, Paris, France, 904 pp. Whitehead PF (1991) Some British records of exotic invertebrates. Entomologist's Monthly Magazine 127, 1520-1523 (abst.) NPPO of the Netherlands, 2006-07. INTERNET CABI Crop Protection Compendium. http://www.cabicompendium.org/cpc/home.asp University of Florida website. Featured Creatures. http://creatures.ifas.ufl.edu/ORN/silky_cane_weevil.htm
EPPO RS 2006/168	
Panel review date	- Entry date 2006-08

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2006/169 EPPO report on notifications of non-compliance

The EPPO Secretariat has gathered the notifications of non-compliance for 2006 received since the previous report (EPPO RS 2006/132) from the following countries: Austria, Belgium, Bulgaria, Cyprus, Denmark, France, Germany, Ireland, Netherlands, Poland, Slovakia, Spain, Sweden, Switzerland, United Kingdom. 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 (*).

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.

Note: The NPPO of Uruguay stresses that the total number of consignments of oranges (*C. sinensis*) from Uruguay intercepted by Spain and reported in 2005/188 and 2006/132 amounts only to 10 consignments. These 10 consignments were all intercepted in 2005 and none intercepted in 2006.

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Bemisia tabaci	*Aster*	Cut flowers	Israel	Netherlands	1
	Bacopa	Aquarium plants	Thailand	Denmark	1
	Chrysanthemum	Cut flowers	Spain (Canary Isl.)	United Kingdom	3
	Colocasia esculenta	Vegetables	India	United Kingdom	3
	Croton	Plants for planting	Sri Lanka	United Kingdom	1
	Cryptocoryne, Dracaena, Hemigraphis	Plants for planting	Singapore	United Kingdom	1
	Eryngium	Vegetables	Thailand	Denmark	1
	Eryngium	Vegetables	Zimbabwe	Netherlands	1
	Eustoma	Cut flowers	Israel	Netherlands	1
	Gardenia	Plants for planting	Egypt	Netherlands	1
	Gypsophila	Cut flowers	Israel	Netherlands	1
	Hardenbergia violacea	Plants for planting	Italy	United Kingdom	2
	Hemigraphis	Plants for planting	Singapore	United Kingdom	1
	Ipomoea	Vegetables	Gambia	United Kingdom	1
	Ipomoea	Vegetables	Sierra Leone	United Kingdom	1
	Ipomoea batatas	Vegetables	Gambia	United Kingdom	4
	Ipomoea batatas	Vegetables	Ghana	United Kingdom	2
	Lisianthus	Cut flowers	Israel	Netherlands	1
	Neptunia oleracea, Ocimum	Vegetables	Thailand	United Kingdom	1
	Ocimum	Vegetables	Israel	Netherlands	1
	Ocimum	Vegetables	Spain (Canary Isl.)	United Kingdom	1
	Ocimum basilicum	Vegetables	Israel	Netherlands	9
	Ocimum basilicum	Vegetables	Thailand	Netherlands	1
	Ocimum sanctum	Vegetables	Thailand	United Kingdom	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
***B. tabaci* (cont.)**	*Rosa*	Cut flowers	Brazil	Netherlands	2
	Rosa	Cut flowers	Israel	Netherlands	1
	Rosa	Cut flowers	Israel	Netherlands	3
	Solidago	Cut flowers	Israel	Netherlands	11
	Solidago	Cut flowers	Zimbabwe	Netherlands	8
	Solidago	Cut flowers	Zimbabwe	United Kingdom	1
	Trachelium	Cut flowers	Israel	Belgium	1
	Trachelium	Cut flowers	Israel	Netherlands	8
	Trachelium	Cut flowers	Israel	Sweden	1
	Trachelium caeruleum	Cut flowers	Israel	Netherlands	2
	Unspecified	Aquarium plants	Malaysia	Belgium	2
	Verbena	Plants for planting	Israel	United Kingdom	1
Diaphania indica	*Momordica charantia*	Vegetables	Kenya	United Kingdom	6
Globodera pallida	*Fragaria ananassa*	Plants for planting	Ukraine	Netherlands	1
Guignardia	*Citrus*	Fruits	China	Netherlands	1
	Citrus grandis	Fruits	China	Netherlands	1
	Citrus grandis	Fruits	Thailand	Netherlands	2
Guignardia citricarpa	*Citrus*	Fruits	China	Netherlands	2
	Citrus sinensis	Fruits	Brazil	Netherlands	38
	Citrus sinensis	Fruits	Brazil	Spain	2
	Citrus sinensis	Fruits	South Africa	Netherlands	16
	Citrus sinensis	Fruits	Swaziland	Netherlands	1
Helicoverpa armigera	*Capsicum annuum*	Vegetables	Uganda	United Kingdom	1
	Cucurbita	Vegetables	Zambia	Netherlands	1
	Dianthus	Cut flowers	Egypt	Netherlands	2
	Dianthus	Cut flowers	Israel	Netherlands	1
	Dianthus	Cut flowers	Kenya	Netherlands	1
	Eryngium	Vegetables	Kenya	Netherlands	1
	Eryngium	Vegetables	Zimbabwe	Netherlands	9
	Eustoma	Cut flowers	Israel	Netherlands	1
	Gypsophila	Cut flowers	Israel	Netherlands	1
	Pelargonium	Cuttings	Spain (Canary Isl.)	United Kingdom	2
	Pisum	Vegetables	Kenya	Netherlands	1
	Pisum	Vegetables	Tanzania	Netherlands	2
	Pisum sativum	Vegetables	Zambia	Netherlands	1
	Rosa	Cut flowers	Zambia	Netherlands	1
	Zea mays	Vegetables	Senegal	United Kingdom	1
Hirschmanniella	*Unspecified*	Aquarium plants	Thailand	Belgium	1
Lepidoptera	*Poaceae*	Cut flowers	South Africa	Cyprus	3
Leucinodes orbonalis	*Solanum melongena*	Vegetables	Ghana	Germany	2
	Solanum melongena	Vegetables	Thailand	Netherlands	5
	Solanum melongena, Ocimum, Citrus hystrix	Vegetables	Thailand	Germany	1
	Solanum melongena, S. torvum	Vegetables	Thailand	France	1
	Solanum torvum	Vegetables	Thailand	France	4
	Solanum torvum	Vegetables	Thailand	Netherlands	2

