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CONTENTS _____ ***Pests & Diseases***

_____ ***Invasive Plants***

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2012/023 First report of *Drosophila suzukii* in Austria

The NPPO of Austria recently informed the EPPO Secretariat of the first report of *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) on its territory. The pest was found on fruit of *Rubus idaeus* (raspberry), *Actinidia* spp. (kiwifruit) and *Sambucus* spp. (elder) in the regions of Tyrol, Kärnten and Styria. The insect was identified on the basis of morphological characters by the laboratory of AGES (Austrian Agency for Health and Food Safety). The origin of the pest could not be clarified. The regional Plant Protection services have ordered hygiene measures, including the disposal and destruction of infested fruit. Control strategies against *D. suzukii* will be developed during 2012.
The pest status of *Drosophila suzukii* in Austria is officially declared as: **Transient, actionable, under surveillance.**

Source: NPPO of Austria (2012-01).

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

2012/024 Situation of *Drosophila suzukii* in Switzerland in 2011

In Switzerland, *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) was detected for the first time in July 2011 in the cantons of Ticino and Graubünden (Grisons) (EPPO RS 2011/172). In the framework of a monitoring programme, traps (containing cidar vinegar and a yellow stick trap) were placed across the whole country in stone fruit orchards, small fruit crops and vineyards. At the end of 2011, results showed that adults of *D. suzukii* had been caught in small fruit crops in the cantons of Fribourg, Geneva, Graubünden, Ticino, Thurgau, Valais, Vaud and Zürich. The pest had also been caught in traps located in vineyards (*Vitis vinifera*) in Graubünden and Ticino, as well as in a plum (*Prunus domestica*) orchard in Graubünden and in one fig tree (*Ficus carica*) in Valais. It is noted that for the moment, the impact of the pest is difficult to predict but serious damage has been observed in small fruit crops: strawberry (*Fragaria annassa*), raspberry (*Rubus idaeus*), blackberry (*Rubus fruticosus*) and blueberry (*Vaccinium myrtillus*). Considering the spread of the pest, its eradication no longer seems feasible. Preventive control measures, including monitoring (traps), destruction of attacked and fallen fruit, mass trapping (for private gardens only) are recommended. For the moment, there are no registered plant protection products against *D. suzukii* in Switzerland, but the possibility of using chemical or natural insecticides is currently being studied.
The situation of *Drosophila suzukii* in Switzerland can be described as follows: **Present first caught in July 2011 in 2 cantons, now found in the cantons of Fribourg, Geneva, Graubünden, Ticino, Thurgau, Valais, Vaud and Zürich.**

Source: Kehrli P, Höhn H, Baroffio C, Fischer S (2012) La drosophile du cerisier, un nouveau ravageur dans nos cultures fruitières. *Revue suisse de Viticulture, Arboriculture, Horticulture* **44**(1), 69-71.

Additional key words: detailed record **Computer codes:** DROSSU, CH

2012/025 Traps baited with a mixture of wine and vinegar are more attractive to *Drosophila suzukii*

Monitoring programmes for *Drosophila suzukii* (Diptera: Drosophilidae – EPPO A2 List) usually recommend the use of traps baited with vinegar or wine. Studies have recently been carried out in Oregon (US) on the attractiveness of different baits: wine and vinegar, alone or in combination. The respective roles of acetic acid and ethanol in the fly attraction were also investigated. Results of these studies have showed that numbers of *D. suzukii* trapped were significantly greater with a mixture of vinegar and wine compared with vinegar alone or wine alone. These studies also indicated that both males and females were attracted by acetic acid but not by ethanol, although a synergy was observed when acetic acid and ethanol were used in mixture. The attraction of *D. suzukii* to vinegar and wine was partly due to responses to acetic acid and ethanol, although other volatiles from wine and vinegar played a role as the mixture wine/vinegar attracted more flies than the mixture acetic acid/ethanol.

Source: Landolt PJ, Adams T, Rogg H (2012) Trapping spotted wing drosophila, *Drosophila suzukii* (Matsumura: Drosophilidae), with combinations of vinegar and wine, and acetic acid and ethanol. *Journal of Applied Entomology* **136**, 148-154.

Additional key words: trapping **Computer codes:** DROSSU

2012/026 Incursion of *Ceratitis capitata* in Austria

The NPPO of Austria recently informed the EPPO Secretariat of the detection of *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) on peaches (*Prunus persica*) in the region of Vienna. *C. capitata* was caught in a private garden in a pheromone trap during a monitoring programme carried out at a regional level. The insect was identified on the basis of morphological characters by the laboratory of AGES (Austrian Agency for Health and Food Safety). The origin of the pest could not be clarified. The Regional Plant Protection Service has ordered the destruction of all infested fruit and the application of an insecticide treatment. It is planned to continue the monitoring of the pest in different sites of the Vienna region in 2012.
The pest status of *Ceratitis capitata* in Austria is officially declared as: **Transient, actionable, under surveillance.**

Source: NPPO of Austria (2012-01).

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

2012/027 Incursion of *Ceratitis capitata* in Ile-de-France (FR)

In France, *Ceratitis capitata* (Diptera: Tephritidae – EPPO A2 List) is locally established in the Southern part. However, in 2010 and 2011, isolated findings were made in the Northern part of France (Ile-de-France region). In 2010, it was caught in the Yvelines department. In 2011, several specimens were caught in Paris (Jardin du Luxembourg) and in Val d'Oise department (2 sites in a rural area). It is recalled that *C. capitata* had been caught in the 1950s in Seine-Saint Denis (Montreuil) and Val-de-Marne departments. For the moment, these are isolated findings and *C. capitata* cannot be considered as established in Northern France.

Source: Anonymous (2011) Phyto Régions. Ile-de-France. Cératite, la revoilà. *Phytoma - La Défense des Végétaux* no. 647, p 4.

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

2012/028 First report of *Tuta absoluta* in Slovenia

In 2009, the presence of *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was confirmed for the first time in Slovenia in tomato glasshouses. A specific survey was carried out in 2010 and the pest was detected in several localities scattered across the Slovenian territory. Phytosanitary measures are being taken to prevent any further spread of *T. absoluta*. A map displaying the current situation of the pest (as of 2011-01-05) can be viewed on the Internet:
http://www.fu.gov.si/fileadmin/fu.gov.si/pageuploads/STORITVE/Posebno_nadzorovani_organizmi/Paradiznikov_molj/tuta_a_karta_PK_1_1000000.jpg
The situation of *Tuta absoluta* in Slovenia can be described as follows: **Present, first found in 2009, limited distribution, under official control.**

Source: INTERNET (last accessed in 2012-02)
Ministry of Agriculture, Forestry and Food. Phytosanitary administration of the Republic of Slovenia. Tomato leaf miner (*Tuta absoluta* Povolny).
http://www.fu.gov.si/en/services/regulated_organisms/tomato_leaf_miner_tuta_absoluta_povolny/

Žežlina I, Benko Beloglavec A, Pajk P (2011) [Tomato leaf miner (*Tuta absoluta* Povolny) – Results of its special surveillance in Slovenia in year 2010]. *Proceedings of the 10th Slovenian Conference on Plant Protection (Podčetrtek, SI, 2011-03-01/02)*, pp 107-112 (in Slovene).

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

2012/029 First report of *Tuta absoluta* in Panama

In Panama, the presence of *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was reported for the first time in February 2011. The pest was detected near Río Sereno (Renacimiento district, Chiriquí province), near the border with Costa Rica. Surveys have been initiated in the major tomato-growing regions (i.e. provinces of Veraguas, Coclé, Herrera, Los Santos, Bocas del Toro and Chiriquí). *T. absoluta* was later found in several other localities of the province of Chiriquí (Renacimiento, Cordillera, Potrerillos, Boquete and Gualaca). Control strategies are being studied in order to limit the spread of the pest and its impact on tomato crops.
The situation of the *Tuta absoluta* in Panama can be described as follows: **Present, first found in 2011 in the province of Chiriquí, under official control.**

Source: INTERNET
Tuta absoluta information network.
http://www.tutaabsoluta.it/news/266/tuta-absoluta---detectan-plaga-de-polilla-en-el-tomate-panam

República de Panamá. Ministerio de desarrollo agropecuario. Noticias.
- Detectan plaga de polilla en el tomato (2011-02-10).

http://190.34.208.123/MIDA/index.php?option=com_content&view=article&id=1124:detectan-plaga-de-polilla-en-el-tomate&catid=161:febrero-2011&Itemid=64
- Técnicos del MIDA orientan a productores de CAISAN en al manejo de la polilla del tomate (2011-03-09).
http://190.34.208.123/MIDA/index.php?option=com_content&view=article&id=1157:tecnicos-del-mida-orientan-a-productores-de-caisan-en-el-manejo-de-la-polilla-del-tomate&catid=162:marzo-2011&Itemid=64

