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2009/207 First record of *Rhynchophorus ferrugineus* in Albania

The NPPO of Albania recently informed the EPPO Secretariat of the first record of *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae – EPPO A2 List) on its territory.
The situation of *Rhynchophorus ferrugineus* in Albania can be described as: **Present, no details.**

Source: NPPO of Albania, 2009-10.

Additional key words: new record **Computer codes:** RHYCFE, AL

2009/208 First report of *Rhynchophorus ferrugineus* in Ceuta (ES)

In October 2009, the presence of *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae – EPPO A2 List) was officially declared by the autonomous city of Ceuta (Spain), which is located on the North African side of the Strait of Gibraltar near Morocco. Eradication and containment measures are being implemented including: 1) delimiting surveys; 2) destruction of infested palms, 3) preventive treatments, and 4) restrictions on the movement of palm trees.

Source: Anonymous (2009) Orden por la que se declara la existencia de plaga de las palmeras, producidas por el agente nocivo *Rhynchophorus ferrugineus*, en la ciudad Autónoma de Ceuta. *Boletín Oficial de la Ciudad de Ceuta (B.O.C.CE)*, 2009-10-30, Extraordinario n° 6, 58-62.

Personal communication with Dr Michel Ferry, Station de Recherche sur le Dattier et l'Agriculture d'Oasis, Elche, Spain (2009-11).

Additional key words: detailed record **Computer codes:** RHYCFE, ES

2009/209 *Rhynchophorus ferrugineus* found again in Liguria, Italy

As reported in EPPO RS 2008/093, *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae – EPPO A2 List) was found in August 2007 in Liguria, Northern Italy. The pest was caught in the municipality of Bordighera, in the province of Imperia. The NPPO of Italy recently reported another finding on a palm tree in the municipality of Albenga, in the province of Savona.
The situation of *Rhynchophorus ferrugineus* in Italy can be described as: **Present, first observed in the South and now recorded in Apulia, Campania, Lazio, Liguria, Toscana, Sardegna, and Sicilia, under official control.**

Source: NPPO of Italy, 2009-11.

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

2009/210 Distribution of *Rhynchophorus ferrugineus* in China

In a recent paper, Li *et al*. (2009) reported the recent introduction of *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae – EPPO A2 List) in the province of Zhejiang and provided an update on the distribution of the pest in China.

- **Zhejiang province**

In October 2007, adults of *R. ferrugineus* were discovered in both live and dead palm trees (*Phoenix canariensis*) in the central part of Zhejiang province. The pest was found in several urban districts (Liandu, Qingtian, Jinyun) of the city of Lishui. It is suspected that the pest was introduced into the city of Lishui by illegal imports of *P. canariensis* from the province of Fujian where the pest occurs. In December 2007, the pest was also found in the Cangnan district of the city of Wenzhou. All infested palm trees were destroyed.

- **Other parts of China**

The presence of *R. ferrugineus* has also been reported from Taiwan and the following Chinese provinces:

- Fujian (Xiamen since the 1990s, Zhangzhou county since 2003);
- Guangdong (city of Zhongshan in 1997, Guangzhou in 1999);
- Guangxi (in 1997);
- Hainan (since 2000);
- Shanghai Municipality (Songjiang district since 2003 where many dead palm trees were observed);
- Xizang (=Tibet, in Medog (=Motuo) county of Nyingchi prefecture);
- Yunnan (2002).

These recent records of *R. ferrugineus* from several provinces of Southern China indicate that the pest is rapidly spreading. With increasing movements of ornamental palms, it is stressed that quarantine measures should be initiated to prevent any further spread of the pest to other Chinese provinces where it has been demonstrated that *R. ferrugineus* could establish (i.e. Anhui, Chongqing Municipality, Guizhou, Hunan, Jiangsu, Jiangxi, Sichuan).

Source: Li YZ, Zhu ZR, Ju RT, Wang LS (2009) The red palm weevil, *Rhynchophorus ferrugineus* (Coleoptera: Curculionidae), newly reported from Zhejiang, China and update of geographical distribution. *Florida Entomologist* **92**(2), 386-387.

Additional key words: detailed record **Computer codes:** RHYCFE, CN

2009/211 Control strategy against *Rhynchophorus ferrugineus*

Rhynchophorus ferrugineus (Coleoptera: Curculionidae – EPPO A2 List) was introduced into Spain in the early 1990s. Despite strict eradication measures, the pest has continued to spread around the Mediterranean Basin at a rapid pace, infesting essentially *Phoenix canariensis* in urban environments. For example, it is estimated that more than 30 000 palm trees have been destroyed in Spain during the last 3 years.

