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2009/082 *Diabrotica virgifera virgifera* eradicated from the Netherlands

In 2003, *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae – EPPO A2 List) was found for the first time in the Netherlands, near Schiphol airport (EPPO RS 2003/142). In 2005, 5 specimens were caught at 4 locations. But since then, the pest has no longer been detected during regular surveys conducted in demarcated zones, maize-growing areas, and near airports. Since no specimens of *D. virgifera virgifera* have been caught for 3 consecutive years, the NPPO of the Netherlands now considers that the pest has been eradicated.
The pest status of *Diabrotica virgifera virgifera* in the Netherlands is officially declared as: **Absent, pest eradicated, confirmed by surveys in 3 subsequent years.**

Source: NPPO of the Netherlands, 2009-02.

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

2009/083 First report of *Ralstonia solanacearum* in Austria

The Austrian NPPO informed the EPPO Secretariat of the first finding of *Ralstonia solanacearum* (EPPO A2 List) in Niederösterreich. The bacterium was first detected in one lot of ware potatoes (*Solanum tuberosum* cv. 'Ditta') during routine testing in a supermarket in Kärnten. Investigations showed that the infested lot originated from a producer located in Niederösterreich and had been grown from certified seed potatoes (which had tested negative before planting). The infested lot of ware potatoes had only been marketed in Austria. The possible source of contamination is still unknown. Phytosanitary measures were taken in accordance with the EU Directive 98/57/EC.
The pest status of *Ralstonia solanacearum* in Austria is officially declared as: **Isolated outbreak under observation.**

Source: NPPO of Austria, 2009-05.

Additional key words: new record **Computer codes:** PSDMSO, AT

2009/084 First report of '*Candidatus* Liberibacter asiaticus' in Iran

In Iran, *Diaphorina citri* (EPPO A1 List) the psyllid vector of '*Candidatus* Liberibacter asiaticus' (associated with citrus huanglongbing – EPPO A1 List) was first detected in December 1997 in an area close to the border with Pakistan. Since then, high populations of *D. citri* have been found in citrus plantations of Hormozgan and Kerman provinces in Southern Iran. Citrus trees in this region showed typical symptoms of huanglongbing including mottling of leaves and yellowing of shoots. Leaf samples were collected from 20 symptomatic and 20 symptomless Valencia sweet orange trees (*Citrus sinensis*) and more than 50 psyllid samples were collected from various locations in Sistan-Baluchistan and Hormozgan provinces. Molecular tests (nested-PCR, sequencing) confirmed the presence of '*Ca.* L. asiaticus' in 5 out of 20 symptomatic leaf samples and in 26 out of 50 psyllid samples. This is the first report of citrus huanglongbing in Iran. It is noted that the disease appears to be widely distributed in citrus-growing regions of Southern Iran and that it probably plays a role in the citrus decline observed in this area.

The situation of '*Candidatus* Liberibacter asiaticus' in Iran can be described as follows: **Present, first reported in 2008, detected on *Citrus sinensis* in Southern Iran.**

Source: Faghihi MM, Salehi M, Bagheri A, Izadpanah K (2008) First report of citrus huanglongbing disease on orange in Iran. *New Disease Reports* vol. 18 (August 2008 to January 2009). http://www.bspp.org.uk/publications/new-disease-reports/ndr.php?id=018042

Additional key words: new record **Computer codes:** LIBEAS, IR

2009/085 First report of '*Candidatus* Liberibacter asiaticus' in Belize

The occurrence of citrus huanglongbing (associated with '*Candidatus* Liberibacter asiaticus' – EPPO A1 List) is reported for the first time from Belize. The disease has been found in the northern, eastern and southern parts of the country. An eradication programme will be implemented.
The situation of '*Candidatus* Liberibacter asiaticus' in Belize can be described as follows: **Present, first reported in 2009, under eradication.**

Source: ProMed posting of 2009-05-18. Huanglongbing, citrus – Belize: first report. http://www.promedmail.org (archive number 20090518.1853).

Additional key words: new record **Computer codes:** LIBEAS, BZ

2009/086 '*Candidatus* Liberibacter asiaticus' detected in South Carolina (US)

On 2009-04-02, the presence of *'Candidatus* Liberibacter asiaticus' (associated with citrus huanglongbing – EPPO A1 List) was confirmed in a leaf sample from a private property in the City of Charleston (Charleston County), South Carolina (US). The sample had been collected from a mature citrus tree growing near the area where the psyllid vector of the disease, *Diaphorina citri*, was detected in August 2008 (EPPO RS 2008/160). Studies are currently being done by APHIS to determine the origin of the infected tree, to delimit the extent of the infection, and to set out appropriate regulatory actions in order to prevent any further spread. This is the first report of *'Ca.* L. asiaticus' in South Carolina. So far, it has only been reported from Florida (in private properties and commercial orchards) and Louisiana (in 1 tree).
The pest status of *'Candidatus* Liberibacter asiaticus' in the USA is officially declared as: **Present, only in some areas, and subject to official control to limit its spread in the United States.**

Source: NPPO Phytosanitary Alert System. Official Pest Reports (2009-04-13). USA. Confirmation of citrus greening in Charleston County, South Carolina. http://www.pestalert.org/oprDetail.cfm?oprID=373

Additional key words: detailed record **Computer codes:** LIBEAS, US

2009/087 Successful control of insect vectors of citrus huanglongbing in the islands of Reunion, Mauritius and Guadeloupe

In the 1970s, Reunion Island faced severe outbreaks of citrus huanglongbing (EPPO A1 List), a disease which is transmitted by insect vectors, *Trioza erytreae* and *Diaphorina citri* (both EPPO A1 List). On Reunion Island, both '*Candidatus* Liberibacter africanus' and '*Candidatus* Liberibacter asiaticus' were detected, sometimes in mixed infections. The main reasons for these severe outbreaks were the following:
- presence of *Trioza erytreae* (EPPO A1 List) in the absence of any of its natural parasitoids, and of *Diaphorina citri* (EPPO A1 List) which was poorly controlled by a single species of parasitic wasp (*Diaphorencyrtus aligarhensis*);
- great diversity of climates and topographies offering multiple favourable sites for the vector populations to build up and for the disease to develop;
- many ornamental and wild rutaceous host plants harbouring the two vector species;
- plantation of commercial citrus orchards in the vicinity of many small citrus plantings and backyard trees;
- lack of diagnostic tools and limited research capacities.

Eradication of citrus huanglongbing was not considered feasible at that time and an integrated control strategy was implemented, in which training of extension consultants and farmers played an important role. In this programme, commercial growers were strongly encouraged to replant affected orchards with disease-free material and a biological control programme was launched in 1974. Parasitic wasps, *Tamarixia dryi* and *Tamarixia radiata* (Hymenoptera: Chalcidoidea) originating from Africa and Asia respectively, were reared and released across the island. *Tamarixia dryi* successfully controlled populations of *Trioza erytreae* which were mainly present in the cool and wet areas of higher altitudes. The control was so successful that *T. erytreae* is no longer observed in Reunion. Similarly, *Tamarixia radiata* provided effective control of *D. citri* which was mainly occurring in the dry and hot coastal areas. However, *D. citri* survived on pruned hedges of *Murraya exotica* but is now rarely seen on citrus, even on neglected trees. Today in Reunion Island, huanglongbing is no longer causing economic problems in citrus orchards, nevertheless it is suggested that it would be advisable to search for the last remaining foci in order to eradicate the disease completely. It is noted that similar results were obtained in the neighbouring Island of Mauritius, where the same control strategy was applied.

