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CONTENTS _______________________________________ *Pests & Diseases*

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2008/070 New data on quarantine pests and pests on the EPPO Alert List

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

- **New records**

Aleurocanthus woglumi (Homoptera: Aleyrodidae – EPPO A1 List) is reported for the first time from Brazil. It was found in citrus and mango crops in the state of Maranhão in 2003/2004 (de Lemos *et al.*, 2006). **Present, in the state of Maranhão**.

In Libya, symptoms of 'brittle leaf disease' of date palms (or 'maladie des feuilles cassantes' – formerly on the EPPO Alert List) have been reported near Waddan (municipality of Al Jufrah). The etiology of this disease is still unclear (Namsi *et al.*, 2007). **Present, in the region of Waddan (Al Jufrah municipality).**

Diaphorina citri (Homoptera: Aphalaridae – EPPO A1 List, vector of citrus huanglongbing) was recently detected in Iran, it was found in some parts of Hormozgan and Sistan-Baluchestan provinces. During surveys on natural ennemies, a nymphal parasitoid of *D. citri* was identified as *Psyllaephagus stenopsyllae* (Hymenoptera: Encyrtidae) (Ameri *et al.*, 2006). **Present, in the provinces of Hormozgan and Sistan-Baluchestan.**

Diaphorina citri (Homoptera: Aphalaridae – EPPO A1 List) is reported for the first time from Costa Rica (Villalobos *et al.*, 2005). **Present, no details.**

Echinothrips americanus (Thysanoptera: Thripidae) is reported to occur on glasshouse crops in Poland (Fielder, 2006). **Present, no details.**

Liriomyza trifolii (Diptera: Agromyzidae – EPPO A2 List) occurs in Iran (Talebi *et al.*, 2005). **Present, no details.**

In Southern Iran, *Maconellicoccus hirsutus* (Homoptera: Pseudococcidae – EPPO A1 List) is considered as an important pest (Moghaddam, 2006). **Present, no details.**

In Iran, *Monochamus sutor* (Coleoptera: Cerambycidae) was trapped in natural forests (Farashiani *et al.*, 2006). **Present, no details.**

Scirtothrips citri (Thysanoptera: Thripidae - EPPO A1 List) occurs in the Khūzestān Province, Iran (Akbari & Seraj, 2007). **Present, Khūzestān province**.

- **Detailed records**

Anastrapha fraterculus and *A. obliqua* (Diptera: Tephritidae – EPPO A1 List) occurs in the State of Amapá, Brazil (da Silva & da Silva, 2007).

The presence of the Q biotype of *Bemisia tabaci* (Homoptera: Aleyrodidae - EPPO A2 List) is reported for the first time in the State of Sonora, Mexico. *B. tabaci* biotype Q was identified on poinsettia plants (*Euphorbia pulcherrima*) at several nurseries (Martinez-Carillo & Brown, 2007).

Bactrocera dorsalis (Diptera: Tephritidae – EPPO A1 List) occurs in Andhra Pradesh, India (Kannan & Rao, 2006).

Bactrocera latifrons (Diptera: Tephritidae) occurs in Hainan Province, China (Lin *et al.*, 2006).

In Iran, *Clavibacter michiganensis* subsp. *michiganensis* (EPPO A2 List) was first reported from Urmiyeh in the West Azerbaijan province in 1993. In 2004-2005, a collection of 102 bacterial isolates was obtained from tomato fields in the major producing areas. 98 isolates, collected from the West Azerbaijan and Golestan Provinces, were identified as *C. michiganensis* susbp. *michiganensis* (Nazari *et al.*, 2007).

Monochamus carolinensis (Coleoptera: Cerambycidae – EPPO A1 List) occurs in Iowa, USA (Rice & Veal, 2006).

Monochamus alternatus (EPPO A1 List) and *M. urussovii* (Coleoptera: Cerambycidae) occur in Jilin Province, China (Wang *et al.*, 2007).

Pepino mosaic virus (*Potexvirus*, PePMV – EPPO Alert List) occurs in glasshouse tomatoes in Minnesota, USA. PePMV has frequently been found in association with an unknown tymovirus whose identity is currently being investigated (Lockhart, 2007).

Thrips palmi (Thysanoptera: Thripidae – EPPO A1 List) occurs in glasshouse rose crops in the State of Minais Gerais, Brazil (Carvalho *et al.*, 2005).

- **Host plants**

Studies were carried out in Idaho and Washington states in the USA to determine the potential weed hosts of *Iris yellow spot virus* (*Tospovirus*, IYSV – EPPO Alert List). The presence of IYSV could be detected (ELISA, RT-PCR, sequencing) in the following weed species growing in infected onion fields or in their vicinity: *Amaranthus retroflexus* (Amaranthaceae), *Chenopodium album* (Chenopodiaceae), *Kochia scoparia* (Chenopodiaceae), *Lactuca serriola* (Asteraceae), *Tribulus terrestris* (Zygophyllaceae) (Sampangi *et al.*, 2007).

Source:
Akbari L, Seraj AA (2207) Predacious mites for control of citrus thrips, *Scirtothrips citri* (Thysanoptera: Thripidae) in nursery citrus. *Proceedings of the XVI International Plant Protection congress, Glasgow (GB), 2007-10-15/18*, 312-313.
Ameri A, Talebi AA, Xu ZH, Rakhshani E (2006) [Report of *Psyllaephagus stenopsyllae* (Hym.: Encyrtidae) from Iran.] *Journal of Entomological Society of Iran* **25**(2), 83-84 (abst.).
Carvalho AR, Bueno VHP, Diniz AJF (2005) Thrips (Thysanoptera) in protected rose crops in Brazil. *Bulletin OILB/SROP* **28**(1), 39-42 (abst.).
Da Silva WR, da Silva RA (2007) [Survey of fruit flies and its parasitoids in Ferreira Gomes, Amapá State.] *Ciência Rural* **37**(1), 265-268 (abst.).
De Lemos RNS, da Silva GS, Araújo JRG, Das Chagas EF, Moreira AA, Soares ATM (2006) [Occurrence of *Aleurocanthus woglumi* Ashby (Hemiptera: Aleyrodidae) in the State of Maranhão, Brazil.] *Neotropical Entomology* **35**(4), 558-559 (abst.).
Farashiani E, Yarmand H, Tavakoli M, Sedghian B, Al-Mansoor H, Ahmadi SMM (2006) [An introduction to important xylophagous pests (longhorn beetles) of Iran.] *Iranian Journal of Wood and Paper Science Research* **20**(2), 207-236 (abst.).
Fielder Ż (2006) [Biological control of thrips in glasshouse crops.] *Ochrona Roślin* **51**(5), 11-12 (abst.).

