ORGANISATION EUROPEENNE
ET MEDITERRANEENNE
POUR LA PROTECTION DES PLANTES

EUROPEAN AND MEDITERRANEAN
PLANT PROTECTION
ORGANIZATION

EPPO Reporting Service

NO. 2 PARIS, 2010-02-01

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_____ *Invasive Plants*

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2010/025 *Anoplophora chinensis* found again in the Netherlands

The NPPO of the Netherlands recently informed the EPPO Secretariat that 2 larvae of *Anoplophora chinensis* were found in 1 *Carpinus* tree in December 2009. This second outbreak is located in the centre of the major tree nursery area of Boskoop, 30 km away from the first one in Westland (see EPPO RS 2009/173). On this *Carpinus* tree, inspectors had noticed (on 2009-12-07) a recent exit hole, and dissection of the tree in the laboratory revealed the presence of the 2 living, mature larvae. At the same location, 7 old exit holes (at least 2 to 3 years old) were also detected in 2 old dead stumps of *Acer palmatum*. All plants were part of a hedgerow of a company which has imported *A. palmatum* plants from China over a long period (at least since 1993). These exit holes were not easily visible as the trees were covered by ivy (*Hedera* spp.).
Eradication measures were immediately taken. All deciduous trees (*Corylus, Euonymus, Fraxinus, Ilex, Quercus, Rhododendron* and *Sambucus*), as well as *Cryptomeria* and *Pinus* spp., within a range of 100 m of the infested trees are being removed and destructively inspected at the laboratory to eliminate all possibly remaining life stages. This will be completed at the end of March, well in advance to the adult emergence which is not expected before the end of May (based on the Italian experience). At the same time an intensive inspection of all host trees is being performed within a range of 100-200 m around the infested site (including 2 companies, 27 private gardens, 5 gardens of public buildings). For the moment, no further specimens or signs of the pest have been detected within this area of 200 m radius.
In addition, a buffer zone of 2 km radius around the infested trees has been demarcated. In this area and for a period of 4 years, the movement of plants for planting of 17 host plant species (as listed by the EU*) will not be allowed before official inspections have taken place (including both visual inspections and destructive sampling) and have found that the plants were free from *A. chinensis*. These official inspections will be done in addition to the regular ones which are already being performed (on average twice a year) in those registered nurseries that are exporting plants for planting (EU plant passport system). Finally, inspections have been carried out across the Netherlands at 41 locations, mainly sites of companies which had imported *Acer* trees from Asia in the past, and they did not detect *A. chinensis*.
The pest status of *Anoplophora chinensis* in the Netherlands is officially declared as: **Transient – actionable, under surveillance. The pest has been detected as an occurrence of two larvae and is not expected to establish.**

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* Host plants listed in the Commission Decision 2008/840/EC on emergency measures to prevent the introduction into and the spread within the Community of *Anoplophora chinensis* (Forster): *Acer* spp., *Aesculus hippocastanum*, *Alnus* spp., *Betula* spp., *Carpinus* spp, *Citrus* spp., *Corylus* spp., *Cotoneaster* spp., *Fagus* spp., *Lagerstoemia* spp., *Malus* spp., *Platanus* spp., *Populus* spp., *Prunus* spp., *Pyrus* spp., *Salix* spp., *Ulmus* spp.

Source: NPPO of the Netherlands, 2010-02.

INTERNET (last accessed 2010-02)
Plantenziektenkundige Dienst website
Pest report of 2010-01. 2010 - Two larvae of *Anoplophora chinensis* in hedgerow of company importing *Acer palmatum* plants from China.
http://www.minlnv.nl/portal/page?_pageid=142,2268041&_dad=portal&_schema=PORTAL&p_file_id=49862
Factsheet measures buffer zone Boskoop. http://www.minlnv.nl/aziatischeboktor

Additional key words: detailed record **Computer codes:** ANOLCH, NL

2010/026 First record of *Tuta absoluta* in Israel

The NPPO of Israel (PPIS) recently informed the EPPO Secretariat of the presence of *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) on its territory. A survey was carried out during December 2009 and confirmed its occurrence in Israel.
The pest status of *Tuta absoluta* in Israel is officially declared as: **Present.**

Source: NPPO of Israel, 2010-02.

Additional key words: new record **Computer codes:** GNORAB, IL

2010/027 *Diabrotica virgifera virgifera* is no longer found in the United Kingdom

The NPPO of the United Kingdom informed the EPPO Secretariat that during official surveys, no adults of *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae – EPPO A2 List) were caught in 2008 or 2009. The NPPO of the United Kingdom now considers that the country is free from the pest and demarcated zones have been revoked.
The situation of *Diabrotica virgifera virgifera* in the United Kingdom can be described as follows: **Absent, pest no longer found, confirmed by surveys**.

Source: NPPO of the United Kingdom, 2010-01.

Additional key words: absence **Computer codes:** DIABVI, GB

2010/028 Results of the 2009 survey on *Diabrotica virgifera virgifera* in Italy

Official surveys carried out in Italy in 2009 showed that *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae - EPPO A2 List) is now present in most parts of the Po Valley with the addition of 1 outbreak near Roma (Lazio region). With the exception of this outbreak near Roma, all Italian regions located at the south of Emilia-Romagna are still free from *D. virgifera virgifera*. In 2009, the pest was caught in the following regions:

- Emilia-Romagna (Parma, Piacenza, Reggio Emilia, Modena),
- Friuli-Venezia-Giulia (all provinces),
- Lazio (only in the province of Roma),
- Liguria (Savona),
- Lombardia (all provinces),
- Piemonte (all provinces),
- Trentino-Alto Adige (Bolzano, Trento),
- Veneto (all provinces).

It was noted that a moderate increase of the infested areas took place in Liguria and in the province of Bolzano (Trentino-Alto Adige region). In 2009, although the pest occurred on a larger area, it was estimated that visible damage was observed in 46 700 ha and that economic damage occurred only in 13 400 ha in the following regions: Piemonte (1 400 ha in the provinces of Novara, Vercelli, Torino), and Lombardia (12 000 ha in the provinces of Bergamo, Brescia, Como, Cremona, Lodi, Mantova, Milano, Monza/Bianza, Pavia). In Italy, the total area cultivated with maize was approximately 943 000 ha in 2009.

The situation of *Diabrotica virgifera virgifera* in Italy can be described as follows: **Present, first found in 1998 near Venezia airport, now occurring in Northern Italy (Emilia-Romagna, Friuli-Venezia-Giulia, Liguria, Lombardia, Piemonte, Trentino-Alto Adige, Veneto) and in Lazio (1 outbreak). Under official control.**

Source: NPPO of Italy, 2009-12.

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

2010/029 *Diabrotica virgifera virgifera* in France: preliminary results of summer 2009

In France, the preliminary results of trapping studies conducted in summer 2009 showed that *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae – EPPO A2 List) is still present and has been found in new areas. As of 2009-08-20, approximately 300 specimens were caught in 46 communes, belonging to the following 8 departments (in 3 regions): Bas-Rhin, Haut-Rhin (Alsace); Saône-et-Loire (Bourgogne); Ain, Isère, Rhône, Savoie (Rhône-Alpes). Most beetles (approximately 200) were caught in the Alsace region, and the new infested areas found in Bourgogne were close to those in Rhône-Alpes. It is noted that the number of insects caught in 2009 was significantly higher than in previous years.