In Guadeloupe, citrus huanglongbing has never been detected but one of its insect vectors, *Diaphorina citri*, was first found in January 1998 on backyard orange trees. In January 1999, the release of *Tamarixia radiata* was decided. The rearing and release of a few hundred wasps did succeed in establishing and subsequently reducing *D. citri* populations in backyard citrus trees, in hedges of *Murraya exotica*, and across the 360 ha of commercial citrus orchards.

Source: Aubert B, Étienne J, Quilici S, Gottwald TR (2008) Citrus huanglongbing experiences of integrated vector management (IVM) in Réunion and Guadeloupe, two ultra-peripheral regions of the European Union. *International Conference on Huanglongbing (Orlando, Florida, US, 2008-12-01/05),* 9 pp.

Additional key words: detailed record, biological control **Computer codes:** LIBEAS, GP, MU, RE

2009/088 Cultivation of '*Candidatus* Liberibacter asiaticus', '*Ca*. L. africanus' and '*Ca*. L. americanus'

Huanglongbing (EPPO A1 List) is a citrus disease associated with several phloem-limited bacteria which had previously not been able to be cultured (in particular to verify Kochs' postulates). A new growing medium (called Liber A) has been designed and used successfully to cultivate the three species of 'Candidatus Liberibacter' associated with huanglongbing (i.e. '*Ca.* Liberibacter asiaticus', '*Ca*. L. africanus' and '*Ca*. L. americanus'). Two strains of '*Ca*. L. asiaticus' and one strain of '*Ca*. L. americanus were found to be pathogenic on citrus and were re-isolated from tissues of inoculated trees and seedlings 9 and 2 months after inoculation (by leaf infiltration), respectively. It is considered that Koch's postulates have not been fully completed by inoculating mature trees and reproducing the entire disease etiology. However, this partial fulfilment of Kochs' postulates showed that both '*Ca*. L. asiaticus' and '*Ca*. L. americanus' are pathogens of citrus, causing huanglongbing–like symptoms, and are likely to be major components of the disease (although it cannot be excluded that the disease might be a syndrome involving other factors).

Source: Secher A, Schuenzel EL, Cooke P, Donnua S, Thaveechai N, Postnikova E, Stone AL, Schneider WL, Damsteegt VD, Schaad NW (2009) Cultivation of '*Candidatus* Liberibacter asiaticus', '*Ca*. L. africanus' and '*Ca*. L. americanus' associated with huanglongbing. *Phytopathology* **99**(5), 480-486.

Additional key words: diagnostics **Computer codes:** LIBEAS, LIBEAF, LIBEAM

2009/089 '*Candidatus* Liberibacter psyllaurous', a new species causing diseases of solanaceous crops: addition to the EPPO Alert List

Studies which have been carried out in the USA and New Zealand almost simultaneously came to the conclusions that a new bacterium species belonging to the genus '*Candidatus* Liberibacter' was associated with emerging diseases of potatoes, tomatoes and other solananacous crops, and that this fastidious and phloem-inhabiting bacterium was transmitted by a psyllid vector, *Bactericera cockerelli* (syn. *Paratrioza cockerelli*, Hemiptera: Psyllidae). In addition, it has been observed in North America that *B. cokerelli* populations were often associated with a growth disorder in potato and tomato called 'psyllid yellows'. For many years, it has been considered that this disorder was caused by a toxin produced by the psyllid but it is now felt that this disorder is most probably caused by the new '*Candidatus* Liberibacter' species.

Situation in the Americas

Since the early 1990s, a new disease of potatoes (*Solanum tuberosum*) called 'zebra chip' (or 'papa manchada' in Spanish) has been reported in the Americas (e.g. Guatemala, Mexico and the Southwestern USA). The disease caused severe economic losses, in particular to the potato chip industry because chips made from infected tubers present dark stripes becoming markedly more visible after frying which is unacceptable for manufacturers. When planted, infected tubers do not produce plants in some cases. Observations made in affected potato fields strongly suggested that the disease was transmitted by the potato/tomato psyllid, *B. cockerelli*.

Situation in New Zealand

In New Zealand, a new disease of glasshouse tomatoes (*Lycopersicon esculentum*) was observed in Auckland in January 2008. Affected plants showed spiky and chlorotic apical growth, leaf curling, mottling, and general stunting. *B. cockerelli* was reported to occur in all tomato glasshouses where the disease was observed. In New Zealand, *B. cockerelli* is an introduced pest which was first discovered in May 2006 in 1 glasshouse in Auckland. Today, it is established throughout the North Island and the northern part of the South Island. In April 2008, similar symptoms appeared in a glasshouse of *Capsicum annuum* on the same property. In May 2008, symptoms resembling 'zebra chip' disease were observed in potatoes (tubers had been harvested from a breeding trial in South Auckland). The affected tubers showed necrotic flecking and streaking which became marked when the potatoes were fried. Diseased plants generally senesced early (beginning of April in New Zealand), yield was reduced (60 % less than expected) and harvested tubers had less dry matter (13% instead of 19%). Large numbers of *B. cockerelli* were observed on the diseased crops.

Results of the US and New Zealand studies

Investigations carried out in parallel in the USA and New Zealand revealed the presence of bacterium-like organisms in diseased solanaceous crops which were called '*Candidatus* Liberibacter psyllaurous' (Hansen *et al*., 2008) and '*Candidatus* Liberibacter solanacearum' (Liefting *et al*., 2009), respectively. Apparently, these two new pathogens are closely related, if not identical (e.g. comparison studies of rDNA sequences revealed 99.7% identity between potato isolates from Texas with potato and tomato isolates from New Zealand). For the moment, the EPPO Secretariat has considered that these two pathogens were identical, and because '*Candidatus* Liberibacter psyllaurous' was the first name proposed, it was retained as the preferred name. Considering the importance of solanacous crops in the EPPO region, the EPPO Secretariat decided to add '*Candidatus* Liberibacter psyllaurous' to the EPPO Alert List.

