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**2009/042 First report of *Tuta absoluta* in Tunisia**

In October 2008, leaf mines were observed on field tomato crops (*Lycopersicon esculentum*) during phytosanitary inspections carried out in the region of Akkouda (Sahel), in Tunisia. Leaf samples were collected from the affected plants and the causal agent was identified by the Tunisian quarantine laboratory as *Tuta absoluta* (Lepidoptera: Gelechiidae - EPPO A1 List). Further surveys carried out in other tomato-producing regions showed that the pest was also present in the regions of Kairouan (central part of Tunisia) and Bizerte (northeastern part). In order to prevent any further spread of *T. absoluta*, phytosanitary measures were applied, including in particular the use of pheromone traps and the development of integrated control strategies (combined use of biological control agents and chemical insecticides, information campaigns for the growers, nurserymen and other stakeholders). This is the first record of *T. absoluta* in Tunisia.

The pest status of *Tuta absoluta* in Tunisia is officially declared as: Found for the first time in 2008, 3 outbreaks, under official control.

Source: NPP0 of Tunisia, 2009-02.

Additional key words: new record

Computer codes: GNORAB, TN

**2009/043 First record of *Anoplophora glabripennis* in Belgium**

In 2008, the presence of *Anoplophora glabripennis* (Coleoptera: Cerambycidae - EPPO A1 List) was detected for the first time in Belgium. Two adult beetles were detected in a private garden. It is suspected that these insects had been introduced in wooden boxes containing stones imported from China which had arrived on this site a few days before the insects were caught. Wooden boxes showed typical galleries and were not carrying the ISPM 15 mark. Eradication measures were immediately applied, the wooden boxes were destroyed and the infested site was delimited. Surveys were carried out and no other specimens were caught. The NPP0 of Belgium therefore considers that *A. glabripennis* has not been able to establish and has been eradicated.

The situation of *Anoplophora glabripennis* in Belgium can be described as follows: Transient, 2 adults caught in 2008 in a private garden (in connection with imports of infested wooden boxes from China), under eradication.

Source: NPP0 of Belgium, 2009-01.

Additional key words: new record

Computer codes: ANOLGL, BE

2009/044 Situation of *Anoplophora glabripennis* in Austria in 2008

In Austria, *Anoplophora glabripennis* (Coleoptera: Cerambycidae - EPPO A1 List) was first detected in 2001 in the city of Braunau am Inn (EPPO RS 2001/215). It is assumed that the pest was introduced with wood packaging material, dumped near a store. In 2001, 89 beetles were caught, and 38 trees were found infested and destroyed. Since 2001, all potential host plants have been annually inspected across the whole area of Braunau and eradication measures have been implemented. All infested trees were immediately felled, chipped and incinerated. As a result, the number of infested trees was considerably reduced from 38 in 2001, to 7 in 2006. However, in spring 2007 a new outbreak was detected in the eastern part of the industrial zone of Braunau, and by April 2007 25 infested trees were destroyed. In late summer 2007, another outbreak was detected in the western part of the industrial zone. Although it could not be determined whether these two outbreaks corresponded to new introductions or were related to previous infestations, observations suggested that in this industrial area, trees were already infested in 2005 and 2006 but that inspections had failed to detect the pest. In spring 2008 after the storm 'Emma', pruning operations were carried out in Braunau and 4 infested trees (*Acer* spp.) were found in an area which had previously been infested (several trees had been destroyed there since 2001). Interestingly, in a branch of approximately 1 m long cut from an *Acer* tree, 7 living larvae were found, and all of them were able to complete their life cycle. In 2008, the monitoring programme was intensified in the eastern and western parts of the industrial zone, and tree climbers were appointed to inspect tree canopies in order to improve pest detection. As of April 2008, only 5 infested trees were found and no beetle was observed. Eradication efforts are continuing in Austria.

The situation of *Anoplophora glabripennis* in Austria can be described as follows: Present, only in the city of Braunau am Inn (Oberösterreich), under eradication.

Source: NPPO of Austria, 2008-12.

Additional key words: detailed record

Computer codes: ANOLGL, AT

2009/045 Situation of *Anoplophora glabripennis* in France in 2008

In France, two outbreaks of *Anoplophora glabripennis* (Coleoptera: Ceambycidae - EPPO A1 List) were reported in 2003 (Gien) and in 2004 (St Anne-sur-Brivet). In 2008, the pest was reported at two new locations, first in Strasbourg (Bas-Rhin) and then in Velars-sur-Ouche (Côte d'Or). In all cases eradication measures were applied.

#### Gien (Loiret, Centre region)

*A. glabripennis* was first discovered in France in 2003 (EPPO RS 2003/114) in an industrial area of Gien, probably introduced with wood packing material from China. In 2003, it was estimated that the outbreak was relatively old (high numbers of insects were found) and covering an area of less than 1 km radius. Over the years, results of the surveys were as follows:

- 2003 (initial finds): 202 larvae, 3 nymphs, 5 adults (still inside pupation chambers), and 30 attacked trees were destroyed.
- 2004: 12 beetles were caught, 10 attacked trees were destroyed.
- 2005: 2 beetles, 6 trees destroyed.
- 2006: 9 beetles, 13 trees destroyed.
- 2007: 0 beetles, 20 trees destroyed.

- 2008: 1 beetle, 6 trees (2 *Acer*, 4 *Betula*) destroyed (4 inspections were carried out in 2008).

#### St Anne-sur-Brivet (Loire-Atlantique, Pays de la Loire region)

Discovered in 2004, this second outbreak occurred in a rural environment, in the small city of St Anne-sur-Brivet (RS 2004/043). Similarly, it is suspected that the pest was introduced with imports of wood packing material from China. In 2004, it was estimated that the outbreak was relatively old (high numbers of insects were found) and covering an area within a radius of approximately 250 m. Survey results were as follows:

- 2004 (initial finds): 163 larvae, 4 eggs, and 77 attacked trees were destroyed.
- 2005: 5 beetles, 33 trees.
- 2006: 1 beetle (caught on the soil surface), 0 trees.
- 2007: 0 beetles, 0 trees.
- 2008: 0 beetles, 0 trees (19 inspections were carried out in 2008).

#### Strasbourg (Bas-Rhin, Alsace region)

In July 2008, 1 beetle was caught at the port of Strasbourg (along the Rhine river). It is suspected that the pest was introduced on wood packing material with imports of granite stones from China. Investigations showed that 2 poplar trees (*Populus*) were infested. These 2 isolated trees were growing along a wharf which had also been used for storage. During the destruction of the trees, 407 eggs, 206 living larvae, 3 nymphs and 2 dead beetles could be counted. One tree had a higher level of infestation (380 eggs, 198 larvae, 3 nymphs, 2 dead beetles) than the other (27 eggs, 8 larvae). In total, 6 exit holes were observed on the 2 trees. Observations made on the most severely attacked tree suggested that at least 2 generations had taken place before detection, and that the infestation probably started in 2003. Surveys will continue in 2009 and information is being circulated to the local authorities of Strasbourg, so that any suspicious symptoms found on city trees is notified to the NPPO.

#### Velars-sur-Ouche (Côte d'Or, Bourgogne region)

At the end of November 2008, 1 beetle was reported on a wood pallet imported from China, in the small city of Velars-sur-Ouche. Surveys will be carried out in 2009 on the storage site concerned and its vicinity, to verify whether this was a single incursion or a new outbreak.

To summarize the situation, it can be said that *A. glabripennis* still occurred in France in 2008 and that two new records were made at the end of the year (Strasbourg and Velars-sur-Ouche), although it was too early to consider the latest finding as an outbreak. The French NPPO considered that the phytosanitary measures which had been taken so far seemed to be adequate, because the outbreak in Gien was well contained (no spread observed) and at St Anne-sur-Brivet, no beetles or infested trees were detected during the last two years. Finally, considering the very low number of outbreaks of *A. glabripennis* in France, the type of environments in which they have been found, and the active surveillance which has been put into place, eradication of the pest is still considered as an achievable goal. Therefore, surveys and eradication efforts will continue in 2009.