Kannan M, Rao NV (2006) Ecological studies on mango fruit fly, *Bactrocera dorsalis* Hendel. *Annals of Plant Protection Sciences* **14**(2), 340-342 (abst.).
Lin MG, Yang ZJ, Wang XJ, Li JY, Li WD (2006) [A taxonomic study of the subfamily Dacinae (Diptera: Tephritidae) from Hainan, China.] *Acta Entomologica Sinica* **49**(2), 310-314 (abst.).
Lockhart BE (2007) Characterization of a tymovirus occurring in greenhouse-grown tomatoes in Minnesota. *Phytopathology* **97**(7 supplement), S67.
Martinez-Carillo JL, Brown, JK (2007) First report of the Q biotype of *Bemisia tabaci* in Southern Sonora, Mexico. *Phytoparasitica* **35**(3), 282-284.
Moghaddam M (2006) The mealybugs of southern Iran (Hem.: Coccoidea: Pseudococcidae). *Journal of Entomological Society of Iran* **26**(1), 1-11 (abst.)
Namsi A. Montarone M, Serra P, Ben Mahmoud O, Takrouni ML, Zouba A, Khoualdia O, Bové JM, Duran-Vila N (2007) Manganese and brittle leaf disease of date palm trees. *Journal of Plant Pathology* **89**(1), 125-136.
Nazari F, Niknam GR, Ghasemi A, Taghavi SM, Momeni H, Torabi S (2007) Investigations on strains of *Clavibacter michiganensis* subsp. *michiganensis* in North and North West of Iran. *Journal of Phytopathology* **155**(9), 563-569.
Rice ME, Veal DA (2006) New distribution and adult host records for longhorned beetles (Cerambycidae) from Iowa. *Coleopterists Bulletin* **60**(3), 255-263 (abst.).
Sampangi R, Druffel K, Mohan K, Pappu H (2007) New weed hosts for *Iris yellow spot virus*. *Phytopathology* **97**(7 supplement), S103.
Talebi AA, Asadi R, Fathipour Y, Kamali K, Moharramipour S, Rakhshani E (2005) Eulophid parasitoids of agromyzid leafminers genus *Liriomyza* (Dip.: Agromyzidae) in Tehran, Iran. *Bulletin OILB/SROP* **28**(1), 263-266 (abst.).
Villalobos W, Hollis D, Godoy C, Rivera C (2005) First report of *Diaphorina citri* (Hemiptera: Psyllidae) in Costa Rica. *Insecta Mundi* 19(3), 191-192 (abst.).
Wang ZM, Pi ZQ, Hou B (2007) [Account of the genus *Monochamus* Guerin-Meneville in Jilin Province.] *Journal of Jilin Agricultural University* **29**(1), 41-43 (abst.).

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

Computer codes: ALECWO, ANSTOB, ANSTST, BEMITA, CORBMI, DACUDO, DACULA, DIAACI, ECHTAM, IYSV00, LIRITR, MONCCA, MONCSU, PHENHI, SCITCI, THRIPL, BR, CR, IN, IR, IR, MX, PL, US, US, BR, CN

2008/071 First report of *Gibberella circinata* in Italy

Since 2005, symptoms of pitch canker have been observed in Apulia (Southern Italy) on numerous trees of *Pinus halepensis* and *P. pinea* in urban parks and gardens. Affected trees showed withering of needles, twigs and branches and dieback leading to crown decline. Bleeding cankers with abundant resin were visible on twigs and branches. A species of *Fusarium* was consistently isolated from affected plant tissues. Studies (morphology, PCR, inoculation tests) were conducted and the fungus was identified as *Fusarium circinatum* (teleomorph *Gibberella circinata* – EPPO A1 List). There had been an unconfirmed report of *G. circinata* in the past, but this is the first published and confirmed record of pitch canker in Italy.
The situation of *Gibberella circinata* in Italy can be described as follows: **Present, first reported in 2005 in Apulia on *Pinus halepensis* and *P. pinea* in urban parks and gardens.**

Source: Carlucci A, Colatruglio L, Frisullo S (2007) First report of pitch canker caused by *Fusarium circinatum* on *Pinus halepensis* and *P. pinea* in Apulia (Southern Italy). *Plant Disease* **91**(12), p 1683.

Additional key words: new record

Computer codes: GIBBCI, IT

2008/072 *Ralstonia solanacearum* race 3 biovar 2 found in Mauritius

In Mauritius, two outbreaks of bacterial wilt (caused by *Ralstonia solanacearum* – EPPO A2 List) were recently observed in seed potato fields on different cultivars, at altitudes of approximately 90 m (one in October 2005 in the south, and the other in September 2006 in the north). In Mauritius, although *R. solanacearum* has been regularly found, all isolates belonged to race 1 biovar 3. But in October 2005 and September 2006, *R. solanacearum* race 3 biovar 2 was identified for the first time in potato crops, as well as in weed species (*Solanum americanum, Lycopersicon pimpinellifolium, Oxalis latifolia*). It is considered that *R. solanacearum* race 3 biovar 2 has recently been introduced onto the island, most probably with latently infected seed potato tubers.

Source: Khoodoo MHR, Ganoo ES, Saumtally S (2007) First report of *Ralstonia solanacearum* race 3 biovar 2A infecting potato and weeds in Mauritius. *Plant Disease* **91**(9), p 1200.

Additional key words: detailed record **Computer codes:** PSDMS3, MU

2008/073 First report of *Xylella fastidiosa* in avocado (*Persea americana*)

Since the late 1990s, chlorotic mottling, marginal scorch, deformation of leaves, defoliation, shortening of internodes, and branch dieback have been observed in avocado trees (*Persea americana*) in Costa Rica. The symptoms were not uniformly distributed in the trees (only some branches were symptomatic) and resembled those of leaf scorch diseases caused by *Xylella fastidiosa* (EPPO A1 List). In Costa Rica, *X. fastidiosa* occurs on coffee and citrus trees. From 2000 to 2004, 227 avocado trees were tested for the presence of *X. fastidiosa* (DAS-ELISA) and 188 were found positive. Transmission studies and molecular tests (electron microscopy, PCR) confirmed the presence of the bacterium in diseased trees. This is the first report of *X. fastidiosa* in avocado trees.

Source: Montero-Astúa, Saborío G, Chacón-Díaz C, Garita L, Villalobos W, Moreira L, Hartung JS, Rivera C (2008) First report of *Xylella fastidiosa* in avocado in Costa Rica. *Plant Disease* **92**(1), p 175.

Additional key words: new host plant **Computer codes:** XYLEFA, CR

2008/074 Bacterial leaf scorch of blueberry: a new disease caused by *Xylella fastidiosa*

During the last 5 years, a new disease initially described as 'yellow twig' and then as 'bacterial leaf scorch' has been observed on blueberries (*Vaccinium* spp.) in the south of Georgia, USA. Initial symptoms are leaf marginal chlorosis which then enlarges to the whole leaf. Early leaf fall occurs, and thin, yellow twigs become apparent on some cultivars. Studies carried out in 2006-2007 (ELISA, inoculation tests to verify Koch's postulates) confirmed that the causal agent of 'bacterial leaf scorch' of *Vaccinium* is *Xylella fastidiosa* (EPPO A1 List). Initial field surveys conducted in summer 2007 showed that bacterial leaf scorch has the potential to become a major threat to blueberry production in Georgia, especially on highbush blueberry cultivars (hybrids of *V. corymbosum, V. ashei, V. darrowi*). So far, little is known about the blueberry strain of *X. fastidiosa*. In the field, the disease only causes problems in southern highbush blueberry cultivars and it is not known whether it could affect other types of *Vaccinium* (in particular, *V. ashei*). It is assumed that *X. fastidiosa* is transmitted through propagation of infected plants but this has not been demonstrated in *Vaccinium*. The role of insect vectors also needs to be studied further. It is supposed that *Homalodisca vitripennis* which is abundant in the south of Georgia and known to be a vector of peach phony and grapevine Pierce's disease, plays an important role in disease spread. Further research will be carried out to better understand the epidemiology of *X. fastidiosa* in *Vaccinium* crops and to develop control strategies.

Source: Chang C, Brannen P, Krewer G, Boland R, Donaldson R (2007) Bacterial leaf scorch of blueberry: a new disease caused by *Xylella fastidiosa*. *Phytopathology* **97**(7 suppl.), S20.

Internet (last retrieved in 2008-03)
University of Georgia (US). Cooperative Extension. Bacterial Leaf Scorch of Blueberry by Phillip M Brannen, Gerard Krewer, Bob Boland, Dan Horton, CJ Chang.
http://pubs.caes.uga.edu/caespubs/pubcd/C922/C922.htm

Additional key words: new host plant **Computer codes:** XYLEFA, US

2008/075 *Curtobacterium flaccumfaciens* pv. *beticola*: a new pathogen of sugar beet in China

A new bacterial leaf spot disease of sugar beet (*Beta vulgaris*) was first observed in 1995 in Neimenggu (Inner Mongolia), China. Affected plants initially show small, yellow leaf spots which became brown with a yellow halo. After 1 month, spots coalesced to form brown patches. Finally, the entire leaves desiccate and die. So far, the disease has only been observed in sugar beet fields near Linhe City. In severely affected fields, crop losses reached 100%. A bacterium was isolated from diseased leaves in 1995, 1996 and 1998. It was identified as a new pathovar of *Curtobacterium flaccumfaciens* and called *Curtobacterium flaccumfaciens* pv. *beticola*.

