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2014/062 *Agrilus planipennis* is spreading in Central Russia

In the European part of Russia, the presence of *Agrilus planipennis* (Coleoptera: Buprestidae - EPP0 A2 List) was first reported in 2007 (see EPP0 RS 2007/067) in the city of Moscow, although there are indications that it was already there in 2003 and had probably been introduced in the late 1990s. At present almost all ash trees (*Fraxinus pennsylvanica*, *F. excelsior*) in Moscow and its vicinity have been killed or severely damaged by the pest.

In 2012, *A. planipennis* was discovered in the oblasts of Tula, Kaluga, and Smolensk. In spring and summer 2013, a survey (Orlova-Bienkowskaja, 2013) was conducted in 22 localities (and included 2719 *F. pennsylvanica* and 115 *F. excelsior* trees) in the European part of Russia to detect damage caused by the pest. Damaged trees with emergence holes were found not only in the Moscow oblast, but also in Konakovo (Tver oblast), Michurinsk (Tambov oblast), Tula, Kaluga, Orel, Yaroslavl and Voronezh. Observations made indicate that the beetle probably needs more than 1 year to complete its life cycle in these areas. In all inspected localities of the Moscow oblast, as well as in the city of Konakovo (Tver oblast), most ash trees had already been killed by *A. planipennis*. Most ash trees in Kaluga, Orel, Tula, Yaroslavl, Michurinsk and Voronezh appeared healthy, but groups of damaged and dying trees with characteristic D-shaped emergence holes were observed. The pest now occupies a large area of at least 150 000 km² around Moscow (250 km to the West of Moscow, 230 km North, 250 km East, 460 km South).

In another study (Straw *et al.*, 2013), similar observations have been made (although the estimated invaded area is slightly smaller). It is noted that over the last 4 years, the pest has been spreading at a rate ranging from 30 to 40 km per year. High rates of spread have also been observed along the motorways west and south of Moscow, suggesting a strong influence of human-assisted transport. It was also noted that *F. pennsylvanica*, a highly susceptible host, had also been widely planted along these main roads which has probably facilitated rapid spread. In this part of Russia, the local movement of firewood is not thought to be a significant factor because mainly birch and conifer are used for firewood. Considering such a rapid rate of spread, it has been estimated that *A. planipennis* might reach the western border of Russia around 2020.

Both studies concluded that *A. planipennis* presents a serious threat for ash trees in Europe, and noted that as low population densities of the pest are particularly difficult to detect, it cannot be excluded that isolated populations have already spread outside what it is currently considered as the invaded area in Central Russia.

Source: Orlova-Bienkowskaja M (2013) Ashes in Europe are in danger: the invasive range of *Agrilus planipennis* in European Russia is expanding. *Biological Invasions*. doi: 10.1007/s10530-013-0579-8.

Straw NA, Williams DT, Kulinich O, Gninenko YI (2013) Distribution, impact and rate of spread of emerald ash borer *Agrilus planipennis* (Coleoptera: Buprestidae) in the Moscow region of Russia. *Forestry*. doi: 10.1093/forestry/cpt031

Additional key words: detailed record

Computer codes: AGRLPL, RU

2014/063 *Agilus planipennis* found in Colorado and Georgia (US)

The emerald ash borer, *Agilus planipennis* (Coleoptera: Buprestidae - EPPO A2 List) continues to spread within the USA. Recently, the pest has been found in two more states, Colorado and Georgia. In both states, phytosanitary measures are being taken.

- **Colorado:** *A. planipennis* was first found in the county of Boulder in September 2013.
- **Georgia:** the pest was discovered in DeKalb and Fulton counties in July 2013 as part of the national detection survey.

Source: INTERNET
 Colorado. The official State web portal. Emerald ash borer.
http://www.colorado.gov/cs/Satellite/ag_Plants/CBON/1251646251641
 Georgia Forestry Commission. Emerald ash borer (EAB).
<http://www.gfc.state.ga.us/forest-management/forest-health/eab/index.cfm>
 Stock SD (2014) Recent reports on the spread of emerald ash borer regulated area.
 NPDN First Detector Network News 9(1), p 1.

Additional key words: detailed record

Computer codes: AGRLPL, US

2014/064 Updated situation of *Anoplophora glabripennis* in Marche region, Italy

At the beginning of August 2013, an outbreak of *Anoplophora glabripennis* (Coleoptera: Cerambycidae - EPPO A1 List) was discovered for the first time in Marche region, Italy (see EPPO RS 2013/189). The pest was first found in the municipality of Grottazzolina (Fermo province) on a maple tree (*Acer* sp.) in a private garden. Intensive surveys were then undertaken, focussing more particularly on the following tree genera: *Acer*, *Aesculus*, *Betula*, *Populus*, *Salix*, *Ulmus*. Inspections of other potential hosts were also carried out. Signs of *A. glabripennis* infestation were detected in 80 sites (located in the municipalities of Grottazzolina and Magliano di Tenna), in public and private gardens in urban and rural areas. Infested plants belonged to the genera *Ulmus*, *Acer*, *Aesculus*, *Salix*, *Populus* and *Betula*. The heaviest attacks were found on *Ulmus campestris* (a common tree in rural landscapes) and on *Acer* spp. An outbreak area and a buffer zone of 2 km radius were delimited. Since the beginning of 2014, all infested trees and potential hosts have been georeferenced.

At the same time, the destruction of infested plants was initiated. A single grinding and chipping station has now been set up inside the demarcated area. According to a regional decree, the following phytosanitary measures are being taken in the Marche region:

- felling of infested plants and asymptomatic host plants within a radius of 50 m around infested plants;
- prohibition to move any potentially infested material outside the demarcated areas;
- prohibition to plant susceptible hosts within the demarcated areas;
- obligation to notify any new findings.

In addition, citizens and stakeholders were informed about the presence of *A. glabripennis* in Marche region and encouraged to report any sightings. Several meetings were organized and information material was produced and distributed to raise public awareness (see website: <http://www.assam.marche.it/servizi1/fitosanitario/fitosanitario/emergenza-fitosanitaria/99-anoplophora-glabripennis-tarlo-asiatico-del-fusto>).

Source: NPPO of Italy (2014-02).

Additional key words: detailed record

Computer codes: ANOLGL, IT

2014/065 Updated situation of *Anoplophora glabripennis* in Zürich canton, Switzerland

In Switzerland the first outbreak of *Anoplophora glabripennis* (Coleoptera: Cerambycidae - EPPO A1 List) was detected in July 2012 in the municipality of Winterthur, canton of Zürich (in 30 *Acer pseudoplatanus* planted along a city street and in 1 *Salix caprea*). All infested trees were destroyed (see EPPO RS 2013/049). During surveys which were conducted in 2013, no exit holes, adult beetles or eggs could be found, but 11 larvae (presumably hatched in 2012) were detected. The infested host trees belonged to the following species: *Salix caprea* (8), *Acer campestre* (2) and *Betula pendula* (1). These larvae were found on the basis of signs of pest activity and/or detected by sniffer dogs. Among non-suspicious trees subject to preventive felling, none of them was found infested.