The pest status of *Anoplophora glabripennis* in France is officially declared as: Present only in certain areas, under eradication.

Source: NPPO of France, 2009-01.

Additional key words: detailed record

Computer codes: ANOLGL, FR

2009/046 Eradication measures against *Anoplophora glabripennis* in Italy

In June 2007, *Anoplophora glabripennis* (Coleoptera: Cerambycidae - EPPO A2 List) was found for the first time in Italy (EPPO RS 2007/166). An adult was discovered during a survey for the other species (*A. chinensis*) in Lombardia in the garden of a private company located at Corbetta (province of Milano). It is thought that the insect had been introduced with a wood pallet from China. An infested zone and a buffer zone (500 m radius around the infested area) were delimited, and the following phytosanitary measures were implemented with the aim of eradicating the pest. In the infested zone all susceptible trees growing in public and private areas were inspected, all infested trees were completely destroyed as well as potential host trees located within a radius of 500 m, plantation and movements of susceptible hosts outside the infested zone were prohibited, and movements of plant material (not previously chipped) outside the infested zone were also prohibited. In the buffer zone, specific inspections were carried out on all susceptible tree species. All nurseries which were located in the demarcated zones were compelled to apply chemical treatments on susceptible hosts (it must be noted that there was no nursery in the infested zone, only in the buffer zone). In 2007, following the discovery of the adult specimen, surveys showed that 1 sycamore maple (*Acer pseudoplatanus*) and 3 birches (*Betula pendula*) were infested. By April 2008, all of them had been completely destroyed. The demarcated area included two communes (Corbetta and Vittuone) and all potential host trees (i.e. 273 trees belonging to 4 genus: *Acer*, *Betula*, *Populus* and *Salix*) were removed, chipped and burned. In addition, after the destruction of the 4 infested trees, 6 sentinel trees (*Acer pseudoplatanus*) were placed in the garden where *A. chinensis* was originally detected. In 2008, no further insect specimens or signs of infestation were observed during surveys carried out in Lombardia (specific surveys and general surveillance).

Source: NPPPO of Italy (2009-01).

Additional key words: eradication

Computer codes: ANOLGL, IT

2009/047 First record of *Anoplophora chinensis* in Croatia

In Croatia, a dead beetle of *Anoplophora chinensis* (Coleoptera: Cerambycidae - EPPO A2 List) was found during routine inspections carried out in a nursery in Turanj (near Zadar) in September 2007. In addition to this single specimen, it was found that potted plants of *Lagerstroemia* and *Acer palmatum* were showing signs of infestation (presence of frass). Dissection of these plants revealed the presence of larvae which were later identified as *A. chinensis* by molecular tests. These infested plants belonged to a consignment of potted plants (600 *Magnolia*, 400 *Lagerstroemia*, 9200 *Acer palmatum*) which had been imported from China in February 2007. Plants had been transported in a closed container and unloaded in the glasshouse (semi-closed) of the nursery concerned. In this infested consignment, most *Lagerstroemia* plants were severely affected by the pest (many dead trees with visible exit holes, no live beetle or larvae in the stems). A third of the *Acer* trees (i.e. 2692 plants) showed health problems and less than 100 trees showed clear signs of larval presence (frass at the base of the stem). *Magnolia* plants did not show any particular symptoms, although they were shipped together with the other highly infested plants. Investigations showed that a small number of plants (less than 50) had been transported to 2 other nurseries (in Zagreb and Split). Eradication measures were taken, all infested or suspicious plants were destroyed and burnt. Further inspections will be carried out in the infested nursery and movements of plants from this nursery have been

prohibited for a period of 2 years. Intensive monitoring will continue in the infested nursery and its surroundings.

The situation of *Anoplophora chinensis* in Croatia can be described as follows: Present, first found in 2007 in one nursery (near Zadar) on imported potted plants from China, under eradication.

Source: Vukadin A, Hrašovec B (2008) *Anoplophora chinensis* (Forster) in Croatia. *Forstschutz Aktuell* 44, 23-24.

Additional key words: first record

Computer codes: ANOLCN, HR

#### 2009/048 Further details on the outbreak of *Anoplophora chinensis* in Roma (IT)

As reported in EPPO RS 2008/184, *Anoplophora chinensis* (Coleoptera: Cerambycidae - EPPO A2 List) was detected for the first time in the city of Roma. In July 2008, 15 specimens (males and females) were found on 12 plants (7 *Acer negundo* and 5 *Aesculus hippocastanum*). Most insects were found in the Parco di San Sebastiano. In order to better understand the biology of the pest, a metallic structure (22.5 m long x 5 m wide x 2 m high) supporting a wire net (wire of 1 mm diameter and mesh size of 0.5 cm) has been built around 3 infested trees of *Acer negundo*. These trees, cut at 1.5 m height for convenience, will be observed for a period of 3 years. Some other infested trees will be cut in sections of 20 cm long to study the number, position and orientation of larval galleries inside the wood. These wood sections will also be placed under the metallic net for further study. In the infested area, all infested trees and susceptible host trees have been mapped using GIS systems. Intensive surveys continued in Roma in parks and gardens within a radius of 2 km around the infested area, and at the end of 2008 27 *Acer negundo* and 7 *Aesculus hippocastanum* trees were found infected. At present, it is estimated that the outbreak covers approximately a circular area of 700 m diameter (i.e. 0.4 km<sup>2</sup>). Infestations have only been observed on *Acer negundo* and *Aesculus hippocastanum*. All infested trees and susceptible trees located within a 20 m radius will be destroyed (from October 2008 to April 2009). If roots cannot be extirpated from the soil, chemical treatment will be applied and soil covered with a metallic net for at least 2 years. Intensive surveys will continue in the city of Roma in 2009.

Source: NPPO of Italy, 2009-02.

Additional key words: detailed record

Computer codes: ANOLCN, IT

2009/049 First report of *Paysandisia archon* in Cyprus

The NPPO of Cyprus recently informed the EPPO Secretariat of the first record of *Paysandisia archon* (Lepidoptera: Castniidae - EPPO A2 List) on its territory. The pest was detected on 2 plants of *Chamaerops humilis* and 1 plant of *Washingtonia filifera* planted along a main road, in the area of Geroskipou near Paphos. Investigations were carried out to trace back the origin of the infestation and 6 more *C. humilis* plants were found infested at the trader premises. All infested plants were destroyed. Investigations also showed that these infested plants were part of a larger consignment originating from Italy. A survey has been initiated to determine the extent of the infestation of *P. archon* in Cyprus. It must be noted that the Geroskipou area is also one of the areas in Cyprus where official measures are already being taken to prevent the spread of another palm pest, *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae - EPPO A2 List). The situation of *Paysandisia archon* in Cyprus can be described as follows: Present, first reported in 2009 near Paphos, under eradication.

Source: NPPO of Cyprus, 2009-03.

Additional key words: new record

Computer codes: PAYSAR, CY

2009/050 First report of *Paysandisia archon* in Slovenia

The NPPO of Slovenia recently informed the EPPO Secretariat of the first record of *Paysandisia archon* (Lepidoptera: Castniidae - EPPO A2 List) on its territory. In November 2008, a sample was taken from a *Trachycarpus fortunei* plant which was showing decay of the terminal bud. The official laboratory of the Agricultural and Forestry Institute of Nova Gorica confirmed the presence of *P. archon*. This symptomatic plant was part of a plantation of 98 palm trees in which 13 other plants were also showing symptoms. Plants were 4 to 6 years old, raised from seeds and grown for ornamental purposes (cut foliage). This plantation was located in the western part of Slovenia, near a garden centre which was selling plants of Palmae originating from other EU member states. Other potential host plants in the garden centre and its surroundings were visually inspected but no symptoms could be found. The origin of the infestation remains unknown. The pest status of *Paysandisia archon* in Slovenia is officially declared as: Transient, actionable, under eradication.