Source: Chen YF, Yin YN, Zhang XM, Guo JH (2007) *Curtobacterium flaccumfaciens* pv. *beticola*, a new pathovar of pathogens in sugar beet. *Plant Disease* **91**(6), 677-684.

Additional key words: new pest **Computer codes:** CN

2008/076 Incursion of *Potato spindle tuber viroid* on tomatoes in Belgium

In Belgium, tomato plants (*Lycopersicum esculentum*) showing severe growth reduction with chlorosis and distortion of the young leaves were observed in one glasshouse, in August 2006. As the disease had been spreading slowly along the row, it suggested the presence of a viroid. A sample was collected and laboratory analysis (RT-PCR, sequencing) revealed the presence of *Potato spindle tuber viroid* (*Pospiviroid*, PSTVd – EPPO A2 List). Investigations were carried out to trace the origin of this infection. It was found that in November 2005, 8-day-old tomato seedlings raised from seed by a Dutch nursery were transferred to a small part of the glasshouse of the Belgian grower; 7 to 8 weeks later, the plants were transplanted to their final destination. In May 2006, the grower first observed growth reduction in a single plant; several weeks later, similar symptoms were observed in two more plants in the same row close to the first symptomatic plant; and by September,

there were approximately 20 symptomatic tomato plants, all located in two adjacent rows. This PSTVd outbreak was fully eradicated by destroying all tomato plants in the affected rows, as well as in adjacent rows (2 rows on both sides). The absence of further infections was confirmed by testing approximately 1 200 tomato plants in pooled samples for PSTVd by RT-PCR and real-time RT-PCR.
The situation of *Potato spindle tuber viroid* in Belgium can be described as follows: **Absent, detected in 2006 in one tomato glasshouse, eradicated.**

Source: Verhoeven JTJ, Jansen CCC, Roenhorst JW, Steyer S, Michelante D (2007) First report of *Potato spindle tuber viroid* in tomato in Belgium. *Plant Disease* **91**(8), p 1055.

Additional key words: phytosanitary incident **Computer codes:** PSTVD0, BE

2008/077 First report of *Tomato apical stunt viroid* in Tunisia

In May 2005, the Plant Protection Service in the Netherlands received two samples of tomato plants (*Lycopersicon esculentum*) for diagnosis. These samples had been collected from a tomato glasshouse (2.5 ha) located near Kebili in Tunisia. Growth of the plants was reduced and leaves were chlorotic and brittle. Ripening of the fruits was delayed and their storage life was reduced from 3 weeks to 1 week. The grower reported that initially only 5% of plants showed symptoms; however, with the increase of temperatures in the production facility the number of symptomatic plants quickly reached 100%. Laboratory tests (indicator plants, RT-PCR, sequencing) confirmed the presence of *Tomato apical stunt viroid* (Pospiviroid, TASVd – EPPO Alert List) in affected tomato plants. This is the first report of TASVd in Tunisia.
The situation of *Tomato apical stunt viroid* in Tunisia can be described as follows: **Present, first found in 2005, in one tomato glasshouse near Kebili.**

Source: Verhoeven JTJ, Jansen CCC, Roenhorst JW (2006) First report of *Tomato apical stunt viroid* in tomato in Tunisia. *Plant Disease* **90**(4), p 528.

Additional key words: new record **Computer codes:** TASVD0, TN

2008/078 First report of *Tomato chlorosis virus* in Turkey

In Turkey, tomato plants (*Lycopersicon esculentum*) showing symptoms of a virus disease were observed in several glasshouses in the province of Muğla (Aegean region). The presence of whiteflies (*Bemisia tabaci* and *Trialeurodes vaporariorum*) was also observed on diseased crops. Affected plants showed symptoms of interveinal leaf chlorosis with brown necrotic flecks resembling those of *Tomato chlorosis virus* and *Tomato infectious chlorosis* (both *Crinivirus* – EPPO A2 List). Molecular tests (RT-PCR) revealed the presence of *Tomato chlorosis virus* (ToCV) but *Tomato infectious chlorosis virus* was not detected. This is the first report of ToCV in Turkey.
The situation of *Tomato chlorosis virus* in Turkey can be described as follows: **Present, first reported in 2007, found on a few glasshouse tomato crops (Muğla province).**

Source: Çevik B, Erkış G (2007) First report of *Tomato chlorosis virus* in Turkey. New Disease Reports, Volume 16 (August 2007-January 2008).
http://www.bspp.org.uk/ndr/jan2008/2007-79.asp

Additional key words: new record **Computer codes:** ToCV00, TR

2008/079 First report of *Tomato chlorosis virus* in Mayotte, France

In November 2005, a survey was carried out on glasshouse tomato crops (*Lycopersicon esculentum*) on the Island of Mayotte (FR). Yellow leaf symptoms were observed on the lower and middle leaves of tomato plants from the northern (Koungou), western (Chiconi and Combani) and southern (Chirongui) regions. Because symptoms resembled those caused by *Tomato chlorosis virus* (*Crinivirus*, ToCV – EPPO A2 List) which had been observed in 2004 in Réunion (see EPPO RS 2005/066), samples were collected and tested for the presence of ToCV. Molecular tests (RT-PCR with different types of specific primers and sequencing) confirmed the presence of ToCV in affected tomatoes. This is the first report of ToCV in Mayotte.
The situation of *Tomato chlorosis virus* in Mayotte can be described as follows: **Present, first reported in 2007 on glasshouse tomatoes.**

Source: Massé D, Lefeuvre P, Delatte H, Abdoul Karime AL, Hostachy B, Reynaud B, Lett JM (2007) *Tomato chlorosis virus*: first report in Mayotte Island. New Disease Reports, Volume 16 (August 2007-January 2008).
http://www.bspp.org.uk/ndr/jan2008/2007-69.asp

Additional key words: new record **Computer codes:** ToCV00, YT

2008/080 The tomato 'marchitez' disease in Mexico is caused by a new virus

In Mexico, tomato growers in Sinaloa, Sonora and Baja California recently observed the emergence of a new disease which was called 'marchitez' or 'marchitez manchada'. Symptoms commonly include necrotic growing apices, elongated necrotic lesions on stems, and less commonly, ringspots on green fruits. Initially, the disease was thought to be caused by a new strain of *Tomato spotted wilt virus* (*Tospovirus*) but studies revealed the presence of a new virus. A virus with small isometric particles was isolated and characterized from tomato samples showing severe symptoms of 'marchitez' and collected from the Culiacan area (Sinaloa state). In the Culiacan area, this new virus was found to be widely distributed in symptomatic tomato plants. Whiteflies and aphids were present throughout the season when samples were collected but their involvement in 'marchitez' epidemics is not known. Molecular studies showed that this new virus showed greatest similarity with members of the *Sequiviridae* family and was tentatively called Tomato apex necrosis virus (Turina *et al.*, 2007).

Almost simultaneously, another team of researchers isolated a new virus with small isometric particles from tomato plants affected by 'marchitez' in the state of Sinaloa, Mexico. This new virus was found related to, but distinct from, Tomato torrado virus and was tentatively called Tomato marchitez virus. It is also proposed that it should be assigned to a new plant virus genus called Torradovirus (Verbeek *et al.*, 2008).

Source: Turina M, Ricker MD, Lenzi R, Masenga V, Ciuffo M (2007) A severe disease of tomato in the Culiacan area (Sinaloa, Mexico) is caused by a new picorna-like viral species. *Plant Disease* **91**(8), 932-941.