A focus zone of 1.5 km² (radius of 200 m around each infested tree and overlapping areas then merged into a single focus zone) and a buffer zone of approximately 10 km² (radius of 2-2.5 km around the focus zone) have been demarcated. In the focus zone, all potential host plants have been mapped. As the infested area is located in the urban sector of Winterthur (most host plants are high value amenity trees), clear-cuts were not carried out systematically. Non-felled host trees, irrespectively of their location in the focus zone, were subject to at least 2 visual inspections (in April/June and September/November), by tree climbers, assisted by dog handlers with specifically trained sniffer dogs. In the buffer zone, surveillance was more intensive in an approximately 200 m wide strip surrounding the focus zone, whereas in the remaining parts of the buffer zone visual checks were concentrated on weakened and randomly selected healthy looking host trees. In addition, random checks were performed in the framework of other activities by municipal gardeners. Mandated tree climbers and dog handlers spent together more than 5900 hours performing inspections in 2013, and approximately 1000 man-hours were spent on felling actions (69 trees with a DBH (diameter at breast height) ≥16 cm and 81 trees with a DBH < 16 cm). Measures for the safe use/disposal of wood, wood waste and debris were taken according to the Swiss surveillance and control guidelines for *A. glabripennis*, which are largely based on the EPPO Standard PM 9/15(1).

An information campaign was undertaken to raise the awareness of stakeholders (e.g. staff involved in parks and gardens maintenance) and of the general public. Information was provided by the municipality of Winterthur in the form of individual letters to each household in the demarcated area and local broad-cast. Signs were installed at strategic places in and along the boundary of the demarcated areas.

The pest status of *Anoplophora glabripennis* in Switzerland is officially declared as: **Present, under eradication.**

Source: NPPO of Switzerland (2014-03).

Manuel de gestion du risque dû au capricorne asiatique (*Anoplophora glabripennis*) (in French and German).

<http://www.bafu.admin.ch/publikationen/publikation/01727/index.html?lang=fr>
<http://www.bafu.admin.ch/publikationen/publikation/01727/index.html?lang=de>

EPPO (2013) EPPO Standard PM 9/15(1) *Anoplophora glabripennis*: procedures for official control. <http://onlinelibrary.wiley.com/doi/10.1111/epp.12064/pdf>

Additional key words: detailed record

Computer codes: ANOLGL, CH

2014/066 Outbreak of *Bactrocera zonata* in Israel

The NPPO of Israel recently informed the EPPO Secretariat of an outbreak of *Bactrocera zonata* (Diptera: Tephritidae - EPPO A1 List) in the metropolitan area of Tel-Aviv. The pest has been caught in traps in private gardens and public areas within this area. The NPPO is taking official measures to prevent any further spread of the pest including the use of methyl-eugenol based lure and kill (male annihilation technique), mass trapping and sprays. Orchards located outside this area are being closely monitored. It can be recalled that an earlier outbreak had been reported in Israel in 2001 but had been successfully eradicated (see EPPO RS 2001/006 and 2002/107).

The situation of *Bactrocera zonata* in Israel can be described as follows: **Present, one outbreak in the metropolitan area of Tel-Aviv, under official control.**

Source: NPPO of Israel (2014-04).

Additional key words: detailed record

Computer codes: DACUZO, IL

2014/067 First report of *Dryocosmus kuriphilus* in Spain

In 2012, the presence of *Dryocosmus kuriphilus* (Hymenoptera: Cynipidae - EPPO A2 List) was detected for the first time in Spain. Populations were found on *Castanea sativa* in several municipalities, all located in the Western part of Cataluña (comarcas de Alt Empordà, Baix Empordà, Garrotxa, Gironès, La Selva, Maresme, Osona, Vallès Oriental).

The situation of *Dryocosmus kuriphilus* in Spain can be described as follows: **Present, first found in 2012 in the Western part of Cataluña.**

Source: Pujade-Villar J, Torrell A, Rojo M (2013) Nota entomológica. Primeres troballes a la península Ibèrica de *Dryocosmus kuriphilus* (Hym., Cynipidae), una espècie de cinípid d'origen Asiàtic altament perillosa per al castanyer (Fagaceae). *Orsis* 27, 295-301. https://ddd.uab.cat/pub/orsis/orsis_a2013v27/orsis_a2013v27p295.pdf

INTERNET

Dryocosmus kuriphilus (Hymenoptera; Cynipidae) una especie alóctona que pone en peligro los castaños en Cataluña. Poster by Cristina Castro Torres.

http://ddd.uab.cat/pub/tfg/2013/113412/TFG_cristinacastrotorres.pdf

Junta de Andalucía. *Dryocosmus kuriphilus* (Avispilla del Castaño).

http://www.juntadeandalucia.es/agriculturaypesca/portal/export/sites/default/comun/galerias/galeriaDescargas/cap/agricultura-ganaderia/agricultura/Sanidad-Vegetal/MATERIAL_DIVULGATIVO_DRYOCOSMUS_KURIPHILUS.pdf

Additional key words: new record

Computer codes: DRYCKU, ES

2014/068 Updated situation of *Epitrix similaris* in Spain

In Spain, the presence of *Epitrix similaris* (Coleoptera: Chrysomelidae - EPPO A2 List) was detected for the first time on potatoes in 2009 at Xinzo de Limia (province of Ourense) in Galicia. As of January 2014, official surveys have shown that *E. similaris* has not spread outside Galicia, and remains limited to the provinces of A Coruña, Ourense and Pontevedra. Although in some cases, *E. similaris* can diminish the commercial value of

tubers, no severe damage has been observed on potato crops. An action plan has been initiated in Galicia to eradicate *E. similaris*.

The situation of *Epitrix similaris* in Spain can be described as follows: **Present, only found in Galicia (A Coruña, Ourense, Pontevedra provinces), under eradication.**

Source: NPP0 of Spain (2014-01).

Additional key words: detailed record

Computer codes: EPIXSI, ES

2014/069 *Anthonomus eugenii* occurs in the Dominican Republic

In the Dominican Republic, *Anthonomus eugenii* (Coleoptera: Curculionidae - EPPO A1 List) was first recorded in 2006 in the eastern part of the island. Between 2008 and 2010, severe damage was observed in sweet and chilli pepper crops (*Capsicum* spp.) grown in the areas of Ocoa, Bani and Cibao.