Source: NPPO of Slovenia, 2009-01.

Additional key words: new record

Computer codes: PAYSAR, SI

2009/051 *Rhynchophorus ferrugineus* found on *Howea forsteriana* in Sicilia (IT)

The NPPO of Italy recently informed the EPPO Secretariat that *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae - EPPO A2 List) was found on *Howea forsteriana* (syn. *Kentia forsteriana*, Arecaceae) in the city of Palermo, Sicilia (IT). The pest was observed in a private garden on 5 plants of *H. forsteriana*. One of the plants was already completely defoliated and showed the typical symptoms caused by *R. ferrugineus*. During the destruction of the plants, adults and larvae were observed inside the stipes.

Source: NPPO of Italy, 2009-02.

Additional key words: detailed record, host plant

Computer codes: RHYCFE, IT

2009/052 *Gibberella circinata* eradicated from Italy

In 2005, the presence of *Gibberella circinata* (anamorph *Fusarium circinatum* - EPPO A1 List) was reported from the region of Puglia on 2 young plants of *Pinus halepensis* and *P. pinea*, in the city of Foggia (EPPO RS 2008/071). Because construction work took place on the 2 sites where the fungus was detected, the infected plants and nearby potential host plants were completely removed. In April 2008, samples were taken from *Pinus* trees located in the vicinity of the previously infected sites but all results were negative. Visual inspections took place in the following months and did not detect any suspicious symptoms. The regional Plant Protection Service of Puglia now considers that *G. circinata* has been eradicated.

The situation of *Gibberella circinata* in Italy can be described as follows: Absent, eradicated.

Source: Regional PPO of Puglia, Italy, 2009-01.

Additional key words: absence, eradication

Computer codes: GIBBCI, IT

2009/053 *Pantoea stewartii* does not occur in Austria

The NPPO of Austria recently informed the EPPO Secretariat that *Pantoea stewartii* no longer occurs on its territory. In 1992, an isolated finding was reported. Investigations were carried out for 3 consecutive years in all maize-producing areas (using ELISA tests in accordance with EPPO Standard PM 7/60(1)), and the bacterium could no longer be detected. Based on these results, the NPPO of Austria considers that *P. stewartii* no longer occurs on its territory.

The pest status of *Pantoea stewartii* in Austria is officially declared as: Absent.

Source: NPPO of Austria, 2009-02.

EPPO (2006) EPPO Standard PM7/60(1) Diagnostics. *Pantoea stewartii* subsp. *stewartii*. *Bulletin OEPP/EPPO Bulletin* 36(1), 111-115.  
<http://dx.doi.org/10.1111/j.1365-2338.2006.00920.x>

Additional key words: absence

Computer codes: ERWIST, AT



2009/054 A new ambrosia beetle, *Xylosandrus crassiusculus*, detected in Italy: addition to the EPPO Alert List

Dr Minuto (CERSAA, IT) attracted the attention of the EPPO Secretariat to the first record of an Asian ambrosia beetle, *Xylosandrus crassiusculus* (Coleoptera: Scolytidae) in Italy and in Europe. The insect was first trapped in Toscana (near Pisa) in a mixed forest dominated by *Pinus pinaster* and *Quercus cerris* (Pennacchio *et al.*, 2003). As no recent information has been published, it is not known whether the pest has been able to establish in Toscana and which tree species were attacked. In 2007 and 2008, damage caused by *X. crassiusculus* was observed on *Ceratonia siliqua* (carob tree) in private and public gardens in Alassio (Liguria). The extent of the infestation of the pest in Liguria is not known. Because *X. crassiusculus* is a very polyphagous pest of woody plants and has the potential to cause damage in areas where it has been introduced (i.e. in the USA), the EPPO Secretariat decided to add it to the Alert List.

*Xylosandrus crassiusculus* (Coleoptera: Scolytidae - Asian ambrosia beetle, granulate ambrosia beetle)

Why	<i>Xylosandrus crassiusculus</i> is a highly polyphagous pest of woody plants which has recently been reported from Italy. It originates from Asia and has been introduced to other parts of the world, most probably with trade of plants and wood. In particular, it has been introduced into the USA in the 1970s where it has become a pest of fruit tree orchards and ornamental tree nurseries. As this pest might present a risk to many woody plants in nurseries, plantations, orchards, parks and gardens, the EPPO Secretariat decided to add it to the EPPO Alert List.
Where	<p>It is considered that <i>X. crassiusculus</i> originates from Asia, and that it was introduced into Africa hundreds of years ago by early traders. More recently, it has been introduced into the Americas (detected in the USA in the 1970s; in Costa Rica and Panama in the 1990s).</p> <p>EPPO region: Italy (Liguria, Toscana). For the moment, it is not known whether the pest is established or not.</p> <p>Asia: Bhutan, China (Fujian, Hong Kong, Hunan, Sichuan, Xizhang, Yunnan), India (Andaman and Nicobar Islands, Assam, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal), Indonesia (Irian Jaya, Java, Kalimantan, Maluku, Nusa Tenggara, Sulawesi, Sumatra), Japan (Hokkaido, Honshu (including Ogasawara Islands), Kyushu, Shikoku), Korea Democratic Peoples' Republic, Korea Republic, Malaysia (Sabah, Sarawak, West Malaysia), Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam.</p> <p>Africa: Cameroon, Congo Democratic Republic, Côte d'Ivoire, Equatorial Guinea, Ghana, Kenya, Madagascar, Mauritania, Mauritius, Nigeria, Seychelles, Sierra Leone, Tanzania.</p> <p>North America: USA (Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Indiana, Louisiana, Maryland, Mississippi, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Virginia, Washington). <i>X. crassiusculus</i> was first recorded in May 1974 in South Carolina on a dying graft of <i>Liquidambar styraciflua</i>. It is now well established in South-Eastern USA.</p> <p>Central America: Costa Rica, Panama. In these countries where it is now considered established, <i>X. crassiusculus</i> has been found in primary tropical forests on many tree species. However, in these natural forests, it is not known if it can kill healthy trees.</p> <p>Oceania: New Caledonia, Palau, Papua New Guinea, Samoa.</p>
On which plants	<i>X. crassiusculus</i> is a highly polyphagous pest which can feed on many tree and shrub species (only Coniferae are apparently not attacked by this pest). In tropical areas, it has been reported on economically important crops (e.g. <i>Camellia sinensis</i> , <i>Carica papaya</i> , <i>Cocos nucifera</i> , <i>Coffea arabica</i> , <i>Mangifera indica</i> , <i>Theobroma cacao</i> ) or forest tree species (e.g. <i>Aucoumea kleineana</i> ,