Source: Anonymous (2009) Diabrotica, aïe. *Phytoma- La Défense des Végétaux* n°624-625, p 5.
Fricotté C (2009) Chrysomèle du maïs : taper plus juste. *La France Agricole*. Octobre 2009, 16-17.

Additional key words: detailed record **Computer codes:** DIABVI, FR

2010/030 *Agrilus anxius* (bronze birch borer): addition to the EPPO Alert List

The NPPO of Norway recently suggested that *Agrilus anxius* (Coleoptera: Buprestidae – bronze birch borer) could usefully be added to the EPPO Alert List, and Dr Bjørn Økland (Norwegian Forest and Landscape Institute) kindly provided most of the information used to prepare the pest description. This borer is an important pest of landscape birches in North America and causes widespread damage to ornamental birches, especially in the North-Eastern USA and Canada. European species of birch (*Betula pendula* and *B. pubescens*) planted in North America are among the most susceptible birches and have demonstrated very high mortality. In the EPPO region, these birch species are widespread and important in the landscape, especially in the northern part of the region and in Russia where they constitute a significant part of the forest cover. Thus, *A. anxius* has the potential to become a serious forest pest should it become introduced in Europe. In addition, small insects are thought to survive in wood chips as it has been demonstrated for close relatives in the genus *Agrilus,* in particular for *A. planipennis* (EPPO A1 List). The increasing import of wood chips from North America to Europe includes large volumes of chips made from birch wood. This increasing trade could constitute a pathway for the entry of *A. anxius* into the EPPO region.

Agrilus anxius (Coleoptera: Buprestidae) - Bronze birch borer

Why	The NPPO of Norway recently suggested that *Agrilus anxius* (Coleoptera: Buprestidae – bronze birch borer) could usefully be added to the EPPO Alert List. *A. anxius* originates from North America where it is considered as a serious pest of birch trees (*Betula* spp.). *A. anxius* primarily attacks birches that are weakened or stressed but it is suspected that under certain circumstances (e.g. large populations) it can also attack healthy trees. In North America, tree mortality has been observed more particularly on birches planted for ornamental purposes, but *A. anxius* is also causing problems in forests.
Where	*A. anxius* is native to North America and occurs throughout the range of birches in Canada and the USA. **EPPO region:** absent. **North America:** Canada (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec, Saskatchewan), USA (Alaska, Colorado, Georgia, Idaho, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Tennessee, Utah, Washington, West Virginia, Wisconsin, Wyoming).
On which plants	*Betula* spp. (birches), including *Betula alleghaniensis* (yellow birch), *B. jacquemontii* (white-barked Himalayan birch), *B. lenta* (sweet birch), *B. occidentalis* (water birch), *B. papyrifera* (paper birch), *B. pendula* (silver or European birch), *B. platyphylla* (Manchurian birch), *B. populifolia* (gray birch), *B. pubescens* (downy birch), *B. utilis* (Himalayan birch). *A. anxius* is known to attack all native and introduced birch species (and their numerous crosses) in North America, although susceptibility varies between the birch species. It has been observed that the white-barked birches were generally more susceptible than those without white bark. For example, *B. jacquemontii* and *B. pendula* (which are widely planted in North America) are considered to be highly susceptible; B. *alleghaniensis, B. lenta, B. papyrifera, B. platyphylla* and *B. populifera* moderately susceptible; and *B. nigra* (river birch) is rarely attacked by *A. anxius*. A large block experiment with different birch species in Ohio revealed 100% mortality for *B. pendula* and *B. pubescens* which are the most widespread birch species in Northern Europe. Earlier studies carried out in Michigan had also shown that *B. pendula* was particularly susceptible to the insect.
Damage	Damage is caused by larval feeding on the inner bark and cambium of the tree. Repeated attacks and the construction of numerous winding galleries by larvae disrupt nutrient transport that eventually kills the roots. Insect galleries can also girdle the tree branches and trunks. Initially symptoms of an infestation appear in the upper crown the tree with leaf yellowing and branch dieback. Other evidence of an infestation is the presence of 5 mm wide 'D'-shaped exit holes. Rust coloured sap oozing and staining can also be observed on the bark, along with swellings and bumps where the tree has healed inside. In many cases, tree mortality is observed within a few years after the appearance of the first symptoms. Birches that are weakened or stressed by drought, old age, insect defoliation, soil compaction, stem or root injury are more susceptible to damage caused by *A. anxius*. Adults feed on leaves (*Alnus, Betula, Populus*) but damage is insignificant. The life cycle of *A. anxius* can last 1 or 2 years. Adults are small, narrow, metallic coppery beetles of approximately 12 mm long. Females lay eggs (singly or in clusters) in bark crevices, and can lay up to 75 eggs during a lifetime. Larvae are whitish, relatively long (19-25 mm) and flat with a head that is larger than the body, and they immediately bore into the wood after hatching. The insect overwinters as larvae inside the wood. Pupation takes place in shallow cells in the xylem and adults emerge from May to mid-July (depending on the climatic conditions). Pictures can be viewed on the Internet: http://www.forestryimages.org/browse/subthumb.cfm?sub=352

Dissemination — Adults can fly but there is no data on the natural spread of the insect. Over long distances, trade of infested trees and wood can ensure pest dispersal. Except for host preferences, the biology and morphology of *A. anxius* show similarities with *A. planipennis* (emerald ash borer – EPPO A1 List). Both insects are small and their larvae make serpentine-like galleries under the bark. The small size of *A. anxius* and the entry into the wood for pupation make it likely to survive chipping and transport in wood chips (provided the chips are not too small), as this has been demonstrated in experiments for *A. planipennis*. In Europe, and in particular in the Scandinavian countries, there is an increasing trade of wood chips for biofuel production. It is expected that the yearly import of deciduous wood chips in some Scandinavian countries will reach approximately 1 million tonnes in the coming years, including chips from the main host trees of *A. anxius*, such as *B. papyrifera* and *B. alleghanensis*. In addition, it is very likely that these large amounts of wood chips will be stored outdoors at short distances from birch stands.

Pathway — *Betula* spp. plants for planting, cut branches?, wood, wood chips from Canada and the USA.

Possible risks — In the EPPO region, birches are stand-forming tree species and are especially common in Northern Europe and Russia. With the exception of the Mediterranean region, they are widely planted for forestry and amenity purposes. For example in the Northern European countries, birches constitute a large part of the forest volume, ranging from 11.6 % in Sweden to 28.2 % in Latvia. In Norway, the area covered by birch forests reaches approximately 30 % of the total forest cover. In Scandinavian forests, the dominance of birch increases with latitude and altitude. Birch wood is also economically important for various building and industry purposes (e.g. plywood, pulpwood, furniture, birch sap).