A new strategy to better control the pest has recently been proposed, in which the systematic destruction of the infested palm trees is replaced by a combination of measures including: 1) early detection of the pest by regular visual inspections and intensive use of traps; 2) mechanical removal of infested plant tissues; 3) chemical or biological preventive treatments of asymptomatic palm trees. In particular, it is stressed that the mechanical removal of infested offshoots and palms (before larvae reach the terminal bud) is in most

cases successful because living larvae and adults are eliminated (before they can spread to other palm trees) and palm trees generally recover from this sanitation treatment. This new control strategy was applied in 2007/2009 in 2 heavily infested sites near Marbella (Spain) and gave satisfactory results. A reduction of insect captures was observed, no new palm trees were found infested, and most mechanically treated palm trees recovered (more than 80%). In July 2009, the region of Cataluña replaced the systematic destruction of palm trees by the mechanical removal of infested palms in its compulsory control programme against *R. ferrugineus*.

Source: Anonymous (2009) Orden AAR/226/2009 *AAR/226/2009,* de 6 de mayo, de modificación de la Orden ARP/343/2006, de 3 de julio, por la que se declara la existencia oficial en Cataluña de la plaga del gorgojo rojo de las palmeras *Rhynchophorus ferrugineus* (Olivier, 1790), y se califica de utilidad pública la prevención y la lucha contra esta plaga. *Diari Oficial de la Generalitat de Catalunya no. 5377* (2009-05-12), 38461-38463.
http://www.gencat.cat/eadop/imatges/5377/09124012.pdf

Ferry M, Gómez S (2008) Une nouvelle stratégie contre le charançon rouge des palmiers. *Phytoma – La Défense des Végétaux* no. 620, 24-28.

Ferry M, Gómez S, Barbado J, Hernandez F, Montero F (2009) Aplicación de una estrategia de control integrado del picudo rojo de las palmeras (*Rhynchophorus ferrugineus*). *Phytoma España* no. 206, 29-36.

Personal communication with Dr Michel Ferry, Station de Recherche sur le Dattier et l'Agriculture d'Oasis, Elche, Spain (2009-06).

Additional key words: control **Computer codes:** RHYCFE

2009/212 *Tuta absoluta* occurs in Islas Canarias, Spain

In Spain, *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was first recorded in 2006 on tomato crops in the mainland and Islas Baleares (RS 2008/001). In Islas Canarias, *T. absoluta* was first detected in December 2008 as a result of an early detection programme. In order to detect the pest as early as possible, pheromone traps had been placed in all tomato-producing areas of the Archipelago. As of November 2009, *T. absoluta* was found in all tomato-producing areas of Gran Canaria, Tenerife and Fuerteventura. Control measures are being implemented to limit the pest populations and avoid infestations inside tomato glasshouses.
The situation of *Tuta absoluta* in Spain can be described as follows: **Present, first recorded in 2006, now present in the mainland, Islas Baleares (Ibiza) and Islas Canarias (Gran Canaria, Tenerife and Fuerteventura).**

Source: Internet (last accessed 2009-11)
Gobierno de Canarias. Consejería de Agricultura, Ganadería, Pesca y Alimentación. Notas de prensa (2009-11-20). Agricultura insta al sector del tomate a mantener en buen estado sus instalaciones para frenar la Tuta absoluta.
http://www.gobcan.es/noticias/index.jsp?module=1&page=nota.htm&id=116654

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

2009/213 *Tuta absoluta* found in Basilicata, Lombardia and Molise regions, Italy

In Italy, *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was first reported in spring 2008 in Calabria, and then on tomato crops in several other Italian regions (EPPO RS 2009/023, 2009/106, 2009/153, 2009/154, 2009/172). The NPPO of Italy has recently informed the EPPO Secretariat of the detection of *T. absoluta* in three additional regions, Basilicata, Lombardia, and Molise. Adult specimens were caught in pheromone traps placed in tomato crops.
The situation of *Tuta absoluta* in Italy can be described as follows: **Present, first found in 2008, now reported from Abruzzo, Basilicata, Calabria, Campania, Lazio, Liguria, Lombardia, Molise, Sardegna, Sicilia, Puglia, Umbria, and Veneto, under official control.**

Source: NPPO of Italy, 2009-11.

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

2009/214 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**

Bactrocera invadens (Diptera: Tephritidae – EPPO Alert List) occurs in Zambia (Manrakhan *et al.*, 2009). **Present, no details.**

In Turkey, *Cacoecimorpha pronubana* (Lepidoptera: Tortricidae – EPPO A2 List) was detected for the first time in April 2007, in an olive orchard in Seyhan near Adana, Eastern Mediterranean region. The pest was later found to be present in many other olive orchards in the Eastern Mediterranean region (Adana, Gaziantep, Hatay, Kahramanmaras and Osmaniye provinces) (Kaçar and Ulusoy, 2008). **Present, widespread in olive orchards of the Eastern Mediterranean region.**

Cacyreus marshalli (Lepidoptera: Lycaenidae – EPPO A2 List) has recently been found in Croatia (Kosmač and Verovnik, 2009). **Present, no details.**

Frankliniella occidentalis (Thysanoptera: Thripidae – EPPO A2 List) occurs in Iran. It was found during a faunistic survey carried out from 2002 to 2005 on thrips of ornamental plants (Baniameri and Gilasian, 2008). **Present, no details**.