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

2012/030 Situation of *Tuta absoluta* in France in 2011

In France, *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was detected for the first time in Corse and Provence-Alpes-Côte d'Azur (EPPO RS 2009/003) in 2008. In 2011, surveys were conducted and showed that the pest occurs in the following regions: Aquitaine, Bretagne, Centre, Champagne-Ardenne, Corse, Ile-de-France, Languedoc-Roussillon, Midi-Pyrénées, Pays-de-la-Loire, Provence-Alpes-Côte d'Azur, Rhône-Alpes.
Management strategies are being developed to control *T. absoluta* and include: 1) use of pheromone traps to monitor pest populations; 2) prophylactic measures (e.g. insect-proof screens, soap sprays, destruction of weeds and plant debris, soil solarisation); and 3) curative measures (biological control with *Macrolophus pygmaeus and Trichogramma achaeae*, bio-insecticides such as Bt and spinosad, mass trapping, insecticide applications).
The situation of *Tuta absoluta* in France can be described as follows: **Present, first found in 2008, occurring in Aquitaine, Bretagne, Centre, Champagne-Ardenne, Corse, Ile-de-France, Languedoc-Roussillon, Midi-Pyrénées, Pays-de-la-Loire, Provence-Alpes-Côte d'Azur, Rhône-Alpes.**

Source: Tabone E, Thi Khanh HD, Bodendörfer J, Rey F (2012) Contre *Tuta absoluta*, vive la protection intégrée. *Phytoma - La Défense des Végétaux* no. 650, 45-47.

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

2012/031 First report of *Aproceros leucopoda* in Slovenia

In Slovenia, the presence of the zigzag elm sawfly, *Aproceros leucopoda* (Hymenoptera: Argidae – EPPO Alert List) was reported for the first time in September 2011. Signs of infestation (zigzag feeding tracks) were discovered in Rožna Dolina near Nova Gorica. At the beginning of October larval feeding symptoms were also observed in the Arboretum of Volčji Potok (Radomlje, near Ljubljana) and in the Botanical garden in Ljubljana. The majority of the infested trees were *Ulmus minor* (field elms), but infestation was also observed on a few *U. glabra* (Wych elms). This is the first time that *A. leucopoda* is reported in Slovenia.
The situation of *Aproceros leucopoda* in Slovenia can be described as follows: **Present, first observed in 2011 near Nova Gorica and Ljubljana.**

Source: de Groot M, Hauptman T, Seljak G (2012) [The first record of the invasive 'zigzag' sawfly, *Aproceros leucopoda* (Hymenoptera: Argidae) in Slovenia]. *Gozdarski vestnik* **70**(1), 3-7 (in Slovene).

Additional key words: new record **Computer codes:** APRCLE, SI

2012/032 First report of *Phyllocnistis vitegenella* in Switzerland

Phyllocnistis vitegenella (Lepidoptera: Gracillariidae) is a leafminer of grapevine (*Vitis vinifera*) originating from North America which was introduced into Europe in the 1990s. It was first reported in Northern Italy in 1994 in Veneto region (Province of Vicenza). In the following years, it spread to other provinces of Veneto (Padova, Treviso, Verona) and other Italian regions (Friuli Venezia-Giulia in 2001, Emilia-Romagna in 2005, Trentino in 2009). In 2004, its presence was also noted in Slovenia (EPPO RS 2006/160).
In Switzerland, *P. vitegenella* was first observed in 2009 in Ticino. As the pest was found in several municipalities of Mendrisiotto, it is suspected that it has been present for several years. For the moment, no economic damage has been reported in European vineyards. Studies carried out in Italy, and preliminary observations made in Switzerland showed that several native species of parasitoids are able to develop on this newly introduced species and probably contribute to limit its populations.

Source: Cara C, Jermini M (2011) La mineuse américaine *Phyllocnistis vitegenella* un nouveau ravageur de la vigne au Tessin. *Revue Suisse de Viticulture, Arboriculture, Horticulture* **43**(4), 224-230.

Additional key words: new record **Computer codes:** PHYNVI, CH

2012/033 First reports of *Aphis illinoisensis* in Cyprus, Italy, Libya, Malta, Montenegro and Spain

The grapevine aphid, *Aphis illinoisensis* (Homoptera: Aphididae) originates from the Americas but was introduced into the Mediterranean region in the 2000s where it is showing an invasive behaviour. It was first detected in Turkey in 2002 and in Crete (GR) in 2005 where it rapidly spread across the island (EPPO RS 2007/034). In 2007, it was found in Algeria and Israel, and in 2009 it was first recorded in Tunisia (EPPO RS 2011/105 & 106). In recent years, it continued to spread around the Mediterranean Basin and the following countries have reported its occurrence. For the moment, in most invaded areas no serious damage has been reported.

- **Cyprus**

The occurrence of *A. illinoisensis* in Northern Cyprus is mentioned in a review about its spread around the Mediterranean Basin. It was first recorded there in 2006 (Havelka, 2011).

- **Italy (Sicilia)**

The NPPO of Italy recently informed the EPPO Secretariat that *A. illinoisensis* was detected in Sicilia in the vineyards of the Etna area (Province of Catania). The origin of the infestation has not been clarified yet. In Sicilia, localized infestations were observed on a small percentage of young shoots growing in shaded areas. No infestations have been observed on grapes. Further investigations will be carried out during the next growing season to evaluate the spread of *A. illinoisensis* and its phytosanitary risk (NPPO, 2011).

- **Libya**

In Libya, *A. illinoisensis* was detected for the first time in 2010, in several localities (Derna, Misurata and Zliten) along the Mediterranean coast (Havelka, 2011).

- **Malta**

In Malta, the presence of *A. illinoisensis* was detected for the first time in 2009. The aphid was found on *Vitis vinifera* at Msida. The high levels of infestations and extensive damage observed indicated that it had probably been introduced earlier. *A. illinoisensis* has also been observed in the area of Hal-Far (in the south of Malta) in both private gardens and vineyards (Mifsud & Pérez Hidalgo, 2011).

- **Montenegro**

In Montenegro, *A. illinoisensis* was detected for the first time in September 2007 in vineyards near Podgorica. In 2008 and 2009, the aphid was found in many localities in the grapevine-growing regions of Montenegro (Petrović-Obradović *et al.*, 2010).

- **Spain**

In Spain, *A. illinoisensis* was detected for the first time in August 2011 on *Vitis vinifera* in a private garden in the city of Sevilla (Andalucía). Interestingly, this first finding was noticed because a photograph of an aphid colony had been posted on the Internet (Biodiversidad Virtual Portal – www.biodiversidadvirtual.org). Specimens were then collected from the same place and identified at the University of Barcelona. The aphid colonies observed in Sevilla were treated (water and detergent), and at present it is not known whether *A. illinoisensis* is established or not and whether it will become a damaging pest of grapevine (Pérez Hidalgo *et al.*, 2011).

Source: Havelka J, Schukshuk AH, Ghaliow M, Laamari M, Kavallieratos NG, Tomanović Ž, Rakhshani E, Pons X, Starý P (2011) Review of invasive grapevine aphid, *Aphis illinoisensis* Shimer and native parasitoids in the Mediterranean (Hemiptera, Aphididae; Hymenoptera, Braconidae, Aphidiinae). *Archives of Biological Science, Belgrade* **63**(1), 269–274.

Mifsud D, Pérez Hidalgo N (2011) The grapevine aphid *Aphis illinoisensis*: a good example of recent invasion and rapid colonization by aphids. *Bulletin OEPP/EPPO Bulletin* **41**(2), 183-184.

NPPO of Italy (2011-12).

Pérez Hidalgo N, Laguna Garcia F, Nieto Nafría JM (2011) First Spanish record of *Aphis illinoisensis* Schimer (Hemiptera: Aphididae), the grapevine aphid. *Boletín de la Sociedad Entomólogica Aragonesa (S.E.A) n°49, 321-323.*

Petrović-Obradović O, Tomanović Ž, Poljaković-Pajnik L, Hrnčić S, Vučetić A, Radonjić S (2010) New invasive species of aphids (Hemiptera, Aphididae) in Serbia and Montenegro. *Archives of Biological Sciences, Belgrade* **62**(3), 775–780.

Additional key words: new record **Computer codes:** APHIIL, CY, ES, IT, LY, ME, MT

2012/034 First reports of Grapevine flavescence dorée phytoplasma and its vector *Scaphoideus titanus* in Croatia

Grapevine flavescence dorée phytoplasma (EPPO A2 List) was identified for the first time in Croatia in 2008 on one infected *Clematis vitalba* plant, during a specific survey conducted in the vicinity of a vineyard in Železna Gora (Međimurska county). In vineyards, Grapevine flavescence dorée phytoplasma was first found in 2009. 35 grapevine samples were collected from 13 locations and the phytoplasma was identified in only 1 sample (*Vitis vinifera* cv. 'Pinot Noir') collected in October 2009 in Vivodina (Karlovačka county).