The situation of *Anthonomus eugenii* in the Dominican Republic can be described as follows: **Present, first found in 2006 on *Capsicum* spp. crops.**

Source: Serra CA, Cayetano X, Félix A, Ferreira M, García S, Godoy G, Halpay M, Martínez RT, Méndez RM, de Dios Moya J, Silverio L, Matos L (2011) Impacts of recently emerged invasive exotic species and major threats to the Dominican Agriculture. *Proceedings of the Caribbean Food Crops Society* **47**, 146-156.

Additional key words: new record

Computer codes: ANTHEU, DO

2014/070 *Ralstonia solanacearum* in France

The NPP0 of France recently informed the EPPO Secretariat about an outbreak of *Ralstonia solanacearum* (EPPO A2 List) in the department of Haute-Saône (Franche-Comté region). During the official 2013 national survey, the bacterium was detected in November in one field of ware potatoes (*Solanum tuberosum* cv. 'Magnum') grown for transformation into frozen products. This field was irrigated (sprinklers) with water from the river (Saône) and potatoes were grown in rotation with onion and maize crops. Investigations are being made to identify the possible source of this outbreak. The first results have excluded an introduction with contaminated potato seed. Samples of *Solanum nigrum* were collected from the river banks, as well as water samples from the river Saône, but all tested negative. As at the moment of detection, the contaminated potato lot had already been transformed (frozen product), phytosanitary measures included the disinfection of all agricultural machinery, and intensive surveys will continue on the outbreak site.

The pest status of *Ralstonia solanacearum* in France is officially declared as: **Present, under eradication.**

Source: NPP0 of France (2014-02).

Additional key words: detailed record.

Computer codes: RALSSO, FR

2014/071 Outbreak of *Clavibacter michiganensis* subsp. *sepedonicus* in France

During an official survey conducted on the potato harvest 2013, one outbreak of *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List) was detected in the Marne department (Champagne-Ardenne region), France. The bacterium was found on ware potatoes (*Solanum tuberosum* cv. 'Agata' - 33 ha) and farm-saved seed potatoes (3 ha) which had been produced on one farm. Samples were collected in November 2013, tested (IF, PCR, pathogenicity test), and the final confirmation was received in February 2014. A survey is being implemented to determine the extent of the outbreak. Infected potato lot(s) will be destroyed under the supervision of the NPPO, all machinery used by the grower will be disinfected, and an intensive survey will be carried in the municipality where the outbreak was found, as well as in its immediate vicinity. In addition, all potato waste resulting from the harvest has been buried in a dedicated area which, along with its surroundings, will be placed under surveillance.

The pest status of *Clavibacter michiganensis* subsp. *sepedonicus* in France is officially declared as: **Present, under eradication.**

Source: NPPO of France (2014-02).

Additional key words: detailed record

Computer codes: CORBSE, FR

2014/072 Outbreak of *Clavibacter michiganensis* subsp. *sepedonicus* in Slovakia

During an official survey conducted in 2013, one outbreak of *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List) was detected in the village of Jasenov (district of Humenné), Slovakia. In December 2013, the identity of the bacterium was confirmed on ware potatoes (*Solanum tuberosum* cv. 'Terka') in one sample. Official control measures were taken in accordance with the Council Directive 93/85/EEC.

The pest status of *Clavibacter michiganensis* subsp. *sepedonicus* in Slovakia is officially declared as: **Present, only in some areas.**

Source: NPPO of Slovakia (2014-02).

Additional key words: detailed record

Computer codes: CORBSE, SK

2014/073 Outbreak of *Clavibacter michiganensis* subsp. *sepedonicus* in Finland

The NPPO of Finland recently informed the EPPO Secretariat that over a period from January to May 2014, *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 List) has been detected on ware potatoes (*Solanum tuberosum* cvs. 'Gala', 'Van Gogh', 'Lady Felicia', 'Melody', 'Mathilda') on 4 farms. The extent of probable contaminations has been determined as being the entire areas of the farms. The origin of these infections is not known. On the 4 farms concerned, all potato lots have been inspected and no further findings were made. Official control measures were taken in accordance with the Council Directive 93/85/EEC.

The pest status of *Clavibacter michiganensis* subsp. *sepedonicus* in Finland is officially declared as: **Present, under eradication.**

Source: NPPO of Finland (2014-05).

Additional key words: detailed record

Computer codes: CORBSE, FI

2014/074 Situation of *Erwinia amylovora* in Latvia in 2013

In Latvia, the presence of *Erwinia amylovora* (EPPO A2 List) was first confirmed in July 2007. Since then, specific annual surveys have been conducted across the whole country. In 2012, the bacterium was not found. However in 2013, 8 outbreaks were detected in *Malus*, *Pyrus* and *Crataegus* in the following localities: Slampe (all village), Lapmežciems (Engure municipality, in a private garden), Saldus (private garden), Tukums (private garden), Jelgava (private garden and orchard), Dzelzāmurs (Lecava municipality, private garden), Aizupe (Ozolkieki municipality, alongside railways). Phytosanitary measures were taken to eradicate the disease and included: destruction by incineration of all infected plants and potential hosts located within a radius of 10 m, disinfection of tools and material used for plant destruction, prohibition to move planting material out of demarcated areas (infected area and buffer zone), and restrictions on the movements of bee hives.

The pest status of *Erwinia amylovora* in Latvia is officially declared as: **Present, under eradication.**

Source: NPPO of Latvia (2014-01).

Additional key words: detailed record

Computer codes: ERWIAM, LV

2014/075 Situation of several quarantine pests in Ukraine in 2014

The NPPO of Ukraine recently informed the EPPO Secretariat about the current situation of several quarantine pests on its territory (as of 2014-01-01) and provided for each of them an official pest status according to the terms of ISPM 8 (indicated in bold).

Ambrosia artemisiifolia (EPPO List of Invasive Alien Plants): the total infested area is estimated to be 3 316 805 ha (in 1 autonomous republic and 24 oblasts). **Present, subject to official control.**

Acroptilon repens (EPPO List of Invasive Alien Plants): the total infested area is estimated to be 304 271 ha (in 1 autonomous republic and 6 oblasts). **Present, subject to official control.**

Beet necrotic yellow vein virus (EPPO A2 List): the total infested area is estimated to be 2 167 ha (in 7 oblasts). **Present, subject to official control.**

Bemisia tabaci (EPPO A2 List): the total infested area is estimated to be 0.08 ha (in 1 oblast). **Transient, actionable, under eradication.**

Ceratitis capitata (EPPO A2 List): the total infested area is estimated to be 9.9 ha (in 1 oblast). **Transient, actionable, under eradication.**

Cenchrus longispinus: the total infested area is estimated to be 23 333 ha (in 1 autonomous republic and 6 oblasts). **Present, subject to official control.**

Cuscuta campestris: the total infested area is estimated to be 31 517 ha (in 1 autonomous republic and 20 oblasts). **Present, subject to official control.**