Liriomyza bryoniae (Diptera: Agromyzidae - EU Annexes) and *L. trifolii* (EPPO A2 List) occur in Vietnam. The distribution and importance of *Liriomyza* species on vegetable crops from 2002 to 2007 were studied, and more than 16 800 specimens of leafminer species were collected from 50 of the 62 Vietnamese provinces. Results showed that *L. sativae* (EPPO A2 List) occurred in all studied provinces and was the predominant species (75.2% of the specimens). *L. huidobrensis* (8.6%) was found in 7 provinces in the central part of the country. *L. trifolii* (8.4%) was found in 13 provinces also in the central part. *L. bryoniae* (4.0%) was found in 15 provinces mainly in areas north of Ho Chi Minh city. *L. chinensis* (3.0%) was found in 20 provinces across the country and mainly on onion (*Allium cepa*) and

Chromatomyia horticola (0.8%) was found in low numbers in 9 provinces across Vietnam (Andersen *et al*., 2008).

In April 2005, *Ophelimus maskelli* (Hymenoptera: Eulophidae) was observed in a garden on 1 tree (*Eucalyptus gunnii*), in Lambeth (London), United Kingdom. In June 2008, the pest was also found at Hyde Hall Gardens in Essex indicating that the gall wasp is spreading in England (Badmin, 2008). **Present, found in England.**

In Croatia, *Rhagoletis completa* (Diptera: Tephritidae) was first identified in walnuts (*Juglans regia*) in 2003 and it is suspected to attack peaches (*Prunus persica*) (Bjeliš, 2008). **Present, no details.**

In Puerto Rico, *Scirtothrips dorsalis* (Thysanoptera: Thripidae – EPPO A2 List) was detected for the first time in January 2006 on various cultivars of roses (Cabrera-Asencio and Ramírez, 2007). **Present, no details.**

Scirtothrips dorsalis (Thysanoptera: Thripidae – EPPO A2 List) and *Thrips palmi* (Thysanoptera: Thripidae – EPPO A1 List) occur in Vietnam (Le Quang *et al.*, 2008). **Present, no details**.

Tomato yellow leaf curl virus (Begomovirus – EPPO A2 List) occurs in Bangladesh where it is considered as one of the most damaging virus of tomato crops (Rashid *et al*., 2008). **Present, no details.**

- **Detailed records**

In Brazil, *Aleurocanthus woglumi* (Homoptera: Aleyrodidae – EPPO A1 List) was first reported in the city of Belem (State of Pará) in 2001. It was then found in the following Brazilian States: Maranhão in 2003, Amazonas in 2004, Amapá in 2006, Tocantins in 2007, Goias in 2007, and São Paulo in March 2008 (Pena *et al*., 2008; Sa *et al*., 2008).

Anastrepha obliqua (Diptera: Tephritidae – EPPO A1 List) and *A. serpentina* are the predominant fruit fly species in mango crops in the State of Piauí, Brazil (Feitosa *et al*., 2008).

Bactrocera caryae and *B. dorsalis* (Diptera: Tephritidae – EPPO A1 List) are reported to be widespread in Kerala, India (David *et al*., 2008).

Bactrocera dorsalis (Diptera: Tephritidae – EPPO A1 List) occurs in Jiangsu, China, on a wide range of fruit and vegetable crops (Ren *et al*., 2008).

Ceratitis capitata (Diptera: Tephritidae – EPPO A2 List) occurs in Paraíba, Brazil (Lopes *et al*., 2008).

Citrus tristeza virus (*Closterovirus*, CTV – EPPO A2 List) was detected in 2007 on calamondin pot plants (*Citrofortunella macrocarpa* grafted on *Citrus volkameriana*) cultivated in commercial glasshouses in Koropi (near Athens), Greece. CTV was detected in 11 plants in 2007 and again in mother plants in 2008. Eradication measures were taken and all citrus plants (81 560 plants in total) from the infected glasshouses were burned. Surveys were then carried out within a radius of 1.5 km around the infected glasshouses and CTV was not detected (Kalogeropoulou *et al*., 2009).

Gonipterus scutellatus (Coleoptera: Curculionidae – EPPO A2 List) was found in Espírito Santo State, Brazil, attacking plantations of *Eucalyptus urophylla x E. grandis*. This pest has been known to occur in Brazil since 1979, but was restricted to Southern Brazil and São Paulo State before being accidentally introduced in the central part of Espírito Santo State (Wilcken, 2008).

Leucinodes orbonalis (Lepidoptera: Pyralidae – EPPO Alert List) occurs in Himachal Pradesh and Manipur, India (Anjana *et al.*, 2008; Singh *et al.*, 2007).

Opogona sacchari (Lepidoptera: Tineidae – EPPO A2 List) occurs in Zhejiang, China (Shen *et al.*, 2008).