In North America, the control of *A. anxius* mainly relies on preventive methods which favour birch growth (e.g. suitable planting sites, sufficient watering). Woodpeckers and some hymenopteran insects (*Atanycolus charus* (Braconidae), *Phasgonophora sulcata* (Chalcididae), *Spathius simillimus* (Braconidae)) are mentioned as natural enemies of *A. anxius*, but these may not be effective in urban environments. Chemical control targeted at the adults during summer can be used in tree nurseries but is probably not practical in urban and forest environments. The wide geographical distribution of *A. anxius* in North America, under various climates, strongly suggests that this insect has the potential to establish in the EPPO region. Considering the significant tree mortality observed in North America and the high susceptibility of the most dominant birch species in the EPPO region (i.e. *B. pendula* and *B. pubescens*), the introduction and establishment of *A. anxius* would most probably cause severe outbreaks and damage to *Betula* species grown in forests, nurseries, parks and gardens.

Acknowledgements: Warm thanks are due to Dr Dr Bjørn Økland (Norwegian Forest and Landscape Institute, Ås, NO) who has kindly provided most of information used to prepare this description.

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EPPO RS 2010/030
Panel review date - Entry date 2010-02

2010/031 Update on the situation of *Xylosandrus crassiusculus* in Italy

As reported in EPPO RS 2009/054, *Xylosandrus crassiusculus* (Coleoptera: Scolytidae – EPPO Alert List) was observed for the first time in Europe in 2003. The insect was trapped in Toscana (Italy), during a trial to evaluate different traps for forestry pests. During further studies conducted in Toscana, many specimens of *X. crassiusculus* were caught in other natural parks and in the harbour of Livorno. As the insect was caught in traps, it was not possible to identify its host plants; however, it is suspected that it may be present in *Alnus* (alders), *Fraxinus* (ashes), and *Quercus* (oaks). No particular damage has been noticed on trees in Toscana. The insect is now considered established and widespread along the Tyrrhenian coast, and eradication does not seem feasible. *X. crassiusculus* originates from Asia but is also established in some tropical African countries. It is hypothetized that African timber or wood packaging material may have been the pathway of introduction of *X. crassiusculus* in Toscana.
In 2007, a heavy infestation of *X. crassiusculus* had also been found on a single carob tree (*Ceratonia siliqua*) in a private garden (in Alassio) in Liguria. Later, other infested carob trees were found in private gardens in the same area. The infested trees were treated by endotherapy with imidacloprid with successful results. However, it is noted that wild plants may also be infested and act as sources for new infestations in Liguria.
Finally in 2009, specimens of *X. crassiusculus* were captured at the Marghera harbour near Venezia (Veneto region) but it is not known if established populations are present.
The situation of *Xylosandrus crassiusculus* in Italy can be described as follows: **Present, first detected in 2003, occurring in Liguria (few infested trees, under control), Toscana (many captures but no damage reported so far), Veneto (few captures). Eradication is not considered feasible.**

Source: Personal communication with Franco Finelli, Regional Plant Protection Organization of Emilia-Romagna (IT), 2010-02.

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

2010/032 *Phytophthora lateralis* identified in France

The NPPO of France recently informed the EPPO Secretariat that *Phytophthora lateralis* (EPPO A1 List) has been identified on *Chamaecyparis lawsoniana* plants. The French Forestry Department mentioned that tree mortality and symptoms resembling those of *P. lateralis* have been observed since 2005 on several hedges of *C. lawsoniana* in Finistère department (Bretagne region, Western France). Research studies will be initiated by INRA in collaboration with the Oregon State University (Corvallis, US) to compare French and American strains of *P. lateralis*, and to better understand their epidemiology. Detailed surveys will be carried out to delimit the extent of the infestation in France.
It can be recalled that in France, *P. lateralis* had been isolated from *C. lawsoniana* on two previous occasions (in 1996 and in 1998) in different locations, but at that time it was felt that these findings were related to a single original infestation of young, potted, greenhouse-propagated trees in a commercial nursery, itself resulting from an introduction from North America (Hansen *et al.*, 1999).
The situation of *Phytophthora lateralis* in France can be described as follows: **Present, identified in *Chamaecyparis lawsoniana* in 2010, under official control.**

Source: NPPO of France (2010-02).

Anonymous (2009) La lettre du DSF no. 38 – Juin 2009. Département de la Santé des Forêts (FR), 9 pp. http://agriculture.gouv.fr/sections/thematiques/foret-bois/sante-des-forets/publications-du-departement-de-la-sante-des-forets
Hansen EM, Streito JC, Delatour C (1999) First confirmation of *Phytophthora lateralis* in Europe. *Plant Disease* **83**(6), p 587.

Additional key words: new record **Computer codes:** PHYTLA, FR

2010/033 *Phytophthora ramorum* detected on *Larix kaempferi* in the United Kingdom

In the United Kingdom, *Phytophthora ramorum* (EPPO Alert List) was first found in 2002. In forests and woodlands, the disease has been largely associated with *Rhododendron* species (mainly *R. ponticum*) growing in the understorey. But in summer 2009, *P. ramorum* was detected for the first time on mature trees of *Larix kaempferi* (Japanese larch) in England (counties of Devon, Cornwall and Somerset). Affected larch trees showed foliar symptoms (wilted, withered shoot tips with blackened needles), and infected shoots shed their needles prematurely. Trees with branch dieback were in some cases showing numerous cankers on their branches and upper trunk that could bleed resin.
Pictures of symptoms on *L. kaempferi* can be viewed on the Internet:
http://www.forestry.gov.uk/pdf/fcsymptomshandout.pdf/$file/fcsymptomshandout.pdf
This is the first time that stem lesions caused by *P. ramorum* have been found on a conifer species. Many of the infected *L. kaempferi* trees were not growing in proximity to rhododendrons which raises the question of how they have become infected. Symptoms have also been found on *Tsuga heterophylla* (Western hemlock) and a selection of broadleaf species (beech, birch, and some oaks) growing in their vicinity.

Source: INTERNET (last retrieved in 2010-02)
Forestry Commission website. *Phytophthora ramorum*.
http://www.forestry.gov.uk/forestry/infd-7xvewh

Additional key words: host plant, detailed record **Computer codes:** PHYTRA, GB

2010/034 *Gibberella circinata* detected again in France

The NPPO of France recently informed the EPPO Secretariat that *Fusarium circinatum* (anamorph of *Gibberella circinata* – EPPO A1 List) has been again detected on its territory (see also EPPO RS 2006/104, 2008/103 and 2009/093). The fungus was detected in July 2009 on samples of *Pinus radiata* collected from 1 nursery in Vendée department (Pays-de-la-Loire region). Eradication measures (including destruction of infected plants and increased surveillance) were immediately put into place, and information was provided to all customers of the nursery. Studies were initiated to identify the possible source of this infection and it was found that infected plants had been grown from a lot of imported seeds. These tracing-back studies showed that 8 French nurseries and 1 forest stand had received young plants grown from this suspect seed lot. In September 2009, the presence of *F. circinatum* was confirmed in 1 of these nurseries in Côtes d'Armor department (Bretagne region), and eradication measures were also implemented. Although it has not been possible for the moment to retrieve and test seeds from the suspect lot, this second finding strongly suggests that the origin of the two infestations is the import of an infected seed lot. The country of origin of the *P. radiata* seeds, as well as other countries which may have imported plants grown from this suspect seed lot have been informed by the French NPPO. Intensive surveillance programmes are being implemented by the NPPO.
The situation of *Gibberella circinata* in France can be described as follows: **Present, found again in 2009 in 2 nurseries in Western France (Côtes d'Armor, Vendée) in connection with the import of a suspect *Pinus radiata* seed lot; under eradication.**

Source: NPPO of France, 2009-12.