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Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Liriomyza	*Gypsophila paniculata*	Cut flowers	Ecuador	Sweden	2
Liriomyza huidobrensis	*Gypsophila*	Cut flowers	Ecuador	Netherlands	3
	Gypsophila	Cut flowers	Ecuador	Sweden	1
	Molucella	Cut flowers	Israel	Ireland	1
	Pisum	Vegetables	Kenya	United Kingdom	1
	Unspecified	Unspecified	Kenya	United Kingdom	1
Liriomyza sativae	*Gypsophila*	Cut flowers	Israel	Netherlands	1
	Ocimum sanctum	Vegetables	Thailand	Netherlands	1
Liriomyza trifolii	*Gypsophila*	Cut flowers	Israel	Netherlands	7
	Gypsophila, Solidago	Cut flowers	Israel	Netherlands	1
	Solidago	Cut flowers	Israel	Netherlands	1
	Solidago	Cut flowers	Zimbabwe	Netherlands	1
	Trachelium	Cut flowers	Israel	Netherlands	1
Pepino mosaic potexvirus	*Lycopersicon esculentum*	Vegetables	Spain	United Kingdom	3
	Lycopersicon esculentum	Vegetables	Spain (Canary Isl.)	United Kingdom	2
Phytophthora ramorum	*Rhododendron*	Plants for planting	Netherlands	United Kingdom	1
Puccinia	*Momordica charantia*	Vegetables	Ghana	United Kingdom	1
Scirtothrips dorsalis	*Momordica charantia*	Vegetables	Kenya	United Kingdom	2
	Solanum melongena	Vegetables	Kenya	United Kingdom	1
	Solanum melongena	Vegetables	Kenya	United Kingdom	1
Spodoptera exigua	*Allium*	Vegetables	Thailand	Netherlands	1
Spodoptera littoralis	*Eustoma*	Cut flowers	Israel	Netherlands	1
	Ocimum basilicum	Vegetables	Israel	Netherlands	1
Spodoptera litura	*Ipomoea aquatica*	Vegetables	Thailand	Netherlands	1
Thripidae	*Gypsophila*	Cut flowers	Egypt	Cyprus	1
	Mangifera indica	Fruits	Dominican Rep.	Netherlands	1
	Momordica charantia	Vegetables	Dominican Rep.	United Kingdom	2
	Momordica charantia	Vegetables	India	United Kingdom	1
	Momordica charantia, Solanum melongena	Vegetables	India	United Kingdom	1
Thrips	*Momordica*	Vegetables	Dominican Rep.	Germany	2
	Momordica, Psidium guajava	Vegetables	India	Germany	1
Thrips palmi	*Cucurbita, Solanum melongena*	Vegetables	Ghana	United Kingdom	1
	Dendrobium	Cut flowers	Singapore	United Kingdom	1
	Dendrobium	Cut flowers	Thailand	Netherlands	3
	Dendrobium	Cut flowers	Thailand	United Kingdom	4
	Dendrobium, Mokara	Cut flowers	Thailand	Netherlands	1
	Luffa	Vegetables	Ghana	Netherlands	1
	Momordica	Vegetables	India	United Kingdom	3
	Momordica	Vegetables	Suriname	Netherlands	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
***T. palmi* (cont.)**	*Momordica charantia*	Vegetables	Dominican Rep.	United Kingdom	7
	Momordica charantia	Vegetables	India	United Kingdom	5
	Momordica charantia	Vegetables	Thailand	France	1
	Momordica, Solanum melongena	Vegetables	Dominican Rep.	Germany	1
	Orchidaceae	Cut flowers	Thailand	Austria	1
	Orchidaceae	Cut flowers	Thailand	Slovakia	1
	Rosa	Cut flowers	India	Netherlands	1
	Solanum melongena	Vegetables	Dominican Rep.	Netherlands	3
	Solanum melongena	Vegetables	Suriname	Netherlands	10
	Solanum melongena	Vegetables	Thailand	Netherlands	3
Thysanoptera	*Lisianthus*	Cut flowers	Israel	Germany	1
	Punica granatum	Plants for planting	Turkey	Germany	1
Tingidae	*Solanum melongena*	Vegetables	Thailand	Netherlands	1
Trialeurodes vaporariorum	*Bracteantha bracteata*	Plants for planting	Australia	Netherlands	1
Unspecified pest	*Phoenix roebelenii, Dracaena marginata*	Plants for planting	Costa Rica	Spain	1
Xanthomonas axonopodis pv. phaseoli	*Phaseolus*	Seeds	Netherlands	Poland	1