Spodoptera litura (Lepidoptera: Noctuidae – EPPO A1 List) occurs in Anhui and Yunnan, China (Huang *et al.,* 2006; Yang, 2009).

In France, *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) continues to spread. It has been reported from 8 departments: Bouches-du-Rhône, Corse, Drôme, Gard, Hérault, Pyrénées-Orientales, Var, Vaucluse (Anon., 2009).

Source:

Andersen A, Tran TTA, Nordhus E (2008) Distribution and importance of polyphagous *Liriomyza* species (Diptera, Agromyzidae) in vegetables in Vietnam. *Norwegian Journal of Entomology* **55**(2), 149-164 (abst.).

Anjana P, Mehta PK, Sood AK (2007) Developmental biology of brinjal shoot and fruit borer, *Leucinodes orbonalis* Guenée in mid-hills of Himachal Pradesh. *Entomon* **32**(2), 137-141 (abst.).

Anonymous (2009) *Tuta absoluta* menace la tomate. *Phytoma – La Défense des Végétaux*, no. 622, p 3.

Badmin J (2008) Spread of *Ophelimus maskelli* Ashmead (Hymenoptera: Eulophidae) in south-east England. *British Journal of Entomology and Natural History* **21**(3), 147 (abst.).

Baniameri V, Gilasian E (2008) A review of thrips (Insecta: Thysanoptera) fauna of ornamental plants in Iran. *Bulletin OILB/SROP* **32**, 271 (abst.).

Bjeliš M (2008) [Fruit flies from the family *Rhagoletis* (Tephritidae) in Croatia]. *Glasilo Biljne Zastite* **8**(1), 25-28 (abst.).

Cabrera-Asencio I, Ramírez A (2007) [*Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae): a new record for Puerto Rico]. *Journal of Agriculture of the University of Puerto Rico* **91**(1/2), 49-52 (abst.).

David KJ, Kumar ARV, Srinivasan R (2008) Distribution of *Bactrocera* Macquart (Diptera: Tephritidae) in Kerala with special reference to the Western Ghats. *Journal of the Entomological Research Society* **10**(2), 55-69 (abst.).

Feitosa SS, Silva PRR, Pádua LE de M, Carvalho EMS, Paz JK da S, Paiva DR de (2008) [Population dynamics of fruit flies (Diptera: Tephritidae) associated to mango varieties in the city of Jose de Freitas-Piauí-Brazil]. *Revista Brasileira de Fruticultura* **30**(1), 112-117 (abst.).

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Kosmač M, Verovnik R (2009) First record of *Cacyreus marshalli* (Lycaenidae) from the Balkan Peninsula. *Nota lepidopterologica* **32**(1), 81-82 (abst.).

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Lopes EB, Batista J de L, Albuquerque IC de, Brito CH de (2008) Frugivorous flies (Tephritidae and Lonchaeidae): occurrence in commercials tangerine orchards (*Citrus reticulata* Blanco) in Matinhas, state of Paraiba, Brazil. *Acta Scientiarum - Agronomy* 30(suppl), 639-644 (abst.).

Pena MR, Vendramim JD, Lourencao AL, da Silva NM, Yamamoto PT, Goncalves da S M (2008) Occurrence of citrus blackfly *Aleurocanthus woglumi* Ashby (Hemiptera: Aleyrodidae) in the state of Sao Paulo. *Revista de Agricultura (Piracicaba)* **83(**1), 61-65 (abst.).

Manrakhan A, Grout T, Hattingh V (2009) Combating the African invader fly *Bactrocera invadens*. *SA Fruit Journal* 8(1), 57-61 (abst.).

Rashid MH, Hossain I, Alam MS, Zaman MM, Hannan A (2008) Study on virus-vector relationship in TYLCV of tomato. *International Journal of Sustainable Crop Production* **3**(1), 1-6 (abst.).

Ren L, Qi LY, Jiang QG, Zhou SD, Dai HG (2008) Oviposition preference of oriental fruit fly, *Bactrocera dorsalis*. *Chinese Bulletin of Entomology* **45**(4), 593-597 (abst.).

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Shen YL, Lao C, Feng LG (2008) [Biological characteristics and control of *Opogona sacchari* in Cixi City, Zhejiang Province]. *Journal of Zhejiang Forestry College* **25**(3), 367-370 (abst.).