'Candidatus Liberibacter psyllaurous'

Why	A new bacterial species '*Candidatus* Liberibacter psyllaurous' has been found in association with serious diseases of tomatoes, potatoes and other solanaceous crops observed in the Americas, and recently discovered in New Zealand. In particular, it was found associated with a potato disease called 'zebra chip' which has caused significant economic losses, by reducing both yield and quality of potato crops. The tomato/potato psyllid *Bactericera cockerelli* (syn. *Paratrioza cockerelli*, Hemiptera: Psyllidae) is strongly suspected to be the vector of this new bacterium.
Where	The geographical distribution given below is essentially based on reports of disease symptoms. However, the presence of '*Ca*. L. psyllaurous' has been confirmed in New Zealand (at first under another tentative name '*Ca*. L. solanacearum'), in Mexico (Coahuila), and the USA (California, Kansas, Texas). As molecular tools are now available to detect specifically '*Ca*. L. psyllaurous', further studies will probably better determine its geographical distribution. **EPPO region:** Absent. **North America**: Canada (Alberta), Mexico, USA (Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Texas, Utah, and Wyoming). **Central America**: Guatemala, Honduras. **Oceania**: New Zealand. The distribution of the psyllid vector**,** B. *cokerelli* is the following: **EPPO region**: Absent. **North America**: Canada (Alberta, British Columbia, Ontario, Quebec, Saskatchewan), Mexico, USA (Arizona, California, Colorado, Idaho, Kansas,

	Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wyoming). **Central America**: Guatemala, Honduras. **Oceania**: New Zealand (recently introduced, first detected in May 2006 in Auckland).
On which plants	Potato (*Solanum tuberosum*), tomato (*Lycopersicon esculentum*), and capsicum (*Capsicum annuum*). The presence of '*Ca.* L. psyllaurous' was detected in symptomless *Solanum betaceum* (tamarillo) and *Physalis peruviana* (Cape gooseberry). These plants were collected from a garden in South Auckland, located close to a commercial glasshouse where infected tomatoes had been found. For the moment, it is not known whether *S. betaceum* and *P. peruviana* only act as symptomless reservoirs of the pathogen or can also develop disease symptoms. Although it can be found on many plants (numerous species in 20 plant families), the psyllid vector (*B. cockerelli)* has been reported to complete its life cycle only on Solanaceae, Convolvulaceae and Lamiaceae. Its preferred hosts include aubergine, capsicum tomato, and potato.
Damage	On potato symptoms include: purple top, shortened internodes, smaller leaves, enlargement of the stems, swollen axillary buds and aerial tubers. Potato chips made from infected tubers present dark stripes which become markedly more visible after frying (hence the disease name 'Zebra chip'), leading to rejection from the potato chip industry. When planted, infected tubers may not produce plants. 'Zebra chip' disease has been reported to cause severe economic losses in potato production (up to 60 % yield losses and significant rejections from the industry). Although significant economic damage has been reported on potato crops in Guatemala, Mexico and the Southwestern USA, the economic impact of the disease in New Zealand is yet to be determined. On tomato symptoms include: 'spiky' and chlorotic apical growth, leaf curling, mottling, plant stunting, and in some cultivars fruit deformation. On capsicum affected plants develop: chlorotic or pale green leaves, sharp tapering of leaf apex, upward leaf curling, shortened internodes and petioles, necrosis of apical meristem, flower abortion, and plant stunting.
Transmission	Preliminary transmission trials strongly suggested that *B. cokerelli* is a vector of '*Ca*. L. psyllaurous'. It has been demonstrated that the psyllid can acquire the bacterium but transmission needs to be confirmed. In addition, many other aspects of the disease epidemiology remain to be studied (e.g. transmission through seeds or grafts). Over long distances, trade of infected plants and psyllids can spread the bacterium.
Pathway	Plants for planting of host plants, tomato and capsicum fruits? potato tubers? seeds? infected psyllids?
Possible risks	Solanaceous crops such as potatoes and tomatoes are extensively grown in the EPPO region and are of major economic importance. For the moment, there is little experience with disease control, and it is likely that it will be essentially targeted against the psyllid vector (or possibly the use of resistant cultivars). Although many aspects of the biology and epidemiology of '*Ca*. L. psyllaurous' need to be further investigated, it is advisable to avoid its introduction into the EPPO region, as well as of its psyllid vector, *B. cockerelli*.
Source(s)	Abad JA, Bandhla M, French-Monar RD, Liefting LW, Clover GRG (2008) First report of the detection of '*Candidatus* Liberibacter' species in Zebra chip disease-infected potato plants in the United States. *Plant Disease* **93**(1), p 108. Biosecurity Australia (2009) Draft pest risk analysis report for '*Candidatus* Liberibacter psyllaurous' in fresh fruit, potato tubers, nursery stock and its vector the tomato-potato psyllid. Biosecurity Australia, Canberra, 110 pp. http://www.daff.gov.au/__data/assets/pdf_file/0008/1108691/Candidatus_Liberibacter_psyllaurous_draft_PRA_20090506.pdf Crosslin JM , Bester G (2009) First report of '*Candidatus* Liberibacter psyllaurous' in Zebra Chip symptomatic potatoes from California. *Plant Disease* **93**(5), p 551. Hansen AK, Trumble JT, Stouthamer R, Paine TD (2008) A new huanglongbing species, '*Candidatus* Liberibacter psyllaurous,' found to infect tomato and potato, is vectored by the psyllid *Bactericera cockerelli* (Sulc). *Applied and Environmental Microbiology* **74**(18), 5862-5865. Liefting LW, Sutherland PW, Ward IL, Paice KL, Weir BS, Clover GRG (2009) A new '*Candidatus* Liberibacter' species associated with diseases of Solanaceous crops. *Plant Disease* **93**(3), 208-214.

Liefting LW, Perez-Egusquiza, Clover GRG, Anderson JAD (2008) A new '*Candidatus* Liberibacter' species in *Solanum tuberosum* in New Zealand. *Plant Disease* **92**(10), p 1474.
Liefting LW, Ward LI, Shiller JB, Clover GRG (2008) A new '*Candidatus* Liberibacter' species in *Solanum betaceum* (tamarillo) and *Physalis peruviana* (Cape gooseberry) in New Zealand. *Plant Disease* **92**(11), p 1588.
Munyaneza JE, Sengoda VG, Crosslin JM, de la Rosa-Lozano G, Sanchez A (2009) First report of '*Candidatus* Liberibacter psyllaurous' in potato tubers with Zebra Chip disease in Mexico. *Plant Disease* **93**(5), p 552.

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2009/090 First report of Grapevine flavescence dorée in Portugal

In 2007, during an official survey on flavescence dorée (EPPO A2 List) typical symptoms were observed in vineyards (*Vitis vinifera* cvs. 'Loureiro' and 'Vinhão') from the region of Amares, Northern Portugal. It is recalled that in 2002, similar but less severe symptoms had been noted in the same region but they were associated with other phytoplasmas (belonging to the '*Candidatus* Phytoplasma asteris' group). However the grapevine flavescence dorée phytoplasma had been detected in the insect vector *Scaphoideus titanus* (EPPO RS 2003/152). Cuttings and leaf samples were collected from both symptomatic and asymptomatic grapevines. Molecular tests (nested-PCR, sequencing) confirmed the presence of Grapevine flavescence dorée phytoplasma (16SrV-D group). In addition to Amares, the disease was later detected in the municipalities of Braga and Ponte de Lima. Because flavescence dorée is a serious threat to vineyards, phytosanitary measures, including compulsory control against *S. titanus,* are being implemented in Portugal to eradicate the disease.
The situation of Grapevine flavescence dorée phytoplasma in Portugal can be described as follows: **Present, first detected in 2007, only found in Northern Portugal (Amares, Braga, Ponte de Lima), under official control.**