Cuscuta europaea: the total infested area is estimated to be 0.001 ha (in 1 oblast). **Present, subject to official control.**

Cuscuta lehmanniana: the total infested area is estimated to be 4 621 ha (in 1 autonomous republic and 2 oblasts). **Present, subject to official control.**

Cuscuta monogyna: the total infested area is estimated to be 3 940 ha (in 3 oblasts). **Present, subject to official control.**

Diabrotica virgifera virgifera (EPPO A2 List): the total infested area is estimated to be 33 047 ha (in 7 oblasts). **Present, subject to official control.**

Erwinia amylovora (EPPO A2 List): only occurs in protected crops and the total infested area is estimated to be 94 ha (in 5 oblasts). **Present, subject to official control.**

Frankliniella occidentalis (EPPO A2 List): only occurs in protected crops and the total infested area is estimated to be 12.9 ha (in 5 oblasts). **Present, only in protected cultivation, subject to official control.**

Globodera rostochiensis (EPPO A2 List): the total infested area is estimated to be 4 805 ha (in 17 oblasts). **Present, subject to official control.**

Globodera pallida (EPPO A2 List): annual official surveys have confirmed that this nematode is now absent from Ukraine. **Absent.**

Hyphantria cunea (formerly EPPO A2 List): the total infested area is estimated to be 65 580 ha (in 1 autonomous republic and 20 oblasts). **Present, subject to official control.**

Mycosphaerella linicola (formerly EPPO A2 List): the total infested area is estimated to be 612 ha (in 2 oblasts). **Present, subject to official control.**

Solanum rostratum: the total infested area is estimated to be 134 ha (in 1 oblast). **Present, subject to official control.**

Synchytrium endobioticum (EPPO A2 List): the total infested area is estimated to be 2942 ha (in 7 oblasts). **Present, subject to official control.**

Phthorimaea operculella (formerly EPPO A2 List): the total infested area is estimated to be 7 710 ha (in 1 autonomous republic and 5 oblasts). **Present, subject to official control.**

Plum pox virus (EPPO A2 List): the total infested area is estimated to be 4 012 ha (in 5 oblasts). **Present, subject to official control.**

Puccinia horiana (EPPO A2 List): the total infested area is estimated to be 1.5 ha (in 1 oblast). **Transient, actionable, under eradication.**

Tuta absoluta (EPPO A2 List): the total infested area is estimated to be 191 ha (in 1 autonomous republic and 3 oblasts). **Transient, actionable, under eradication.**

Source: NPPO of Ukraine (2014-04).

Additional key words: absence, detailed record

Computer codes: AMBEL, BEMITA, BNYVVO, CCHLO, CENRE, CERTCA, CVCCA, CVCEU, CVCLE, CVCMO, DIABVI, ERWIAM, FRANOC, GNORAB, HETDPA, HETDRO, HYPHCU, MYCOLN, PHTOOP, PPV000, PUCCHN, SOLRS, SYNCEN, UA

2014/076 Q-collect inventory questionnaire on plant pest collections

EPPO is a partner in the EU-FP7 funded Q-collect project on collections of plant pests. Q-collect aims to improve the status of reference collections important to plant health and the objectives of the project are to:

- make an inventory of existing plant pest collections in the European and Mediterranean region, and of their content,
- develop guidelines for quality standards,
- develop guidelines to improve the accessibility of these collections,
- design and build a network of reference collections,
- develop an info-portal on the web to provide information on the outcomes of the project,
- disseminate results to stakeholders.

Q-collect will in particular:

- support a network of national reference collections relevant to national and EU phytosanitary policy,
- provide guidelines for preserving, maintaining and improving the quality, accessibility of national reference collections (specimens, tissue and DNA) and consequently ensuring harmonization of collection maintenance across Europe.

Information on the project is available on the Q-collect website: www.q-collect.eu

An online questionnaire has been established to collect data on existing plant pest collections and their content. This questionnaire is available at:

<http://survey.q-collect.eu/> (end date of the survey 2014-07-31)

Curators of a plant pest collection who have not been contacted directly are invited to contribute in this survey.

Source: EPPO Secretariat (2014-05).

Additional key words: diagnostic, EPPO

2014/077 First report of *Acroptilon repens* in Romania

Acroptilon repens (Asteraceae, EPPO List of Invasive Alien Plants) was found for the first time in Romania. A small population of the species was identified in the surroundings of Iași city, in the eastern part of the Socola railway station, in a disturbed habitat along the railroad leading to the Republic of Moldova. Plants were observed in 2012 and in 2013.

Between 2012 and 2013, the plant had not spread, and seedlings could not be found. Seeds collected were unable to germinate. However, although the aerial stems were destroyed during spring 2012 by the workers of the railroad, the plants regenerated via root suckers.

Source: Sîrbu C, Oprea A (2013) A new contribution on the vascular flora of Romania. *Acta Horti Botanici Bucurestiensis* 40, 19-26.

Additional key words: invasive alien plants, new record

Computer codes: CENRE, RO

2014/078 *Leycesteria formosa*, an invasive alien plant in the Azores (PT)

Leycesteria formosa (Caprifoliaceae) is a shrub reaching 2 to 3 m high with large ovate leaves up to 24 cm long and 9 cm wide. It originates from Asia (India and temperate Himalayas) and was introduced in Australia, New Zealand and California (US) as an ornamental plant. In the EPPO region, it is recorded in Great Britain, Ireland and France (including Corse) and is considered among the 100 most invasive alien plants in Macaronesia due to extensive populations in São Miguel Island (Azores, Portugal). In the Azores, the species has also recently been found in Terceira Island. The species reproduces sexually and produces a large number of berries which are dispersed by birds and water runoff associated with heavy rains. The species can also resprout from stems or pieces of stem, which can be spread through garden waste.

In the Azores, *L. formosa* is recorded in habitats such as: *Calluna* shrublands; *Laurus*, *Ilex*, and *Juniperus* forests; pasture margins; water stream banks; roadsides; *Cryptomeria* planted forest and woodlands with the introduced *Pittosporum*. In addition, it occurs in protected areas (i.e. Pico da Vara/Tronqueira special protection area and Lagoa do Fogo nature reserve).

As only 3 individual plants were found in Terceira Island, surveillance is recommended. Monitoring would also be of value in EPPO countries where the species occurs, to gather information on its behavior.

Source: Australia Virtual herbarium, *Leycesteria formosa*.
http://avh.ala.org.au/occurrences/search?taxa=leycesteria+formosa#tab_mapView

DAISIE Database, *Leycesteria formosa*.
<http://www.europe-aliens.org/speciesFactsheet.do?speciesId=24120#>

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Additional key words: invasive alien plants, detailed record

Computer codes: LEYFO, PT

2014/079 Q-bank database on invasive alien plants

Q-bank is a database on quarantine pests (including invasive alien plants). Q-bank provides information on the taxonomy, morphology, distribution, ecology and control of invasive alien plants. For each plant included in Q-bank, the origin and the establishment in the EPPO region has been checked and is provided in the table below.