- **Fruit flies**

Pest	Consignment	Country of origin	Destination	nb
Bactrocera dorsalis	*Annona squamosa*	Thailand	Czechia	1
Ceratitis cosyra	*Citrus sinensis*	South Africa	Netherlands	1
Ceratitis rosa	*Prunus persica var. nectarina*	Zimbabwe	Netherlands	1
Non-European Tephritidae	*Citrus reticulata*	Pakistan	Netherlands	1
	Citrus sinensis	South Africa	Netherlands	1
	Cucurbita	Ghana	United Kingdom	3
	Momordica	Thailand	Netherlands	1
	Pyrus	Uruguay	Netherlands	1

- **Wood**

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Aeolesthes	*Unspecified*	Wood and bark	Thailand	Denmark	1
Bostrychidae	*Unspecified*	Wood and bark	Indonesia	Germany	1
Bursaphelenchus	*Unspecified*	Wood and bark	Israel	Lithuania	1
Bursaphelenchus xylophilus	*Unspecified*	Wood and bark	USA	Denmark	1
Cerambycidae	*Salix*	Cut branches	China	Sweden	1
Scolytidae	*Picea, Pinus*	Wood and bark	Russia	Cyprus	1

- **Bonsais**

Pest	Consignment	Country of origin	Destination	nb
Hirschmanniella	*Carmona retusa*	China	Netherlands	1
Xiphinema	*Ilex crenata*	Japan	Belgium	1

Source: EPPO Secretariat, 2006-08.