Source: De Sousa E, Casati P, Cardoso F, Baltazar C, Durante G, Quaglino F, Bianco PA (2009) Flavescence dorée phytoplasma affecting grapevine (*Vitis vinifera*) newly reported in Portugal. *New Disease Reports* vol. 19 (February 2009 to August 2009) http://www.bspp.org.uk/publications/new-disease-reports/ndr.php?id=019033

Diário da República, 2.ª série - N.º 197 - 10 de Outubro de 2008. Despacho no°. 25296/2008. http://www.drapn.min-agricultura.pt/drapn/fil_videira/Despacho_n%C2%BA_25296-2008_FdDconcelho_e_freguesias.pdf

Additional key words: new record **Computer codes:** PHYP64, PT

2009/091 First report of *Monilinia fructicola* in Italy

The NPPO of Italy informed the EPPO Secretariat that *Monilinia fructicola* (EPPO A2 List) has been recently found in Italy. *M. fructicola* was detected during a survey carried out in 2008/2009 in Piemonte region. It was found at Lagnasco (Cuneo province) in 2 orchards of nectarines (*Prunus persica* var. *nectarina* cvs 'Sweet red' and 'Orion').
The situation of *Monilinia fructicola* in Italy can be described as follows: **Present, first found in 2009 in 2 orchards of Piemonte region.**

Source: NPPO of Italy, 2009-04.

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

2009/092 First report of *Cylindrocladium buxicola* in Italy

In spring 2008, *Cylindrocladium buxicola* (formerly on the EPPO Alert List) was detected for the first time in Italy (Saracchi *et al*., 2008). In a nursery located in the province of Como (Lombardia), leaf blight symptoms were observed on potted box plants (*Buxus sempervirens* cv. 'Suffruticosa') and were followed by a sudden and severe defoliation. Diseased plants had been imported from Belgium (where *C. buxicola* is known to occur) as cuttings in November 2006. At the time of import, cuttings did not show any symptoms. However, in spring 2007, the first leaf blight symptoms appeared on a few plants but were attributed to the hot temperatures that prevailed during this period. Because spring 2008 was particularly cool and rainy, box blight symptoms were severe and the nurseryman decided to destroy the whole plant lot. Investigations were subsequently carried out on other plant lots within this nursery but *C. buxicola* was no longer detected.
Interestingly, the NPPO of Italy later reported another finding of *C. buxicola* in the province of Como. In September 2008, *C. buxicola* was detected in the boxwood hedges (*Buxus sempervirens*) of the 'Italian style garden' of Villa Taverna which is located at Torno on the shores of Lake of Como.
The situation of *Cylindrocladium buxicola* in Italy can be described as follows: **Present, first found in 2008 in Lombardia (Como province).**

Source: NPPO of Italy and PPO of Lombardia, 2009-02.

Saracchi M, Rocchi F, Pizzatti C, Cortesi P (2008) Box blight, a new disease of *Buxus* in Italy caused by *Cylindrocladium buxicola*. *Journal of Plant Pathology* **90**(3), 565-568.

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

2009/093 Situation of *Gibberella circinata* in France

In France, *Gibberella circinata* (anamorph *Fusarium circinatum* – EPPO A1 List) had been detected once in 2005, in a private garden at Perpignan (Languedoc-Roussillon region, Southern France) on a small number of declining trees. In 2008, this outbreak was officially declared eradicated (see EPPO RS 2006/164 and 2008/108). The French NPPO recently carried out studies on conifer seeds imported from the USA and detected *F. circinatum* in 6 seed lots (see table below).

Species	Nb of lots	Origin	Year of import
Pinus taeda	2	Virginia (US)	2001 (harvested in 1993 and 1994)
Pseudostuga menziesii	1	Washington State (US)*	2004 (harvested in 2003)
Pinus ponderosa	1	New Mexico (US)*	2005
Pinus taeda	1	USA	2004
Pinus taeda	1	Virginia (US)	2008

* So far, *G. circinata* was reported as 'Absent, unreliable record' in Washington State and 'Absent' in New Mexico. USDA-APHIS has accordingly been informed of these detections, as well as the NPPOs of other countries to which seeds originating from the infested lots were subsequently re-exported from France.

All infected seed lots were destroyed and seedlings issued from these lots were traced back. A single outbreak of *F. circinatum* was identified by the French National Laboratory on 2008-05-28 on *Pseudotsuga mensiezii* in the Vosges department (North-eastern France). Seedlings were destroyed. A buffer zone of 1 km radius (314 ha) was demarcated around the infested site and will be submitted to intensive monitoring for at least 2 years to verify the absence of *F. circinatum*.
The pest status of *Gibberella circinata* in France is officially declared as: **One outbreak detected in the Vosges department in 2008, under eradication.**

Source: NPPO of France, 2009-01.

Additional key words: phytosanitary incident **Computer codes:** GIBBCI, FR

2009/094 Occurrence of *Plum pox virus* in Schleswig-Holstein, Germany

The NPPO of Germany recently informed the EPPO Secretariat of the detection of *Plum pox virus* (*Potyvirus*, PPV – EPPO A2 List) on *Prunus domestica* (plum) in Schleswig-Holstein. In August and September 2008, PPV was detected in 4 registered companies (3 of them were producing planting material subject to plant passport), and in 1 private garden. The leaves of affected *P. domestica* showed diffuse chlorotic spots. Further analysis by PCR confirmed that the symptoms were caused by PPV-D and PPV-M strains. All infected plants have been destroyed. The origin of these infections is not known.
The pest status of *Plum pox potyvirus* in Germany is officially declared as: **Present in some areas, under eradication.**

Source: NPPO of Germany, 2009-02.

Additional key words: detailed record **Computer codes:** PPV000, DE

2009/095 First report of '*Candidatus* Phytoplasma pyri' in Lebanon

In October 2005 and 2006, symptoms of pear decline were observed in commercial orchards (*Pyrus communis* cvs. 'California' and 'Coscia') in the western, central and northern Bekaa Valley, in Lebanon. Affected plants showed premature reddening and upward rolling of the leaves; in some cases, premature defoliation and reduced shoot growth were also observed. Samples were collected from 31 symptomatic and 2 asymptomatic pear trees. Molecular tests (PCR with different sets of primers) confirmed the presence of '*Candidatus* Phytoplasma pyri' (EPPO A2 List) in the majority of symptomatic samples (51%). This is the first report of pear decline in Lebanon.
The situation of '*Candidatus* Phytoplasma pyri' in Lebanon can be described as follows: **Present, first reported in 2007 in the Bekaa Valley.**

Source: Choueiri E, Salar P, Jreijiri F, El Zammar S, Danet JL, Foissac X (2007) First report and characterization of pear decline phytoplasma on pear in Lebanon. *Journal of Plant Pathology* **89**(3) Supplement, S69.