Damage	<p><i>Tectona grandis</i>). In more temperate areas, it has been reported on many fruit and nut crops (e.g. <i>Carya illinoensis</i> (pecan), <i>Ceratonia siliqua</i> (carob), <i>Diospyros kaki</i>, <i>Ficus carica</i> (fig), <i>Malus domestica</i> (apple), <i>Prunus avium</i> (cherry), <i>P. domestica</i> (plum), <i>P. persica</i> (peach)); as well as on many forest and ornamental woody species (e.g. <i>Acacia</i>, <i>Alnus</i>, <i>Azalea</i>, <i>Cornus</i>, <i>Eucalyptus</i>, <i>Hibiscus</i>, <i>Koelreuteria</i>, <i>Lagerstroemia</i>, <i>Liquidambar</i>, <i>Magnolia</i>, <i>Prunus</i>, <i>Quercus</i>, <i>Populus</i>, <i>Salix</i>, <i>Ulmus</i>).</p> <p>Adults and larvae bore into twigs, branches or small trunks of woody host plants and introduce a symbiotic ambrosia fungus (<i>Ambrosiella</i> sp.) on which they feed. The insect usually bores galleries within stems of a rather small diameter (2.5-8 cm) but larger logs can be attacked (e.g. up to 30 cm diameter). Unlike other ambrosia beetles which normally attack only stressed or damaged plants, <i>X. crassiusculus</i> is apparently able to attack healthy plants. Infested plants can show wilting, branch dieback, shoot breakage and general decline. Newly planted seedlings are often attacked at the root collar and the resulting girdling can stunt or kill the young tree. When boring galleries, frass is pushed out in the form of a compact cylinder which may reach 3 to 4 cm long before it breaks off (resembling a 'toothpick'). On <i>Prunus</i> species, abundant gummosis is also produced. In the USA, it is considered that <i>X. crassiusculus</i> has become an important pest of ornamental and fruit trees, more particularly in nurseries and trees used in landscaping. Although no figures are given, it is stated that <i>X. crassiusculus</i> has caused moderate to heavy losses in US nurseries (e.g. on potted <i>Quercus shumardii</i> and <i>Ulmus parviflora</i>), on chestnut, peach and pecan orchards. In other parts of the world, tree mortality has been reported on <i>Mangifera indica</i> in Pakistan, <i>Aucoumea klaineana</i> and <i>Khaya ivorensis</i> plantations in Ghana.</p> <p>Adults are small dark reddish brown scolytids (female: 2-3 mm long, males: 1.5 mm). Larvae are white, legless, C-shaped with a well developed capsule, and cannot be easily distinguished from other scolytids. Populations essentially contain females (1:10 male-female ratio). Adult males do not fly and remain inside the galleries. <i>X. crassiusculus</i> is an inbreeding species (females mate with their brothers). When females emerge, they leave infested plants and fly to new hosts. They start to bore a tunnel (round entrance hole of 2 mm diameter) with a brood chamber and one or more branches into the sapwood (and sometimes the heartwood). Eggs are laid in the brood chamber. Larvae hatch and feed on the symbiotic fungus growing inside the galleries. In the tropics, breeding is continuous throughout the year with overlapping generations. In South-Eastern USA, beetles are active from March to the autumn, and the life cycle takes about 55 days, with usually two generations per year.</p> <p>Pictures can be viewed on the Internet:  <a href="http://photos.eppo.org/index.php/album/427-xylosandrus-crassiusculus-xylbcr">http://photos.eppo.org/index.php/album/427-xylosandrus-crassiusculus-xylbcr-</a>  <a href="http://www.barkbeetles.org/browse/subject.cfm?SUB=2437">http://www.barkbeetles.org/browse/subject.cfm?SUB=2437</a>  <a href="http://woodypest.ifas.ufl.edu/1005.htm">http://woodypest.ifas.ufl.edu/1005.htm</a>  <a href="http://www.padil.gov.au/viewPest.aspx?id=1072">http://www.padil.gov.au/viewPest.aspx?id=1072</a></p>
Dissemination	<p>Flight of adult females is the main means of movement and dispersal to new plant and new areas over short distances. There is no data on the distances they can fly but data obtained from flight traps in Panama suggested that <i>X. crassiusculus</i> normally flies at heights under 10 m above the ground. Over long distances, trade of infested plants, wood, and packing wood material can transport <i>X. crassiusculus</i>.</p>
Pathway	<p>Plants for planting, cut branches, wood, packing wood material from countries where <i>X. crassiusculus</i> occurs.</p>
Possible risks	<p>Many woody plants attacked by <i>X. crassiusculus</i> are important fruit crops, forest trees or woody ornamentals in the EPPO region. Although Scolytine beetles are usually considered as secondary pests in their native forests, it seems that <i>X. crassiusculus</i> can occasionally become a significant and aggressive pest in its introduced range. Although data is lacking on its economic impact, it seems that it has the potential to be a pest in nurseries, orchards and plantations. Data is</p>

lacking on its potential impact in forests and wood production. Pest control and detection is difficult due to its concealed mode of life. In the USA, it is recommended to removed and destroy infested plants. Repeated insecticide treatments may help to reduce pest populations. Lindgren funnel traps baited with ethanol lures can be used to monitor flight periods and evaluate the importance of pest populations. In New Zealand, *X. crassiusculus* is included in the 'List of regulated pests potentially associated with woodware'. Considering the areas where *X. crassiusculus* has been introduced and the damage it may cause, it seems that this species has the potential to establish and cause damage to a large number woody plants in Europe, cultivated for fruit production, forest and ornamental purposes.

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EPPO RS 2009/053  
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## 2009/055 New data on quarantine pests and pests of the EPPO Alert List

By browsing 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

*Fusarium foetens* (EPPO A2 List) was recorded for the first time on *Begonia x hiemalis* in Auckland, New Zealand, in 2008 (Anon., 2008a). Present, found in 2008 in North Island (Auckland).

*Metcalfa pruinosa* (Homoptera: Flatidae) was found for the first time in Bulgaria in 2004. It was observed in the region of Plovdiv on *Thuja occidentalis* (Tranchev *et al.*, 2007). Present, first found in 2004.

*Phoracantha recurva* (Coleoptera: Cerambycidae, formerly EPPO Alert List) was detected for the first time in France in 2003. The pest was observed on large cut-branches of *Eucalyptus* in a residential area of Nice, Alpes-Maritimes (Miquel, 2008). Present, first found in 2003, in southern France (Nice, Alpes-Maritimes).

During studies carried out in Argentina on noctuid pests of soybean crops, the presence of *Spodoptera eridania* (Lepidoptera: Noctuidae - EPPO A1 List) was noted in the province of Tucumán, in 2005/2006. The EPPO Secretariat previously had no data on the occurrence of this pest in Argentina (Valverde *et al.*, 2008). Present (at least in the province of Tucumán).

*Tilletia controversa* (formerly EPPO A2 List) was recorded for the first time in August 2006, in Latvia. It was observed on winter wheat (*Triticum aestivum*) ears and in grain samples collected from commercial fields in different geographical regions in Latvia (Priekule, 2007). Present, first found in 2006 in different regions.

*Xanthomonas campestris* pv. *musacearum* is the causal agent of a new serious banana wilt in Eastern Africa (EPPO RS 2003/171, 2005/119, 2007/210). It was first reported in Ethiopia on *Enset ventricosum* in 1968. It remained of low economic importance until 2001 when outbreaks occurred in central Uganda on banana (*Musa* spp.). Further outbreaks were then reported in the Democratic Republic of Congo (eastern part), Rwanda, and Tanzania (Lake Victoria region). More recently, its presence was also reported from Western Kenya and Burundi. Finally, data obtained from comparative studies with other *Xanthomonas* species (molecular characterization and pathogenicity tests) suggested that *X. campestris* pv. *musacearum* could be reclassified as *Xanthomonas vasicola* pv. *musacearum* (Aritua *et al.*, 2008).

- Detailed records

In Israel, *Clavibacter michiganensis* subsp. *michiganensis* (EPPO A2 List) was first recorded in 1963 and has appeared sporadically since then. A severe epidemic occurred in 2000 in the southern part of the country, which is the main area for the production of tomatoes under protected conditions. Since 2000, the disease has been found in most glasshouses in this area, including the Gaza Strip, and it has also spread to tomato fields in northern locations (Kleitman *et al.*, 2008).

*Glomerella acutata* (anamorph *C. acutatum* - EU Annexes) was first reported in Bulgaria in 2002. Since 2004, disease outbreaks have been observed in strawberry production fields. Surveys carried out in 2004 and 2005, indicated that the disease was present in 7 of the 8 visited districts and almost half of the strawberry fields were infected. In some areas, disease incidence reached more 90% (Jelev *et al.*, 2008).

In the USA, *Maconellicoccus hirsutus* (Homoptera: Pseudococcidae - EPPO A1 List) was reported for the first time in Georgia in November 2008. The pest was discovered in a private garden near Atlanta (Forsyth County) on hibiscus plants. It is noted that in the USA, *M. hirsutus* is now well established in Florida, Louisiana and Texas (the EPPO Secretariat previously had no data on its presence in Texas). For the moment, it is not known whether *M. hirsutus* will be able to survive winters in Georgia (Plant Health Progress, 2008).