Verbeek M, Dullemans AM, van den Heuvel JFJM, Maris PC, van der Vlugt RAA (2008) Tomato marchitez virus, a new plant picorna-like virus from tomato related to tomato torrado virus. *Archives of Virology* **153**(1), 127-134 (abst.).

Additional key words: new pest **Computer codes:** MX

2008/081 First report of *Iris yellow spot virus* in South Africa

In South Africa, typical symptoms of *Iris yellow spot virus* (*Tospovirus*, IYSV – EPPO Alert List) were observed in an onion (*Allium cepa*) seed crop in the region of Klein Karoo (Western Cape Province), in December 2006. The crop was 2 to 3 weeks from harvest and at the time symptoms were observed, approximately 5% of the scapes (seed stalks) had lodged because of the presence of extensive lesions. Symptomatic tissues from 2 plants were tested (RT-PCR, sequencing) and the presence of IYSV was confirmed. In South Africa, approximately 6 100 ha of onion bulb crops are grown annually in the Western Cape, Kwazulu Natal, Limpopo, and Northern Cape provinces, and 600 ha of onion seed crops are grown primarily in the semi-arid regions of the Western Cape. Examination of an additional 10 onion seed crops in the Klein Karoo region in January 2007 revealed the presence of IYSV in three more crops (with a disease incidence of approximately 5%). This is the first report of IYSV in South Africa.
The situation of *Iris yellow spot virus* in South Africa can be described as follows: **Present, first found in 2006 in four onion crops, Western Cape Province.**

Source: du Toit LJ, Burger JT, McLeod A, Engelbrecht M, Viljoen A (2007) *Iris yellow spot virus* in onion seed crops in South Africa. *Plant Disease* **91**(9), p 1203.

Additional key words: new record **Computer codes:** IYSV00, ZA

2008/082 Incursion of bois noir phytoplasma on grapevine in Canada

During summer and autumn 2006, a survey on grapevine phytoplasma was carried out in Canadian vineyards. Grapevines imported from Europe and established grapevines were observed for the presence of typical symptoms of grapevine yellows. Samples were collected and tested from 155 grapevines. One plant located in the lower Okanagan Valley in British Columbia tested positive for the presence of a phytoplasma. Further analysis confirmed the presence of the bois noir phytoplasma (Stolbur phytoplasma – EPPO A2 List) which is of quarantine significance to Canada. No other phytoplasmas (i.e. flavescence dorée or Western X disease) was detected. This infected grapevine was part of a lot of 1 965 plants which had been imported from Europe in 2006. The whole lot was destroyed.

In 2007, 2 grapevines were also found infected by bois noir in Ontario. These plants had been imported from France, before mandatory hot water treatments were required for imports of grapevines to Canada. All infected plants were destroyed in November 2007. Further surveys carried out in the vicinity of these infected plants did not detect other infections. It is also noted that the known vector of bois noir, *Hyalesthes obsoletus*, does not occur in North America. It is felt that bois noir has been eradicated from Canada but surveys will be carried out during successive growing seasons to verify its absence.
The pest status of bois noir phytoplasma (Stolbur phytoplasma) in Canada is officially declared as follows: **Absent, pest eradicated.**

Source: Rott M, Johnson R, Masters C, Green M (2007) First report of bois noir phytoplasma in grapevine in Canada. *Plant Disease* **91**(12), p 1682.

INTERNET (last retrieved in 2008-04)
NAPPO Phytosanitary Alert System. Canada Official Pest Reports (2007-12-21) Bois noir phytoplasma infected plants found in Ontario, Canada.
http://www.pestalert.org/oprDetail.cfm?oprID=303

Additional key words: phytosanitary incident **Computer codes:** PHYP10, CA

2008/083 Studies on the transmission of the sugar beet disease syndrome of 'basses richesses' by insect vectors

In France, a new disease of sugar beet of complex etiology and called 'syndrome des basses richesses' was first observed in Bourgogne in 1991 (EPPO RS 2002/017 and 2002/084). A similar syndrome was also reported from Hungary in 2005 (EPPO RS 2006/085). The disease is mainly characterized by low sugar content in the roots of affected plants. Earlier studies have revealed the presence of a stolbur phytoplasma ('*Candidatus* Phytoplasma solani') and a bacterium-like organism related to '*Candidatus* Phlomobacter fragariae'* (herein called SBR bacterium for convenience) in diseased sugar beet plants. It has also been shown that an insect vector which was first identified as *Pentastiridius beieri* but now confirmed as *Pentastiridius leporinus* (Homoptera: Ciixidae) might be involved in disease transmission. Further studies have been carried out in France to clarify the role of three planthopper species living near or within sugar beet fields in spreading the two pathogens. The following leafhopper species were studied: *Cixius wagneri, Hyalesthes obsoletus* and *P. leporinus* (Homoptera: Ciixidae). As a result, *P. leporinus* was considered to be the economic vector of the syndrome of 'basses richesses' based on its abundance and high frequency of infection with the SBR bacterium. *C. wagneri* which has been demonstrated to transmit '*Ca.* Phlomobacter fragariae' to strawberry was also found to be infected with the SBR bacterium and able to transmit it to sugar beet, however it is considered as a secondary vector. Neither *C. wagneri* nor *P. leporinus* were infected by '*Ca*. Phytoplasma solani'. Populations of *H. obsoletus* (a known vector of '*Ca*. Phytoplasma solani') living on weeds (*Convolvulus arvensis* and *Urtica dioica*) did not carry the SBR bacterium but were highly infected with two distinct isolates of '*Ca*. Phytoplasma solani'. In transmission assays, only the phytoplasma isolated from *C. arvensis* was transmissible and pathogenic to sugar beet.

* '*Candidatus* Phlomobacter fragariae' is a γ-3 proteobacterium associated with marginal chlorosis of strawberry in western France.

Source: Bressan A, Sémétey O, Nusillard B, Clair D, Boudon-Padieu E (2008) Insect vectors (Hemiptera: Cixiidae) and pathogens associated with the disease syndrome 'Basses Richesses' of sugar beet in France. *Plant Disease* **92**(1), 113-119.

Additional key words: etiology, epidemiology **Computer codes:** PHYP10, PHMBFR, FR

2008/084 First report of a strawberry disease resembling 'marginal chlorosis' in Italy

In autumn 2005 and 2006, strawberry plants showing symptoms resembling those of 'marginal chlorosis' were observed in nurseries and strawberry fields in several provinces of Emilia-Romagna, Italy. Marginal chlorosis is an infectious disease which was reported in France and found to be associated with a γ-3 proteobacterium ('*Candidatus* Phlomobacter fragariae') and stolbur phytoplasma ('*Candidatus* Phytoplasma solani' - EPPO A2 List). In France, '*Ca*. P. fragariae' was considered to be the prevalent agent of the disease in the field (see EPPO RS 2005/104).
In Italy, affected strawberry plants showed conspicuous stunting and poor root systems. Older leaves showed upward rolling and a marked purple discoloration, while young leaves were cupped, chlorotic, generally reduced in size with shortened petioles. Leaf samples were collected and tested by PCR for the presence of '*Ca*. P. fragariae' and '*Ca*. P. solani'. 13 field samples (out of 36) and 1 nursery sample (out of 31) tested positive for the presence of '*Ca*. P. fragariae'. 21 samples from nurseries and 5 from production fields tested positive for '*Ca*. P. solani'. Molecular studies (comparisons of sequences of PCR products and of the 16S rDNA gene) showed that the γ-3 proteobacterium isolated from strawberry in Italy presented higher sequence homology with the 'syndrome des basses richesses proteobacterium*' than with '*Ca*. P. fragariae'. Further work is being carried out in Italy to investigate incidence, geographical distribution, epidemiology, and host range of this γ-3 proteobacterium found on strawberry.