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

2009/096 First report of '*Candidatus* Phytoplasma pyri' in Tunisia

In the northern part of Tunisia, symptoms resembling those of pear decline were observed in pear orchards, both on newly introduced cultivars (*Pyrus communis* cvs. 'Williams' and 'Alexander Lucas') and local ones (*P. communis* cvs. 'Miski-Ahrech' and 'Bouguedma'). Affected trees showed reduced growth, small reddening leaves and premature leaf drop in autumn. In 2003 and 2004, 9 pear orchards in the Ras-Jebel area were surveyed and samples collected from both symptomatic and asymptomatic pear trees. Molecular tests (PCR and RFLP) confirmed the presence of '*Candidatus* Phytoplasma pyri' (EPPO A2 List) in all symptomatic pear trees. It is also noted that *Cacopsylla pyri* (a known vector of pear decline) is the most common psyllid found in Tunisian pear orchards. Preliminary observations made in affected orchards suggest that natural spread is taking place. This is the first report of pear decline in Tunisia.
The situation of '*Candidatus* Phytoplasma pyri' in Tunisia can be described as follows: **Present, first reported in 2007 from Northern Tunisia.**

Source: Ben Khalifa M, Marrakchi M, Fakhfakh H (2007) '*Candidatus* Phytoplasma pyri' infections in pear orchards in Tunisia. *Journal of Plant Pathology* **89**(2), 269-272.

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

2009/097 '*Candidatus* Phytoplasma pyri' found for the first time in Schleswig-Holstein (DE)

In Germany, pear decline (associated with '*Candidatus* Phytoplasma pyri' – EPPO A2 List) occurs only in some parts of the country. Surveys carried out in all länder from 2000 to 2005 showed that it occurred in some areas of Rheinland-Pfalz and Baden-Württemberg, and that a few incursions had been recorded in Bayern, Nordrhein-Westfalen, Niedersachsen and Sachsen. In 2008, three cases of pear decline were found for the first time in Schleswig-Holstein on *Pyrus communis* and *P. callyriana*. On *P. communis,* shoots of affected trees showed reddish discoloration. On *P. calleyriana*, leaves at the top of the affected trees showed necrotic spots. The phytoplasma was identified by PCR. All infected trees were destroyed. It is assumed that the disease was introduced with infected plant material.
The pest status of pear decline in Germany is officially declared as: **Present in some areas, under eradication.**

Source: NPPO of Germany, 2009-01.

Additional key words: detailed record **Computer codes:** PHYPI, DE

2009/098 '*Candidatus* Phytoplasma mali' detected in Thuringen, Germany

Since 2005, symptoms of apple proliferation have been observed in a company producing apple fruits (*Malus* spp.) in Thuringen, Germany. Affected trees showed symptoms of proliferation, enlarged stipules, off-season blooming, poorly coloured fruits, and reduction of fruit size. PCR tests confirmed the presence of '*Candidatus* Phytoplasma mali' (EPPO A2 List) in diseased trees. The infected trees were up-rooted and incinerated. In the remaining plots, measures were taken to control the vectors of the disease. The origin of this infection is unknown.
The pest status of '*Candidatus* Phytoplasma mali' in Germany is officially declared as: **Present in various areas, under official control.**

Source: NPPO of Germany, 2009-03.

Additional key words: detailed record **Computer codes:** PHYPMA, DE

2009/099 Occurrence of *'Candidatus* Phytoplasma prunorum' in Germany

In Germany, the presence of *'Candidatus* Phytoplasma prunorum' (European stone fruit yellows – EU Annexes) has been reported from Hessen, Nordrhein-Westfalen and Rheinland-Pfalz (Jarausch *et al*., 2006). The NPPO of Germany recently informed the EPPO Secretariat of the detection of *'Ca.* Phytoplasma prunorum' in Schleswig-Holstein and Baden-Württemberg.

- **Schleswig-Holstein:**

'*Ca*. Phytoplasma prunorum' was detected in August 2008 in 2 registered companies producing propagation material of *Prunus pumila, P. persica* and *P. armeniaca*. Affected plants did not show any symptoms but PCR tests confirmed the presence of the phytoplasma. All infected plants have been destroyed. The origin of this infection is not known.

- **Baden-Württemberg**:

Between May and October 2008, samples of *P. domestica, P. armeniaca,* and *P. persica* showing symptoms of European stone fruit yellows or without any symptoms were collected from different places and tested by PCR for the presence of phytoplasmas. For technical reasons, only universal primers were used and therefore the identity of the phytoplasmas involved could not be specified. Nevertheless, on the basis of symptomatology, it was assumed that the plants which had tested positive were infected by '*Ca*. Phytoplasma prunorum'.

The pest status of *'Candidatus* Phytoplasma prunorum' in Germany is officially declared as: **Present, under eradication.**

Source: NPPO of Germany, 2009-01.

Jarausch B, Mühlenz I, Beck A, Lampe I, Harzer U, Jarausch W (2006) [Epidemiology of European Stone Fruit Yellows (ESFY) in Germany]. 55. Deutsche Pflanzenschutztagung (Göttingen, 2006-09-25-28). *Mitteilungen aus der Biologischen Bundesanstalt für Land- und Forstwirtschaft Berlin-Dahlem* no. 400, S 274 (in German).

Additional key words: detailed record **Computer codes:** PHYPPR, DE

2009/100 EPPO report on notifications of non-compliance

The EPPO Secretariat has gathered below the notifications of non-compliance for 2009 received since the previous report (EPPO RS 2009/056). Notifications have been sent directly to EPPO by Switzerland, and via Europhyt for the EU countries. The EPPO Secretariat has selected notifications of non-compliance made because of the detection of pests. Other notifications of non-compliance due to prohibited commodities, missing or invalid certificates are not indicated. It must be pointed out that the report is only partial, as many EPPO countries have not yet sent their notifications. When a consignment has been re-exported and the country of origin is unknown, the re-exporting country is indicated in brackets. When the occurrence of a pest in a given country is not known to the EPPO Secretariat, this is indicated by an asterisk (*).