Additional key words: detailed record **Computer codes:** GIBBCI, FR

2010/035 *Chalara fraxinea* occurs in France

In France, *Chalara fraxinea* (causing ash dieback - EPPO Alert List) was first found in spring 2008 in Haute-Saône department (Franche-Comté region). The fungus was later detected in Alsace, Bourgogne (Côte-d'Or, Saône-et-Loire), Champagne-Ardennes (few records in Haute-Marne), Franche-Comté (Doubs, Haute-Saône, Territoire de Belfort), and Lorraine (Meurthe-et-Moselle, Moselle, Vosges). In addition, an isolated finding has been made in the North of France, approximately 100 km from the main outbreak area, in the Pas-de-Calais department.
The situation of *Chalara fraxinea* in France can be described as follows: **Present, first detected in 2008, mainly in the eastern part (Alsace, Bourgogne, Champagne-Ardennes, Franche-Comté, Lorraine) with one isolated record in Pas-de-Calais.**

Source: Anonymous (2008) La lettre du DSF no. 37 – Décembre 2008. Département de la Santé des Forêts (FR), 12 pp.
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Anonymous (2009) La lettre du DSF no. 39 – Décembre 2009. Département de la Santé des Forêts (FR), 9 pp.

Additional key words: new record **Computer codes:** CHAAFR, FR

2010/036 *Plum pox virus* found in Piemonte and Puglia regions, Italy

The NPPO of Italy informed the EPPO Secretariat that *Plum pox virus* (EPPO A2 List) has been found in the regions of Piemonte and Puglia in 2009. Laboratory analysis (ELISA, RT-PCR) have confirmed the presence of PPV-M. Appropriate phytosanitary measures have been taken to eradicate the disease and avoid any further spread.

- **Piemonte**

PPV was detected in a nursery located in the municipality of Alba (province of Cuneo) in 17 samples collected from scions of *Prunus armeniaca* (cvs. 'Tonda di Costigiole', 'Valeria Gottero') and of *P. domestica* (cvs. 'Roero', 'Rossa di Costigliole', 'Big Egg' and 'Santa Clara'), as well as in one-year old rootstocks.

- **Puglia**

Three outbreaks of PPV have been found in young plantations located near Cerignola (province of Foggia). The virus was detected in 6 plants of *P. armeniaca* cvs. 'Ninfa'; 2 plants of 'Orange Rubis'; and in 44 plants of *P. persica* cv. 'Big Top'.

Source: NPPO of Italy, 2009-11.

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

2010/037 First report of *Columnea latent viroid* on tomato in France

In summer 2007, diseased samples of tomato (*Solanum lycopersicum* cv. 'Santa') leaves and fruits were received for diagnosis. These samples had been collected in Western France in glasshouses where tomato plants were showing viroid-like symptoms including severe leaf yellowing or reddening, in addition to distortion and stunting. Results of laboratory tests revealed the presence of *Columnea latent viroid* (*Pospiviroid*, CLVd). This is the first record of CLVd in France. The origin of this infection is still unknown.
The situation of *Columnea latent viroid* in France can be described as follows: **Present, detected for the first time in 2007 in tomato samples collected from glasshouse crops (Western France).**

Source: Steyer S, Olivier T, Skelton A, Nixon T, Hobden E (2009) *Columnea latent viroid* (CLVd): first report in tomato in France. *New Disease Reports* Volume 20 (2009-09 to 2010-01). http://www.bspp.org.uk/publications/new-disease-reports/ndr.php?id=020004

Additional key words: new record **Computer codes:** CLVD00, FR

2010/038 *Columnea latent viroid* detected and eradicated in the United Kingdom

As reported in EPPO RS 2008/007, *Columnea latent viroid* (*Pospiviroid*, CLVd) was detected in 2007 in the United Kingdom. Further details have recently been published on this finding and its subsequent eradication (Nixon *et al.*, 2009). In May 2007, a diseased tomato plant (*Solanum lycopersicum* cv. 'Santa') from a glasshouse crop in North-West England was submitted to the Central Science Laboratory (now Fera) for diagnosis. Symptoms included severe leaf distortion, bronzing and 'crunchy' leaf, and laboratory analysis revealed the presence of *Columnea latent viroid* (*Pospiviroid*, CLVd). Following this first detection,

CLVd was found at 3 further sites in *L. esculentum* cv. 'Santa': one in the same stock at the initial outbreak site, but in a different location; one in North-East England and another in Worcestershire in the West Midlands. CLVd sequence data were identical from all three sampling sites. At one site it was estimated that by the end of the growing season (November 2007), 50-60% of the crop was infected. Phytosanitary measures were immediately taken to control the outbreaks and by the end of the 2008 cropping season, CLVd was declared eradicated from the United Kingdom.
The situation of *Columnea latent viroid* in the United Kingdom can be described as follows: **Absent, detected for the first time in 2007 in tomato production sites, eradicated.**

Source: Nixon T, Glover R, Mathews-Berry S, Daly M, Hobden E, Lambourne C, Harju V, Skelton A (2009) *Columnea latent viroid* (CLVd) in tomato: the first report in the United Kingdom. *New Disease Reports* Volume 19 (2009-02 to 2009-08). http://www.bspp.org.uk/publications/new-disease-reports/ndr.php?id=019030

Additional key words: new record **Computer codes:** CLVD00, GB

2010/039 Situation of *Erwinia amylovora* in Lombardia and Piemonte, Italy

In Lombardia (IT), fireblight caused by *Erwinia amylovora* (EPPO A2 List) was observed for the first time in 1997. The NPPO of Italy informed the EPPO Secretariat that *E. amylovora* has recently been detected in the municipality of Merone (Province of Como). During a survey carried out by the Regional PPO of Lombardia, the bacterium was detected in only 1 plant of *Crataegus*. The infected plant and potential host plants located within a radius of 10 m were destroyed (i.e. 70 plants in total, all belonging to the genus *Crataegus*). The NPPO added that in July 2009, *E. amylovora* had also been detected in the municipality of Vertemate con Minoprio (Province of Como) on 2 *Pyrus* and 1 *Crataegus* plants. Eradication measures were also applied and 136 potential host plants were destroyed (134 *Pyrus* and 2 *Crataegus*).

The NPPO of Italy also stated that *E. amylovora* was detected in 2009 in Piemonte region on 2 adjoining plants of *Cotoneaster* in the botanical garden of Villa Taranto (province of Verbano-Ciuso-Ossola). The two infected plants have been destroyed.

Source: NPPO of Italy, 2009-07, 2009-11, and 2009-12.