2006/170 Eradication of *Sicyos angulatus* in maize fields in Spain

Sicyos angulatus (Cucurbitaceae, EPPO list of invasive alien plants) is a North-American weed known in central and southern Europe since at least 1978. It has been infesting maize crops in the south-west of France and in Italy since the 1980s. Although, the plant has been reported in Spain since 1995 it was confined to the riparian forests of the river Ter in Girona. However, in 2002, it was discovered in a maize field in Lleida. By 2004, five maize fields were infested by *Sycios angulatus*, on an area of approximately 6 km².

As there is no official list of problematic plants, *S. angulatus* was therefore declared a quarantine weed in Catalunya under the "Diari Oficial de la Generalitat de Catalunya" (DOGC nùm. 4315 – 2005-02-03) which establishes compulsory control measures for this plant. Farmers must notify the authorities concerned of any occurrence of the plant, and the plant must be destroyed whenever found in fields. As a result, *S. angulatus* has been eradicated from Catalunya. The destruction of the plant and its seeds also implied the destruction of field crops, for which farmers received compensation. Machinery was identified as a major pathway for local spread, and cleaning of the machinery appeared to be as important for the eradication of *S. angulatus* as the destruction of infested fields. Action plans for the near future include training of farmers so that they can recognize the plant and control it, monitoring and surveillance of the fields to detect new spots, and eradication of the plant when found.

Source: Diari Oficial de la Generalitat de Catalunya (DOGC nùm. 4315 – 03/02/2005). Department d'Agricultura, Ramaderia i pesca. Ordre ARP/10/2005.
http://www.gencat.net/diari/4315/05017116.htm

EPPO Datasheet on *Sicyos angulatus*
http://www.eppo.org/QUARANTINE/ias_plants.htm

Taberner A, Sans M (2005) Procedimiento de erradicación de *Sicyos angulatus* L. en maís. Congreso 2005 de la Sociedad Española de Malherbologia. 4pp.

Additional key words: eradication, invasive alien plants **Computer codes:** SIYAN, ES

EPPO *Reporting Service*

2006/171 Management of biological invasions: a review

Phil Hulme, Head of Ecosystem Dynamics at NERC Centre for Ecology and Hydrology (Scotland) and editor of the *Journal of applied ecology* develops his ideas on the management of biological invasions.

Although Government Departments, environmental managers and conservationists are facing practical management questions for resolving invasive alien species (IAS) problems, to date, research is more focussed on describing biological invasions than in delivering robust solutions to address all stages of the process of invasion, and only a few studies embrace the ecosystem approach.

Prevention, eradication and control form the cornerstones of recommended best practices aimed at managing IAS, **prevention** being considered the more cost-effective and environmentally desirable strategy. Prevention consists of assessing the risk of entry and establishment of a species in a given area. One approach is to use climate prediction tools to analyse the likelihood and extent of IAS establishment in a new region, using knowledge of the environmental constraints in its native range. Thus, caution must be applied when interpreting predictions based on climate matching alone. An alternative to the individual species approach is the "neural network", which models entire IAS assemblages under the assumption that these are likely to be non-random species groupings that contain hidden predictive information. The advantage of this approach is that it integrates species and bio-geographical information in a single analysis, uses widely available data on species presence-absence rather than less-accessible climate and species trait information, and can be used at regional and global scales.

Nevertheless, the high number of candidate IAS, the expense of individual risk assessment, and the investment required in inspection capacities may act against measures aiming to prevent the introduction of IAS. In this context, species-centred approaches may require revision and moving the focus instead to modelling pathways of introduction (for example, intentional introduction of species for ornamental purposes, unintentional introduction of species with consignments of soils) may prove a valuable way forward.

However, even where the tools are appropriate and available, implementation of prevention measures requires action through voluntary codes of practice.

Rapid response should be consequent on **early detection**, but, when IAS are rare, it is both difficult to detect them and to assess the risk they represent. Vigilance is often focused at the sites of likely entry (e.g. ports and airports), where the probability of interception is expected to be highest. But most of the time, sampling protocols are not implemented in a consistent and statistically designed manner. An assessment of inspection protocols and the scope for extending them to cover a wider range of IAS threats (in order to protect the natural environment and not only plant and health) would help provide guidance for future interception strategies at places of entry. Improvements in remote sensing (such as hyperspectral imagery at spatial resolution of 2 m) may play an important role in large-scale surveys of relatively visible, recognizable and immobile IAS.