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Agromyzidae	*Apium graveolens*	Vegetables	Vietnam	Germany	1
	Apium graveolens	Vegetables	Thailand	Switzerland	2
	Apium graveolens, Ocimum	Vegetables	Thailand	Switzerland	2
	Apium graveolens, Ocimum, Passiflora	Vegetables	Vietnam	Switzerland	1
Aonidiella citrina, Aspidiotus destructor, Fiorinia proboscidaria, Phyllocnistis citrella, Coccus	*Citrus*	Fruits	Bangladesh	United Kingdom	1
Bemisia	*Apium graveolens*	Vegetables	Thailand	United Kingdom	1
	Lisianthus	Cut flowers	Israel	United Kingdom	1
Bemisia tabaci	*Apium graveolens*	Vegetables	Thailand	United Kingdom	1
	Glechoma	Plants for planting	Spain (Canary isl.)	Switzerland	1
	Murraya	Fruits	India	Ireland	3
	Ocimum basilicum	Vegetables (leaves)	Israel	Czech Republic	1
	Ocimum basilicum	Vegetables (leaves)	Israel	Ireland	4
	Ocimum basilicum	Vegetables (leaves)	Israel	Netherlands	2
	Ocimum basilicum	Vegetables (leaves)	Thailand	United Kingdom	1
	Ocimum sanctum	Vegetables (leaves)	Thailand	United Kingdom	1
Ceratothripoides brunneus, Diaphania indica, Helicoverpa	*Momordica charantia*	Vegetables	Kenya	United Kingdom	1
***Cercospora apii,* unspecified bacteria**	*Apium graveolens*	Vegetables	Thailand	Germany	1
Diaphania indica	*Momordica*	Vegetables	India	United Kingdom	1
	Momordica	Vegetables	Kenya	United Kingdom	3
Diaphania indica (Thrips* spp. suspected to be *T. palmi and Scirtothrips)	*Momordica charantia*	Vegetables	India	United Kingdom	1
Diaphania indica, Scirtothrips dorsalis	*Momordica*	Vegetables	Kenya	United Kingdom	1
Diaphania, Thripidae	*Momordica*	Vegetables	Dominican Republic	United Kingdom	1
Guignardia citricarpa	*Citrus aurantium*	Fruits	Ghana	United Kingdom	1
	Citrus maxima	Fruits	China	Netherlands	1
	Citrus paradisi	Fruits	South Africa	Netherlands	2
	Citrus sinensis	Fruits	Argentina	Netherlands	1
	Citrus sinensis	Fruits	Ghana	United Kingdom	1
	Citrus sinensis	Fruits	South Africa	Netherlands	5
Helicotylenchus	*Phoenix canariensis*	Plants for planting	Uruguay	France	1
Helicotylenchus, Tylenchorhynchus	*Mangifera indica*	Fruits	USA	United Kingdom	1
Helicoverpa armigera	*Capsicum annuum*	Vegetables	Kenya	United Kingdom	1
	Chrysanthemum	Cuttings	Kenya	United Kingdom	1
	Pelargonium	Plants for planting	Spain (Canary isl.)	Netherlands	1
Heliothis,* Non-European Tephritidae, *Toxoptera* (suspect *T. victoriae)	*Citrus aurantiifolia, Momordica charantia, Solanum melongena*	Fruits and vegetables	Bangladesh	Germany	1
Liriomyza	*Apium graveolens*	Vegetables	Thailand	Sweden	1
	Apium graveolens, Ocimum americanum	Vegetables	Thailand	Denmark	1
	Apium graveolens, Ocimum basilicum	Vegetables	Thailand	Denmark	2
	Gypsophila	Cut flowers	Israel	Belgium	1
	Ocimum	Vegetables (leaves)	Thailand	Germany	1
	Ocimum americanum	Vegetables (leaves)	Thailand	Denmark	9

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
***Liriomyza* (cont.)**	*Ocimum americanum*	Vegetables (leaves)	Thailand	Sweden	1
	Ocimum basilicum	Vegetables (leaves)	Thailand	Czech Republic	6
	Ocimum basilicum	Vegetables (leaves)	Thailand	Denmark	10
	Unspecified	Vegetables	Thailand	Denmark	1
Liriomyza huidobrensis	*Chrysanthemum*	Cut flowers	Colombia	Netherlands	1
	Chrysanthemum	Cut flowers	Kenya	Netherlands	1
	Gypsophila	Cut flowers	Ecuador	Netherlands	4
	Gypsophila	Cut flowers	Kenya	Netherlands	3
	Gypsophila paniculata	Cut flowers	Kenya	Netherlands	1
	Solidago	Cut flowers	Kenya	Netherlands	2
Liriomyza sativae	*Gypsophila*	Cut flowers	Ethiopia*	Netherlands	1
	Ocimum	Vegetables (leaves)	Thailand	Netherlands	1
	Ocimum americanum	Vegetables (leaves)	Thailand	Sweden	8
	Ocimum basilicum	Vegetables (leaves)	Thailand	Netherlands	5
	Ocimum basilicum	Vegetables (leaves)	Thailand	Sweden	1
Liriomyza trifolii	*Apium graveolens*	Vegetables	Thailand*	Netherlands	1
	Apium graveolens	Vegetables	Thailand*	Sweden	1
	Ocimum americanum	Vegetables (leaves)	Thailand*	Sweden	1
	Solidago	Cut flowers	Israel	Netherlands	1
Liriomyza, Spodoptera	*Ocimum americanum*	Vegetables (leaves)	Thailand	Sweden	1
Metamasius hemipterus	*Phoenix roebelenii*	Plants for planting	Costa Rica	Netherlands	1
Milviscutulus mangiferae, Helicotylenchus, Tylenchorhynchus	*Mangifera indica*	Plants for planting	USA	United Kingdom	1
Milviscutulus mangiferae, Pinnaspis buxi	*Cordyline*	Plants for planting	Singapore	United Kingdom	1
Pepino mosaic virus	*Lycopersicon esculentum*	Seeds	Guatemala	Belgium	1
	Lycopersicon esculentum	Vegetables	Spain (Canary isl.)	United Kingdom	1
Potato spindle tuber viroid	*Petunia*	Cuttings	Israel	Belgium	1
Radopholus similis	*Anubias*	Aquarium plants	Singapore	Netherlands	1
	Anubias	Aquarium plants	Thailand	Netherlands	3
Ralstonia solanacearum	*Solanum tuberosum*	Ware potatoes	Egypt	Italy	1
	Solanum tuberosum, Citrus	Fruits and vegetables	Bangladesh	United Kingdom	1
Rhizoecus hibisci	*Serissa*	Plants for planting	China	Netherlands	1
Scirtothrips dorsalis	*Momordica*	Vegetables	Kenya	United Kingdom	1
	Momordica charantia	Vegetables	Kenya	United Kingdom	1
Spodoptera littoralis	*Rosa*	Cut flowers	Uganda	Netherlands	1
	Rosa	Cut flowers	Zimbabwe	Netherlands	21
	Solidago	Cut flowers	Zimbabwe	Netherlands	2
Spodoptera litura, Thrips palmi	*Momordica*	Vegetables	India	United Kingdom	1
Thripidae	*Momordica*	Vegetables	Dominican Republic	United Kingdom	1
Thripidae (suspect *T. palmi*)	*Momordica*	Vegetables	India	United Kingdom	1
	Solanum melongena	Vegetables	Dominican Republic	United Kingdom	1
Thrips	*Momordica*	Vegetables	Bangladesh	Sweden	1
Thrips palmi	*Aranda, Dendrobium*	Cut flowers	Malaysia	Netherlands	1
	Dendrobium	Cut flowers	Thailand	Netherlands	4
	Momordica	Vegetables	Dominican Republic	United Kingdom	1
	Momordica	Vegetables	Surinam	Netherlands	1
	Momordica	Vegetables	Thailand	Sweden	1
	Momordica charantia	Vegetables	Dominican Republic	Netherlands	2
	Momordica charantia	Vegetables	India	United Kingdom	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
***T. palmi* (cont.)**	*Momordica charantia*	Vegetables	Thailand	United Kingdom	1
	Orchidaceae	Cut flowers	Thailand	Austria	4
	Solanum	Vegetables	Dominican Republic	Netherlands	1
	Solanum	Vegetables	Thailand	Netherlands	1
	Solanum melongena	Vegetables	Dominican Republic	Netherlands	2
	Solanum melongena	Vegetables	Thailand	Netherlands	1
	Solanum melongena	Vegetables	Thailand	United Kingdom	1
Thrips palmi, Scirtothrips dorsalis	*Momordica charantia*	Vegetables	India	United Kingdom	2
Tomato chlorotic dwarf viroid	*Petunia*	Cuttings	Israel*	Belgium	3
Xanthomonas	*Citrus aurantiifolia*	Fruits	Bangladesh	United Kingdom	1
	Citrus limon	Fruits	India	United Kingdom	1
Xanthomonas axonopodis* pv. *citri	*Citrus aurantiifolia*	Fruits	India	United Kingdom	2
	Citrus limon	Fruits	India	United Kingdom	1