Visual inspections of vineyards which were considered to have the highest potential for occurrence and spread of flavescence dorée continued during 2010. New findings were confirmed in 6 grapevine samples collected from 3 (out of 21) inspected locations: Sveta Nedelja and Jagnjić Dol (Zagrebačka county), and Brckovčina (Koprivničko-križevačka county). To prevent any further spread of the disease, phytosanitary measures were put into place. Infected grapevines at the above locations were uprooted and incinerated. The health status of grapevine will continue to be monitored during the forthcoming vegetation periods at locations where flavescence dorée infection was confirmed.
The insect vector of the disease, *Scaphoideus titanus* (Hemiptera: Cicadellidae), occurs in all major vineyards, but so far, molecular analyses have not confirmed the presence of Grapevine flavescence dorée phytoplasma in collected samples of *S. titanus*. In 2010, the largest populations of *S. titanus* were observed in the counties of Istarska, Karlovačka, Zagrebačka and Krapinsko-zagorska.
The pest status of Grapevine flavescence dorée phytoplasma in Croatia is officially declared as: **Present, on grapevine first found in 2009, new findings in Zagrebačka and Koprivničko-križevačka counties, eradication measures conducted, under official control.**

Source: NPPO of Croatia (2011-11).

Additional key words: new records **Computer codes:** PHYP64, SCAPLI, HR

2012/035 Maize redness: addition to the EPPO Alert List

As presented in EPPO RS 2008/013, Maize redness is a phytoplasma disease of maize (*Zea mays*) which has occurred periodically in Serbia, Romania and Bulgaria since the 1960s. It was first observed in 1957 in Serbia (Banat region), and epidemic phases were observed in the late 1950s – early 1960s, and 40 years later in the late 1990s – early 2000s. During these epidemic phases, disease incidence could reach 90% in some maize fields and yield reductions varying from 40 to 90% were observed. In the mid-2000s, studies showed that stolbur phytoplasma ('*Candidatus* Phytoplasma solani') was consistently associated with diseased maize plants and that *Reptalus panzeri* (Homoptera: Cixiidae) was the main insect vector. It is acknowledged that many aspects of this disease still remain to be clarified, such as its aetiology and the relationships with other diseases caused by stolbur phytoplasma, its epidemiology (natural plant reservoirs, vectors) and its biology. As maize is an important crop in Europe, the EPPO Panel on Phytosanitary Measures suggested adding maize redness to the EPPO Alert List.

Pictures of maize redness and *R. panzeri* were kindly provided by Dr Ivo Toševski and Dr Jelena Jović (Institute for Plant Protection and Environment, Zemun, Serbia), and can be viewed on the EPPO gallery.
http://photos.eppo.org/index.php/album/63-stolbur-phytoplasma-phyp10-
http://photos.eppo.org/index.php/album/582-reptalus-panzeri-reptpa-

Maize redness - a disease associated with stolbur phytoplasma

Why

Unusual symptoms of reddening and poor cob development were first observed on maize (*Zea mays*) in 1957 in the Banat district of Serbia. The disease, called 'Maize redness', was subsequently reported from neighbouring countries, and more recently from Italy and Hungary. The disease generally remained sporadic in Serbia, but severe outbreaks were reported during some periods (e.g. in the 1990s and the early 2000s). Although Maize redness might be caused by a complex of pathogens, recent studies have showed that stolbur phytoplasma ('*Candidatus* Phytoplasma solani', subgroup 16SrXII-A) is its major causal agent and that a planthopper *Reptalus panzeri* (Hemiptera: Cixiidae) is its main insect vector. The emergence of a new maize disease caused by stolbur phytoplasma which is also known to be associated with other diseases (e.g. on grapevine (Bois Noir), or solanaceous crops such as potato, tomato and capsicum) is not yet fully explained and it is acknowledged that further studies are needed to better understand its taxonomy, biology and ecology. As maize is an important crop in the EPPO region, the EPPO Panel on Phytosanitary measures suggested the addition of Maize redness to the Alert List.

Where

Despite the fact that Maize redness has been known to occur for decades in Europe, it remained localised to parts of Serbia for more than 50 years. It was then found in neighbouring countries (Bulgaria, Croatia, Romania). In 2009, symptoms of Maize redness were observed in on a small number of maize plants in Northern Italy (Mantova province, Lombardia). Preliminary studies detected the presence of stolbur phytoplasma, together with other phytoplasmas (belonging to 16SrI and 16Sr II groups). In August/September 2010, the occurrence of reddening symptoms was also observed in some maize fields in different localities in Hungary. The presence both stolbur phytoplasma and its vector, *R. panzeri* could be confirmed in one of these localities.

EPPO region: Bulgaria, Croatia, Hungary, Italy, Romania and Serbia.

The geographical distribution of *R. panzeri* remains to be further studied but it is considered to be widespread in Europe. *R. panzeri* has been recorded at least in the following countries: Austria, Bulgaria, Croatia, Hungary, Italy, Romania, Serbia.

On which plants

The main host of the disease is: *Zea mays* (maize). However, studies carried out in Serbia in infected maize fields and their surroundings have showed that the phytoplasma could also be detected in the roots of a perennial weed *Sorghum halepense* and of *Triticum aestivum* (wheat). Roots of these plants also harboured overwintering populations (nymphs) of *R. panzeri*. It is noted that these plants play an important role in the disease epidemiology. In particular, a maize/wheat rotation could favour the disease development because winter wheat roots can constitute a bridge (by harbouring both the overwintering stages of the vector and the phytoplasma) between two maize crops.

Damage

Symptoms of Maize redness are characterized by midrib, leaf, and stalk reddening (usually in late July), and by abnormal ear development with poor, shriveled grains. Soon after the appearance of symptoms, affected plants wilt, their foliage desiccates rapidly and most of the red-violet pigmentation disappears, and they eventually die. The disease reduces grain filling and maize cob weight. Compared to healthy plants, symptomatic plants ripen earlier, but they do not show stunting as in the cases of Maize bushy stunt phytoplasma or Corn stunt (caused by *Spiroplasma kunkelii*). The outbreaks of Maize redness observed in 2002 and 2003 reduced yields by 40 to 90% in the maize-growing district of Banat in Serbia.

Transmission

In the field, Maize redness is transmitted by *R. panzeri*. This insect is also suspected to transmit Bois Noir disease in grapevine (also associated with Stolbur phytoplasma but whose main vector is *Hyalesthes obsoletus*). *R. panzeri* is a monovoltine species and adults are only observed during a short period in summer. Like most cixiids, females lay eggs in the soil surrounding their host plants, and nymphs develop on host plant roots. Although detailed information is generally lacking on the biology of *R. panzeri*, it is considered to be a

polyphagous species, primarily living on the tree species that inhabit scattered shrublands. Early stages develop on grasses. Both, larvae and adults are covered by wax and live 9 months 20-30 cm under the soil surface. In Serbia, adults emerge from mid-June to early July, and can migrate to maize fields from July to September. According to the literature, *R. panzeri* has been observed on cultivated species (e.g. *Triticum aestivum, Vitis vinifera, Zea mays*) and numerous wild species (e.g. *Artemisia, Cirsium arvense, Clematis, Convolvulus arvense, Crataegus, Datura stramonium, Pinus, Prunus spinosa, Rosa, Salix, Sorghum halepense, Ulmus, Urtica dioica*).

In the Southern part of the district of Banat, it has been observed that adults of *R. panzeri* transmitted Stolbur phytoplasma to maize plants during summer (i.e. around mid-July). Adult females of *R. panzeri* lay eggs on roots of maize or other host plants, and nymphs living on these roots may acquire the phytoplasma from infected plants. Resulting adults will then be able to further transmit the disease in the field. Because severe outbreaks of maize redness have usually been observed during warm and dry summers, it has been hypothetized that when these climatic conditions prevail, *R. panzeri* moves from its dessicating wild host plants to green maize crops.

Over long distances, the possible pathways for spreading Maize redness across the EPPO region appears to be limited because maize is not normally traded as plants for planting. Seed transmission of phytoplasma is still a controversial issue and is generally considered as unlikely. However, preliminary studies on Maize redness have suggested that a low percentage of seed transmission might occur but more studies are needed to confirm this.

Pathway

Natural spread via infected *Reptalus panzeri* seems to be the main pathway. Nevertheless, plants for planting of species liable to carry infected *R. panzeri* might also be a pathway. Seed transmission needs to be clarified.