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

2010/040 Surveys on regulated pests in Estonia: results for 2008

Official surveys were conducted by the NPPO of Estonia in 2008 on several regulated pests. During these surveys, the absence of the following pests was confirmed:
- *Bursaphelenchus xylophilus* (EPPO A1 List),
- *Diabrotica virgifera* (EPPO A2 List),
- *Erwinia amylovora* (EPPO A2 List),
- *Gibberella circinata* (EPPO A1 List),
- *Glomerella acutata* (formerly EU Annexes),
- *Pepino mosaic virus* (EPPO Alert List),
- *Phytophthora fragariae* (EPPO A2 List),
- *Phytophthora kernoviae* (EPPO Alert List),

- *Potato spindle tuber viroid* (EPPO A2 List),
- *Xanthomonas fragariae* (EPPO A2 List),

For all these organisms, the pest status is officially declared as: **Absent, confirmed by survey.**

During surveys conducted in nurseries, garden centres, parks and forests, *Phytophthora ramorum* (EPPO Alert List) was detected 3 times in garden centres. All infected plants which originated from Poland and the Netherlands were destroyed, and *P. ramorum* is now considered as eradicated from Estonia.
The pest status of *Phytophthora ramorum* in Estonia is officially declared as: **Absent, pest eradicated.**

Mycosphaerella pini (EU Annexes) was detected in garden centres and is under eradication. Outbreaks of *Globodera rostochiensis* (EPPO A2 List) were detected in production sites of plant propagation material and of seed potatoes. *Ditylenchus destructor* (EU Annexes) was found in 1 sample of seed potatoes.
The pest status for *Ditylenchus destructor, Globodera rostochiensis*, and *Mycosphaerella pini* is officially declared as: **Present, under eradication.**

Source: NPPO of Estonia, 2009-11.

Additional key words: absence, detailed record

Computer codes: BURSXY, COLLAC, DIABVI, DITYDE, ERWIAM, GIBBCI, HETDRO, PEPMV0, PHYTFR, PHYTKE, PHYTRA, PSTVD0, SCIRPI, XANTFR, EE

2010/041 New data on quarantine pests and pests of 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 of ISPM no. 8.

- **New records**

Studies on *Bactrocera cucurbitae* (Diptera: Tephritidae – EPPO A1 List) were carried out in West and Central Africa and showed that this fruit fly occurs in Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, Mali, Niger, and Senegal (Vayssières *et al*., 2007). The EPPO Secretariat had no previous data on the occurrence of this pest in Burkina Faso and Niger. **Present, no details.**

Cacyreus marshalli (Lepidoptera: Lycaenidae – EPPO A2 List) occurs in Malta (Sammut, 2007). **Present, no details.**

In Pakistan, surveys carried out in potato fields in the Northern Areas detected the presence of *Clavibacter michiganensis* subsp*. sepedonicus* (EPPO A2 List). The EPPO Secretariat had previously no data on the occurrence of potato ring rot in Pakistan (Bhutta, 2008). **Present, found in the Northern Areas.**

Iris yellow spot virus (*Tospovirus*, IYSV – EPPO Alert List) occurs in Egypt. Symptoms of IYSV have been observed since the 2000s on onions (*Allium cepa*), garlic (*A. sativum*), leek (*A. porrum*) and Egyptian leek (*A. kurrat*). The presence of the virus was confirmed in 2005 and observations made at that time concluded that despite high densities of the vector,

Thrips tabaci, the disease incidence was low in Egypt (Elnagar *et al*., 2005). **Present, first reported in 2005 with a low incidence.**

During surveys, the presence of *Rhagoletis cingulata* (Diptera: Tephritidae – EPPO A2 List) was confirmed in Croatia (Bjeliš, 2007). **Present, no details.**

In the Republic of Korea, the presence of *Tomato spotted wilt virus* (*Tospovirus* – EPPO A2 List) on capsicum has been reported recently. It was noted that this virus is spreading (Kim *et al*., 2008). **Present, no details**.

In Iran, *Potato spindle tuber viroid* (*Pospiviroid*, PSTVd – EPPO A2 List) has been detected on potato tubers collected from Razavi Khorasan and Northern Khorasan provinces (Arezou *et al*., 2008). **Present, detected on potatoes in Razavi Khorasan and Northern Khorasan provinces.**

Puccinia hemerocallidis (EPPO A1 List) is reported for the first time from Venezuela. The daylily rust was found in Colonia Tovar, in the state of Aragua (Pardo-Cardona *et al*., 2008). **Present, first reported in 2008 in Colonia Tovar, state of Aragua.**

- **Detailed records**

Anastrepha fraterculus and *A. striata* (Diptera: Tephritidae – EPPO A1 List) occur in Tocantins, Brazil (Bomfim *et al*., 2007).

Aleurocanthus spiniferus (Hemiptera: Aleyrodidae - EPPO A1 List) occurs in Shandong (China) where it is considered as one of the major pests of tea bushes (Jin *et al*., 2007).

Clavibacter michiganensis subsp*. michiganensis* (EPPO A2 List) was detected in spring 2005 in tomato crops in Cyprus, in the districts of Nicosia (Pyrgos), Larnaca (Odou, Melini, Vavatsinia) and Limassol (Parekklisia) (Papayiannis, 2008).

Cryphonectria parasitica (EPPO A2 List) occurs in Castilla y León, Spain. In this region, it was first detected in 1978 in Bembibre. At present it can be found in many chestnut stands in the areas of Leon and Zamora, and in some stands in the areas of Salamanca and Avila (Zamora *et al*., 2008).

Cryphonectria parasitica (EPPO A2 List) is reported for the first time from the islands of Crete and Lesbos. In 2006, symptoms were observed in an orchard in Chania (Crete) and in Agiasso (Lesbos) and laboratory tests confirmed the identity of the fungus (Perlerou and Diamandis, 2009).

Dryocosmus kuriphilus (Hymenoptera: Cynipidae – EPPO A2 List) occurs in Gansu, China (He *et al.,* 2007).

Frankliniella occidentalis (Thysanoptera: Thripidae – EPPO A2 List) occurs on glasshouse ornamental crops in Yunnan, China (Liang *et al*., 2007).

Helicoverpa armigera (Lepidoptera: Noctuidae – EPPO A2 List) occurs in Uttaranchal, India (Mohapatra *et al*., 2007).

Leucinodes orbonalis (Lepidoptera: Pyralidae – EPPO Alert List) occurs in Maharashtra, India (Mahesh and Men, 2007).

Liriomyza trifolii (Diptera: Agromyzidae – EPPO A2 List) occurs in Guangdong, China (Liu *et al*., 2007).

Scirtothrips dorsalis (Thysanoptera: Thiripidae – EPPO A2 List) occurs on mango plants (*Mangifera indica*) cultivated in greenhouses on the Island of Amami-Oshima, Ryukyu Archipelago, Japan (Yamaguchi, 2007).

Spodoptera frugiperda (Lepidoptera: Noctuidae – EPPO A1 List) occurs in Espírito Santo, Brazil (Pratissoli *et al*., 2007).

In Australia, sugarcane smut caused by *Sporisorium scitamineum* has been found for the first time in New South Wales (Promed, 2009).

- **Host plants**

In China, '*Candidatus* Liberibacter asiaticus' (EPPO A1 List) was detected on *Citrus medica* var. *sarcodactylus* (syn= *Citrus limonimedica,* Rutaceae – foshou or Buddha's hand), a plant cultivated for its fragrance and for traditional medicine. The pathogen was detected in January 2006 on trees showing typical symptoms of huanglongbing in the City of Guangning, province of Guangdong (Deng *et al*., 2008).