- **Fruit flies**

Pest	Consignment	Country of origin	Destination	nb
Anastrepha	*Mangifera indica*	Dominican Republic	Netherlands	1
Anastrepha obliqua	*Mangifera*	Dominican Republic	United Kingdom	1
Bactrocera	*Psidium*	Pakistan	United Kingdom	1
Bactrocera minax	*Citrus*	India	United Kingdom	1
Bactrocera zonata	*Psidium guajava*	Pakistan	United Kingdom	3
Non-European Tephritidae	*Annona squamosa*	India	United Kingdom	1
	Apium graveolens, Mangifera indica, Momordica, Ocimum basilicum	Vietnam	Germany	1
	Mangifera indica	Dominican Republic	Netherlands	1
	Syzygium	Thailand	Switzerland	1
	Syzygium samarangense	Thailand	Netherlands	1

- **Wood**

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
Bostrychidae	Unspecified (crate)	Wood packing material	China	Germany	1
	Unspecified (crate)	Wood packing material	India	Germany	3
Bostrychidae, Cerambycidae or Buprestidae	Unspecified	Dunnage	India	Denmark	1
Bursaphelenchus	Unspecified (pallet)	Wood packing material	China	Latvia	1
Cerambycidae	Unspecified (pallet)	Wood packing material	Japan	Germany	1
Grub holes > 3 mm	Unspecified	Wood packing material	USA	Poland	1
Ips typographus	Coniferae	Dunnage	Italy	Ireland	1
Lyctus	Unspecified	Wood packing material	China	Germany	1
Platypodidae, Scolytidae	*Entandrophragma cylindricum*	Wood and bark	Cameroon	Spain	1
Scolytidae, grub holes > 3 mm	*Guarea cedrata*	Wood and bark	Congo	Spain	1
Sinoxylon	Unspecified (crate)	Wood packing material	India	Germany	1

- **Bonsais**

Pest	Consignment	Country of origin	Destination	nb
Scutellonema brachyurus	*Taxus cuspidata*	Japan	United Kingdom	1

Source: EPPO Secretariat, 2009-04.

2009/101 International Workshop on citrus quarantine pests (Villahermosa, MX, 2009-07-27/31)

An International Workshop on citrus quarantine pests will take place at Villahermosa (State of Tabasco) in Mexico on the 2009-07-27/31. The Workshop is organized jointly by SAGARPA (Secretaría de Agricultura, Ganadería, Desarollo rural, Pesca y Alimentacíon), SENASICA (Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria), USDA (US Department of Agriculture), NAPPO (North American Plant Protection Organization), IICA (Istituto Interamericano de Cooperacíon para la Agricultura) and the Plant Health Committee of Tabasco State (Comité Estatal de Sanidad Vegetal de Tabasco).
The objective of this Workshop is to discuss the management of citrus quarantine pests such as: huanglongbing (associated with *Liberibacter* spp.), Citrus leprosis virus, citrus canker (*Xanthomonas axonopodis* pv. *citri*) and citrus variegated chlorosis (*Xyllela fastidiosa*).
The programme of the Workshop, contact addresses, and a registration form can be downloaded from the NAPPO website:
http://www.nappo.org/Workshop%20Citrus%20QuaratinePests-UP23-4-09.pdf

Source: NAPPO, 2009-03.

Additional key words: conference

2009/102 Assessing biofuel crop invasiveness in Hawaii (US)

There is growing interest in biofuels as a "green" and renewable solution to the world's energy needs, particularly in the face of increasing cost and declining availability of fossil fuels. Some evidence suggests that biofuel crops are selected for traits that contribute to a higher probability of naturalization and invasiveness.
A list of 40 biofuel crops proposed for Hawaii (US) have been assessed through the adapted version of the Australian Weed Risk Assessment system (WRA) for Hawaii. For each plant assessed, the WRA system generates a score assisting policy-makers to determine if a plant can be introduced. If the score is higher than 6, the plant is rejected for import. If the score is lower than 1, the plant is accepted for import, and in between these 2 thresholds it is considered that the assessment could not be completed.
The result of the WRA system for the 40 biofuel crops with their intended use, known invasiveness elsewhere and occurrence in the EPPO region in the wild (this information does not consider whether the species is cultivated, only if it escaped and naturalized) checked in the EPPO PQR and DAISIE database are provided in the table below:

Biodiedel

Species	Inv.	Occurrence in EPPO	WRA	Risk
Aleurites moluccana (Euphorbiaceae)	Y	/	12	High
Arachis glabrata (Fabaceae)	N	/	-1	Low
Azadirachta indica (Meliaceae)	Y	/	10	High
Brassica napus (Brassicaceae)	Y	Widespread	16	High
Cocos nucifera (Arecaceae)	N	/	-4	Low
Copaifera langsdorffii (Fabaceae)	N	/	4	Incomplete
Elaeis guineensis (Arecaceae)	N	/	9	High
Euphorbia lathyris (Euphorbiaceae)	Y	Widespread	8	High
Glycine max (Fabaceae)	N	FR, Madeira (PT)	-3	Low
Helianthus annuus (Astercaeae)	Y	Widespread	10.5	High
Jatropha curcas (Euphorbiaceae)	Y	/	17	High
Linum usitatissimum (Linaceae)	Y	Widespread	9.5	High
Moringa oleifera (Moringaceae)	N	/	1	Low
Persea americana (Lauraceae)	N	/	3	Low
Pittosporum resiniferum (Pittosporaceae)	N	/	6	Incomplete
Pongamia pinnata (Fabaceae)	Y	/	9	High
Ricinus communis (Euphorbiaceae)	Y	Widespread	21	High
Simmondsia chinensis (Simmondsiaceae)	N	/	-3	Low
Triadica sebifera (Euphorbiaceae)	Y	/	14	High
Ulex europaeus (Fabaceae)	Y	Native in W-Eur.	20	High

Biomass

Species	Inv.	Occurrence in EPPO	WRA	Risk
Arundo donax (Poacee)	Y	Widespread	12	High
Calotropis gigantea (Apocynaceae)	Y	/	15	High
Cannabis sativa (Cannabaceae)	N	Widespread	11.5	High
Casuarina equisetifolia (Casuarinaceae)	Y	CY, Madeira (PT)	15	High
Eucalyptus globulus (Myrtaceae)	Y	Azores (PT), ES (incl. Canarias), GB, Madeira (PT)	10	High
Eucalyptus grandis (Myrtaceae)	Y	/	11	High
Eucalyptus robusta (Myrtaceae)	N	ES, PT	3	Low
Eucalyptus saligna (Myrtaceae)	N	/	7	High
Eucalyptus urophylla (Myrtaceae)	N	/	6	Incomplete
Fraxinus uhdei (Oleaceae)	Y	/	11	High
Macadamia integrifolia (Proteaceae)	N	/	-1	Low
Paraserianthes falcataria (Fabaceae)	Y	/	8	High
Prosopis juliflora (Fabaceae)	Y	/	19	High
Psidium cattleianum (Myrtaceae)	Y	Azores (PT)	18	High