Rather than responding to rare incursions, action could be mobilized at a higher abundance threshold, at which the power of detection is increased. Developing a composite indicator that tracks trends in the relative abundance of a suite of IAS with similar life histories, shared pathways and/or habitat preferences may help in taking decisions.

Concerning **management**, strategic models that identify the optimum manner in which to deploy limited resources available for management can generate valuable empirical rules. For instance, one of the earliest empirical rules emphasized the importance of targeting small, isolated populations or 'satellites' rather than a larger core IAS population because many satellites will contribute proportionally more to population expansion than a large core population.

Moreover, the assessment of management options has to be done within an ecosystem perspective, taking into account the use of native competitors, consumers and mutualists, to reviewing existing management practices as well as mitigating other environmental pressures and addressing indirect effects on community diversity and structure.

In conclusion, a comprehensive approach to IAS management should include consideration of the following: expected impacts, technical options available, ease with which the species can be targeted, risks associated with management, likelihood of success, and extent of public concern and stakeholder interest.

Source: Hulme PE (2006) Beyond control: wider implications for the management of biological invasions. *Journal of applied ecology* **43**, 835-847

Additional key words: management, invasive alien plants

2006/172 Comparison of *Oxalis pes-caprae* spread in islands and mainland areas of Spain

Islands are generally thought to be more vulnerable to biological invasions than continents. *Oxalis pes-caprae* (Oxalidaceae, EPPO list of invasive alien plants), a South-African geophyte, is considered invasive in the Mediterranean region. In Spain, a survey on *Oxalis pes-caprae* was conducted at 2000 sampling points in different habitats (coastal, urban, orchard, field margin, shrubland, forest, grassland, old fields, tree groves and ruderal) in Menorca, Mallorca (Islas Baleares) and in Murcia and Valencía, (two administrative provinces of Spain). The aim was to compare the spread of the plant between islands and the mainland. In this study, both the occurrence (number of sites where *Oxalis pes-caprae* is found) and abundance (percentage cover) were recorded.

In both island and mainland areas, the plant was most frequently found in ruderal habitats, tree groves and old fields. *O. pes-caprae* invaded a wider range of habitats and was observed to occupy a greater proportion of these vulnerable habitats on the two islands compared to the two mainland regions. Indeed, it was never found in shrubland and grassland in the mainland areas, while it was found in these habitats on the islands.

However, the abundance of *O. pes-caprae* within the sites where it occurs was similar in both islands and mainland. Therefore, at the local scale and for this species, island communities do not appear to be more easily invaded than mainland communities.

The fact that *O. pes-caprae* occupies a larger proportion of available habitats on islands may be due to:

- its strong dependence on domestic animal and human-mediated dispersal; these spread factors are probably greater on the islands than in mainland areas,
- the smaller surface area of islands and higher density of road networks that, over a comparable period of time, enables a greater proportion of available habitats to be colonized (and therefore the occurrence of the species is higher) than in equivalent larger mainland areas.

Source: Gimena I, Vilà M, Hulme PE (2006) Are islands more susceptible to plant invasion than continents? A test using *Oxalis pes-caprae* L. in the western Mediterranean. *Journal of Biogeography* **33**, 1559-1565.

Additional key words: research, islands **Computer codes:** OXAPC, ES

2006/173 Datasheets on invasive alien plants in Hungary

The illustrated book "Biological invasions in Hungary" provides datasheets in Hungarian (an English version will appear in 2007) for the following 19 invasive alien plants, describing their taxonomy, morphological traits, history of introduction, environmental requirements, positive and negative impacts, and control measures.