* Syndrome des basses richesses is a disease of sugar beet characterized by a low sugar content in the roots which was first reported in France in 1991. It is also of complex etiology, being associated with '*Ca*. Phytoplasma solani' and with a γ-3 proteobacterium closely related to, but distinct from, '*Candidatus* Phlomobacter fragariae'. In sugar beet fields, 'syndrome des basses richesses' is transmitted by ciixid insects (see also EPPO RS 2008/083).

Source: Terlizzi F, Babini AR, Lanzoni C, Pisi A, Credi R, Foissac X, Salar P (2007) First report of a γ 3-proteobacterium associated with diseased strawberries in Italy. *Plant Disease* **91**(12) p 1688.

Additional key words: new pest **Computer codes:** PHMBFR, PHYP10, IT

2008/085 Slovenian population of *Xiphinema rivesi* can transmit *Tobacco ringspot virus* and *Tomato ringspot virus*

Xiphinema rivesi (EPPO A2 List) is a member of the *X. americanum* group which was detected for the first time in Slovenia in 2002 (EPPO RS 2003/036). *X. rivesi* is known to be a vector of at least four North American nepoviruses: *Cherry rasp leaf virus* (EPPO A1 List), *Tobacco ringspot virus* (TRSV, EPPO A2 List), *Tomato ringspot virus* (ToRSV, EPPO A2 List), *Peach rosette mosaic virus* (EPPO A1 List). So far, none of the *Xiphinema* species found in Europe have been reported to transmit these nepoviruses. Laboratory studies were carried out to determine whether the Slovenian population of *X. rivesi* could transmit TRSV and ToRSV.
Three virus isolates, TRSV (from *Lobelia*), ToRSV (from grapevine) and *Arabis mosaic virus* (from *Vinca*, negative control as this virus is not transmitted by *X. rivesi*) were used. Nematodes were extracted from the soil of an infested peach orchard near the village of Dornbek, Slovenia. Transmission tests were carried out using cucumber plants (*Cucumis sativus* cv. Eva) as acquisition and transmission hosts. Results showed that *X. rivesi* could acquire TRSV and ToRSV from artificially inoculated cucumber plants and then transmit both viruses to healthy cucumber plants which developed systemic symptoms. This is the first report of transmission of TRSV and ToRSV by a *Xiphinema* population from Europe.

Source: Širca S, Geric Stare B, Mavrič Pleško I, Višček Marn M, Urek G, Javornik B (2007) *Xiphinema rivesi* from Slovenia transmit *Tobacco ringspot virus* and *Tomato ringspot virus* to cucumber bait plants. *Plant Disease* **91**(6), p 770.

Additional key words: epidemiology **Computer codes:** XIPHRI, TORSV0, TRSV00, SI

2008/086 PCR tests to identify *Elsinoe australis* and *E. fawcettii*

The causal agents of citrus scab, *Elsinoe australis* and *E. fawcettii* (both EU Annexes) cannot be readily distinguished by morphological or cultural characteristics but only by their host range and molecular characteristics (i.e. ITS region sequences). New PCR tests have now been developed to distinguish between *E. australis* and *E. fawcettii*. In addition, specific primer pairs were developed to differentiate between the sweet orange (*Citrus sinensis*) and natsudadai (*C. natsudadai*) pathotypes within the species *E. australis*. These PCR methods were successfully used both on fungal cultures and infected plant tissues (directly from fruit and leaf lesions).

Source: Hyun JW, Peres NA, Yi SY, Timmer LW, Kim KS, Kwon HW, Lim HC (2007) Development of PCR assays for the identification of species and pathotypes of *Elsinoë* causing scab on citrus. *Plant Disease* **91**(7), 865-870.

Additional key words: diagnostics **Computer codes:** ELSIAU, ELSIFA

2008/087 Impact assessment of invasive alien plants in Belgium

The Belgian Forum on Invasive Species gathers scientific information on the presence, distribution, ecology and adverse impacts of invasive alien species. Information on alien species introduced by man on the Belgian territory or in neighbouring areas from 1500 to date is stored in a database called Harmonia. Species included in the system are allocated to different categories based on a simplified environmental impact assessment and geographical distribution in Belgium. It includes diverse taxonomic groups from terrestrial, freshwater and marine environments. Only organisms that are already established in Belgium or in neighbouring areas with similar eco-climatic conditions (Germany, Ireland, Luxembourg, Netherlands, Northern France, Switzerland and United Kingdom) are taken into consideration to be integrated in the system. The data included in the system refers as much as possible to available published literature and on-line databases dedicated to invasive alien species, and to information from field surveys.

The objective of this process is to group alien species into different categories and to identify those for which preventive and/or mitigation actions are necessary. Contrary to pest risk assessments protocols which are mainly based on species' intrinsic attributes to evaluate invasion likelihood, this approach favours the use of documented invasion histories to assess their potential to cause adverse ecological effects in Belgium.

In this process, the 4 following factors (spread, colonization, impacts on native species and ecosystems) are assessed, and scores are attributed according to the level of risk which is perceived. In this scoring system, an equal weight is attributed to each item.

- low risk: score=1
- medium risk: score=2
- high risk: score=3

1. <u>The potential of an organism to spread</u> in the environment by natural means and/or by human activities:

  - Low risk: the species does not spread into the environment because of poor dispersal capacities and a low reproduction potential. E.g.: *Aesculus hippocastanum, Zea mays*
  - Medium risk: except when assisted by man, the species does not colonise remote places. Natural dispersal rarely exceeds more than 1 km per year. The species can however become locally invasive because of a strong reproduction potential. E.g.: *Robinia pseudacacia*
  - High risk: the species is highly fecund, can easily disperse through active or passive means over distances >1km/year and initiate new populations. Are to be considered plant species that take advantage of anemochory (e.g. *Senecio inaequidens*), hydrochory (e.g. *Ludwigia grandiflora*), and zoochory (e.g. *Prunus serotina*).

2. <u>The potential for an exotic species to colonise habitats with a high conservation value</u> (irrespective of its dispersal capacities) – assessment is based on habitat preference information from native and invaded areas. Habitats with a high conservation value are those where disturbance by man is minimal, thus allowing specific natural communities and threatened native species to occur (see examples of habitats in annex 1 of the 92/43/EEC Directive):

  - Low risk: populations of the alien species are restricted to man-made habitats (low conservation value). E.g.: *Setaria verticillata*
  - Medium risk: populations of the alien species are usually confined to habitats with a low or a medium conservation value and may occasionally

colonise high conservation value habitats. E.g.: *Fallopia japonica, Robinia pseudoacacia, Solidago gigantea*
- High risk: the alien species often colonise high conservation value habitats and therefore are a potential threat for red-listed species. E.g.: *Ludwigia grandiflora, Spartina townsendii*.

3. The potential of alien species to have adverse impacts on native species is assessed. Impacts may include predation/herbivory, interference and exploitation competition, transmission of diseases to native species, genetic effects such as hybridisation and introgression with native species:
- Low risk: data from invasion histories suggest that the negative impact on native populations is negligible.
- Medium risk: the alien species is known to cause local changes (<80%) in population abundance, growth or distribution of one or several native species, especially among common and ruderal species. This effect is usually considered as reversible. E.g.: moderate competition of *Senecio inaequidens* with native species.
- High risk: the development of the alien species often cause severe local (>80%) population decline and the reduction of local species richness. These alien species form long-standing populations and their impacts on native biodiversity are considered as hardly reversible. E.g.: strong interspecific competition in plant communities mediated by allelopathic chemicals (*Fallopia japonica, Prunus serotina, Solidago* spp.).