Species	Origin*	Naturalized in the EPPO region**
<i>Abutilon theophrasti</i> (Malvaceae)	Eurasia, N-Africa	Widespread
<i>Acacia dealbata</i> (Fabaceae, EPPO List of IAP)	Australia	ES, FR, HR, IT, PT, RO
<i>Acer negundo</i> (Sapindaceae)	N-Am.	Widespread
<i>Acroptilon repens</i> (Poaceae, EPPO List of IAP)	Eurasia	DE, GB, LU?, RO (native in part of the EPPO region)
<i>Ailanthus altissima</i> (Simaroubaceae, EPPO List of IAP)	Asia	Widespread
<i>Akebia quinata</i> (Lardizabalaceae, EPPO Observation List of IAP)	Asia	CH, FR, GB
<i>Allium paradoxum</i> (Amaryllidaceae)	Asia	AT, CZ, DE, FI, GB, IE, NL, PL, SE
<i>Alternanthera philoxeroides</i> (Amaranthaceae, EPPO List of IAP)	S-Am.	FR, IT
<i>Amaranthus albus</i> (Amaranthaceae)	N-Am.	Widespread
<i>Amaranthus blitoides</i> (Amaranthaceae)	N-Am.	Widespread
<i>Amaranthus blitum</i> (Amaranthaceae)	Eurasia, Africa	Widespread
<i>Amaranthus caudatus</i> (Amaranthaceae)	N-Am.	Widespread
<i>Amaranthus deflexus</i> (Amaranthaceae)	S-Am.	Widespread
<i>Amaranthus graecizans</i> (Amaranthaceae)	Eurasia, Africa	Widespread
<i>Amaranthus hybridus</i> subsp. <i>bouchonii</i> (Amaranthaceae)	Uncertain	Widespread
<i>Amaranthus hybridus</i> subsp. <i>hybridus</i> (Amaranthaceae)	Am.	Widespread
<i>Amaranthus palmeri</i> (Amaranthaceae)	N-Am.	Widespread
<i>Amaranthus retroflexus</i> (Amaranthaceae)	N-Am.	Widespread
<i>Amaranthus standleyanus</i> (Amaranthaceae)	Argentina	?
<i>Ambrosia artemisiifolia</i> (Asteraceae, EPPO List of IAP)	N-Am.	Widespread
<i>Ambrosia psilostachya</i> (Asteraceae)	N-Am.	BE, FR, DE, ES, GB, IT, NL, RU, SE
<i>Ambrosia trifida</i> (Asteraceae)	N-Am.	DE, DK, FR, IT, NL, RU
<i>Amelanchier lamarckii</i> (Rosaceae)	N-Am.	BE, DK, FI, FR, DE, GB, IT, NL, NO, SE
<i>Amelanchier spicata</i> (Rosaceae, EPPO List of IAP)	N-Am.	Widespread
<i>Amorpha fruticosa</i> (Fabaceae, EPPO List of IAP)	N-Am.	Widespread
<i>Aponogeton distachyos</i> (Aponogetonaceae)	S-Africa	BE, FR, GB, IE, NL
<i>Araujia sericifera</i> (Apocynaceae, EPPO Observation List of IAP)	S-Am.	ES, FR (Corse), GR, IL, IT, PT (Azores, Madeira)
<i>Aronia prunifolia</i> (Rosaceae)	N-Am.	BE, DE, LV, NL, NO, PL
<i>Artemisia verlotiorum</i> (Asteraceae)	China	Widespread
<i>Arthraxon hispidus</i> (Poaceae)	China	Abs.?
<i>Asclepias syriaca</i> (Apocynaceae)	N-Am.	AT, CZ, FR, DE, IT, LT, NL, PL, RO
<i>Azolla filiculoides</i> (Salviniaceae, EPPO Observation List of IAP)	Am.	Widespread

Species	Origin*	Naturalized in the EPPO region**
<i>Baccharis halimifolia</i> (Asteraceae, EPPO A2 List)	N-Am.	BE, ES, FR, GB, GE, IT
<i>Bidens bipinnata</i> (Asteraceae)	S-Am.	CH, ES, FR, IT (incl. Sicilia)
<i>Bidens frondosa</i> (Asteraceae, EPPO List of IAP)	N-Am.	Widespread
<i>Bidens pilosa</i> (Asteraceae)	S-Am.	CY, ES (incl. Canarias), FR, IT, PT (incl. Azores, Madeira)
<i>Buddleia davidii</i> (Scrophulariaceae, EPPO List of IAP)	Asia	Widespread
<i>Bunias orientalis</i> (Brassicaceae)	Caucasus	Widespread
<i>Cabomba aquatica</i> (Cabombaceae)	S-Am.	Abs.
<i>Cabomba caroliniana</i> (Cabombaceae, EPPO List of IAP)	Am.	BE, FR, GB, GR, HU, NL
<i>Cabomba furcata</i> (Cabombaceae)	C & S Am.	Abs.
<i>Carpobrotus acinaciformis</i> (Aizoaceae, EPPO List of IAP)	S-Africa	Widespread
<i>Carpobrotus edulis</i> (Aizoaceae, EPPO List of IAP)	S-Africa	Widespread
<i>Cenchrus incertus</i> (= <i>Cenchrus pauciflorus</i>) (Poaceae)	N-Am.	ES, FR (incl. Corse), GR, HU, IL, IT, PT (Azores), RO, RU, TR
<i>Ceratophyllum demersum</i> (Ceratophyllaceae)	Cosmop.	Widespread
<i>Cornus sericea</i> (Cornaceae, EPPO List of IAP)	N-Am.	BE, CH, CZ, DE, GB, IE, LV, NL, RU
<i>Cortaderia jubata</i> (Poaceae)	S-Am.	Abs.
<i>Cortaderia selloana</i> (Poaceae, EPPO List of IAP)	S-Am.	ES (incl. Baleares, Canarias), FR (incl. Corse), GB, IT, PT (incl. Azores, Madeira), TR
<i>Cotoneaster dielsianus</i> (Rosaceae)	China	DE, GB, NO, SE
<i>Cotoneaster franchetii</i> (Rosaceae)	China	FR, GB, IE
<i>Cotoneaster horizontalis</i> (Rosaceae)	China	AT, BE, GB, IE, NL, NO, SE
<i>Crassula helmsii</i> (Crassulaceae, EPPO A2 List)	Australia & New Zealand	BE, DE, DK, ES, FR, GB, NL, RU
<i>Crassula tillaea</i> (Crassulaceae)	Medit.	BE, DE, GB, NL?
<i>Cuscuta campestris</i> (Convolvulaceae)	Am.	Widespread
<i>Cyperus eragrostis</i> (Cyperaceae)	S-Am.	Widespread
<i>Cyperus esculentus</i> (Cyperaceae, EPPO List of IAP)	Cosmop.	Widespread
<i>Cyperus rotundus</i> (Cyperaceae)	Eurasia, Africa	CH, ES, PT(Azores)
<i>Digitaria horizontalis</i> (Poaceae)	Am.	Abs.?
<i>Digitaria nuda</i> (Poaceae)	?	Abs.?
<i>Dipsacus strigosus</i> (Caprifoliaceae)	Russia, SW Asia	CZ, DE, DK, GB, NO, RO, SE
<i>Egeria densa</i> (Hydrocharitaceae, EPPO List of IAP)	S-Am.	Widespread
<i>Egeria naias</i> (Hydrocharitaceae)	S-Am.	Abs.?
<i>Eichhornia azurea</i> (Pontederiaceae)	C&S-Am.	Abs.
<i>Eichhornia crassipes</i> (Pontederiaceae, EPPO A2 List)	S-Am.	ES, FR, IT, PT, RU
<i>Elatine hexandra</i> (Elatinaceae)	Eur.	Widespread
<i>Elatine hydropiper</i> (Elatinaceae)	Eur.	Widespread
<i>Elatine triandra</i> (Elatinaceae)	Eur.	Widespread
<i>Elodea callitrichoides</i> (Hydrocharitaceae)	S-Am.	FR, DE, GB, SE
<i>Elodea canadensis</i> (Hydrocharitaceae)	N-Am.	Widespread
<i>Elodea nuttallii</i> (Hydrocharitaceae, EPPO List of IAP)	N-Am.	Widespread
<i>Erechtites hieraciifolia</i> (Asteraceae)	Am.	CZ, DE, HU, PL, RO