In Poland, '*Candidatus* Phytoplasma mali' (EPPO A2 List) was detected on *Dahlia* plants in summer 2004, and in *Lilium* plants (oriental hybrids cv. Siberia) showing symptoms of leaf scorch (Kamińska and Śliwa, 2008).

During surveys carried out in Colombia from June to December 2005, natural infections by *Citrus leprosis virus* (EPPO A1 List) were detected in some plants of *Swinglea glutinosa* (Rutaceae) grown in hedges around citrus orchards. Affected plants showed chlorotic spots and ringspots of variable size on the leaves (León *et al*., 2008).

Potato spindle tuber viroid (*Pospiviroid*, PSTVd – EPPO A2 List) has been detected in cuttings and young seedlings of *Physalis peruviana* (Solanaceae - Cape gooseberry) submitted for testing by two growers from Turkey and Germany, respectively. Infected plants of *P. peruviana* did not show any symptoms (Verhoeven *et al*., 2009).

Source: Arezou Y, Jafarpour B, Rastegar MF, Javad-Manesh A (2008) Molecular detection of *Potato spindle tuber viroid* in Razavi and Northern Khorasan provinces. *Pakistan Journal of Biological Sciences* **11**(12) 1642-1645 (abst.).
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Additional key words: new records, detailed records, host plants

Computer codes: ALECSN, ANSTFR, ANSTST, CACYMA, CORBMI, CORBSE, DACUCU, DRYCKU, ENDOPA, FRANOC, HELIAR, IYSV00, LAPHFR, LEUIOR, LIBEAS, LIRITR, PHYPMA, PSTVD0, PSTVD00, PUCCHM, RHAGCI, SCITDO, TSWV00, USTISC, AU, BF, BR, CN, DE, EG, ES, GR, HR, IN, IN, IR, JP, KR, MT, NE, PK, PL, TR, VE

2010/042 EPPO Technical Document no. 1056: Pictorial glossary of morphological terms in nematology

A new EPPO Technical Document: 'Pictorial glossary of morphological terms in nematology' can be downloaded from the EPPO website. This document was originally drafted by Dr McNamara (former EPPO Assistant Director) and completed by Dr Johannes Halmann (JKI, DE) and the *Ad hoc* Panel on Nematodes. This glossary provides definitions for all the nematological terms which are used in the EPPO diagnostic protocols, together with drawings to illustrate many of these terms. **EPPO Technical Document no. 1056: 'Pictorial glossary of morphological terms in nematology':** http://archives.eppo.org/EPPOStandards/PM7_DIAGNOS/TD_1056_Glossary_2010-01-08.pdf

Source: EPPO Secretariat, 2010-02.

Additional key words: diagnostics, publication

2010/043 'Rhynch'info': a new and free newsletter on palm pests

'Rhynch'info' is a new and free newsletter (in French only) which is dedicated to palm pests, and in particular to *Rhynchophorus ferrugineus* and *Paysandisia archon* (both EPPO A2 List). It will provide scientific, technical and regulatory information, as well as results from scientific studies or control trials and reports from all professionals who are involved in palm pest management.

To receive this newsletter, send an e-mail message to: rhynchinfo.fredon@orange.fr
Saying the *object field* of the message (not the body): 'je souhaite m'abonner à rhynch'info'

Source: Personal communication with Eric Chapin, Fredon-PACA (FR), 2010-01.

Additional key words: publication **Computer codes:** RHYNCFR, PAYSAR

2010/044 3rd International Symposium on Tomato Diseases (Ischia, IT, 2010-07-25/30)

The 3rd International Symposium on Tomato Diseases will take place on the Island of Ischia near Napoli (Italy), on the 2010-07-25/30. This symposium will be organized by ISHS (International Society for Horticultural Science), SIPaV (Società Italiana di Patologia Vegetale), AIPP (Associazione Italiana per la Protezione delle Piante), SIN (Società Italiana di Nematologia), and SOI (Società di Ortoflorofrutticoltura Italiana). This Symposium will provide the opportunity for scientists to discuss and exchange information on tomato diseases (caused by fungi, bacteria, viruses, and nematodes), emerging diseases and detection, seed pathology, disease management, disease resistance, abiotic stresses, and topics related to tomato industry. For more information, consult the symposium website: http://www.3istd.com/index.php

Source: Personal communication with Prof. Aniella Crescenzi, President of the 3rd ISTD Organizing Committee.

Additional key words: conference

2010/045 The perception of Spanish land managers of invasive alien plants

A questionnaire was sent to land managers in Spain in order to evaluate their perception regarding plant invasions, and to gather information about management activities on invasive alien plants. Respondents were senior managers from all public environmental administrations with responsibility for biodiversity conservation of natural areas at both national and local level. The environmental sectors assessed included forestry, water management, nature conservation, coastal protection, and urban green spaces departments, but the agricultural sector was not surveyed. Seventy (70) questionnaires were received.
Results highlighted that environmental managers in Spain were clearly aware of the risks posed by biological invasions, and ranked them as an intermediate threat to biodiversity, after landscape changes such as habitat loss, urbanization, habitat fragmentation and land use change. In total, 193 alien plants were identified as noxious, and 109 were subject to management measures.
The taxa most frequently identified as noxious were *Carpobrotus* spp., *Eucalyptus* spp., *Ailanthus altissima, Robinia pseudoacacia, Acacia* spp. and *Cortaderia selloana*. About 94% of noxious species were found in at least one protected area. Regarding the magnitude of the impacts caused by noxious species, 35% of the cases were perceived as having a high impact on natural areas, and 28.5% a low impact. The main ecological impacts reported were competition with native species for space and soil resources, species loss and changes in the integrity and stability of ecosystems. Other impacts included indirect effects on the fauna due to changes in their behaviour or modification of the habitat, changes in the composition and structure of riparian forests, soil erosion and degradation, etc. Respondents also provided names of native species negatively affected by aliens:

- In Cap de Creus (Natural Park in Cataluña), *Carpobrotus* spp. outcompetes *Limonium gerondense* (Plumbaginaceae), *Armeria ruscinonensis* (Plumbaginaceae), *Astragalus massiliensis* (Fabaceae) and *Seseli farrenyi* (Apiaceae);
- In Isla Grossa (Murcia), *Carpobrotus* spp., *Acacia* spp. and *Agave americana* are thought to compete with *Lycium intricatum* (Solanaceae), *Salsola* spp. (Chenopodiaceae) and *Withania frutescens* (Solanaceae);
- In the Miña River, the presence of *Azolla* spp. leads to a loss in the cover of *Magnopotamion* and *Parvopotamion* vegetation type;
- On Fuerteventura (Islas Canarias), *Pennisetum setaceum* outcompetes *Launaea arborescens* (Asteraceae), *Euphorbia balsamica* and *E. regis jubae* (Euphorbiaceae), *Suaeda* spp. and *Salsola* spp. (Chenopodiaceae).