Species	**Family**	**Origin**
Aster novi-belgii	Asteraceae	N-America
Azolla mexicana and *A. filiculoides* (EPPO List of invasive alien plants)	Azolaceae	N & C America, Neotropical
Cabomba caroliniana (EPPO list of invasive alien plants)	Cabombaceae	Neotemperate
Celtis occidentalis	Ulmaceae	N-America
Cenchrus incertus (EPPO list of invasive alien plants)	Poaceae	Neotroprical
Echinocystis lobata	Cucurbitaceae	N-America
Eleagnus angustifolia	Eleagnaceae	C-Asia
Elodea canadensis and *Elodea nuttallii* (EPPO list of invasive alien plants)	Hydrocharitaceae	N-America
Helianthus spp.	Asteraceae	N-America
Humulus japonicus	Cannabaceae	E-Asia
Impatiens parviflora (EPPO list of invasive alien plants)	Balsaminaceae	EC-Asia
Parthenocissus spp.	Vitaceae	N-America
Phytolacca americana and *P. esculenta*	Phytolaccaceae	N-America, China
Ribes aureum	Grossulariaceae	N-America
Robinia pseudoacacia	Fabaceae	N-America
Vitis hybrids	Vitaceae	Horticultural
Xanthium strumarium subsp. *italicum*	Asteraceae	N-America

Some of these species are reported as invasive in Hungary for the first time, compared to previous published lists, such as that described previously in EPPO RS 2006/093:

- *Azolla mexicana* was previously not recorded in Hungary and is not known as invasive in other countries of the EPPO region,
- *Azolla filiculoides* was only considered casual in Hungary and is already known as invasive in the western area of the EPPO region,
- *Cabomba caroliniana* was not recorded in Hungary and is known as invasive in the Netherlands and in the United Kingdom.
- *Elodea nutallii* was recorded as casual in Hungary and is known as invasive in many countries of the north-western part of the EPPO region.

Of particular interest are the two climbers *Echinocystis lobata* and *Humulus japonicus*, which are not widely distributed in the EPPO region and may therefore represent emerging invaders.

Source: Botta-Dukát Z, Mihály B (eds.) (2006) [Biological invasions in Hungary – Invasive plants, Volume 2.]. Természet BÚVÁR Alapítvány Kiadó, Budapest, 412 pp.

Additional key words: invasive plants records, national study

Computer codes: ASTNB, AZOME, AZOFI, CETOC, CCHIN, ECLNO, ELGAN, ELDNU, 1HELG, HUMJA, IPAGL, PRTIN, PHTAM, PHTES, RIBAU, ROBPS, 1VITG, XANSI, HU

2006/174 *Humulus japonicus*: an emerging invader

Humulus japonicus (= *H. scandens*) (Cannabaceae) is an annual climber vine originating from East Asia. Its common name in English is 'Japanese hop'. In Europe, it is only recorded in France, Hungary and Italy where it showed invasive behaviour in wetlands. Because distribution is still very limited, this plant can be considered a new emerging invader.

Morphology

H. japonicus has stems growing up to 5-8 m, leaves are opposite, 5 to 6 cm long, palmate with 5 to 7 lobes. Petioles tend to be longer than the length of leaves. Stems and leaves have rough hooked hairs. Male and female flowers are on separate plants and bloom from mid to late summer. Male flowers are 5 mm in diameter, female inflorescence 15-20 mm, pale green.

Geographical distribution:

EPPO Region: the plant is recorded in southern France, western Hungary and northern Italy (Tutin *et al*., 1964-1980). The plant is known to be native in the Russian Federation. It is recorded as invasive in France, Hungary and Italy.

In France, the plant was observed as naturalized in Russan in the Gard Department in September 2004 by Sarah Brunel and Jean-Marc Tison in a degraded riparian habitat near the Gard river. It is thought to have escaped from a garden and has colonized more than 500 m², covering almost 100% of the soil layer and was less abundant on another 500 m². Both female and male plants were found. The plant has thereafter been observed as naturalized in other stations along the Gard river.

North America: USA (Alabama, Delaware, District of Columbia, Georgia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Vermont, Virginia, West Virginia, Wisconsin).

Asia (native): China, Japan, North Korea, South Korea, Taiwan, Vietnam

Biology and ecology
H. japonicus reproduces by seeds which are dispersed by wind and water. Preferring moist soils, it can form dense stands in floodplains and along stream banks and lake shores, but can also thrive in disturbed areas such as roadsides and urban lots. It can be found in full sun or shade.