Species	Origin*	Naturalized in the EPPO region**
<i>Eriochloa villosa</i> (Poaceae, EPPO Observation List of IAP)	Asia	DK, FR, HU, RO, RU, UA
<i>Fallopia baldschuanica</i> (Polygonaceae, EPPO List of IAP)	Asia	Widespread
<i>Fallopia japonica</i> (Polygonaceae, EPPO List of IAP)	Asia	Widespread
<i>Fallopia sachalinensis</i> (Polygonaceae, EPPO List of IAP)	Asia	Widespread
<i>Fallopia x bohémica</i> (Polygonaceae, EPPO List of IAP)	Asia	Widespread
<i>Gaillardia x grandiflora</i> (Asteraceae)	Hort.	AT, BE, DE, FR (Corse), GB, NL, PT (Azores)
<i>Gaultheria shallon</i> (Ericaceae)	N-Am.	FR, GB, IE, NL
<i>Gunnera tinctoria</i> (Gunneraceae, EPPO Alert list)	S-Am.	FR, GB, IE, PT (Azores)
<i>Hakea sericea</i> (Proteaceae, EPPO List of IAP)	Australia	ES, FR, PT
<i>Helianthus californicus</i> (Asteraceae)	N-Am.	/
<i>Helianthus ciliaris</i> (Asteraceae)	N-Am.	/
<i>Helianthus tuberosus</i> (Asteraceae, EPPO List of IAP)	N-Am.	Widespread
<i>Helianthus x laetiflorus</i> (Asteraceae)	N-Am.	BE, CZ, DK, FR (incl. Corse), DE, GB, HU, NL, PL
<i>Heracleum mantegazzianum</i> (Apiaceae, EPPO List of IAP)	Caucasus, Asia	Widespread
<i>Heracleum persicum</i> (Apiaceae, EPPO A2 List)	Temp. Asia	DK, FI, NO, SE, TR
<i>Heracleum sosnowskyi</i> (Apiaceae, EPPO A2 List)	Asia	BY, EE, FI, HU, LV, LT, PL, RU, UA
<i>Humulus japonicus</i> (Cannabaceae, EPPO List of IAP)	Asia	FR, HU, IT, RU
<i>Hydrilla verticillata</i> (Hydrocharitaceae, EPPO List of IAP)	N-Am.	IE, LV, LT, PL, RU
<i>Hydrocotyle leucocephala</i> (Apiaceae)	S-Am.	/
<i>Hydrocotyle ranunculoides</i> (Apiaceae, EPPO A2 List)	Am.	BE, FR, DE, ES, GB, GE, IE, IT (incl. Sardinia), NL
<i>Hydrocotyle sibthorpioides</i> (Apiaceae)	Asia	DE?, FR?, IT,
<i>Hydrocotyle verticillata</i> (Apiaceae)	N-Am.	ES
<i>Hydrocotyle vulgaris</i> (Apiaceae)	Eurasia	Widespread
<i>Hygroryza aristata</i> (Poaceae)	Asia	SE
<i>Impatiens balfourii</i> (Balsaminaceae)	Himalaya	Widespread
<i>Impatiens capensis</i> (Balsaminaceae)	N-Am.	FR, DE, FI, GB, NL, PL
<i>Impatiens glandulifera</i> (Balsaminaceae, EPPO List of IAP)	Himalaya	Widespread
<i>Impatiens parviflora</i> (Balsaminaceae)	Asia	Widespread
<i>Ipomoea hederacea</i> (Convolvulaceae)	N-Am.	Widespread
<i>Ipomoea lacunosa</i> (Convolvulaceae)	N-Am.	/?
<i>Iva axillaris</i> (Convolvulaceae)	N-Am.	/?
<i>Kyllinga brevifolia</i> (Cyperaceae)	Am., Africa, Asia	IT, PT (incl. Azores), ES
<i>Lagarosiphon major</i> (Hydrocharitaceae, EPPO List of IAP)	S-Africa	BE, CH, FR, DE, GB, IE, IT, NL
<i>Landoltia punctata</i> (Araceae)	Australasia	CH?, ES?, IL?, IT, NL, TR?
<i>Lemna gibba</i> (Araceae)	Cosmop.	Widespread
<i>Lemna minor</i> (Araceae)	Cosmop.	Widespread
<i>Lemna minuta</i> (Araceae)	Am.	Widespread
<i>Lemna trisulca</i> (Araceae)	Cosmop.	Widespread
<i>Lemna turionifera</i> (Araceae)	Eurasia, N-Am.	BE, DE, FI, FR, NL