In France, *Phoracantha semipunctata* (Coleoptera: Cerambycidae, formerly EPPO A2 List) was first recorded in Corse in 1984 (EPPO RS 502/07 of 1989). The pest is now present in mainland France where it has been reported in several locations of Alpes-Maritimes, Pyrénées-Atlantiques, Pyrénées-Orientales and Var (Brustel *et al.*, 2002).

In Turkey, the presence of ‘*Candidatus Phytoplasma mali*’ (associated with apple proliferation, EPPO A2 List) was confirmed by laboratory analysis on samples collected from apple orchards in Adana (Mediterranean region) and Niğde (Central Anatolia). Further surveys will be carried out in Turkey to better understand the situation of the pathogen and its insect vectors in other important apple-growing regions of Turkey (Sertkaya *et al.*, 2008).

In New Zealand, *Impatiens necrotic spot virus* and *Tomato spotted wilt virus* (both *Tospovirus*, EPPO A2 List) were found in 2008 near Auckland, North Island, on *Hoya* plants (Anon., 2008b).

- Host plants

*Physalis ixocarpa* and *P. peruviana* are reported for the first time as natural host plants of *Tomato chlorosis virus* (*Crinivirus*, ToCV - EPPO A2 List). Plants of *P. ixocarpa* showing abnormal interveinal yellowing and plants of *P. peruviana* showing mild yellowing were collected in the vicinity of tomato crops in Portugal. These plants were found to be infected by ToCV and the susceptibility of these host plants was confirmed by transmission tests (Trenado *et al.*, 2007).

Studies were carried out in Spain to determine which species of weeds could act as reservoirs for Tomato torrado virus (ToTV). 72 samples of common weeds were tested for the presence of ToTV (molecular hybridization, RT-PCR). The virus was detected in 22 samples of weed species belonging to Amaranthaceae (*Amaranthus* sp.), Caryophyllaceae (*Spergularia* sp.), Chenopodiaceae (*Atriplex* sp., *Chenopodium ambrosioides*, *Chenopodium* sp., *Halogetum sativus*), Brassicaceae (*Senebiera didyma*), Malvaceae (*Malva* sp.), Polygonaceae (*Polygonum* sp.), and Solanaceae (*Nicotiana glauca*, *Solanum nigrum*) (Alfaro-Fernández *et al.*, 2008).

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

Computer codes: COLLAC, CORBMI, FUSAFO, INSV00, METFPR, PHENHI, PHOASE, PHOARE, PHYPMA, PRODER, TILLCO, TOCV00, TOTV00, XANTMU, AR, BG, BI, FR, IL, KE, LV, NZ, TR, US

## 2009/056 EPPO report on notifications of non-compliance

The EPPO Secretariat has gathered below the notifications of non-compliance for 2008 received since the previous report (EPPO RS 2008/229). Notifications have been sent directly to EPPO by Algeria, Norway, 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
<b>Acari, Curculionidae, Lepidoptera</b>	<i>Cyperus esculentus</i>	Vegetables	Mali	Spain	1
<b>Agromyzidae</b>	<i>Eryngium</i>	Cut flowers	Kenya	United Kingdom	1
	<i>Gazania</i>	Cuttings	Kenya	Spain	1
<b>Aleyrodidae</b>	<i>Colocasia esculenta</i>	Vegetables	India	United Kingdom	1
	<i>Ocimum sanctum</i>	Vegetables (leaves)	Thailand	France	1
<b>Anoplophora chinensis</b>	<i>Acer palmatum</i> (and many other ornamentals) <sup>1</sup>	Plants for planting	Japan	Lithuania	1
<b>Bemisia tabaci</b>	<i>Alternanthera, Hygrophila angustifolia</i>	Aquarium plants	Singapore	France	1
	<i>Aster, Solidago</i>	Cut flowers	Israel	Netherlands	1
	<i>Bouvardia</i>	Cut flowers	Israel	Belgium	1
	<i>Chrysanthemum</i>	Cut flowers	Israel	Ireland	1
	<i>Eryngium foetidum</i>	Vegetables (leaves)	Thailand	France	16
	<i>Felicia amelloides</i>	Plants for planting	Ethiopia	Netherlands	1

<sup>1</sup> *Acer, Cornus, Euonymus, Fagus crenata, Hamamelis, Ilex, Malus, Magnolia, Pinus, Prunus, Quercus, Rhododendron, Sorbus, Styra, Stewartia, Taxus cuspidata, Thuja occidentalis, Viburnum dilatatum.*

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b>B. tabaci (cont.)</b>	<i>Gypsophila</i>	Cut flowers	Israel	France	2
	<i>Hygrophila</i>	Aquarium plants	Singapore	United Kingdom	1
	<i>Hypericum</i>	Cut flowers	Israel	France	3
	<i>Hypericum</i>	Cut flowers	Zimbabwe	Sweden	1
	<i>Myrtus</i>	Plants for planting	Israel	France	1
	<i>Ocimum</i>	Vegetables (leaves)	Israel	Netherlands	1
	<i>Ocimum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	France	7
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	Ireland	2
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	Netherlands	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Israel	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Denmark	1
	<i>Ocimum basilicum, Rosa</i>	Vegetables (leaves)	Israel	Ireland	1
	<i>Ornithogalum</i>	Plants for planting	Israel	France	1
	<i>Rosa</i>	Cut flowers	Brazil	Netherlands	1
	<i>Solidago</i>	Cut flowers	Israel	France	8
	<i>Solidago</i>	Cut flowers	Kenya	Netherlands	1
<b>Bemisia tabaci, Aphis gossypii</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
<b>Bemisia tabaci, Liriomyza trifolii</b>	<i>Solidago</i>	Cut flowers	Israel	Netherlands	1
<b>Ceratothripoides brunneus, Diaphania indica</b>	<i>Momordica charantia</i>	Vegetables	Kenya	United Kingdom	2
<b>Clavibacter michiganensis subsp. michiganensis</b>	<i>Lycopersicon esculentum</i>	Seeds	India	France	1
<b>Diaphania indica</b>	<i>Momordica</i>	Vegetables	India	United Kingdom	2
	<i>Momordica</i>	Vegetables	Kenya	United Kingdom	2
	<i>Momordica charantia</i>	Vegetables	India	United Kingdom	1
	<i>Momordica charantia</i>	Vegetables	Kenya	United Kingdom	1
<b>Diaphania indica, Scirtothrips dorsalis, Tortricidae</b>	<i>Momordica</i>	Vegetables	India	United Kingdom	1
<b>Diaphania indica, Thripidae</b>	<i>Momordica</i>	Vegetables	India	United Kingdom	2
	<i>Momordica charantia</i>	Vegetables	India	United Kingdom	1
<b>Guignardia citricarpa</b>	<i>Citrus limon</i>	Fruits	South Africa	Netherlands	1
	<i>Citrus limon</i>	Fruits	South Africa	United Kingdom	1
	<i>Citrus maxima</i>	Fruits	China	Netherlands	34
	<i>Citrus sinensis</i>	Fruits	South Africa	Netherlands	10
<b>Guignardia citricarpa, Xanthomonas axonopodis pv. citri</b>	<i>Citrus aurantiifolia</i>	Fruits	Bangladesh	United Kingdom	1
<b>Guignardia, Xanthomonas</b>	<i>Citrus, Solanum melongena</i>	Fruits and vegetables	Bangladesh	United Kingdom	1
<b>Helicoverpa armigera, Liriomyza</b>	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Czech Republic	1
<b>Helicoverpa armigera, Thripidae</b>	<i>Solanum melongena</i>	Vegetables	Kenya	United Kingdom	1
<b>Hirschmanniella</b>	<i>Vallisneria</i>	Aquarium plants	Singapore	Poland	1
<b>Insecta (caterpillars and beetles)</b>	<i>Unspecified</i>	Cut flowers	South Africa	Germany	1
<b>Leucinodes orbonalis</b>	<i>Solanum aethiopicum</i>	Vegetables	Ghana	Germany	3
	<i>Solanum melongena</i>	Vegetables	India	Germany	1
	<i>Solanum melongena</i>	Vegetables	Thailand	Germany	1
<b>Liriomyza</b>	<i>Gypsophila</i>	Cut flowers	Israel	Belgium	2
	<i>Lisianthus</i>	Cut flowers	Kenya	Netherlands	1
	<i>Ocimum</i>	Vegetables (leaves)	Thailand	Sweden	2
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	Luxemburg	1
<b>Liriomyza huidobrensis</b>	<i>Aster</i>	Cut flowers	Ecuador	Netherlands	1
	<i>Chrysanthemum</i>	Cut flowers	Kenya	Netherlands	1