Possible risks

Maize is an important crop for the EPPO region. The epidemic character of Maize redness and possible correlation with longer periods of higher temperatures and droughts can cause significant economic damage in maize production. Disease control is difficult in the field, and there is little information about effective methods against the insect vector or about the availability of resistant/tolerant maize varieties. In disease epidemiology, the wide range of the vector's host plants and stolbur phytoplasma plant hosts are factors which should be considered. Possible management practices to reduce the risk of Maize redness may include crop rotation over 3 or more years (avoiding the short wheat/maize rotation – see above), weed control, vector control, drainage and irrigation channels. Concerning maize tolerance/resistance, differential sensitivity to Maize redness has been observed in some maize hybrids. Hybrids with a short growing period tend to be less affected by Maize redness than those with longer growing period or which are sown late in the season for silage production. Insecticide treatments against *R. panzeri* adults might be envisaged. Finally, it has been suggested that climate change might significantly influence the epidemiology of Maize redness, since the most severe damage was recorded during the warmest decade in 1990s and early 2000s.

Sources

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2012/036 First report of *Potato spindle tuber viroid* in Croatia

Potato spindle tuber viroid (*Pospiviroid*, PSTVd – EPPO A2 List) was first detected in Croatia during a specific survey in 2009. In order to determine the presence of the pest, leaf samples of *Solanum jasminoides*, *Solanum rantonnetii* and *Brugmansia* spp. plants were collected at border inspection posts during import, at registered plant suppliers of imported plants and in nurseries. In total, 45 *Solanum jasminoides*, 9 *Brugmansia* spp. and 12 *Solanum rantonnetii* samples were tested in the laboratory using molecular methods (RT-PCR) and sequencing according to the EPPO Diagnostic protocol PM 7/33. The presence of PSTVd was detected in 5 samples collected from 4 locations: 3 *Solanum jasminoides* samples collected in Varaždin (Varaždinska county) and Umag (Istarska county) at points of unloading and sale of host plants, and 2 *Solanum rantonnetii* samples collected in Kutina (Sisačko-moslavačka county) and Ribnik (Karlovačka county) where mother plants and seedlings of host plants were produced. After confirmation of PSTVd infections, phytosanitary measures were taken. All infected plants, as well as their daughter plants which could be retrieved, were destroyed by incineration.
Following this first finding, specific surveys were carried out in 2010 and included the testing of other PSTVd host plants (Petunia, 'Surfinia', tomato and potato). No infection could be found in the tested plant material, but regular surveys will nevertheless continue in Croatia.
The pest status of *Potato spindle tuber viroid* in Croatia is officially declared as: **Few outbreaks in 2009, eradication measures conducted, no new findings.**

Source: NPPO of Croatia (2011-11).

Additional key words: new record **Computer codes:** PSTVD0, HR

2012/037 Pests newly found or intercepted in the Netherlands

The NPPO of the Netherlands recently provided the EPPO Secretariat with the following summary of recent findings or interceptions made during import in the Netherlands of new possibly harmful organisms.

SNAILS

***Bradybaena similaris* (Mollusca: Bradybaenidae).**
This snail was found on *Ficus* pot plants originating from China in the tropical glasshouse of the Burger's Bush Zoo.
Distribution: **Asia** (South East), **South America, Central America, North America** (Southern USA), **Africa** (Madagascar, South Africa), and many islands in the Pacific.
Host plants: polyphagous snail, damage has been reported on citrus in the USA and on *Vitis* in Taiwan.

INSECTS

***Exophthalmus jekelianus* (Coleoptera: Curculionidae)**
This weevil was found on *Ficus* nursery stock originating from Costa Rica.
Distribution: **Central America and Caribbean** (Costa Rica, Honduras, Nicaragua, Panama, Trinidad), **South America** (Colombia).
Host plants: economic damage (defoliation) has been described in *Coffea arabica*. *E. jekelianus* is probably a polyphagous beetle but in most crops, no serious damage is observed.

***Cephrenes trichopepla* (Lepidoptera: Hesperiidae) – yellow palm-dart**
Caterpillars were intercepted during import on *Livistona* plants from Sri Lanka.
Distribution: **Asia** (Malaysia, Singapore, Sri Lanka and probably other tropical Asian countries), **Oceania** (Australia, Papua New Guinea).
Host plants: palm trees, including *Cocos nucifera* (coconut), *Livistona* and *Phoenix*.

***Conotrachelus cristatus* (Coleoptera: Curculionidae)**
This species was intercepted during import on *Codiaeum* plants from Costa Rica.
Distribution: **North America**: Mexico, USA (no details), **Central America and Caribbean** (Belize, Costa Rica, Guadeloupe, Guatamala, Honduras, Nicaragua, Panama, Trinidad and Tobago), **South America** (Argentina, Brazil, Colombia, Ecuador, Peru, Uruguay, Venezuela).
Host plants: according to the literature the main economic host is *Arracacia xanthorrhiza* (arracacha, batata-salsa, mandioquinha-salsa - Apiaceae). Adult weevils feed on leaves and petioles, and larvae feed on the tubers. *C. cristatus* has also been reported on *Inga* spp. (Fabaceae) and *Hibiscus* (Malvaceae), but *Codiaeum* is not recorded as a host plant.

***Cylas formicarius* (Coleoptera: Apionidae) - sweet potato weevil**
This species was intercepted during import on *Ipomoea batatas* from Vietnam.
Distribution: Southern North America, Central America (part) & Caribbean, Africa, Asia and Oceania.
Host plants: *C. formicarius* is a polyphagous weevil but its major economic host is *Ipomoea batatas* (sweet potato). Other hosts are *Daucus carota* (carrot) and *Manihot esculenta* (cassava) and many plant species belonging to the *Apiaceae, Araceae, Brassicaceae, Dioscoreaceae, Euphorbiaceae, Maranthaceae, Piperaceae* families.

PATHOGENS

***Chrysanthemum chlorotic mottle viroid* (Pelamoviroid, CChMVd)**

CChMVd was detected in chrysanthemums at a nursery in the Netherlands.

Distribution: CChMVd has been reported from the following countries but it probably has a wider distribution. **EPPO region** (Denmark, France, Netherlands), **Asia** (China, India, Japan), **North America** (USA).

Host plants: chrysanthemums (*Dendranthema* spp.) but no economic damage has been reported (CChMVd causes only mild symptoms).

Source: NPPO of the Netherlands (2011-11).

Additional key words: incursion, interception **Computer codes:** BRABSI, CCMVD0, CEPRTR, CONHCS, CYLAFO, EXOHJE, NL

2012/038 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**

Bean golden mosaic virus (*Begomovirus*, BGYMV – EPPO A1 List) occurs in Nicaragua. Bean golden mosaic disease was first observed in Nicaragua in the early 1970s but it was not until 1990 that the disease became economically important in bean (*Phaseolus vulgaris*) production. Recent studies have showed that BGYMV is the predominant virus involved in this disease (detected in 95% of the tested samples). In addition, BGYMV was detected in all studied regions (Boaco, Managua, Granada, Masaya, Rivas, León, Matagalpa, Estelí). The other viruses found were *Squash yellow mild mottle virus* and *Calopogonium golden mosaic virus* (Karkashian *et al.*, 2011). **Present, widespread.**

Cucurbit chlorotic yellows virus (CCYV) is a new *Crinivirus* of cucurbits spreading in Asia (see EPPO RS 2011/007). CCYV is transmitted by *Bemisia tabaci* and has been reported from China, Japan and Taiwan causing damage to melon (*Cucumis melo*), watermelon (*Citrullus lanatus*) and cucumber (*Cucumis sativus*) crops. In 2009, it was detected for the first time in Africa, in Sudan. The disease was observed in open fields and plastic houses on melons and cucumbers in Khartoum state (Hamed *et al.*, 2011). **Present, first found in 2009 in Khartoum state.**

In a review paper, Brown *et al.* (2011) present the currently known geographical distribution of *Harmonia axyridis* (Coleoptera: Coccinellidae). The presence of this invasive species has newly been reported from the following areas (in chronological order):
South America: Chile (first record in the wild in 2003), Peru (2003), Paraguay (2006), Uruguay (2009), Colombia (2010).
EPPO region: Northern Ireland (GB - 2007, no evidence of establishment), Scotland (GB - 2007), Croatia (2008), Slovenia (2008), Bulgaria (2009), Latvia (2009), Bosnia and Herzegovina (2010, no evidence of establishment), Ireland (2010, no evidence of establishment).
Africa: Lesotho (2008), Kenya (2010).