Species	Origin*	Naturalized in the EPPO region**
<i>Limnobium laevigatum</i> (Hydrocharitaceae)	C & S Am.	/?
<i>Lobelia chinensis</i> (Campanulaceae)	Asia	/?
<i>Ludwigia grandiflora</i> (Onagraceae, EPPO A2 List)	S-Am.	BE, CH, DE, ES, FR, GB, IT, NL, TR
<i>Ludwigia peploides</i> (Onagraceae, EPPO A2 List)	S-Am.	BE, DE, ES, FR (Including Corse), GB, GR, IT, NL, TR,
<i>Lupinus nootkatensis</i> (Fabaceae)	N-Am.	FI, IL, NO, SE
<i>Lupinus polyphyllus</i> (Fabaceae, EPPO Observation List of IAP)	N-Am.	Widespread
<i>Lysichiton americanus</i> (Araceae, EPPO List of IAP)	N-Am.	CH DE, DK, FI, FR, GB, IE, NL, NO, SE
<i>Lysichiton camtschatcensis</i> (Araceae)	Asia	GB, NO, SE
<i>Mahonia aquifolium</i> (= <i>Berberis aquifolium</i>) (Berberidaceae)	N-Am.	Widespread
<i>Matricaria discoidea</i> (Asteraceae)	N-Am., Asia	Widespread
<i>Microstegium vimineum</i> (Poaceae, EPPO List of IAP)	Asia	TR, RU (native)
<i>Mimulus guttatus</i> (Phrymaceae)	N-Am.	Widespread
<i>Miscanthus floridulus</i> (Poaceae)	Asia	/?
<i>Miscanthus sinensis</i> (Poaceae, EPPO Alert List)	Asia	AT, BE, CH, CZ, DE, ES, FR, HU, IT, GB, GE, RU (native)
<i>Myriophyllum alterniflorum</i> (Haloragaceae)	Eur	Widespread
<i>Myriophyllum aquaticum</i> (Haloragaceae, EPPO List of IAP)	S-Am.	BE, DE, FR (incl. Corse), GB, IE, IT, NL, PT
<i>Myriophyllum crispatum</i> (Haloragaceae)	Australia	/?
<i>Myriophyllum heterophyllum</i> (Haloragaceae, EPPO List of IAP)	N-Am.	AT, BE, CH, DE, ES, FR, GB, NL
<i>Myriophyllum robustum</i> (Haloragaceae)	New Zealand	/?
<i>Myriophyllum spicatum</i> (Haloragaceae)	Eur., Asia, N-Africa	Widespread
<i>Myriophyllum tuberculatum</i> (Haloragaceae)	Asia, Australia	/?
<i>Myriophyllum verticillatum</i> (Haloragaceae)	Asia, N-Africa, Asia, N-Am.	Widespread
<i>Oxalis corniculata</i> (Oxalidaceae)	S-Eur.	Widespread
<i>Oxalis debilis</i> var. <i>corymbosa</i> (Oxalidaceae)	S-Am.	BE, CH, CZ, DE, DK, ES, FR, GB, NL, PT (incl. Azores), SE, SI
<i>Oxalis latifolia</i> (Oxalidaceae)	C & S-Am.	BE, CH, CZ, DE, DK, ES, FR, GB, IE, NL, PT (incl. Azores), SE, SK
<i>Oxalis pes-caprae</i> (Oxalidaceae, EPPO List of IAP)	S-Africa	Widespread
<i>Panicum capillare</i> (Poaceae)	N-Am.	Widespread
<i>Panicum dichotomiflorum</i> (Poaceae)	N-Am.	Widespread
<i>Panicum maximum</i> (Poaceae)	Africa	EE, IT (incl. Sicilia), NL
<i>Panicum miliaceum</i> (Poaceae)	Asia	Widespread
<i>Panicum repens</i> (Poaceae)	Eur., Africa, Asia	Widespread
<i>Panicum schinzii</i> (Poaceae)	S-Africa.	AT, BE, CH, DE, DK, FR, GB, NL, SI, SE
<i>Papaver atlanticum</i> (Papaveraceae)	N-Africa	AT, BE, DE, DK, ES, GB, IE, IT, NL, NO, SE
<i>Paspalum dilatatum</i> (Poaceae)	S-Am.	ES (incl. Baleares, Canarias), FR, GR, IT (incl. Sardinia, Sicilia), PT (incl. Azores, Madeira)
<i>Paspalum distichum</i> (Poaceae, EPPO List of IAP)	N-Am.	Widespread

Species	Origin*	Naturalized in the EPPO region**
<i>Pennisetum advena</i> (Poaceae)	Uncertain	AT, DE, ES (incl. Balears), GB, GR, MA, SE
<i>Pennisetum alopecuroides</i> (Poaceae)	Asia	NL
<i>Pennisetum setaceum</i> (Poaceae, EPPO List of IAP)	N-Africa	ES (incl. Balears, Canarias), FR, IT (Incl. Sardinia, Sicilia),
<i>Persicaria wallichii</i> (Polygonaceae)	Asia	BE, CH, CZ, FR, DE, GB, IE, IT, NL, PL, SE
<i>Phyllanthus fluitans</i> (Phyllanthaceae)	S-Am.	/?
<i>Phytolacca acinosa</i> (Phytolaccaceae)	Asia	AT, BE, BG, DE, DK, GB, NL, RO, SI, SE
<i>Phytolacca americana</i> (Phytolaccaceae)	N-Am.	Widespread
<i>Pistia stratiotes</i> (Araceae, EPPO List of IAP)	S-Am.	ES, FR, GB, IT, NL, RU, SI
<i>Polygonum perfoliatum</i> (Polygonaceae, EPPO A2 List)	Eurasia	TR
<i>Pontederia cordata</i> (Pontederiaceae)	N-Am., Caribbean	BE, GB, NL
<i>Prunus laurocerasus</i> (Rosaceae)	Eurasia	Widespread
<i>Prunus serotina</i> (Rosaceae, EPPO List of IAP)	N-Am.	Widespread
<i>Pueraria lobata</i> (Fabaceae, EPPO A2 List)	Asia	IT, CH, UA
<i>Ranunculus circinatus</i> (Ranunculaceae)	Eur.	Widespread
<i>Rhododendron ponticum</i> (Ericaceae, EPPO Observation List of IAP)	S-Eur., Asia	Widespread
<i>Rhus typhina</i> (Anacardiaceae)	N-Am.	Widespread
<i>Robinia pseudoacacia</i> (Fabaceae)	N-Am.	Widespread
<i>Rosa rugosa</i> (Rosaceae)	China	Widespread
<i>Rudbeckia laciniata</i> (Asteraceae, EPPO other documented species)	N-Am.	Widespread
<i>Sagittaria latifolia</i> (Alismataceae)	N-Am.	BE, BG, CH, DE, DK, FR, IT, NL
<i>Salvinia minima</i> (Salviniaceae)	Am.	/?
<i>Salvinia molesta</i> (Salviniaceae, EPPO List of IAP)	S-Am.	FR (Corse), IT, PT
<i>Salvinia natans</i> (Salviniaceae)	Cosmop.	Widespread
<i>Salvinia oblongifolia</i> (Salviniaceae)	S-Am.	/?
<i>Senecio inaequidens</i> (Asteraceae, EPPO List of IAP)	S-Africa	Widespread
<i>Sesbania punicea</i> (Fabaceae, EPPO Observation List of IAP)	S-Am.	IT (Sardinia)
<i>Sicyos angulatus</i> (Cucurbitaceae, EPPO List of IAP)	N-Am.	Widespread
<i>Solanum carolinense</i> (Solanaceae, EPPO other documented species)	N-Am.	Widespread
<i>Solanum elaeagnifolium</i> (Solanaceae, EPPO A2 List)	Am.	HR, CY, DZ, ES, FR, GR, IL, IT, MA, MK, RS, TN, TR
<i>Solanum rostratum</i> (Solanaceae, EPPO other documented species)	N-Am.	Widespread
<i>Solanum triflorum</i> (Solanaceae, EPPO other documented species)	N-Am.	Widespread
<i>Solidago canadensis</i> (Asteraceae, EPPO List of IAP)	N-Am.	Widespread
<i>Solidago gigantea</i> (Asteraceae, EPPO List of IAP)	N-Am.	Widespread
<i>Solidago nemoralis</i> (Asteraceae, EPPO Observation List of IAP)	N-Am.	NL?
<i>Sorghum halepense</i> (Poaceae)	Asia	Widespread