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b>L. huidobrensis (cont.)</b>	<i>Chrysanthemum</i> , <i>Gypsophila paniculata</i>	Cut flowers	Kenya	Netherlands	1
	<i>Eryngium</i>	Cut flowers	Kenya	Netherlands	5
	<i>Eryngium</i>	Cut flowers	Zimbabwe	Netherlands	1
	<i>Gypsophila</i>	Cut flowers	Ecuador	Netherlands	3
	<i>Gypsophila</i>	Cut flowers	Kenya	Netherlands	2
	<i>Gypsophila paniculata</i>	Cut flowers	Kenya	Netherlands	1
	<i>Molucella</i>	Cut flowers	Netherlands	Ireland	1
<b>Liriomyza sativae</b>	<i>Chrysanthemum</i>	Cut flowers	Colombia	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables (leaves)	Thailand	France	1
<b>Liriomyza trifolii</b>	<i>Chrysanthemum</i>	Cut flowers	Costa Rica	Netherlands	2
	<i>Solidago</i>	Cut flowers	Zimbabwe	Netherlands	1
<b>Otiorrhynchidae, Scymnus, and other insects</b>	Unspecified	Cut flowers	South Africa	Germany	2
<b>Pepino mosaic virus</b>	<i>Lycopersicon esculentum</i>	Vegetables	Spain (Canary Isl.)	United Kingdom	1
<b>Phytoplasma prunorum</b>	<i>Prunus persica</i> var. <i>nectarina</i>	Plants for planting	Ukraine	Poland	1
<b>Radopholus similis</b>	<i>Anubias</i>	Aquarium plants	Thailand	Netherlands	1
	<i>Anubias barteri</i>	Aquarium plants	Singapore	France	1
<b>Scirtothrips dorsalis, Thrips palmi</b>	<i>Momordica</i>	Vegetables	India	Sweden	1
<b>Spodoptera littoralis</b>	<i>Rosa</i>	Cut flowers	Kenya	Netherlands	1
	<i>Rosa</i>	Cut flowers	Uganda	Netherlands	2
	<i>Rosa</i>	Cut flowers	Zimbabwe	Netherlands	11
<b>Spodoptera litura</b>	<i>Rosa</i>	Cut flowers	India	Netherlands	2
<b>Thripidae</b>	<i>Dendrobium</i>	Cut flowers	Thailand	United Kingdom	1
	<i>Momordica charantia</i>	Vegetables	Kenya	United Kingdom	1
<b>Thrips palmi</b>	<i>Dendrobium</i>	Cut flowers	Thailand	Italy	2
	<i>Dendrobium</i>	Cut flowers	Thailand	Netherlands	6
	<i>Momordica</i>	Vegetables	India	United Kingdom	1
	<i>Momordica</i>	Vegetables	Thailand	Sweden	1
	<i>Momordica charantia</i> , <i>Solanum melongena</i>	Vegetables	Thailand	France	1
	<i>Momordica</i> , <i>Solanum melongena</i>	Vegetables	India	Sweden	1
	<i>Solanum melongena</i>	Vegetables	India	Sweden	1
	<i>Ocimum sanctum</i>	Vegetables (leaves)	Thailand	United Kingdom	1
	<i>Orchidaceae</i>	Cut flowers	Thailand	Finland	1
	<i>Solanum melongena</i>	Vegetables	Dominican Rep.	France	1
	<i>Solanum melongena</i>	Vegetables	Dominican Rep.	Netherlands	1
	<i>Solanum melongena</i>	Vegetables	Surinam	Netherlands	1
	<i>Solanum melongena</i>	Vegetables	Thailand	France	1
<i>Solanum melongena</i>	Vegetables	Thailand	Sweden	1	
<b>Thrips palmi, Agromyzidae</b>	<i>Phaseolus vulgaris</i> , <i>Pisum sativum</i>	Vegetables	Dominican Rep.	Spain	1
<b>Xanthomonas</b>	<i>Citrus</i>	Fruits	Bangladesh	United Kingdom	2
	<i>Citrus aurantiifolia</i>	Fruits	Bangladesh	United Kingdom	2
	<i>Citrus aurantiifolia</i>	Fruits	India	United Kingdom	1
<b>Xanthomonas axonopodis pv. citri</b>	<i>Citrus</i>	Fruits	India	United Kingdom	1
	<i>Citrus aurantiifolia</i>	Fruits	Bangladesh	United Kingdom	3
	<i>Citrus latifolia</i>	Fruits	Pakistan	United Kingdom	1
	<i>Citrus limettioides</i>	Fruits	Pakistan	United Kingdom	1
	<i>Citrus limon</i>	Fruits	India	United Kingdom	1



## • Fruit flies

Pest	Consignment	Country of origin	Destination	nb
<i>Bactrocera correcta</i>	<i>Syzygium samarangense</i>	Thailand	France	2
<i>Bactrocera cucurbitae</i>	<i>Momordica charantia</i>	Thailand	France	2
<i>Bactrocera dorsalis</i>	<i>Annona muricata</i>	Vietnam	France	8
	<i>Annona muricata</i> , <i>Mangifera indica</i>	Vietnam	France	1
	<i>Annona squamosa</i>	Vietnam	France	2
	<i>Capsicum annuum</i>	Thailand	France	1
	<i>Mangifera indica</i>	Cameroon	France	1
	<i>Psidium guajava</i>	Thailand	France	1
<i>Bactrocera latifrons</i>	<i>Capsicum annuum</i>	Thailand	France	1
	<i>Capsicum frutescens</i>	Thailand	France	2
<i>Bactrocera zonata</i>	<i>Mangifera indica</i>	Pakistan	France	1
<i>Bactrocera, Ceratitis cosyra</i>	<i>Mangifera indica</i>	Kenya	United Kingdom	1
<i>Ceratitis capitata</i>	<i>Citrus reticulata</i>	Israel	Spain	2
<i>Non-European Tephritidae</i>	<i>Annona muricata</i>	Vietnam	France	1
	<i>Annona squamosa</i>	Vietnam	France	1
	<i>Capsicum annuum</i>	Vietnam	France	1
	<i>Capsicum frutescens</i>	Thailand	France	1
	<i>Mangifera indica</i>	Dominican Rep.	United Kingdom	1
	<i>Mangifera indica</i>	Sri Lanka	Germany	1
	<i>Mangifera indica</i>	Vietnam	France	1
	<i>Psidium guajava</i>	Pakistan	United Kingdom	3

## • Wood

Pest	Consignment	Type of commodity	Country of origin	Destination	nb
<b>Bostrychidae</b>	Unspecified (crate)	Wood packing material	India	Germany	6
	Unspecified (pallet)	Wood packing material	South Africa	Germany	1
<b>Grub holes &gt; 3 mm</b>	<i>Larix</i>	Wood and bark	Russia	Finland	4
<b>Nematoda</b>	Unspecified	Wood packing material	Portugal	Finland	1
<b>Scolytidae</b>	<i>Entandrophragma cylindricum</i>	Wood and bark	Central African Republic	Spain	1
	<i>Entandrophragma cylindricum</i>	Wood and bark	Congo	Spain	1
	<i>Guarea cedrata</i>	Wood and bark	Congo	Spain	1
<b>Sinoxylon</b>	Unspecified	Wood packing material	India	Germany	2
	Unspecified (pallet)	Wood packing material	Malaysia	Netherlands	1

## • Bonsais

Pest	Consignment	Country of origin	Destination	nb
<i>Gymnosporangium asiaticum</i>	<i>Juniperus chinensis</i>	Japan	Netherlands	1
<i>Helicotylenchus dihystra</i>	<i>Sageretia thea</i>	China	United Kingdom	1
<i>Helicotylenchus dihystra</i> , <i>Tylenchorhynchus</i>	<i>Serissa</i>	China	United Kingdom	1

Source: EPPO Secretariat, 2009-03.