4. The potential to alter native ecosystems' processes and structures in ways that significantly decrease native species' ability to survive and reproduce is considered. Ecosystem impacts may include modification of nutrient cycling or resources (e.g. eutrophication), physical modifications of the habitat (changes of hydrologic regimes, increase of water turbidity, light interception, alteration of river banks, etc.), modification of natural successions and disruption of food webs (i.e. a modification of lower trophic levels through herbivory or predation leading to ecosystem imbalance):
- Low risk: the impact on ecosystem processes and structures is considered as negligible.
- Medium risk: the impact on ecosystem processes and structures is moderate and considered as easily reversible. E.g.: temporary modification of soil or water properties (*Lemna* spp.), decrease or increase of the rate of colonisation of open habitats by shrubs and trees (*Pinus nigra*).
- High risk: the impact on ecosystem processes and structures is strong and difficult to reverse. E.g.: alteration of physico-chemical properties of water by invasive aquatic plants (*Hydrocotyle ranunculoides, Ludwigia* spp., *Myriophyllum aquaticum*), facilitation of river bank erosion (*Impatiens glandulifera*), prevention of natural regeneration of trees (*Lonicera japonica, Prunus serotina, Rhododendron ponticum)*.

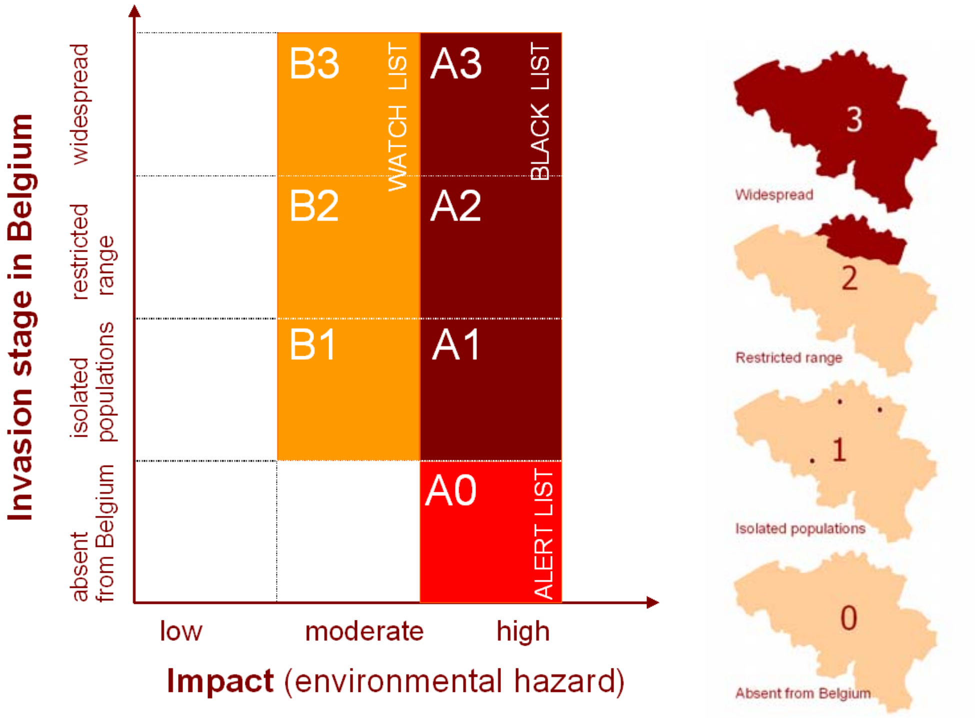

Figure 1: Categorization system to identify organisms of most concern for preventive and mitigation actions.

The global environmental risk is then addressed in the following way:

Score	Category	Description
11-12	A (Black list)	Includes species with a high environmental risk
9-10	B (Watch List)	Includes species with a moderate environmental risk
4-8	C	Includes other alien species that are not considered a threat for biodiversity

Source: E. Branquart (Ed.) (2007) Guidelines for environmental impact assessment and list classification of non-native organisms in Belgium.
http://ias.biodiversity.be/ias/documents/ISEIA_protocol.pdf
http://ias.biodiversity.be/

Additional key words: Invasive alien plants, prioritization **Computer codes:** BE

2008/088 Invasive alien plants in Belgium

The following species have been listed according to the prioritization process described in EPPO RS 2008/087. For each species, their family, origin and category in Belgium (as defined from the prioritization process) are indicated in the table below. The status of each species in the Global Compendium of Weeds (GCW) is given, to indicate their invasive behaviour elsewhere in the world.

Species	Family	Origin	GCW	Score	Category
Acer negundo	Aceraceae	N-Am.	SW, EW, AW	11	A2
Ailanthus altissima (EPPO List of Invasive Alien Plants)	Simaroubaceae	E-As.	N, EW, AW	12	A2
Ambrosia artemisiifolia (EPPO List of IAP)	Asteraceae	N-Am.	N, EW, AW	8	C
Amelanchier lamarckii (EPPO List of IAP)	Rosaceae	N-Am.	/	9	B2
Aster americanus	Asteraceae	N-Am.	-	12	A3
Azolla filiculoides (EPPO List of IAP)	Azollaceae	Neotrop.	N, EW, AW	10	B2
Baccharis halimifolia (EPPO List of IAP)	Asteraceae	N-Am.	N, EW, AW	12	A2
Bidens frondosa (EPPO List of IAP)	Asteraceae	N-Am.	N, EW, AW	9	B2
Buddleia davidii (EPPO List of IAP)	Buddleiaceae	E-As.	SW, N, EW, AW	10	B3
Cornus sericea (EPPO Alert List)	Cornaceae	N-Am.	EW	11	A2
Cotoneaster horizontalis	Rosaceae	W-As.	SW, EW	11	A2
Crassula helmsii (EPPO A2 List)	Crassulaceae	Austr.	N, EW	12	A2
Duchesnea indica	Rosaceae	E-As.	SW, EW, AW	9	B2
Echinocystis lobata (EPPO Alert List)	Cucurbitaceae	N-Am.	N, EW, AW	11	A0
Egeria densa (EPPO List of IAP)	Hydrocharitaceae	S-Am.	N, EW, AW	12	A1
Elodea canadensis	Hydrocharitaceae	N-Am.	SW, N, EW, AW	12	A3
Elodea nuttallii (EPPO List of IAP)	Hydrocharitaceae	N-Am.	EW, AW	12	A3
Epilobium ciliatum	Onagraceae	N-Am.	EW, AW	9	B3
Fallopia japonica (EPPO List of IAP)	Polygonaceae	E-As.	N, SW, EW, AW	12	A3
Gaillardia x grandiflora	Asteraceae	Hort.	/	8	C
Helianthus tuberosus (EPPO List of IAP)	Asteraceae	N-Am.	N, EW, AW	12	A3
Heracleum mantegazzianum (EPPO List of IAP)	Apiaceae	W-As.	N, SW, EW, AW	11	A3
Hydrocotyle ranunculoides (EPPO A2 list)	Apiaceae	Pantrop.	N, SW, EW, AW	12	A2
Impatiens glandulifera (EPPO List of IAP)	Balsaminaceae	S-As.	N, EW, AW	12	A3

Species	Family	Origin	GCW	Score	Category
Impatiens parviflora	Balsaminaceae	East & Cent.-As.	EW	10	B3
Lagarosiphon major (EPPO List of IAP)	Hydrocharitaceae	C-Af.	N, SW, EW, AW	12	A1
Lemna minuta	Lemnaceae	Neotrop.	/	10	B3
Ludwigia grandiflora (EPPO List of IAP)	Onagraceae	Neotrop.	N	12	A1
Ludwigia peploides (EPPO List of IAP)	Onagraceae	Neotrop.	N, EW, AW	12	A1
Lupinus polyphyllus (EPPO List of IAP)	Fabaceae	N-Am.	SW, EW, AW	10	B3
Lysichiton americanus (EPPO A2 List)	Araceae	N-Am.	/	10	B1
Mahonia aquifolium	Berberidaceae	N-Am.	SW, EW, AW	12	A3
Myriophyllum aquaticum (EPPO List of IAP)	Haloragaceae	S-Am.	N, EW, AW	12	A2
Persicaria wallichii (= *Persicaria polystachya*)	Polygonaceae	S-As.	AW	11	A1
Phytolacca americana	Phytolaccaceae	N-Am.	AW	11	A0
Prunus laurocerasus	Rosaceae	Pontic	SW, EW, AW	9	B1
Prunus serotina (EPPO List of IAP)	Rosaceae	N-Am.	SW, EW, AW	12	A3
Quercus rubra	Fagaceae	East and North-Am.	EW, AW	10	B3
Rhododendron ponticum (EPPO List of IAP)	Ericaceae	W-Medit.	SW, EW	11	A2
Rhus typhina	Anacardiaceae	N-Am.	AW	10	B1
Robinia pseudoacacia	Fabaceae	N-Am.	SW, N, EW, AW	10	B2
Rosa rugosa	Rosaceae	E-As.	N, EW, AW	12	A2
Senecio inaequidens (EPPO List of IAP)	Asteraceae	S-Af.	EW, AW	10	B2
Solidago canadensis (EPPO List of IAP)	Asteraceae	N-Am.	EW, AW	11	A3
Solidago gigantea (EPPO List of IAP)	Asteraceae	N-Am.	EW, AW	11	A2
Spiraea spp.	Rosaceae	N-Am.		11	A2