Species	Origin*	Naturalized in the EPPO region**
<i>Spartina anglica</i> (Poaceae)	Eur.	BE, DE, DK, FR, GB, IE, NL, SE
<i>Symphoricarpos albus</i> (Caprifoliaceae)	N-Am.	Widespread
<i>Tellima grandiflora</i> (Saxifragaceae)	N-Am.	BE, DE, FR, GB, IE, NL
<i>Toxicodendron radicans</i> (Anacardiaceae)	N-Am.	FR, IT
<i>Vaccinium angustifolium x corymbosum</i> (Ericaceae)	Hort	AT, DE
<i>Vaccinium corymbosum</i> (Ericaceae)	N-Am.	DK, GB, NL
<i>Verbesina encelioides</i> (Asteraceae, EPPO Observation List of IAP)	Am.	DK, ES, GB, IL, MA

* Origin of species has been checked in the Q-bank and GRIN databases.

** The distribution of species has been checked in the Q-bank database, as well as the DAISIE, NOBANIS and PQR databases. For some species, their distribution was approximated to ‘widespread’ by the EPPO Secretariat.

Source: Q-bank Invasive Plants database: <http://www.q-bank.eu/Plants/>

DAISIE database: <http://www.europe-aliens.org/>

NOBANIS database: <http://www.nobanis.org/>

PQR - EPPO Plant Quarantine Data Retrieval system.
<http://www.eppo.int/DATABASES/pqr/pqr.htm>

USDA, Germplasm Resources Information Network (GRIN). <http://www.ars-grin.gov/>

Additional key words: invasive alien plants **Computer codes:** ABOPR, ABUTH, ACADA, ACRNE, AKEQI, AILAL, AJASE, ALLPX, ALRPH, AMAAL, AMABL, AMALI, AMACA, AMADE, AMAGR, AMAPA, AMARE, AMAST, AMBAL, AMBPS, AMBTR, AMELM, AMESP, AMHFR, APGDI, ARAHI, ARTVE, ASCCU, AZOFI, BACHA, BIDBI, BIDFR, BIDPI, BIKBA, BUDDA, BUNOR, CABAQ, CABCA, CABFU, CBSAC, CBSED, CCHPA, CDTJU, CDTSE, CEYDE, CRWSR, CSBHE, CSBTI, CTTDI, CTTFR, CTTHO, CVCCA, CYPER, CYPES, CYPRO, DIGMB, DIGNU, DIWST, ELDDE, EICAZ, EICCR, ELTHE, ELTHY, ELTTR, ELDCL, ELDCA, ELDNU, EREHI, ERBVI, GAIGR, GAHSH, GUATI, HELLA, HELCA, HELCI, HELTU, HERMZ, HERPE, HERSO, HUMJA, HKASE, HYDLE, HYDRA, HYDSI, HYDVE, HYDVU, HYLVE, HYZAR, IPABF, IPACA, IPAGL, IPOHE, IPAPA, IPOLA, IVAAX, KYLBR, LEMGI, LEMMI, LEMMT, LEMTR, LEMTU, LGAMA, LIMLA, LOBCH, LUDUR, LUDPE, LUPNO, LUPPO, LSYAM, MAHAQ, MATMT, MCGVI, MIUGU, MISFL, MISSI, MYPAL, MYPBR, MYPHE, MYPRO, MYSP, MYPTU, MYPVE, OXACO, OXACB, OXALA, OXAPC, PANCA, PANDI, PANLF, PANMA, PANMI, PANRE, PASDI, PASDS, PESAL, PESSA, PHTAM, PHTES, PIIST, POLCU, POLPF, POLPS, POFCO, PRNLR, PRNSO, PUELO, RANCI, REYSA, REYBO, RHOPO, RHUTY, ROBPS, ROSRG, RUDLA, SPIOL, SAGLT, SAVMO, SAVNA, SAVOB, SAVRO, SEBPU, SENIQ, SIYAN, SOLCA, SOLEL, SOLRS, SOLTR, SOOCA, SOOGI, SOONE, SORHA, SPTAN, SYPAL, TLLGR, TOXRA, VACCO, VEEEN

2014/080 8th European Conference on Biological Invasions, Antalya (TR), 2014-11-03/08

The 8th NEOBIOTA Conference - Biological invasions: from understanding to action - is organized by the Çanakkale Onsekiz Mart University on behalf of the European Group on Biological Invasions (NEOBIOTA), and in cooperation with other organizations. This conference will represent an important opportunity to advance the dialogue and strengthen cooperation between the scientific community, conservation agencies, stakeholders, and policy and decision makers.

The conference topics are as follows:

- Ecology of biological invasions: Drivers and pathways of invasions; Temporal and spatial trends; Biotic and abiotic control of alien species; Biological invasions under climate change.
- Evolution of biological invasions: genetic variation of alien species; local adaptation of alien species; hybridization and invasion; founder and allee effect in alien species.
- Impacts of biological invasions: impacts on ecological processes and species assemblages; impacts on economy and health (plants, animals and humans); context dependence of impacts.
- Management of biological invasions: prevention and early detection; mitigation and control; public perception and communication of invasion risks; policy and legislation.

The deadline for abstract submission is the 27th of June.

Source: NEOBIOTA 2014 <http://neobiota2014.org/>

Additional key words: invasive alien plants, conference

Computer codes: TR