Ethanol

Species	Inv.	Occurrence in EPPO	WRA	Risk
Leucaena leucocephala (Fabaceae)		ES (incl. Canarias), Madeira (PT)	15	High
Panicum maximum (Poaceae)	Y	/	17	High
Panicum virgatum (Poaceae)	N	/	11	High
Pennisetum purpureum (Poaceae)	Y	CY, Madeira (PT)	16	High
Pueraria montana **(Fabaceae) (A2 List)**	Y	CH, IT	24	High
Saccharum officinarum (Poaceae)	N	Madeira (PT)	-2	Low

Source: Buddenhagen CE, Chimera C, Clifford P (2009) Assessing biofuel crop invasiveness: a case study. PloS ONE 4(4): e5261. doi:10.1371/journal.pone.0005261
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0005261

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

Additional key words: invasive alien plants, biofuel

Computer codes: ABKDO, ALEMO, ARHGL, BRSNN, CCNNU, CNISA, CPFLA, CSUEQ, CTRGI, EAIGU, EPHLA, EUCGD, EUCGL, EUCRO, EUCSA, EUCUP, FRXUH, GLXMA, HELAN, IATCU, LIUUT, MCDIN, MEIAD, MOHOL, LUAGL, PANMA, PANVI, PEBAM, PESPU, PNGPI, PRCJU, PSILO, PUELO, RIICO, SACOF, SAQSE, ULEEU

2009/103 The situation of *Baccharis halimifolia* in the EPPO region

Baccharis halimifolia (Asteraceae – common name Salt Bush) is listed on the EPPO List of invasive alien plants. It originates from North America, and is invasive in the EPPO region. It has been introduced as an ornamental plant for its tolerance to salinity and wind.

Geographical distribution

EPPO region: Belgium, France, Italy, Spain, United Kingdom.
North America: Mexico (native), USA (native) (Alabama, Arkansas, Connecticut, District of Columbia, Florida, Georgia, Louisiana, Massachusetts, Maryland, Mississippi, North Carolina, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia).
Oceania: Australia (invasive) (New South Wales, Queensland), New Zealand (invasive).

Morphology

B. halimifolia is a branching shrub or small tree growing up to 4 m high. The trunk can reach 16 cm diameter. Leaves are alternate, pale green, thick, those of the stem and lower branches obovate to elliptic or oblanceolate, 2-7 cm long and 1-5 cm wide, those of the branchlets are smaller, cuneate at the base, several-toothed above the middle. *B. halimifolia* is dioecious. Flower heads are situated in terminal or axillary clusters of 1 to 5. Flowers are small, female ones are whitish, male ones are greenish. Achenes are 1-2 mm long, pappus is bright-white, 6-8 mm long.

Biology and ecology

B. halimifolia is generally an evergreen, but in the cooler parts of its native range, it is deciduous. The species reproduces mainly by seeds, but can also reproduce vegetatively by sprouting. *B. halimifolia* flowers at the end of the summer (August to October in France) and is wind-pollinated. Seeds are produced from October to November (in France). They are abundant (about 1 million seeds are produced by one female plant) and germinate easily (usually in 1 to 2 weeks) if sufficient soil moisture is available. Seed longevity is of about 5 years. Optimum germination conditions are at temperatures comprised between 15 and 20°C. *B. halimifolia* grows fast and shrubs are mature within 2 years and flower every year.
B. halimifolia tolerates a high level of soil salinity as well as periodic floods, it can stand many types of soil and pH. It is frost tolerant, and can stand temperatures as low as -15°C.

Habitats

In its native range, this shrub is found mostly in coastal habitats, e.g. salt marshes and tidal rivers, sandy places, but also on disturbed places far off the coast. In its introduced range, the species first colonizes anthropized habitats such as road sides, ditches, wastelands, etc. and then reaches semi-natural to natural habitats such as wetlands. According to the Corine Land Cover nomenclature, these habitats correspond to: coastal wetlands, banks of continental water, riverbanks/canalsides (dry river beds), road and rail networks and associated land, other artificial surfaces (wastelands).

Pathways

The species has been introduced in France at the end of the 18th century, and is much appreciated for ornamental purposes due to its tolerance to salt and wind. Seeds are dispersed by wind and possibly by water.

Impacts

B. halimifolia forms dense and impenetrable thickets that crowd out native vegetation and prevent the establishment of other plant species, including rare and vulnerable plant species.

When established near salt marshes, *B. halimifolia* is detrimental to salt production as ti forms a wind break and contamines salt with seeds. *B. halimifolia* also impedes treatments against mosquitoes in wetlands. The plant is very inflammable and may increase fire hazards, as well as the cost of wasteland management. The palatability of the plant is low, which can reduce the value of pastures. Seeds are poisonous if eaten and lethal cases of poisoning of cattle have been reported. Its pollen is also suspected to be allergenic and to cause hay fever.

Control

The first step in controlling this species is the reduction of its use as an ornamental plant along roads.

Flooding with marine water could limit the spread of the species. Nevertheless, such a technique can only be considered in salt marshes.

Cutting and uprooting can locally control the plant, but these expensive measures have to be repeated several times because of the resprouting ability of the species, and the large seed bank. If plants are removed manually, the roots should be cut well below the soil surface to prevent resprouting. When uprooting is not possible, regularly cutting the shrubs before they set seeds can stop the spread of the plant. Sheep grazing can reduce the spread of *B. halimifolia* locally, when there is a heavy pasture load (the species has a low palatability).

Chemical control is done by spraying herbicides such as 2,4-D, dicamba plus MCPA, glyphosate, picloram plus 2,4-D, and tryclopyr.

Control through fire has proven to be inefficient. Several biological control agents have been tested, but are not regarded as highly efficient.

Source: Charpentier A, Riou K, Thibault M (2006) Bilan de la campagne de contrôle de l'expansion du *Baccharis halimifolia* menée dans le parc naturel régional de Camargue (PNRC) en automne 2004 et 2005. http://www.parc-camargue.fr/Francais/upload/rapport_baccharis.pdf

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

2009/104 3rd National congress on biological invasions in Spain, Zaragoza (ES), 2009-11-24/27

The Colegio Profesional de Biólogos de Aragón (COPBA), and the Grupo Especialista en Invasiones Biológicas (GEIB) will organize the 3rd Spanish Congress on biological invasions in Zaragoza on the 2009-11-24/27.
The objectives of this congress are:

- to focus attention on the topic of invasive alien species;
- to enhance collaboration in the field of biological invasions;
- to enrich the debate and enhance research;
- to promote transversal participation in the search for solutions.

Information is available at: http://eei2009.blogspot.com/

Source: EPPO Secretariat 2009-05

Additional key words: invasive alien species, conference **Computer codes:** ES