* Abbreviations for the Global Compendium of Weeds column:
W: Weed; N: Noxious Weed; SW: “Sleeper Weed”; EW: “Environmental Weed”; AW: “Agricultural weed”; -: not quoted in the GCW; "/": no clear sign of invasiveness

Source: E. Branquart (Ed.) (2008) Alert, black and watch lists of invasive species in Belgium. Harmonia version 1.2, Belgian Forum on Invasive species, accessed on March 2008 from: http://ias.biodiversity.be

A Global Compendium of Weeds
http://www.hear.org/gcw/alpha_select_gcw.htm

Additional key words: Invasive alien plants, records

Computer codes: ACRNE, AILAL, AMBEL, AMELM, AZOFI, BACHA, BIDFR, AMBEL, AMELM, BUDDA, CRWSR, CTTHO, CSBHE, DUCIN, ECNLO, ELDCA, ELDNU, EPIAC, POLCU, GAISS, HELTU, HERMZ, HYDRA, IPAGL, IPAPA, LGAMA, LEMMT, LUDUR, LUDPE, LUPPO, LSYAM, MAHAQ, MYPBR, POLPS, PHTAM, PRNLR, PRNSO, RHOPO, RHUTY, ROBPS, ROSRG, SENIQ, SOOCA, SOOGI, SPVSS, BE

2008/089 Invasive climbing plants in the Bay of Plenty (New Zealand)

Many invasive alien plants in the Bay of Plenty (North of New Zealand) are climbing plants. These species are very destructive to native plants and the regeneration of native forests because of their smothering effects. They were almost all introduced for ornamental purposes, and usually naturalized during the second half of the 20th century.
Each species has been checked against the Global Compendium of Weeds (GCW) in order to indicate its invasive behaviour elsewhere in the world, as well as in the DAISIE and EPPO databases for its occurrence within the EPPO region. This later information remains only indicative.

Some of these climbing species, which are invasive in the Bay of Plenty, are already established in the EPPO region:

Asparagus asparagoides (Asparagaceae) originates from South Africa. It is a slightly woody winter perennial vine, growing up to 3 m tall. The flowers are small, greenish-white; the berries are small, red and sticky. The plant is spread by birds, eating the berries and distributing the seeds in their droppings. It is also spread by human either deliberately by planting it or by dumping garden refuses on roadsides, waste ground or forest margins.
A. asparagoides is considered W, SW, N, AW, EW by the GCW*. Within the EPPO region, it is established in France (including Corse), Italy, Malta and Portugal (Azores and Madeira only).

Araujia sericifera (Asclepiadaceae, EPPO Alert List) originates from South America. It is a woody, climbing, evergreen vine reaching up to 10 m length and containing irritating and smelly sap.
A. sericifera is considered W, SW, NW, AW, EW by the GCW*. Within the EPPO region, it is established in France (including Corse), Greece, Israel, Italy, Portugal (Azores and Madeira only) and Spain.

Ipomoea indica (Convolvulaceae) originates from the tropical Pacific region and the Americas. *I. indica* is a high climbing perennial with running stems. Leaves are heart-shaped and usually three-lobed. The flowers are up to 10 cm wide and are intense purple or blue in colour. *I. indica* regenerates vigorously from fragments when dumped in waste areas. It has occasionally been found to produce viable seeds.
I. indica is considered W, N, AW, EW by the GCW*. In the EPPO region, it is recorded in Cyprus, France (including Corse), Greece, Israel, Italy (including Sardinia), Malta, Portugal (including Azores, Madeira), and Spain (including Baleares, Islas Canarias).

Lonicera japonica (Caprifoliaceae) is native to East Asia. It is a woody vine growing up to 10 m long. Leaves are oval to oblong in shape. Flowers are tube-like and fragrant and white to yellow in colour. Fruits are small and black. The plant occurs primarily in

disturbed habitats such as roadsides, shrublands or wastelands. The weight of accumulated vines can topple host trees or shrubs.
L. japonica is considered W, N, SW, AW, EW by the GCW*. The plant is established in France (including Corse), Ireland, Italy, Portugal (including Azores, Madeira), Spain (including Baleares, Islas Canarias), Switzerland, and United Kingdom.

Some other invasive species in the Bay of Plenty have a very limited distribution in the EPPO region, or are absent:

Actinidia spp. (Actinidiaceae) or wild kiwifruit are native of China and Northeast Asia. *Actinidia* spp. are naturalized plants which have generally established via seed from fruits of the kiwifruit horticultural crop. Wild kiwifruit establishes in forests, in shrub communities or along stream banks in close proximity to kiwifruit orchards or where reject kiwifruit has been fed to stock.
A. chinensis is recorded as the only *Actinidia* species established in Europe and is only considered W by the GCW*.

Asparagus scandens (Asparagaceae) originates from South Africa. This vine invades forest areas, twining around and strangling host shrubs and trees.
A. scandens is considered W, EW by the GCW*. It is not known to occur in the wild in the EPPO region.

Boussingaultia cordifolia (= *Anredera cordifolia*) (Basellaceae) originates from South America. It is an evergreen climber growing from a fleshy rhizome. It has bright green, heart-shapped, shiny leaves. Wart-like tubers are produced on aerial stems. It has masses of fragrant, cream flowers. The plant spreads via tubers which detach very easily. It smothers other species and is difficult to control.
B. cordifolia is considered W, SW, N, AW, EW by the GCW*. In the EPPO region, it is established in France (including Corse), Greece, Italy, Portugal (including Azores, Madeira), and casual in mainland Spain (but established in Baleares).

Celastrus orbiculatus (Celastraceae) originates from Japan, Korea and Northern China. It is a deciduous woody climber growing up to 12 m long, with stems 10 cm in diameter. Leaves are alternate, variable in shape, 10-15 cm long. Due to its high reproductive rate, long range dispersal, ability to produce root suckers and rapid growth rate, this plant is a threat to native plant communities and forestry plantations.
C. orbiculatus is considered W, NW, EW by the GCW*. In the EPPO region, it is recorded as established in United Kingdom, and as casual in Belgium and the Czech Republic.

Cobaea scandens (Cobaeaceae) originates from Central and South America. It has purplish stems and light oval green leaves. Large purple lantern-like flowers appear from spring to autumn and are followed by oval fruit 6-10 cm long, which explode during summer to release winged seeds. Seeds spread over short distances by wind, and further by soil or water movement. Although frost tender, it flourishes in the Bay of Plenty.
C. scandens is considered W, EW by the GCW*. It is not known to occur in the wild in the EPPO region.

Jasminum polyanthum (Oleaceae) originates from China. It has small pointed leaves, and starry white flowers. Globular, glossy black fruits are occasionally produced, which are spread by birds. The plant climbs vigorously through other vegetation, forming roots where it touches the ground. Spread is mainly from vine fragments or from dumped garden wastes.