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Additional key words: new records, detailed records

Computer codes: ALECWO, ANSTOB, ANSTSE, BCTRCR, BCTRIN, CACYMA, CERTCA, CTV000, DACUDO, GNORAB, GONPSC, LEUIOR, LIRIBO, LIRIHU, LIRISA, LIRITR, OPHEMA, OPOGSC, PRODLI, RHAGCI, SCITDO, SCITDO, THRIPL, TORTPR, TYLCV0, BD, BR, CN, FR, GB, GR, HR, HR, IN, PR, TR, VN, ZM

2009/215 Outbreak of *Pseudomonas syringae* pv. *actinidiae* in Italy: addition to the EPPO Alert List

Kiwifruit (*Actinidia* spp.) can suffer from different bacterial diseases: *Pseudomonas syringae* pv. *syringae* (bacterial blossom blight), *Pseudomonas viridiflava* (bacterial leaf blight) and *Pseudomonas syringae* pv. *actinidiae* (bacterial canker). Bacterial canker was first observed in Japan in the 1980s. In 1984, strains were isolated in the Shizuoka Prefecture from diseased kiwifruits which were showing cankers on the trunks and main twigs, as well as shoot blight and brown leaf spot lesions surrounded by a chlorotic halo. The causal agent of bacterial canker was identified as a new pathovar of *Pseudomonas syringae*, and called *Pseudomonas syringae* pv. *actinidiae*. In the Republic of Korea, the bacterium was first detected in 1988 in Cheju Island, and it rapidly spread across the production areas of kiwifruit (mainly along the south coast of Korea). In both Korea and Japan, bacterial canker is considered as a limiting factor for the production of kiwifruit with significant losses in the production of fruit and plant mortality.

In the EPPO region, *P. syringae* pv. *actinidiae* was detected for the first time in 1992 in Italy (see EPPO RS 93/103). Italy is the major producer of kiwifruit in the world (more than 470 000 tons per year), and is the first exporter together with New Zealand. The main production areas are located in Lazio, Piemonte, Emilia-Romagna, and Veneto (covering at total area of approximately 27 000 ha). In Italy, *Actinidia deliciosa* cv. 'Hayward' is the most widely grown cultivar but since in last 10 years, yellow fleshed cultivars *A. chinensis* cvs. 'Hort 16A' and 'Jin Tao' are increasingly being produced. In spring and summer 1992, a new disease causing cankers, red-rusty exudations on twigs, and brown leaf spots was observed in 3 kiwifruit orchards (*A. deliciosa* cv. 'Hayward') in the province of Latina (Lazio region). After this initial record, *P. syringae* pv. *actinidiae* was sporadically isolated in the same area but did not cause significant losses. At that time, it was assumed that the disease had been introduced by infected propagation material, because 2-year old plants were mainly affected. But since 2007/2008, the disease has increasingly been observed in Northern Italy (Lazio), and sporadic cases of bacterial canker have been reported from Emilia-Romagna (as of October 2009, the identity of the bacterium has been confirmed on *A. chinensis* cv. 'Hort 16A' in two cases). Surveys were conducted in 2007/2008 in Northern Italy, and showed that *P. syringae* pv. *actinidiae* occurred in several orchards in Latina and Rome provinces (Lazio region) and in the province of Treviso (Veneto region). In the orchards, the disease incidence ranged from 50% to 80% and in some cases of high disease incidence, the destruction of the whole orchard was required. The highest disease incidence was associated with *A. chinensis* cultivars, in particular with the yellow fleshed cultivar 'Hort 16' in Latina and Rome provinces, where it reached at least 70% in most cases. In Treviso province, *A. chinensis* cv. 'Jin Tao' showed a lower disease incidence and severity, because symptoms were mainly affecting leaves, buds and flowers. In Italy, it is estimated that the economic losses (including impact on trade) due to *P. syringae* pv. *actinidiae* have reached 2 million euros. Because bacterial canker of kiwifruit is spreading in Italy together with an increasing incidence, the EPPO Secretariat decided to add *P. syringae* pv. *actinidiae* to the Alert List.

Pseudomonas syringae pv. *actinidiae* (Bacterial canker of kiwifruit)

Why	Bacterial canker of kiwifruit caused by *Pseudomonas syringae* pv. *actinidiae* was first described in Japan in the 1980s causing damage in *Actinidia* orchards. The disease was then observed in Korea where it also caused economic losses. In the EPPO region, the disease was first noticed in Northern Italy in 1992 where it remained sporadic and with a low incidence during 15 years. But in 2007/2008 economic losses started to be observed particularly in the Lazio region and the possible spread of the disease to other kiwifruit producing regions in Italy began to raise concerns. Because *P. syringae* pv. *actinidiae* is currently emerging in the