Eighty eight percent (88%) of the invasive plants considered to have a high impact were being managed, while the remaining cases (12%) were not being managed because control was not feasible (species too widely distributed), or affordable. In addition, 78% of species with low impact were managed, often as part of a wider programme targeting high impact species. Management activities were prioritized in the following order: direct control, prevention, education and outreach, and legislation was perceived as the least relevant and efficient measure. The main goal of management appeared to be containment (41%) or complete eradication of the invasive species (37%). Prevention through legislation or education of the general public was only used in 22% of the cases. In most cases, mechanical methods (71%) have been used as they are considered less harmful to the environment, in 25% of the cases mechanical methods were combined with herbicides (usually glyphosate). Only 3% of the cases applied solely herbicides. In 85% of the cases, control measures were followed by annual monitoring to detect reinfestation, but there were only a few cases of this monitoring beign undertaken with long term goals. Restoration of habitats was undertaken in 29% of the cases. Estimates of costs were provided for 41% of the cases, mostly related to direct management activities. Total

expenditure was calculated as around 50 million euros over the last decade for all species concerned. Ninety five percent of this total expenditure was targeted on only 5 species as shown in the table below. These costs are considered to be largely underestimated.
The species which are considered to be the most invasive according to land managers in Spain are listed below, together with their management costs. This table also indicates the numbers of Autonomous Communities (AC) where species are reported as noxious and where they are managed (Spain being divided in 19 AC).

Species	**N° of AC where present**	**N° of AC where managed**	**Costs in €**
Acacia spp. (Fabaceae)	12	7	90,000
Agave americana (Agavaceae)	12	3	57,000
Ailanthus altissima (Simaroubaceae) **EPPO List of Invasive Alien Plants**	12	6	28,675
Aloe spp. (Liliaceae)	4	1	
Amaranthus spp. (Amaranthaceae)	17	0	
Arctotheca calendula (Asteraceae)	10	3	15,000
Arundo donax (Poaceae)	15	1	
Aster squamatus (Asteraceae)	16	0	
Araujia sericifera (Asclepiadaceae) **EPPO Alert List**	8	0	
Artemisia spp. (Asterceae)	13	0	
Azolla filiculoides (Azolaceae) **EPPO List of IAS**	8	2	1,000,000
Baccharis halimifolia (Asteraceae) **EPPO List of IAS**	3	3	
Buddleia davidii (Buddlejaceae) **EPPO List of IAS**	7	2	
Carpobrotus spp. (Aizoaceae) **EPPO List of IAS**	10	8	2,886,683
Conyza spp. (Asteraceae)	17	0	
Cortaderia selloana (Poaceae) **EPPO List of IAS**	11	7	8,600
Datura stramonium (Solanaceae)	16	2	
Disphyma crassifolium (Aizoaceae)	4	0	
Egeria densa (Hydrocharitaceae) **EPPO List of IAS**	2	1	
Eichhornia crassipes (Pontederiaceae) **EPPO A2 List**	3	3	6,700,000
Eucalyptus spp. (Myrtaceae)	13	8	31,528,594
Fallopia japonica (Polygonaceae) **EPPO List of IAS**	6	2	
Ipomoeae spp. (Convolvulaceae)	14	3	
Kalanchoe spp. (Crassulaceae)	-	1	
Lantana spp. (Verbenaceae)	5	0	
Ludwigia spp. (Onagraceae) **EPPO List of IAS**	2	2	
Nicotiana glauca (Solanaceae)	8	2	
Oenothera biennis (Onagraceae)	14	2	
Oenothera drummondii (Onagraceae)	2	1	
Oenothera glazioviana (Onagraceae)	14	3	
Opuntia spp. (Cactaceae)	13	4	4,000
Oxalis pes-caprae (Oxalidaceae) **EPPO List of IAS**	11	2	
Paspalum spp. (Poaceae)	17	0	
Pennisetum setaceum (Poaceae) **EPPO Alert List**	3	1	6,203,300
Pittosporum tobira (Pittosporaceae)	1	1	6,000
Platanus hybrida (Platanaceae)	8	2	
Ricinus communis (Euphorbiaceae)	8	1	
Robinia pseudoacacia (Fabaceae)	17	3	
Senecio spp. (Asteraceae) **EPPO List of IAS**	11	3	19,600
Solanum bonariense (Solanaceae)	9	0	
Sorghum halepense (Poaceae)	15	0	
Spartina patens (Poaceae)	9	0	
Tradescantia fluminensis (Commelinaceae)	8	3	
Tropaeolum majus (Tropaeolaceae)	10	1	

Species	N° of AC where present	N° of AC where managed	Costs in €
Xanthium spinosum (Asteraceae)	16	0	
Xanthium strumarium (Asteraceae)	13	2	

Other species, although not recorded as the most invasive according to the results of the survey, were associated with management costs:

- *Rumex lunaria* (Polygonaceae): 86,000 €
- *Ageratina adenophora* (Asteraceae): 23,109 €
- *Plectranthus australis*: 6,251 €
- *Fallopia aubertii* (Polygonaceae): 6,00 €
- *Hakea sericea* (Proteaceae) (EPPO Alert List): 2,000 €
- *Panicum repens* (Poaceae): 1,000 €
- *Myoporum* spp. (Myoporaceae)*:* 400 €
- *Lonicera japonica* (Caprifoliaceae): 200 €

Source: Andreu J, Vilá M, Hulme PE (2009) An assessment of stakeholder perceptions and management of noxious alien plants in Spain. *Environmental Management* **43**, 1244-1255.

Additional key words: invasive alien species, perception

Computer codes: ABKDO, ACASS, AGVAM, AILAL, AJASE, ALFSS, AMASS, AROCA, ARTSS, ASTSQ, AZOFI, BACHA, BIKAU, BUDDA, CBSSS, CDTSE, CNDSS, DATST, DPHCR, EICCR, ELDDE, EUCSS, EUPAD, IPOSS, KANSS, LANSS, LUDSS, LONJA, MYMSS, NIOGL, OEOBI, OEODR, OEOER, OPUSS, OXAPC, PANRE, PASSS, PESSA, PLTHY, POLCU, PTUTO, RIICO, ROBPS, RUMLU, SENSS, SOLBO, SORHA, SPTPA, TRAAL, UCCSS, XANSP, XANST, ES

2010/046 'Aliens': an innovated Invasive Species Specialist Group Newsletter now online

The Invasive Species Specialist Group publishes its newsletter '*Aliens'* bi-annually. It provides timely information on invasive species and associated issues focusing on conservation issues rather than economic, health or agricultural aspects of alien invasions. Due to escalating printing and mailing costs, *Aliens* is now being produced electronically, and is freely available on the ISSG website.