J. polyanthum is considered W, SW, EW by the GCW*. In the EPPO region, it is only recorded as established in Madeira (PT).

Passiflora mollissima and *P. mixta* (Passifloraceae) are native to tropical South America. They are evergreen climbers that can grow up to 10 m. The dark green leaves are three lobed, and the plants have large, pink, hanging, star-shaped flowers. The fruit is golden yellow when ripe. Inside is a sweet, orange pulp, filled with black seeds which are readily dispersed by rats, possums and birds.
P. mollissima is considered W, N, SW, AW, EW by the GCW*, and *P. mixta* W and EW. *P. mollissima* is only recorded in Madeira (PT), *P. mixta* is not recorded to occur in the wild in the EPPO region.

Rumex sagittatus (Polygonaceae) originates from South Africa. *R. sagittatus* is a climbing perennial; it has tubers up to 10 cm long and extensive rhizomes. It establishes along road edges and infests coastal areas and waste areas. The leaves are arrowhead shaped. The small, papery, pink-yellow flowers are gathered in clusters and form fruits which are wind-dispersed. Tubers and root fragments spread through water and soil movement, as well as through dumping of garden waste.
R. sagitattus is considered W, AW, EW by the GCW*. It is not known to occur in the wild in the EPPO region.

* Abbreviations for the Global Compendium of Weeds:
W: Weed; SW: Sleeper Weed; N: Noxious Weed; AW: Agricultural Weed; EW: Environmental Weed.

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

A Global Compendium of Weeds http://www.hear.org/gcw/alpha_select_gcw.htm

Bay of Plenty Regional Council – Plant Pest Control – Climbing Plants.
http://www.ebop.govt.nz/land/media/pdf/pp1700.pdf

Additional key words: detailed record

Computer codes: 1ATIG, AJASE, CBOSC, CELOR, IASPO, LONJA, PAQMI, PAQMO, RUMSG, NZ

2008/090 *Spiraea* **species: more information needed on their impact to the environment**

Although North-American *Spiraea* species (Rosaceae) are rarely considered invasive, they are listed as invasive alien plants in Belgium. In this country, *Spiraea alba, S. douglasii, S. tomentosa*, and the hydrids (e.g. *S. x billardii*) were introduced for ornamental purposes during the 19th century and are still used for such purpose. They were first observed into the wild in Belgium in 1803. These *Spiraea* spp. are shrubs growing up to 2.5 m tall. Leaves are alternate, simples, dentate, lobate or entire. Flowers are white, rose or red, gathered in panicules, ombels or grappes. Fruits are narrow clusters of 5-parted dry capsules, they are persistent.

The distribution of these species in the EPPO region is as follows (indicative information from DAISIE and EPPO databases):

- *Spiraea alba*: Belgium, Denmark, Estonia, France, Germany, Ireland, Latvia (invasive), Lithuania (potentially invasive), United Kingdom.

- *Spiraea douglasii*: Belgium, Denmark (invasive), France, Germany, Ireland, Latvia (invasive), Slovenia, Sweden, United Kingdom.
- *Spiraea tomentosa*: Belgium, Germany

Flowering occurs in mid-summer. Flowering and fruit production depend on light availability. In Europe, seed production seems dependant upon climatic conditions and favoured by fire events. These species reproduce very well vegetatively. They form dense monospecific stands where they are planted; stems and rhizomes carried by water can regenerate. The plants are also spread by human activities through soil transport and garden wastes.

These species develop in the following habitats and conditions:

- *Spiraea alba*: originally a wet forest edges plant, it is found along river banks and ponds. The plant preferably naturalizes in alluvial conditions, on cool and well aerated soils. It resists temporary anoxy and winter floods.
- *Spiraea douglasii*: as *S. x billardii*, this plant is found on a wide range of habitats, on sandy soils.
- *Spiraea tomentosa*: it grows in peaty heaths, wet and acid sandy soils.

Impacts of these species on the indigenous flora need to be further documented. *Spiraea* spp. can form continuous monospecific stands over 1 ha, particularly where they have been present for many decades. On these sites, the structure of the ecosystem is changed since only tall species are found. In Belgium, it has been observed that *S. douglasii* was outcompeting *Myrica gale* (Myricaceae), *Phragmites australis* (Poaceae) and bryophytes. *Spiraea* spp. are likely to have a negative impact on regionally endangered species because they are often found in habitats of concern for nature conservation (heaths, wetlands, etc.)

Source: Personnal communication Etienne Branquart, Belgian Biodiversity Platform
http://www.biodiversity.be - E-mail : ebranquart@gmail.com

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

FloraWeb Website
http://www.floraweb.de/pflanzenarten/artenhome.xsql?suchnr=7043&

NOBANIS - Network on Invasive Alien Species
http://www.nobanis.org/

Additional key words: invasive alien plants

Computer codes: MYRGA, PHRCO, SPVAB, SPVDO, SPVTO, BE, DE, DK, EE, FR, GB, IE, LV, LT, SE, SL

2008/091 *Cornus sericea* **in the EPPO region: addition to the EPPO Alert List**

Considering the potential of invasiveness and the limited presence of *Cornus sericea* in the EPPO region, the Secretariat considered that this species could usefully be added to the EPPO Alert List.

Why: *Cornus sericea* (Cornaceae) is a deciduous shrub native to North America. The plant has been introduced voluntarily for ornamental purposes (to attract birds and form windbreaks). 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 Europe.

Geographical distribution

EPPO region: Austria, Belgium, Czech Republic, Estonia, Germany, Ireland, Latvia, Russia, Switzerland, United Kingdom.

North America (native): Canada (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Prince Edward island, Quebec, Saskatchewan, Yukon), Mexico (Chihuahua, Durango, Nuevo Leon), USA (Alaska, Arizona, California, Colorado, Connecticut, Idaho, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Utah, South Dakota, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming).

Note: the Native Americans smoke this plant in the sacred pipe ceremony and use it to make dream catchers.

Description
C. sericea is a multi-stemmed shrub growing from 1.4 to 6 m high. The young stems and twigs are dark red, gradually fading to grey-green, and becoming red again in the autumn and winter. The leaves, which are 10 cm long, are opposite with prominent lateral veins, dark green above and hairy and lighter-coloured below. Autumn foliage is colourful. Flowers are 2-3 mm wide, creamy-white, gathered in dense flat-topped clusters. Flowering occurs from June to August. Fruits are white berries gathered in umbrella-shaped clusters.

Biology and ecology
The flowers of *C. sericea* are self-sterile. Pollinators include bees and possibly beetles, flies, and butterflies. Seeds are dispersed primarily by birds, although other animals including bears, mice, and even trouts may eat the fruits and disperse seeds. Individual plants generally first produce fruits at 3 to 4 years of age, but older plants are more prolific. Seeds have a dormant period and need cold stratification for 1 to 3 months. The seeds remain viable in cold storage for 4 to 8 years. This shrub has also a strong vegetative reproduction capacity. It spreads by layering when the lower stems touch or lie along the ground and root at the nodes.
C. sericea is mostly found on moist soils, where it can live with the roots submerged in water for most of the growing season. It has a wide geographical range and is able to tolerate extremely cold temperatures. It generally grows at elevations below 2500 m.

Habitats (adapted from Corine Land Cover nomenclature)
Inland wetlands: swamps and damp woodlands.
Banks of continental water: riverbanks, lake shores.
Road and rail networks and associated land: railway embankments.
Other artificial surfaces: forest margins, fallow lands.

Impacts
C. sericea can cover large surfaces and produces a dense canopy which reduces the development of native vegetation.

Control
No information available.

Source: Belgian Biodiversity Platform
http://www.biodiversity.be

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

NOBANIS - Network on Invasive Alien Species
http://www.nobanis.org/

US Forest Service
http://www.fs.fed.us/database/feis/plants/shrub/corser/all.html

United States Department of Agriculture – Natural Resources Conservation Service
http://plants.usda.gov/plantguide/doc/cs_cose16.doc

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