	Mediterranean region, the EPPO Secretariat decided to add it to the EPPO Alert List.
Where	Although *P. syringae pv. actinidiae* was originally described in Japan, its area of origin has not been ascertained. For example, comparison studies between Korean and Japanese strains showed that they have different phylogenic origins. **EPPO region**: Italy (Emilia-Romagna, Lazio, Veneto). **Asia:** China (Anhui), Japan (Hokkaido (on *Actinidia arguta*), Honshu, Kyushu, Shikoku), Korea Republic. Data is lacking on the situation of *P. syringae* pv. *actinidiae* in China (where *Actinidia* species originate from); only a small number of records were reported from the province of Anhui. In the literature, several papers mention the presence of *P. syringae* pv. *actinidiae* in Iran, but the original publication only refers to *P. syringae* pv. *syringae*.
On which plants	*Actinidia* species: *A. deliciosa, A. chinensis, A. arguta*, and *A. kolomikta* (there is no data on the susceptibility of other *Actinidia* species). Observations made in Italy suggested that damage is more severe on yellow fleshed kiwifruit (i.e. *A. chinensis* cvs. 'Hort 16A' and 'Jin Tao') than on the more widely grown green fleshed cultivar (i.e. *A. deliciosa* cv. 'Hayward').
Damage	*P. syringae* pv. *actinidiae* causes brown discolouration of buds, dark brown spots surrounded by yellow haloes on leaves, cankers with reddish exudates on twigs and trunks, fruit collapse, wilting and eventually plant mortality. The most conspicuous symptom is the red-rusty exudation which covers bark tissues on trunks and twigs. Removal of the bark usually reveals a brown discoloration of the external vascular tissues and reddening of the tissues beneath lenticels.
Transmission	Data is lacking on the epidemiology of the disease. It has been observed that the pathogen is active between 10 to 20 °C and is limited by temperatures above 25°C. Inoculation studies showed that the bacterium can infect the plant through natural apertures (stomata, lenticels) and wounds. Symptoms are usually expressed during spring and autumn when climatic conditions are favourable to the disease (cool temperatures, persistent rains, high humidity). It is suspected that the bacterium is spread by heavy rainfalls, strong winds, animals and humans. Over long distances, trade of infected planting material can spread the disease.
Pathway	Plants for planting of *Actinidia* spp. (infected fruits cannot be totally excluded but seem very unlikely).
Possible risks	Kiwifruits (*A. deliciosa* and *A. sinensis*) are economically important crops which are grown in several EPPO countries (by order of importance in production: Italy, Greece, France, Portugal and Spain). In Japan and Korea, bacterial canker has become one of the most serious limiting factors for cultivating kiwifruit. In Italy, it is estimated that the economic losses (including impact on trade) due to *P. syringae* pv. *actinidiae* have reached 2 million euros. Control strategies are being developed against the disease and include preventive measures (e.g. good fertilization, avoidance of overhead irrigation, disinfection of pruning equipment, pruning and destruction of diseased parts), regular inspections of the orchards for disease symptoms, and the use of healthy planting material. Chemical control has been implemented in Japan (e.g. with copper compounds and antibiotics), but this has lead to the appearance of resistant strains. It seems desirable to better understand the biology of *P. syringae* pv. *actinidiae* in order to develop adequate control strategies in areas where it occurs, and to avoid its further spread in Europe.
Source(s)	Balestra GM, Mazaglia A, Quattrucci A, Renzi M, Rossetti A (2009) Occurrence of *Pseudomonas syringae* pv. *actinidiae* in Jin Tao kiwi plants in Italy. *Phytopathologia Mediterranea* **48**(2), 299-301. Balestra GM, Mazzaglia A, Quatrucci A, Renzi M, Ricci L, Rossetti A (2009) Increased spread of bacterial canker of kiwifruit in Italy. *Informatore Agrario* **65**(24), 58-60 (abst.). Balestra GM, Mazzaglia A, Quattrucci A, Renzi M, Rossetti A (2009) Current status of bacterial canker spread on kiwifruit in Italy. *Australasian Plant Disease Notes* **4**, 34–36. CABI (2008) Distribution Maps of Plant Diseases no. 1043. *Pseudomonas syringae* pv. *actinidae* Takikawa *et al.* CABI (in collaboration with EPPO), Wallingford (GB).

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EPPO RS 2009/215
Panel review date - Entry date 2009-11

2009/216 First record of *Acidovorax citrulli* in Greece

In Greece, the presence of *Acidovorax citrulli* (EPPO Alert List) was detected in samples of watermelon fruits (*Citrullus lanatus*) which had been collected from the district of Chrysoupoli (Kavala prefecture) in July 2005, and from the district of Vagia (Boeotia prefecture) in September 2006. The disease incidence was recorded as high in the district of Chrysoupoli and reached 30% in the district of Vagia. Subsequently, in May 2008, a sample of young grafted watermelon plants collected from a nursery in the district of Varda (Elis prefecture) was also found infected by *A. citrulli*. According to the information which was provided with the samples to the diagnostic laboratory, 50% of the plants were infected in the nursery and were showing severe symptoms of bacterial blotch. This is the first time that natural infections of *Acidovorax citrulli* are reported from Greece.
The situation of *Acidovorax citrulli* in Greece can be described as follows: **Present, first detected in 2005, natural infections of fruits and young plants have been reported occasionally on the mainland.**

Source: Holeva MC, Karafla CD, Glynos PE, Alivizatos AS (2009) First report of natural infection of watermelon plants and fruits by the phytopathogenic bacterium *Acidovorax avenae* subsp. *citrulli* in Greece. *Phytopathologia Mediterranea* **48**(2), p 316.