Iris yellow spot virus (*Tospovirus*, IYVS – formerly EPPO Alert List) was detected on onion (*Allium cepa*) crops in Kenya and Uganda in 2009 and 2010, respectively (Birithia *et al.*, 2011). **Present, no details.**

Little cherry disease (EU Annexes) was reported for the first time from the Czech Republic in 2011. The disease was observed in sweet and sour cherry (*Prunus avium, P. cerasus*) in the East Bohemia region (Ludvikova & Sucha, 2011). **Present, found in East Bohemia.**

Little cherry disease (EU Annexes) was observed for the first time in China during a survey conducted in Yunnan (2008-2009) on viruses of flowering cherry (*Prunus serrulata*) and sweet cherry (*P. avium*). LChV-2 was detected in samples collected from private orchards and community gardens in the counties of Anning, Chenggong, Fumin, Jinning, and Yiliang (Rao *et al.*, 2011). **Present, first found in 2008/2009 in several counties of Yunnan.**

Disease symptoms resembling those of European stone fruit yellows were observed on apricots (*Prunus armeniaca*) in Northern Tunisia. Molecular analysis of symptomatic samples (*P. armeniaca* cv. 'Arengi') collected in 2008 from the Ras Jebel area confirmed the presence of '*Candidatus* Phytoplasma prunorum' (EU Annexes). In 2010, '*Ca*. P. prunorum' was also detected on almond (*P. dulcis* cv. 'Abiod') trees from the same region. Further studies are needed to determine the distribution of this pathogen in Tunisia and identify its vectors (Ben Khalifa *et al.*, 2011; Ben Khalifa & Fakhfakh, 2011). **Present, detected on apricot and almond trees in Northern Tunisia.**

Tomato spotted wilt virus (*Tospovirus*, TSWV – EPPO A2 List) was reported for the first time in Montenegro in 2009. TSWV was detected on *Capsicum annuum* plants grown under glasshouse in the vicinity of Podgorica. Further surveys are needed to determine the distribution and incidence of TSWV in Montenegro (Zindović *et al.*, 2011). **Present, first found in 2009.**

Citrus canker caused by *Xanthomonas axonopodis* pv. *citri* (EPPO A1 List) is reported for the first time from Senegal. Symptoms were noticed in February 2010 on grapefruit (*Citrus paradisi*) and Mexican lime (*C. aurantifolia*) orchards in the area of Sébikotane (Rufisque department). Laboratory analysis confirmed the presence of the bacterium. It is noted that similar symptoms had been observed in this area by farmers since 2008 (Leduc *et al.*, 2011). **Present, first detected in 2010 near Sébikotane (Rufisque department).**

- **Detailed records**

The status of grapes (*Vitis* sp.) as host plants of *Bactrocera tryoni* (Diptera, Tephritidae – EPPO A1 List) has recently been reviewed in Australia. From the literature, it was found that grapes were infrequently attacked by *B. tryoni* and were not preferred hosts. Infestations were reported to be more common in coastal and subtropical areas or during periods of high rainfall associated with a low availability of preferred hosts. Nevertheless, *B. tryoni* can oviposit into grapes; the numbers of eggs hatching are low but some larvae may survive and give rise to adults. In conclusion, grapes are considered as occasional hosts of *B. tryoni* (Dominiak, 2011).

During surveys on tospoviruses infecting vegetable crops in India, the presence of *Iris yellow spot virus* (formerly EPPO Alert List) was detected in onions (*Allium cepa*) in the following states: Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh (Kunkalikar *et al.*, 2011).

During summer 2010, a severe outbreak of *Clavibacter michiganensis* subsp. *michiganensis* (EPPO A2 List) was observed in tomato fields in the main tomato-growing areas of Puglia and Basilicata, Southern Italy. All infested tomato plants belonged to the cultivar 'Uno Rosso' and derived from the same seed batch, thus suggesting that this outbreak was associated with the use of infected tomato seeds (Fanigliulo *et al.*, 2011).

Tomato chlorosis virus (*Crinivirus* – EPPO A2 List) was detected on tomatoes in Georgia (US) during varietal trials conducted in autumn 2009 and 2010 (Sundaraj *et al.*, 2011).

In 2010, *Tomato infectious chlorosis virus* (*Crinivirus,* TICV – EPPO A2 List) was found for the first time in Puglia (Italy). TICV was detected in glasshouse tomatoes in the province of Lecce (Spanó *et al.*, 2011).

- **New host plants**

In Italy, the presence of *Impatiens necrotic spot virus* (*Tospovirus* – EPPO A2 List) has been detected in *Isotoma axillaris* (Campanulaceae), an ornamental perennial species. Diseased plants showed small necrotic concentric rings and necrosis of the leaves (Bellardi *et al.*, 2011).

Source: Bellardi MG, Cavicchi L, Pirini Casadei M, Vicchi V, Bozzano G (2001) First report of Impatiens necrotic spot virus infecting *Isotoma axillaris*. *Journal of Plant Pathology* **93**(4S), S4.26.

Ben Khalifa M, Aldaghi M, Hacheche H, Kummert J, Marrakchi M, Fakhfakh H (2011) First report of *'Candidatus* Phytoplasma prunorum' infecting apricots in Tunisia. *Journal of Plant Pathology* **93**(2), 517-519.

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Hamed K, Menzel W, Dafalla G, Gadelseed AMA (2011) First report of Cucurbit chlorotic yellows virus infecting muskmelon and cucumber in Sudan. *Plant Disease* **95**(10), p 1321.

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Kunkalikar SR, Poojari S, Arun BM, Rajagopalan PA, Chen TC, Yeh SD, Naidu RA, Zehr UB, Ravi KS (2011) Importance and genetic diversity of vegetable-infecting tospoviruses in India. *Phytopathology* **101**(3), 367-376.

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Zindović J, Bulajić A, Krstić B, Ciuffo M, Margaria P, Turina M (2011) First report of *Tomato spotted wilt virus* on pepper in Montenegro. *Plant Disease* **95**(7), p 882.

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

Computer codes: BGYMV0, CCYV00, CORBMI, DACUTR, INSV00, IYSV00, LCHV00, PHYPPR, TICV00, TOCV00, TSWV00, XANTCI, CN, CZ, IN, IT, KE, ME, NI, SD, SN, TN, UG, US

2012/039 First report of *Pomacea insularum* (island apple snail) in Spain

The NPPO of Spain recently informed the EPPO Secretariat of the first report of *Pomacea insularum* (Gastropoda, Ampullariidae – island apple snail) on its territory. In July 2010, *P. insularum* was found in the left part of the Ebro delta, in the province of Tarragona (Cataluña). The snail then spread along this left part of the river and today it occurs on 613.6 ha of paddy rice fields (along a total of 130 km of irrigation channels - and along approximately 20 km of the river Ebro). For the moment, damage has been detected only in 4 hectares of rice crops, but it is considered that this invasive species has the potential to cause serious damage to rice crops in this area of Spain. Therefore, an Action Plan was implemented by the NPPO in order to control and eradicate *P. insularum*. The main measures included in this Action Plan are as follows: phytosanitary treatments, physical barriers to prevent further spread, removal of adult snails and egg clusters, disinfection treatments and intensive surveys. Furthermore, the possession, breeding, transport and trade of live and dead snails of two species, *P. insularum* and *P. canaliculata* (a closely related species) are prohibited across the whole Spanish territory in accordance with a Ministerial Order.

Additional Notes:
Pomacea insularum is a large snail whose shell may reach the size of an apple (hence the name). It lays egg masses in large bright pink clusters on emergent and terrestrial plants (as well as on other types of structures, concrete pillars, cisterns etc.). It feeds on a large range of submerged and emergent aquatic plants. Many pictures can be viewed on the Internet.
P. insularum has historically been confused with *P. canaliculata* (channeled apple snail or golden apple snail). The two species are nearly identical in appearance but molecular testing can confirm species identification. Both *P. insularum* and *P. canaliculata* inhabit slow-moving or stagnant waters in lowland marshes, irrigation canals, streams, ponds, lakes and rivers. They can develop in natural wetlands but also in irrigated crops, such as rice (*Oryza sativa*) and taro (*Colocasia esculenta*). In addition to damage to plants, *Pomacea* spp. are reported to be intermediate host for the rat lungworm (*Angiostrongylus cantonensis*), a nematode which can cause meningitis in humans. Their native range is South America (Argentina, Brazil and Bolivia). They have been introduced to Southeast Asia, where they have become serious pests of wetland crops, primarily rice, as well as invading natural wetlands. Due to the taxonomic confusion, it is probable that some of the ecological and agricultural impacts in Asia associated with *P. canaliculata* should be attributed to *P. insularum*. In the USA, the initial reports of *P. canaliculata* in Florida and Texas were then shown to be *P. insularum*. Many of these introductions have resulted from the escape (or releases) of snails from plant or animal aquaculture operations. The release

of snails acquired through the pet trade probably has also occurred. Fast growth rate and high reproductive potential have most probably participated in their invasion success.

Tentative distribution lists for those two species are as follows.