2009/057 *Salvinia molesta* found in two localities in Italy

*Salvinia molesta* (Salviniaceae - EPPO Alert List) originates from South America and is invasive in a large number of places (Africa, India, USA, Australia, etc.). So far, no occurrences of the plant were known in the EPPO region. However, *S. molesta* has recently been detected in Italy.

In 2000 near Pisa

*Salvinia molesta* was found in 2000 near Pisa (Toscana) in the Fosso del-Acqua calda, a slow flowing artificial canal 2.5 m wide. This canal is fed from a thermal source maintaining water temperature between 16°C and 27°C in summer. The species is omnipresent in summer months and is not seen during winter time, due both to cold temperatures of the water (minimum of 4°C in January), and management by dredging of the canals. *S. molesta* has been observed covering 350 m long of the canal, and mats were 7.5 cm deep. It has been observed that the species can double its biomass in a week in its optimal conditions. The species has also been observed totally covering the surface of adjacent canals. Portions of the plant that seemed dead contained live buds that can regenerate under favourable conditions. It was considered that approximately 80 tonnes of the plant were invading these canals.

It is suggested that the species had escaped from a garden or was discarded from an aquarium. Additionally, it was observed that *S. molesta* displaced the native *Salvinia natans* which is listed in the Italian red list, and is already suffering from the disappearance of its habitats due to intense urbanization.

In 2003 near Rome

In 2003, *S. molesta* was observed in the Pozzo del Merro lake (Cornicolani Mountains, Lazio, near Rome), the deepest flooded sinkhole in the world (392 m of water depth). This lake is part of a protected area, the “Riserva Naturale Macchia di Gattaceca e Macchia del Barco”. There, the situation is similar to the one encountered in the Fosso del aqua calda, with water having a constant temperature of 15°C with the rising of geothermic waters. In the pozzo del Meero, *S. molesta* covered the whole lake in 3 months according to the following chronology:

- 31<sup>st</sup> of July 2003: *S. molesta* was not observed;
- 21<sup>st</sup> of August 2003: first record of *S. molesta*, covering about the half of the lake;
- 7<sup>th</sup> September 2003: it covered more than  $\frac{3}{4}$  of the surface of the lake;
- 1<sup>st</sup> October 2003: it covered about 95% of the lake;
- 2<sup>nd</sup> November 2003: it entirely covered the lake.

*S. molesta* displaced the indigenous fern *Lemna minor*. The pyralid moth *Cataclysta lemmata* (Lepidoptera: Pyralidae), a polyphagous caterpillar, was observed feeding on *S. molesta*, but the presence of this insect was not sufficient to prevent its rapid expansion. It is unknown how *S. molesta* arrived at this lake. It is hypothesized that *S. molesta* was carried voluntarily or involuntarily by human activities, or discarded with firefighting.

In 2008, the species has not been removed and still covers the entire lake. The species regresses during winter, but the carpet that it forms is so thick that other plants such as *Carex pendulma* and *Epilobium parviflorum* grow on it. The mats impede the passage of light, leading to changes in the chemical composition of the water. So far, studies on the fauna of the lake have shown that newts, frogs and invertebrates and vertebrates are still abundant.

General remarks about the plant

The plant is known to die if exposed at temperatures lower than  $-3^{\circ}\text{C}$  or higher than  $43^{\circ}\text{C}$  for more than 2 hours. The optimum temperature for growth is  $30^{\circ}\text{C}$ , and growth occurs between  $10^{\circ}\text{C}$  and  $40^{\circ}\text{C}$ . *S. molesta* is considered to be an hybrid between *S. biloba* and *S. herzogii*, originating from the botanical garden of Rio de Janeiro. Studies confirmed that the populations found near Pisa are sterile. In the Pisa location, cariological studies have identified that the plant is pentaploid with  $2n=45$ .

- Source: Garbari F, Giovannini A, Marchetti D (2000) [*Salvinia molesta* D.S. Mitchell (Salviniaceae) new for the Flora of Italy]. *Arch. Geobot.* 6(1): 73-78 (in Italian).
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Additional key words: invasive alien species, new record

Computer codes: IT, SAVMO

2009/058 A leaflet to stop the spread of aquatic invasive plants in Belgium

“Aqua production” is the biggest nursery of aquatic plants in Belgium, distributing plants to several hundreds of retailers in Belgium and neighbouring countries. This nursery industry has been approached by Belgian experts of the Forum on Invasive Species to make them aware of the threats to biodiversity caused by some invasive aquatic plants produced in the nursery (e.g. *Hydrocotyle ranunculoides*), by showing them pictures of invaded habitats. The manager of “Aqua production” agreed to remove plants considered invasive from production, as long as flyers explaining the threats of these species to their clients were provided. A flyer entitled “Stop the spread of invasive aquatic plants” was produced in French and Dutch by the Belgian Forum on Invasive Species. This flyer was then presented by the manager of Aqua Production himself during horticultural fairs (e.g. Green fair). This document proposes indigenous substitution plants to invasive alien plants:

Type of plants	Invasive alien aquatic plants	Substitution plants proposed
Semi-aquatic species	<i>Impatiens glandulifera</i> (Balsaminaceae, EPPO List of Invasive Alien Plants)  <i>Spiraea alba</i> (Rosaceae)	<i>Filipendula ulmaria</i> ((Rosaceae)  <i>Lythrum salicaria</i> (Lythraceae)  <i>Iris pseudacorus</i> (Iridaceae)
Emerged plants	<i>Hydrocotyle ranunculoides</i> (Apiaceae, A2 List)  <i>Ludwigia grandiflora</i> & <i>Ludwigia peploides</i> (Onagraceae, EPPO List of IAP)	<i>Sagittaria sagittifolia</i> (Alismataceae)  <i>Ranunculus aquatilis</i> (Ranunculaceae)  <i>Caltha palustris</i> (Ranunculaceae)
Oxygenating plants	<i>Elodea</i> spp. (Hydrocharitaceae)  <i>Myriophyllum aquaticum</i> (Haloragaceae, EPPO List of IAP)	<i>Potamogeton lucens</i> (Potamogetonaceae)  <i>Ceratophyllum demersum</i> (Ceratophyllaceae)  <i>Myriophyllum spicatum</i> (Haloragaceae)

The flyer also warns about the threats of *Eichhornia crassipes* (Pontedriaceae - A2 List) and *Pistia stratiotes* (Araceae - Alert List), particularly in Southern Europe, and recommends the alternative use of the indigenous *Nymphaeae* spp. (Nymphaeaceae) and *Potamogeton natans* (Potamogetonaceae). The problems caused by other invasive plants such as *Azolla filiculoides* (Salviniaceae, EPPO List of IAP), *Lemna* spp. (Lemnaceae) and *Crassula helmsii* (Crassulaceae - A2 List) are also pointed out.