Additional key words: new record **Computer codes:** PSDMAC, GR

2009/217 Situation of elm yellows associated with '*Candidatus* Phytoplasma ulmi' in Europe

Elm yellows is a widespread and serious phytoplasma disease of elm trees, in particular in the eastern half of the USA. It was reported in the 1930s and initially called 'elm phloem necrosis'. The disease causes a rapid, general decline of American elms, such as *Ulmus americana* and *U. rubra,* which lead to the death of infected trees usually within one growing season after the onset of symptoms. Symptoms include leaf yellowing and wilting, death of branches. The inner phloem of the lower trunk and roots develops a butterscotch colour and finally turns necrotic. Because such symptoms had never been observed in Europe, elm phloem necrosis was added to the EPPO A1 List in the 1970s. Until the 1950s, elm yellows was thought to be restricted to North America but few reports of a disease called elm witches' broom were made from the former Czechoslovakia, Italy and France on Eurasian elm species (e.g. *U. glabra, U. minor, U. pumila*). In 2004, it was considered that elm yellows was associated with a new tentative phytoplasma species belonging to the elm yellows group and called '*Candidatus* Phytoplasma ulmi'. Finally, recent studies have confirmed that '*Ca.* Phytoplasma ulmi' occurs in the USA and in several European countries but the diseases which are associated with it on the two continents are nevertheless very different.

In Europe, the disease was often referred to as 'elm witches' broom', as symptoms usually involved mild leaf yellowing, reduced growth, and witches' broom. In European countries, symptoms are not conspicuous, disease reports are very occasional, and the disease does not seem to spread rapidly. In grafting experiments, Eurasian elms appear to be tolerant to the disease as they can develop witches' brooms but not phloem necrosis. Another difference concerns the insect vectors of the disease. In the USA, the main vector is *Scaphoideus luteolus* (Homoptera: Cicadellidae – EU Annexes), a species which has not been recorded in Europe. Studies carried out in Italy concluded that the main vector in Europe was probably *Macropsis mendax* (Cicadellidae) and that other species such as *Philaenus spumarius* (Cercopidae) and *Allygidius atomarius* (Cicadellidae) could play a minor role in disease transmission. In addition, during preliminary studies conducted in France, '*Ca.* Phytoplasma ulmi' was detected in *Iassus scutellaris* (Cicadellidae), *Cixius* sp. (Cixiidae), *Allygidius furcatus* (Cicadellidae) but transmission still remains to be demonstrated. The geographical distribution of '*Ca.* Phytoplasma ulmi' in Europe needs to be further studied, but for the moment the phytoplasma itself or disease symptoms have been recorded from the following countries:

- **Czech Republic**: '*Ca.* Phytoplasma ulmi' was detected during surveys carried out from 1997 to 2007 in South Moravia. Affected elm trees showed witches' broom, smaller leaves, partial leaf yellowing, and irregular twig growth but the disease was rare.
- **France**: 1 strain was isolated on *U. minor* near Avignon in the 1990s. Surveys conducted in 1998-2000 showed that symptoms of elm yellows were quite frequent in the elm conservatories of Nogent-sur-Vernisson (Loiret, region Centre) and Guémené-Penfao (Loire-Atlantique, region Pays de la Loire), where approximately 30% of the trees observed were mildly symptomatic. In addition, '*Ca.* Phytoplasma ulmi' was detected in a small number of samples collected from symptomatic elm trees in Loire-Atlantique, Franche-Comté (*U. glabra*), and Basse Normandie (*U.minor*).
- **Germany**: at least 1 phytoplasma strain was isolated near Stuttgart on *U. glabra* in the 1990s.
- **Italy**: elm yellows has been recorded from several regions (e.g. Emilia-Romagna, Friuli-Venezia Giulia, Lombardia, Toscana) on *Ulmus glabra, U. minor,* and *U.*

pumila. In 2006, '*Ca*. Phytoplasma ulmi' was detected for the first time on bonsai plants of *Ulmus parvifolia* and *Zelkova serrata* in a nursery near Ancona (Marche region). Affected plants showed total or partial leaf chlorosis, foliar reddening, stunting, and witches' brooms. This was the first record of elm yellows in bonsais, and in *Zelkova*.

- **Serbia**: in September 2007, mild leaf yellowing symptoms were observed on 18 elm trees near the villages of Srednjevo, Ljubičevo and Šuvajić (north-east Serbia). Molecular tests confirmed the presence of '*Ca*. Phytoplasma ulmi' in samples of *U. minor* (from Srednjevo and Ljubičevo) and in samples of *U. laevis* (from Šuvajić).

Comparison studies between elm inhabiting phytoplasmas from USA and Europe have showed that they were very closely related, although some minor differences could be observed (when other gene sequences were compared in addition to 16SrRNA). For the moment, it seems that elm yellows observed in USA and Europe might be associated with different strains of the same species '*Ca*. Phytoplasma ulmi' (rather than with different species of phytoplasmas). The differences observed in the field between the two continents might be explained by different epidemiological situations (e.g. susceptibility of host trees, insect vectors) but more studies are needed to verify these assumptions. Finally, the implications these new findings may have on the phytosanitary status of 'elm phloem necrosis' probably need to be discussed within EPPO.