- ***Pomacea canaliculata***

EPPO region: Israel.
North America: USA **(**Arizona, California, Hawaii).
Caribbean: Dominican Republic.
South America: Argentina, Bolivia, Brazil, Paraguay, Uruguay.
Asia: Cambodia, China (Fujian, Guangdong, Guangxi, Hainan, Sichuan, Yunnan, Zhejiang), Indonesia (Irian Jaya, Java, Sulawesi, Sumatra), Israel, Japan (Honshu, Kyushu, Ryukyu), Korea Republic, Lao, Malaysia (Sabah), Philippines, Taiwan, Thailand, Vietnam.
Oceania: Papua New Guinea.

- ***Pomacea insularum***

EPPO region: Israel, Spain (under eradication).
Asia: Cambodia, China, Israel, Japan (Honshu, Ryukyu), Malaysia, Philippines, Taiwan.
North America: USA (Alabama, Florida, Georgia, Hawaii, Louisiana, South Carolina, Texas).
South America: Argentina, Bolivia, Brazil.

Source: NPPO of Spain (2011-10).

Orden ARM/2090/2011, de 22 de julio, por la que se establecen medidas provisionales de protección frente al caracol manzana "*Pomacea insularum y Pomacea canaliculata*". http://www.boe.es/boe/dias/2011/07/27/pdfs/BOE-A-2011-12914.pdf

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INTERNET

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http://www.dnr.sc.gov/news/yr2008/june16/june16_snail.html and
http://www.dnr.sc.gov/invasiveweeds/img/snailmap.pdf
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http://www.texasinvasives.org/animal_database/detail_print.php?symbol=15
- US Geological Survey. Non-indigenous aquatic species. *Pomacea insularum*.
http://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=2599

Additional key words: new record **Computer codes:** POMAIN, ES

2012/040 Recent publications on forestry

The following publications on forestry have recently been issued by FAO and can be downloaded from the Internet in different languages:

FAO (2011) Guide to implementation of phytosanitary standards in forestry. FAO Forestry Paper no. 164. FAO, Rome, 101 pp.
English version: http://www.fao.org/docrep/013/i2080e/i2080e.pdf
French version: http://www.fao.org/docrep/014/i2080f/i2080f.pdf
Russian version: http://www.fao.org/docrep/014/i2080r/i2080r.pdf

FAO (2011) State of the world's forests 2011. FAO, Rome, 164 pp.
English version: http://www.fao.org/docrep/013/i2000e/i2000e.pdf
French version: http://www.fao.org/docrep/013/i2000f/i2000f.pdf
Russian version: http://www.fao.org/docrep/013/i2000r/i2000r.pdf
Spanish version: http://www.fao.org/docrep/013/i2000s/i2000s.pdf
Arabic version: http://www.fao.org/docrep/013/i2000a/i2000a.pdf

FAO (2005) Global review of forest pests and diseases FAO Forestry Paper no. 156. FAO, Rome, 222 pp.
English version: ftp://ftp.fao.org/docrep/fao/011/i0640e/i0640e.pdf

For French speakers, the following two books have also been recently been published:

Gauquelin X (ed.) (2011) Guide de gestion des forêts en crise sanitaire. ONF / IDF, Paris, 96 pp.
http://www.foretpriveefrancaise.com/guide-de-gestion-des-forets-en-crise-sanitaire-259183.html

Nageleisen LM, Piou D, Saintonge FX, Riou-Nivert P (2010) La santé des Forêts - maladies, insectes, accidents climatiques... Diagnostic et prévention. DSF / IDF, Paris, 608 pp.
http://www.foretpriveefrancaise.com/la-sante-des-forets-maladies-insectes-accidents-climatiques-diagnostic-et-preventionedition-de-terrain-817171.html

Source: EPPO Secretariat (2012-02).

Additional key words: publications

2012/041 *Solanum elaeagnifolium* found in a vineyard in France

Solanum elaeagnifolium (Solanaceae, EPPO A2 List) is an invasive species in several Mediterranean countries such as Algeria, Greece, Morocco, Tunisia.
In France, the species was first recorded as naturalized in Montpellier in 1967 and since then has been observed in about 10 localities, mainly located in the Hérault department (Béziers, Fabrègues, Montpellier, Montpeyroux, Vic-la-Gardiole) but also in the Bouches-du-Rhône department (Marignane, Châteauneuf-les-Martigues where it has been eradicated) and in the Pyrénées-Orientales department (Banyuls-sur-Mer). The species had always been found in disturbed environments such as fallow lands and road sides. In October 2010, the species was found for the first time in a vineyard in Montpeyroux in the Hérault department (Frédéric Andrieux, CBNMed). It is unknown how the species was introduced in this vineyard. Genetic analyses will be undertaken on this new population and compared to other populations in France, Greece and in the native area of the species in South America (Marie-Claude Bon, USDA-EBCL), in order to learn more about possible introduction pathways.
Considering the major economic impacts that the species causes and the fact that its distribution is still limited in France, an eradication programme could be successfully undertaken.

Source: Guillaume Fried, Laboratoire français de la santé des végétaux / French Plant Health Laboratory, E-mail : guillaume.fried@anses.fr

Fried G (2011) Note d'alerte initiale sur *Solanum elaeagnifolium*. Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail. Laboratoire de la santé des végétaux. Unité Expertise Risques Biologiques. LSV_MO_2011_026. 3 pp.

CBNMED (2011) SILENE : Système d'Information et de Localisation des Espèces Natives et Envahissantes.http://silene.cbnmed.fr

Tela Botanica (2011) Carnet en ligne.
http://www.telabotanica.org/eflore/BDNFF/4.02/nn/64880

Additional key words: Invasive alien plants **Computer code:** SOLEL, FR

2012/042 Regulated invasive alien plants in France

In France, new legislation was published on the 25th of August 2011, which establishes a list of organisms harmful to plants, plant products and other objects which should be subject to compulsory control. In its Appendix B, chapter 1, which applies to the French metropolitan territory, it is stated that the following plants should be controlled: *Cirsium arvense* (Asteraceae), *Cuscuta* spp. (Convolvulaceae), *Orobanche cernua*, *O. crenata, O. minor* and *O. ramosa* (Orobanchaceae) and *Viscum album* (Santalaceae).
This new legislation also mentions that the organisms listed in the EPPO A1 and A2 Lists of pest recommended for regulations and the EPPO Alert List and not listed in the previous articles are also organisms for which control is mandatory on the French metropolitan territory under certain conditions (which shall be defined on a case by case basis).
Considering plants, this means that *Crassula helmsii* (Crassulaceae, EPPO A2 List), *Eichhornia crassipes* (Pontederiaceae, EPPO A2 List), *Heracleum persicum* (Apiaceae, EPPO A2 List), *Heracleum sosnowskyi* (Apiaceae, EPPO A2 List), *Hydrocotyle ranunculoides*

(Apiaceae, EPPO A2 List), *Polygonum perfoliatum (Polygonaceae*, EPPO A2 List), *Pueraria lobata (*Fabaceae, EPPO A2 List), and *Solanum elaeagnifolium* (Solanaceae, EPPO A2 List) could be regulated in metropolitan France under certain conditions.
Ludwigia grandiflora and *L. peploides* (Onagaraceae, EPPO A2 List) are regulated under another regulation (arrêté of the 2nd of May 2007).

Source: Ministère de l'agriculture, de l'alimentation, de la pêche, de la ruralité et de l'aménagement du territoire (2011) Arrêté du 25 août 2011 modifiant l'arrêté du 31 juillet 2000 établissant la liste des organismes nuisibles aux végétaux, produits végétaux et autres objets soumis à des mesures de lutte obligatoire. Journal Officiel de la République Française n° 0198 du 27 août 2011, 17 pp.
http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000024507515&dateTexte=&categorieLien=id

Ministère de l'écologie et du développement durable (2007) Arrêté du 2 mai 2007 interdisant la commercialisation, l'utilisation et l'introduction dans le milieu naturel de *Ludwigia grandiflora* et *Ludwigia peploides*. Journal Officiel de la République Française n° 114 du 12 mai 2007, 1 p.
http://www.legifrance.gouv.fr/jopdf/common/jo_pdf.jsp?numJO=0&dateJO=20070517&numTexte=157&pageDebut=09673&pageFin=09673

Additional key words: invasive alien plants, legislation

Computer codes: 1CVCG, CIRAR, CSBHE, EICCR, HERPE, HERSO, HYDRA, LUDPE, LUDUR, ORACE, ORACR, ORAMI, ORARA, POLPF, PUELO, SOLAL, VISAL, FR