Source: Invasive Species Specialist Group Website: http://www.issg.org/publications.htm

Additional key words: invasive alien species, publications

2010/047 Successful eradication and management actions for invasive alien plants in Andalucía (ES)

In Andalucía (Spain), the 'Consejería de Medio Ambiante' (Environmental Council) is responsible for the conservation of biodiversity in the region. A strategy on invasive alien species has been developed by this organization. This strategy includes control of plant populations, eradication campaigns, information on how to prevent new introductions, and a programme on the early detection of more than 40 alien species. Each management action was only initiated after a risk analysis and a cost-benefit analysis were conducted. Some of the successful eradications of invasive alien plants achieved between 2005 and 2008 are presented below, together with the native species which were threatened by

them, their endangered status according to IUCN Red List Categories, their habitats, and the final results obtained:

Invasive Alien Plants	Native plants threatened	Habitats	Results
Agave americana (Agavaceae)	*Juniperus phoenicea* (Cupressaceae) (VU) *Cynomorium coccineum* (Cynomoriaceae) (VU)	Sea dunes of the Mediterranean coast	Recovery of native plant community
Carpobrotus spp. (Mesembryanthemaceae) (**List of Invasive Alien Plants**)	*Corema album* (Empetraceae) (VU) *Juniperus phoenicea* subsp. *turbinata* (Cupressaceae) (VU) *Juniperus macrocarpa* (Cupressaceae) (EN) *Armeria pungens* (Plumbaginaceae) (VU) *Limonium emarginatum* (Plumbaginaceae) (VU)	Sea dunes of the Mediterranean and Atlantic coasts ; Coastal dunes with *Juniperus* spp. ; wooded dunes with *Pinus pinea*; Vegetated sea cliffs of the Mediterranean coast with endemic *Limonium* spp.	Recovery of native plant community and of endangered area

A population control was also successfully undertaken:

Alien species	Native species threatened	Habitat	Result
Mesembryanthemum crystallinum (Mesembryanthemaceae)	*Senecio alboranicus* (Asteraceae) (CR) *Diplotaxis siettiana* (Brassicaceae) (CR)	Vegetated sea cliffs of the Mediterranean coast with endemic *Limonium* spp.	Recovery of native plant community

IUCN Red List Categories:
EN: Endangered; CR: Critically endangered; VU: Vulnerable.

Source: Dana ED, García-de-Lomas J, Garrida JR, González-Miras E, Ceballos G & Ortega F (2009) Management of invasive alien species in Andalusia (Southern Spain): some successful experiences. *ISSG newsletter*, 50-53.
http://www.issg.org/pdf/aliens_newsletters/A28.pdf

IUCN (2008) The IUCN Red List of Threatened Species 2008.
http://www.iucnredlist.org/

Additional key words: invasive alien plants, eradication **Computer codes:** 1CBSG, AGVAM, MEKCR, ES

2010/048 Invasion of *Rosa rugosa* in Danish coastal dunes

The invasive shrub *Rosa rugosa* (Rosaceae) constitutes a considerable threat to coastal dunes of North-Western Europe because it suppresses natural vegetation of high conservation value. *R. rugosa* is a shrub originating from China and Japan which became a popular garden plant in Europe at the beginning of the 20th century due to its tolerance to wind, poor soil conditions and salt. In Denmark where the species is most problematic, *R. rugosa* was widely planted in the 1950s when summer cottages along the Danish coastline became popular.
All *R. rugosa* patches superior to 0.01 m² have been mapped in an area of 2364 ha of semi-natural dunes of Northwestern Denmark. This study revealed that *R. rugosa* was found in all the major vegetation types, but was most common in white dunes, and less abundant in grey and brown dunes. This is explained by the fact that white dunes in the area studied

have a higher pH and are slightly richer in soil nutrients than inland dunes. For this reason the white dunes represent more suitable habitats for *R. rugosa* than grey and brown dunes, as *R. rugosa* is not limited by wind, salt spray and moving sand layers. As a result of both natural and anthropogenic processes, it was observed that the invasion of coastal dunes by *R. rugosa* was associated with the coastline, roads, paths, and houses. Seeds and vegetative fragments of the plant are transported by water and wind, and thus most propagules may be deposited close to the coastline.
With respect to habitat stress, *R. rugosa* is most common along protected coasts of the Baltic Sea and in inner fjords in Denmark where salt concentrations are lower. Thus, the higher abiotic stress of the North Sea coast may delay invasion by *R. rugosa*.

Source: Halfdan Jørgensen R, Kollman J (2009) Invasion of coastal dunes by the alien shrub *Rosa rugosa* is associated with roads, tracks and houses. *Flora* **204**, 289-297

Additional key words: invasive alien plants **Computer codes:** ROSRG, DK

2010/049 Invasion potential of *Sapium sebiferum* in the Central Valley of California (US)

Sapium sebiferum (= *Triadica sebifera*, Euphorbiaceae) is an ornamental tree native to eastern Asia. This species is known to be invasive in the Gulf Coast region of the USA, where it occupies wetlands, prairies, woodlands and forests. In this region, it is reported to displace native plants and to dominate communities often by forming monospecific stands. In invaded areas, insectivorous birds find the quality of woodlands diminished because of low insect populations. Although *S. sebiferum* was introduced to the Southern USA in the late 18th century, it was only later, after extensive planting that colonization of natural areas was reported. *S. sebiferum* is also reported as present, but not yet as invasive in Algeria, France, India, Martinique, South Africa, Sri Lanka and Sudan. Recent climate matching modelling with CLIMEX showed no invasion potential of *S. sebiferum* in California when coarse scale climatic averages were used. This was largely attributed to the Californian long and dry summers, which are suspected to filter out many exotic plants. However, when summer precipitation was increased in the model to simulate locally elevated soil moisture, much of Californian riparian habitats (especially in the Central Valley) emerged with climate appropriate for *S. sebiferum*.
S. sebiferum is tolerant to a wide range of abiotic and biotic conditions. Its seeds are dispersed by both birds and water. The reproductive success of the species was measured in California and revealed that the mean seed production of mature trees was 39 ± 9 seeds per tree. Seed viability was evaluated at 95%. Numerous recently naturalized populations demonstrate that riparian areas in the Central Valley of California are susceptible to invasion by *S. sebiferum*. In California, it is therefore recommended that land managers should monitor more particularly the edges of rivers and streams where currents are more likely to deposit seeds and where the environmental conditions are favourable to germination and seedling survival of *S. sebiferum*.

Source: Bower MJ, Aslan CE, Rejmánek M (2009) Invasion potential of Chinese Tallowtree (*Triadica sebifera*) in California's Central Valley. *Invasive Plant Science and Management* **2,** 386-395.

Global Invasive Species database (2010) *Triadica sebifera.*
http://www.issg.org/database/species/ecology.asp?si=712&fr=1&sts=&lang=EN

Additional key words: invasive alien species **Computer codes:** SAGSE, US

2010/050 Call for abstracts for the 2nd Workshop on Invasive Alien Plants in Mediterranean Type Regions of the World (Trabzon, TR, 2010-08-02/06)

The call for abstracts for oral presentations and posters for the 2nd Workshop on Invasive Alien Plants in Mediterranean Type Regions of the World to be held in Trabzon (TR) on 2010-08-02/06 is now open untill the 9th of April 2010.
The workshop will be divided into 4 sessions, and proposals fitting into the themes proposed below are preferred:

1. Plant invasions in the Mediterranean: where do we stand?
2. Global change, risk assessment and modeling of invasive alien plants
3. Communication, policies & strategies for tackling invasive alien plants
4. Early detection, eradication and management of invasive alien plants

Details on these themes are available on the EPPO website.

Source: International Workshop on Invasive Plants in the Mediterranean Type Regions of the World (Trabzon, TR, 2010-08-02/06).
http://archives.eppo.org/MEETINGS/2010_conferences/mediterranean_ias.htm

Additional key words: invasive alien plants, workshop