Source: Branquart E (2008) Halte à la prolifération des plantes aquatiques invasives! 2 p.  
[http://ias.biodiversity.be/ias/documents/def\\_fr.pdf](http://ias.biodiversity.be/ias/documents/def_fr.pdf)  
[http://ias.biodiversity.be/ias/documents/def\\_nl.pdf](http://ias.biodiversity.be/ias/documents/def_nl.pdf)

Invasive Species in Belgium.  
<http://ias.biodiversity.be/>

Additional key words: invasive alien plants, substitution plants

Computer codes: BE, 1ELDG, 1LEMG, AZOFI, CSBHE, HYDRA, EICCR, IPAGL, LUDUR, LUDPE, MYPBR, PIIST, SPVAB

2009/059 *Hydrilla verticillata* in the EPPO region: addition to the EPPO Alert List

*Hydrilla verticillata* (Hydrocharitaceae, Florida elodea, syn: *H. lithuanica*) is a submerged freshwater aquatic plant originating from Australasia which is used as an aquarium plant. Within the EPPO region, its distribution is still limited. Because this plant has shown invasive behaviour in all continents and is of limited distribution in the EPPO region, it can be considered an emerging invader in Europe.

Geographical distribution

EPPO region: Ireland, Latvia, Lithuania, Poland, Russia.

Africa: Kenya, Mauritius, Tanzania, Seychelles, Uganda.

North America: Mexico, USA (invasive) (Alabama, Arizona, California, Connecticut, District of Columbia, Delaware, Florida, Georgia, Iowa, Louisiana, Maryland, Maine, Mississippi, North Carolina, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, Washington).

South America: Colombia, Panama.

Asia: Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Iran, Japan, Korea Dem. People's Republic, Korean Republic, Lebanon, Malaysia, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam.

Oceania: Australia (Queensland, New South Wales, Northern Territory, Victoria, Western Australia), Fiji, French Polynesia, Guam, New Caledonia, New Zealand (invasive), Papua New Guinea.

Note: *H. verticillata* is considered to be native to Asia and northern Australia. Import is prohibited in Western Australia and Tasmania.

It is casual in the following EPPO countries. The plant was found in 1914 in one locality in Great Britain, and another in Ireland. It has been suggested that both populations arose from turions (overwintering dense vegetative buds) carried on the feathers or feet of wildfowl. In the UK, the species was not found subsequently and is believed to have become extinct. It still survives in Ireland, but its populations declined.

In Austria, it is recorded as casual from a hot spring in Carinthia where several alien plants and animals from warmer regions persist.

In Germany, *H. verticillata* was found around 100 years ago, but there are no recently known occurrences. Nevertheless, it can be easily confused with *Elodea canadensis* (Hydrocharitaceae), and might be overlooked.

In Latvia, the species was first found in 1961.

Morphology

*H. verticillata* is a submerged aquatic perennial with heavily branched stems toward the water surface. The plant is usually rooted to the substrate but sometimes grows as floating mats at the surface. Stems can grow up to 9 m long. Leaves are 6 to 20 mm long, 2 to 4 mm wide. Leaves are strap-shaped and have saw-tooth edges and grow in whorls of 4 to 8 around the stem. Leaf colour can vary from green, translucent, yellowish, to brown. The plant is both dioecious and monoecious, it produces small white flowers on long slender stems (female flowers), and small, green, free-floating, inverted bell-shaped flowers (male flowers).

### Biology and ecology

*H. verticillata* grows very fast and can double its biomass every two weeks in summer conditions. It is found in freshwater but can tolerate salinities of up to 7%. It can grow in relatively low light and CO<sub>2</sub> conditions, as well as in low or high nutrient conditions. The plant is winter-hardy, it prefers temperatures between 20 and 27°C, and its maximum temperature is 30°C. Seeds play a very small role in its spread, and indeed most populations do not produce any seed at all. The dioecious plant (having female and male flowers on different plants) is native to southern India and the monoecious plant (having both female and male flowers on the same plant) is probably native to Korea. The dioecious and the monoecious plants are found on every continent except Antarctica. *H. verticillata* reproduces mainly by regrowth of stem fragments, which breaks easily, and small pieces of stem no more than 2.5 cm can produce entire new plants. The plant also produces turions of 0.6 cm (overwintering dense vegetative buds) at the axils of leaves and potato-like tubers attached to the roots in the mud. The turions break off the stems in the autumn and can drift for long distances before sinking to start a new plant. Tubers may remain viable for 4 to 7 years in the sediments and one tuber can lead to the production of 5000 new tubers per square metre. Tubers and turions can survive ice cover, drying, ingestion and regurgitation by waterfowl. Fragments, tubers and turions are spread by water currents. The plant may initially be discarded into the wild through aquarium dumping. Fragments of the plant can then be spread by boats, trailers and fishing equipments. Fragments of *H. verticillata* have also been found contaminating shipments of water lilies.

### Habitats

*H. verticillata* has been found in springs, lakes, marshes, ditches, rivers and tidal zones. According to the Corine Land Cover nomenclature, these habitats correspond to: inland wetlands (marshes, peat bogs) and continental waters (water courses, water bodies).

### Impacts

*H. verticillata* forms dense mats on the water surface that totally exclude sunlight from other plants, reducing plant and animal diversity. In North America, native plants such as *Potamogeton* spp. (Potamogetonaceae), *Vallisneria americana* (Hydrocharitaceae) and *Ceratophyllum demersum* (Ceratophyllaceae) are shaded out, outcompeted and eliminated. Populations of fishes can be affected by the plant as they can not hunt effectively within the thick mats. Although some birds feed on the plant, bird populations generally decline in a heavily infested site. The dense mats also affect recreational activities as boat motors can become tangled with them, and swimming areas can be choked. *H. verticillata* often slows or clogs rivers, irrigation ditches, and flood control canals, creating stagnant water that is prime mosquito breeding habitat. Dense stands can even cause flooding, damage dams and power plants, alter water quality by decreasing oxygen levels and by increasing pH and water temperature.

### Control

In ponds and small lakes, water draw-downs have been effective. Harvesting and the use of motorized boats is not recommended as it can fragment the plant and ease its spread.

Aquatic herbicides (e.g. fluridone and endothall in the USA) have been effective at temporarily controlling the weed, but do not kill the tubers, turions and seeds. Biological control agents include Chinese grass carp (*Ctenopharyngodon idella*), tuber-feeding weevils - such as *Bagous affinis* attacking tubers when the plant is not submerged beneath the water - and leaf-eating flies - such as *Hydrellia pakistanae*, whose larvae feed on the plant. Chinese grass carp are effective but should be used with care since they are not selective and might destroy native plants. An integrated approach including biological

control with Chinese grass carp, mechanical and manual methods has been found to achieve maximum success.

- Source: Center for Aquatic and invasive plants - University of Florida IFA - *Hydrilla verticillata*.  
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Additional key words: Invasive alien plants, alert list

Computer codes: HYLVE

2009/060 EPPO/CoE Workshop 'Code of Conduct on horticulture and Invasive Alien Plants', Oslo (NO), 2009-06-04/05

In Europe, it is estimated that 80% of the invasive alien plants are voluntarily introduced for ornamental purposes, and international trade is increasing yearly. This major pathway must be addressed urgently to prevent entry and spread of invasive alien plants, as at present, few legislation and management programmes are in place. Voluntary measures to tackle the problem and raise awareness among the horticultural sector and the public are therefore considered a priority. EPPO and the Council of Europe are in the process of developing a code of conduct on horticulture and invasive alien plants.

This workshop has the following objectives:

- to make the code of conduct known;
- to exchange experiences with nursery industry professionals;
- to discuss how to implement this code of conduct, and how to monitor its effectiveness.

This Workshop is open to civil servants within Governments (NPPOs, Ministries of Environment) and the horticultural industry and trade - plant importers, commercial nurseries, municipal nurseries, garden centres, aquarists - and to those who play a role in deciding what species are grown in particular areas such as landscape architects, municipal parks and gardens departments, recreation and leisure departments.

Pre-registration and call for papers are open till 2009-04-20.

- Source: EPPO/CoE Workshop 'Code of Conduct on horticulture and Invasive Alien Plants'  
[http://archives.eppo.org/MEETINGS/2009\\_conferences/conf\\_codeofconduct.htm](http://archives.eppo.org/MEETINGS/2009_conferences/conf_codeofconduct.htm)

Additional key words: invasive alien plants, workshop