2012/043 New legislation on invasive alien species including plants in Spain

New legislation was launched in Spain on invasive alien species, including plants, in December 2011, and it contains in its appendices a 'Catalogue of Invasive Alien Species'. The introduction of species listed in this Catalogue is prohibited in the natural environment. Their possession, transport, movement, trade of live and dead specimens or propagules are also prohibited within Spain, as well as their export. Authorisations may nevertheless be granted for research or health reasons.
The inclusion of species in the Catalogue of Invasive Alien Species is made by the Ministry of Agriculture, Food and the Environment (Ministerio de Agricultura, Alimentación y Medio Ambiente) at the request of the Spanish regions or cities, but can also be done by an individual expert on the basis of technical justification. In both cases, a risk analysis needs to be performed.
Whenever a new alien species that may represent a threat is found in the Spanish territory, whether it is included in the Catalogue of Invasive Alien Species or not, an 'Alert Team' should be contacted urgently, and the competent authorities should take measures against the species. The species should be monitored, controlled and possibly eradicated; they should prevent the movement of infested commodities. The competent authorities should inform growers and traders of the presence of invasive alien species and take measures to limit the spread of such species when necessary.
For ornamental plants that are listed in the Catalogue of Invasive Alien Species but which were acquired or produced before the enforcement of this new legislation, a delay has been granted but the new legislation will have to be implemented before the 1st of December 2013. In the meantime, horticulturists should prevent the introduction of these species into the environment.
The plant species included in the Catalogue of Invasive Alien Species are listed in the table and the areas in Spain to which this legislation applies are indicated in the last column.

Species	Area of application
Acacia dealbata (Fabaceae, EPPO List of Invasive Alien Plants)	Whole of Spain (except Canarias and Baleares)
Acacia farnesiana (Fabaceae)	Canarias only
Acacia salicina (Fabaceae)	Canarias only
Agave americana (Asparagaceae)	Whole of Spain
Ageratina adenophora (Asteraceae)	Canarias only
Ageratina riparia (Asteraceae)	Canarias only
Ailanthus altissima (Simaroubaceae)	Whole of Spain (except Canarias)
Ambrosia artemisiifolia (Asteraceae, EPPO List of IAP)	Whole of Spain
Araujia sericifera (Apocynaceae, EPPO Alert List)	Whole of Spain
Arundo donax (Poaceae)	Canarias only
Asparagus asparagoides (Asparagaceae)	Whole of Spain
*Atriplex semilunaris (*Amaranthaceae)	Canarias only
Azolla spp. (Azollaceae)	Whole of Spain
Baccharis halimifolia (Asteraceae, EPPO List of IAP)	Whole of Spain
Buddleia davidii (Scrophulariaceae, EPPO List of IAP)	Whole of Spain
Cabomba caroliniana (Cabombaceae, EPPO List of IAP)	Whole of Spain
Calotropis procera (Asclepiadoideae)	Canarias only
Carpobrotus acinaciformis (Aizoaceae, EPPO List of IAP)	Whole of Spain (except Canarias)
Carpobrotus edulis (Aizoaceae, EPPO List of IAP)	Whole of Spain (except Canarias)
Cortaderia spp. (Poaceae)	Whole of Spain (except Canarias)
Cotula coronopifolia (Asteraceae)	Baleares only
Cylindropuntia tunicata (Cactaceae)	Whole of Spain
Cyrtomium falcatum (Dryopteridaceae)	Canarias only
Egeria densa (Hydrocharitaceae, EPPO List of IAP)	Whole of Spain
Eichhornia crassipes (Pontederiaceae, EPPO A2 List)	Whole of Spain
Elodea canadensis (Hydrocharitaceae, EPPO List of IAP)	Whole of Spain (except Canarias)
Fallopia japonica (Polygonaceae, EPPO List of IAP)	Whole of Spain
Furcraea foetida (Asparagaceae)	Canarias only
Helianthus tuberosus (Asteraceae, EPPO List of IAP)	Whole of Spain
Heracleum mantegazzianum (Apiaceae, EPPO List of IAP)	Whole of Spain
Ipomoea indica (Convolvulaceae)	Whole of Spain
Leucaena leucocephala (Mimosoideae)	Canarias only
Ludwigia spp.(except *L. palustris*) (Onagraceae, EPPO A2 List)	Whole of Spain
Maireana brevifolia (Amaranthaceae)	Canarias only
Myriophyllum aquaticum (Haloragaceae, EPPO List of IAP)	Whole of Spain
Opuntia dillenii (Cactaceae)	Whole of Spain
Opuntia maxima (Cactaceae)	Whole of Spain
Opuntia stricta (Cacataceae)	Whole of Spain
Pennisetum clandestinum (Poaceae)	Canarias and Baleares only
Pennisetum purpureum (Poaceae)	Canarias only
*Pennisetum setaceum (*Poaceae, EPPO Alert List)	Whole of Spain
Pennisetum villosum (Poaceae)	Baleares only
Phoenix dactylifera (Arecaceae)	Canarias only
Pistia stratiotes (Aroideae, EPPO Alert List)	Whole of Spain
Salvinia spp. (Salviniaceae)	Whole of Spain
Senecio inaequidens (Asteraceae, EPPO List of IAP)	Whole of Spain
Spartina alterniflora (Poaceae)	Whole of Spain
Spartina densiflora (Poaceae)	Whole of Spain
Spartina patens (Poaceae)	Whole of Spain
Stipa neesiana (Poaceae, EPPO Alert List)	Canarias only
Tradescantia fluminensis (Commelinaceae)	Whole of Spain
Ulex europaeus (Fabaceae)	Canarias only

Source: Ministerio de agricultura, alimentación y medio ambiente, Boletín Official de Estado, Lunes 12 de diciembre de 2011, Núm. 29, Sec. I., 25 pp
http://www.boe.es/boe/dias/2011/12/12/pdfs/BOE-A-2011-19398.pdf

Additional key words: Invasive alien plants, legislation

Computer code: 1AZOG, 1CDTG, 1LUDG, 1SAVG, ABKDO, ACADA, ACAFA, ACASC, AGVAM, AILAL, AJASE, AMBEL, ASPAS, ATXSM, BACHA, BUDDA, CABCA, CBSAC, CBSED, CTRPR, CULCO, CWUFA, EICCR, ELDCA, EUPAD, FURFO, HELTU, HERMZ, IPOAC, LUAGL, MRNBR, MYPBR, OPUDI, OPUMX, OPUST, OPUTU, PESCL, PESPU, PESVI, PHXDA, PIIST, POLCU, SENIQ, SPTAL, SPTDE, SPTPA, STDNE, TRAFL, ULEEU, ES

2012/044 New decision-support systems for the control of invasive alien macrophytes

In the framework of the European project EUPHRESCO, prototype decision-support systems for optimal control measures have been elaborated for 4 invasive alien aquatic plants: *Cabomba caroliniana* (Cabombaceae, EPPO List of Invasive Alien Plants), *Hydrocotyle ranunculoides* (Apiaceae, EPPO A2 List), *Ludwigia grandiflora* (Onagraceae, EPPO A2 List), and *Myriophyllum aquaticum* (Haloragaceae, EPPO List of IAP).
Areas potentially at risk in the United Kingdom and the Netherlands have been predicted using the habitat characteristics where these species are already present in these two countries. Based on a literature review and field experiments on *Cabomba caroliniana* and *Hydrocotyle ranunculoides*, the life cycles of the 4 target species have been analyzed in order to predict the 'vulnerable' stages and improve control measures.

As an outcome of the project, the following documents are freely available on the Q-bank website:

- Background information for *Cabomba caroliniana*, *Hydrocotyle ranunculoides*, *Ludwigia grandiflora* and *Myriophyllum aquaticum*;
- One page field recognition cards for *Cabomba caroliniana*, *Hydrocotyle ranunculoides*, *Ludwigia grandiflora* and *Myriophyllum aquaticum* both for the United Kingdom (in English) and for the Netherlands (in Dutch);
- A risk assessment field sheet, to report new sightings in the field;
- A guide for *Cabomba caroliniana*, *Hydrocotyle ranunculoides*, *Ludwigia grandiflora* and *Myriophyllum aquaticum* describing for each species the biology, ecology, morphology, life cycle, management weak points, management restrictions and techniques (both for the United Kingdom and the Netherlands);
- Bibliography for *Cabomba caroliniana*.

The Q-bank website also provides a tool to report new sightings of exotic aquatic plants on-line.