Impacts
H. japonicus is a rapidly-growing vine that can form dense stands and displace native vegetation by out-competing for essential resources. This plant can be a threat to the environment when invading riparian habitats.

Control
Plants can be hand-pulled and removed from the invaded area before seeds ripen. The herbicide glyphosate can be used on foliage before plants flower.

Regulatory status
In the USA, this plant is prohibited in Connecticut and Massachusetts.

Source: Tutin TG, Heywood VH, Burges NA, Moore DM, Valentine DH, Walters SM and Webb DA (1964/80) *Flora Europeaea*, Vol 1-5. Cambridge University Press, Cambridge.

Wisconsin Department of Agricultural Resources Website
http://www.dnr.state.wi.us/invasives/fact/japanhops.htm

References for geographical distribution:
Germplasm resource information network (GRIN):
http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?19414

USDA Plant database: http://plants.usda.gov/java/profile?symbol=HUJA

Additional key words: record of invasive alien plant **Computer codes:** HUMJA, FR, IT, HU

2006/175 Flora of Israel online

The Hebrew University of Jerusalem hosts a website on the Flora of Israel. This up-to-date website provides names, characteristics, pictures and distribution maps of the 22 Pteridophyta and 2837 Spermatophyta recorded in Israel. Plants are organized not only according to their taxonomy, but searches are possible using other characters such as life forms, leaf types, habitats, distribution in Israel, etc. More than 250 botany articles from Prof. A. Danin are also available, including the Nomenclature news of Flora Palaestina.
This website maintains close relationships with its users by circulating a short monthly E-newsletter which includes links and updates regarding the site as well as useful seasonal botanical news.

Source: The Hebrew University of Jerusalem, Flora of Israel on-line
http://flora.huji.ac.il/

Additional key words: flora **Computer codes:** IL

2006/176 Weed busters - Invasive plant conference: educating professionals and volunteers

On the 9th of August 2006, an invasive plant conference was organized in New Jersey (USA) to train both professionals and volunteers for the management of invasive alien plants. Almost 150 professionals and volunteers attended this event, including nursery and landscape professionals, natural resource specialists, managers of parks, preserves and conservation districts, invasive plant management and restoration specialists, extension agents and environmental educators, public and botanic garden managers and supervisors, researchers, students and gardeners, garden and outdoor writers, golf course and recreational land managers, and home gardeners/garden club members. After a general introduction about invasive plant control, practical talks were given on how to educate, encourage and train volunteers, and how to manage invaded sites. The participants also experienced practical management methods on whether to use mechanical or chemical control on sites invaded by species such as *Ailanthus altissima* (Simaroubaceae), *Alliaria petiolata* (Brassicaceae), *Celastrus orbiculatus* (Celastraceae), *Polygonum perfoliatum* (Polygonaceae), *Reynoutria japonica* (Polygonaceae), or *Rubus phoenicolasius* (Rosaceae). Invasive plant identification was also emphasized.

Source: Weed Busters - Invasive plant conference in New Jersey, US, 2006-08-09
http://www.arboretumfriends.org/20060809Invasives/brochure.pdf

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

2006/177 Conference on effective control of *Reynoutria* spp. and other invasive alien plants in Europe (Falmouth, GB, 2007-03-21/22)

Cornwall Knotweed Forum is a partnership with representatives from a wide range of organisations including universities, local authorities, statutory agencies, non-governmental organisations (NGOs), industry, landowners and individuals. It is dedicated to promoting a co-ordinated approach for managing *Reynoutria* spp. (= *Fallopia* spp.) and other introduced invasive plants through partnerships. This forum has implemented a GIS survey recording system in association with the Botanical Society of the British Isles. It has also produced publications and guidance notes, and participated in scientific research projects. Cornwall Knotweed Forum, now ten years old, is willing to share experiences across Europe during its next conference on "Effective control of Japanese Knotweed and other Introduced Terrestrial Invasive Plants in Europe" in Falmouth (Cornwall, GB) on 2007-03-21/22.

For any enquiry: knotweed@cornwall.gov.uk

Source: Cornwall Knotweed forum website: http://www.projects.ex.ac.uk/knotweed/

Additional key words: conference, invasive alien plants **Computer codes: 1FOPG, GB**