Source: Johan van Valkenburg, Plant Protection Service, NL, Email: j.l.c.h.van.valkenburg@minlnv.nl

Jonathan Newman, CEH Wallingford, UK, Email: jone@ceh.ac.uk

De CLAIM Project, Q-bank Website, under the header 'control'
http://www.q-bank.eu/Plants/

Additional key words: invasive alien plants, aquatic species, management

Computer codes: CABCA, HYDRA, LUDUR, MYPBR, GB, NL

2012/045 Exotic vegetation in thermal waters in Hungary

In Hungary, there are many thermal springs. Within these habitats, hot waters are used for the cultivation of tropical and subtropical aquatic plants.
The vegetation of the Fényes-springs area has been surveyed. The most frequent exotic species found were *Cabomba caroliniana* (Cabombaceae, EPPO List of IAP), *Ceratopteris thalictroides* (Pteridaceae), *Egeria densa* (Hydrocharitaceae, EPPO List of IAP), *Hygrophila difformis* (Acanthaceae), *Hygrophila corymbosa* (Acanthaceae), *Hygrophila polysperma* (Acanthaceae, EPPO Alert List), *Limnophila sessiliflora* (Plantaginaceae, EPPO Alert List), *Nymphaea* spp. and *Rotala rotundifolia* (Lythraceae).

Source: Lukács BA, Dorotovič Cs, Hűvös-Récsi A, Barina Z & Matus G (2008) Exotic aquatic macrophytes in the Pannonicum: flora and vegetation of the Fényes-springs of Tata (Hu) and the Pece-creek of Sînmartin (RO). (Abstract of a paper presented at the 8th conference on Floristical and vegetation research in the Carpathian basin). *Kitaibelia* **13**(1), 113.
http://florakonf.szie.hu/en/Absztrakt/Florakutatas

Additional key words: Invasive alien plants **Computer codes:** 1NYMG, CABCA, CESTH, ELDDE, HYGCR, HYGPO, LIOSE, ROTRO, RUEDI, HU

2012/046 *Limnophila sessiliflora* in the EPPO region: addition to the EPPO Alert List

Why
Limnophila sessiliflora (Plantaginaceae) is an aquatic perennial plant originating from Asia. One of its English common names is "Asian marshweed". This species has been introduced into North America, where it is considered invasive. The species is imported in large amounts as an aquatic ornamental plant into the EPPO region, but so far has only been found as casual in thermal waters in Slovakia and Hungary. Considering the invasive behavior of this species in the USA, flowing freshwater bodies of the Mediterranean and Macaronesian countries may be at risk, and the species should usefully be monitored, particularly in countries currently importing this species as an aquarium plant.

Geographical distribution
EPPO region: the species has been found in thermal ponds in Hungary and in Slovakia since 1995 near Bojnice, but is not considered as established.
North America (alien): USA (Florida, Georgia, Texas).
South America (alien): Bolivia.
Asia (native): Bhutan, China (Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hunan, Jiangsu, Jiangxi, Liaoning, Sichuan, Yunnan, Zhejiang), India, Japan (alien) (Honshu, Kyushu, Ryukyu Islands, Shikoku) Indonesia (Java, Kalimantan), Democratic People's Republic of Korea, Republic of Korea, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Taiwan, Viet Nam.

Morphology
L. sessiliflora roots in the sediments. It has emerged stems of 2 to 3 mm in diameter, 2 to 15 cm above the surface of water, branched, pubescent to somewhat glabrous, green to pink. Emerged leaves are 5 to 8 in number, verticillate, elliptic to lanceolate, 10 to 20 mm long with toothed margins, dark green. Submerged stems are branched, sparsely pubescent to somewhat glabrous, green to reddish. Submerged leaves are 6 to 10 or more in number, verticillate, ovate, elliptic to broadly lanceolate, 5 to 40 mm long (Yang & Yen, 1997). Flowers are solitary in the leaf axis, with 5 green sepals with hairy lobes, while the 5

petals are purple, blue or pink, forming a tube with 2 lips. The fruit is a capsule, ellipsoid, 3.5-5.5 mm long, green-brown when submersed, dark brown when emerged.

In which habitats
L. sessiliflora is reported in a variety of habitats, including swamps, ditches, lakes, rice fields and damp soils.
According to the Corine Land Cover nomenclature, the following habitats are invaded: Continental waters (water courses, water bodies).

Biology and ecology
L. sessiliflora is a fast growing plant which can grow in waters up to three meters deep. It is reported to flower from April to November in Japan, and from July to November in Northern Florida and Texas. The fruit may contain up to 150 seeds according to Hall & Vendiver (2003). Spencer & Bowes (1985) report 200-300 seeds with a germination rate as high as 96%. *L. sessiliflora* does not only reproduce by seeds but can also regrow from fragments.
The Center for Aquatic and Invasive Plants, University of Florida, considers that the species can survive at a minimum temperature of 15°C and a maximum of 28°C, while its optimum is comprised between 20°C and 26°C. On the other hand, Hall *et al*. (2012) mention that the plant can tolerate low temperatures.
L. sessiflora prefers acidic or to slightly alkaline waters.

Pathways
The species is currently imported into the EPPO region as an aquatic ornamental plant (at least in the Netherlands, France, Hungary and Estonia).
Machinery used in waterways has also been reported to spread the species. The species can also spread naturally as individual plants/fragments spread via water currents, or through floating mats (particularly with heavy rains).

Impacts
L. sessiliflora is a weed in paddy rice fields in China, India, Japan and the Philippines, although references mentioning these impacts are quite old, dating back to the 1970s. A hybrid between *L. sessiliflora* and *L. indica* has been found to be a weed in rice. This hybrid has also been reported to clog irrigation and flood-control canals, as well as pumping and power stations.
In terms of environmental impacts, *L. sessiliflora* is able to shade out and thus outcompete totally submerged species. It can start growing in low light before other plants can do so. It is even able to compete with the very invasive *Hydrilla verticillata* (Hydrocharitaceae). In addition, a toxin present in the stem tissue may prevent herbivorous fish from eating the plant (Hall & Vendiver, 2003). In Florida, the species has not been reported as a major concern during the past 25 years.
However, a large surface biomass of *L. sessiliflora* could nevertheless be a nuisance for recreational activities.

Control
In the USA, *L. sessiliflora* is listed in the Federal Noxious Weed List as well as in State Noxious Weed lists (in Alabama, California, Florida, Massachusetts, North Carolina, Oregon, South Carolina and Vermont).
Mechanical control may spread the species, and should therefore be undertaken with great care. Registered aquatic herbicides provide limited control of the species, but high levels of 2,4-D or daily spraying of paraquat for 8 consecutive days at 1000 ppm are reported to kill the plant. *L. sessiliflora* is also reported to have developed a resistance to Sulfonylurea

herbicides, but not to amide or phenoxy herbicides (Wang *et al.*, 2000). There are very few literature sources on the possible management measures against this species.

Source:

Discover Life Website, *Limnophila sessiliflora* (Vahl) Blume
http://www.discoverlife.org/mp/20q?search=Limnophila+sessiliflora

Euro+Med Plant Database
http://ww2.bgbm.org/EuroPlusMed/PTaxonDetailOccurrence.asp?NameId=63415&PTRefFk=7200000

Global Invasive Species Database, *Limnophila sessiliflora*
http://www.issg.org/database/species/ecology.asp?si=602&fr=1&sts=&lang=EN

Germplasm Resources Information Network (GRIN), *Limnophila sessiliflora* (Vahl) Blume
http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?316416

Hall DW, Vandiver VV, Gray CJ (2012) Limnophila, *Limnophila sessiliflora* (Vahl). University of Florida. IFAS Extension.
http://edis.ifas.ufl.edu/pdffiles/FW/FW02500.pdf

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http://florakonf.szie.hu/en/Absztrakt/Florakutatas

Somogyi J (1997) *Limnophila sessiliflora* Blume. In : Flóra Slovenska. Veda, Bratislava, V/2: 456-457.

Spencer W & Bowes G (1985) *Limnophila* and *Hygrophila:* a review and physiological assessment of their weed potential in Florida. *Journal of Aquatic Plants Management* **23**, 7-16.
http://www.apms.org/japm/vol23/v23p7.pdf

University of Florida, Centre for Aquatic and Invasive Plants Website, *Limnophila sessiliflora*
http://plants.ifas.ufl.edu/node/234

USDA Natural resources Conservation Service, Plants profile *Limnophila sessiliflora*
http://plants.usda.gov/java/profile?symbol=LISE3

Wang GX, Watanabe H, Uchino A, Itoh K (2000) Response of a sulfonylurea (SU)-resistant biotype of Limnophila sessiliflora to selected SU and alternative herbicides. *Pesticide biochemistry and physiology* ***68****(2), 59-66.*

Wisconsin Department of Natural Resources – Aquatic Invasive Species Literature Review
http://dnr.wi.gov/invasives/classification/pdfs/Limnophila%20sessiliflora.pdf

Yang YP & Yen SH (1997) Notes on *Limnophila* (Scrophulariaceae) of Taiwan. *Botanical Bulletin of Academia Sinica* **38**, 285-295
http://ejournal.sinica.edu.tw/bbas/content/1997/4/bot384-11.html

Additional key words: Invasive alien plants **Computer codes:** LIOSE, HU, SK