Source:

Boudon-Padieu E, Larrue J, Clair D, Hourdel J, Jeanneau A, Sforza R, Collin E (2004) Detection and prophylaxis of Elm Yellows phytoplasma in France. *Investigación Agraria: Sistema y Recursos Forestales* **13**(1), 71-80. http://www.inia.es/gcontrec/pub/071-080-(08)-Detection_1161943300187.pdf

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Navrátil M, Šafářová D, Válová P, Fránová J, Šimková M (2009) Phytoplasma associated with witches'-broom disease of *Ulmus minor* Mill. in the Czech Republic: electron microscopy and molecular characterization. *Folia Microbiologica* **54** (1), 37–42. http://www.springerlink.com/content/y4w321875856t46m/fulltext.pdf

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Additional key words: new record, detailed record **Computer codes:** PHYPUL, CZ, DE, FR, IT, RS, US

2009/218 First report of *Tomato chlorosis virus* in Brazil

During 2006 and 2007, surveys were carried out in the region of Sumaré in Brazil (São Paulo State) on virus diseases of tomato (*Lycopersicon esculentum*). Observations were made in 3 tomato fields and it was found that some plants showed symptoms of interveinal chlorosis and necrosis on the basal leaves. Symptoms were only observed at a low incidence on old and fruit-bearing plants, and affected plants were randomly distributed within the fields. Laboratory analysis (electron microscopy, RT-PCR, sequencing, whitefly transmission tests) confirmed the presence of *Tomato chlorosis virus* (*Crinivirus*, ToCV – EPPO A2 List) in diseased tomato plants. This is the first report of ToCV in Brazil.
The situation of *Tomato chlorosis virus* in Brazil can be described as follows: **Present, first found in 2006 in field tomatoes near Sumaré, São Paulo State.**

Source: Barbosa JC, Teixeira APM, Moreira AG, Camargo LEA, Bergamin Filho A, Kitajima EW, Rezende JAM (2008) First report of *Tomato chlorosis virus* infecting tomato crops in Brazil. *Plant Disease* **92**(12), p 1709.

Additional key words: new record **Computer codes:** TOCV00, BR

2009/219 First record of *Tomato chlorosis virus* in Mauritius

In Mauritius, a survey on virus diseases was carried out in open-field and glasshouse tomatoes (*Lycopersicon esculentum*) in February 2007. Yellowing symptoms on the lower and middle leaves of tomato plants, together with the presence of whiteflies (*Bemisia tabaci* – EPPO A2 List) were observed in tomato glasshouses in Pailles (north of the island). Because symptoms resembled those of *Tomato chlorosis virus* (*Crinivirus*, ToCV – EPPO A2 List) which was detected in 2004 in Réunion, it was suspected that this virus might also occur in Mauritius. Six symptomatic tomato leaf samples were collected and tested for the presence of ToCV (PCR, comparison of sequences). ToCV was detected in all tested samples. In June 2008, the presence of typical ToCV symptoms was observed in other glasshouses, and therefore, it was considered that further studies were needed to assess the incidence of ToCV on tomato crops on the island.
The situation of *Tomato chlorosis virus* in Mauritius can be described as follows: **Present, first found in 2007 on glasshouse tomatoes in the north of the island.**

Source: Lett JM, Hoareau M, Reynaud B, Saison A, Hostachy B, Lobin K, Benimadhu SP (2009) First report of *Tomato chlorosis virus* in tomato on Mauritius Island. *Plant Disease* **93**(1), p 111.

Additional key words: new record **Computer codes:** TOCV00, MU

2009/220 *Tomato yellow leaf curl virus* occurs in Zhejiang province, China

In China, the presence of *Tomato yellow leaf curl virus* (*Begomovirus* – EPPO A2 List) was first reported in Shanghai in 2006 (EPPO RS 2007/187). In the autumn-winter cropping season of 2006, a severe outbreak of tomato yellow leaf curl disease was reported in field grown tomatoes in several areas (Jiaxing, Haining, Ningbo and Wenzhou) of the Zhejiang province. The infested sites were located along the coast to the south-west of Shanghai. Molecular studies confirmed the presence of 2 begomoviruses: *Tomato yellow leaf curl virus* (TYLCV) and *Tomato leaf curl Taiwan virus* (ToLCTWV). TYLCV was detected in Jiaxing, Haining and Ningbo, and ToLCTWV was detected in Wenzhou. As high populations of *Bemisia tabaci* biotype B are present in this region, it is considered that both viruses present a serious threat to tomato crops.
The situation of *Tomato yellow leaf curl virus* in China can be described as follows: **Present first found in 2006 in Shanghai and later in nearby coastal areas in Zhejiang province.**

Source: Mugiira RB, Liu SS, Zhou X (2008) *Tomato yellow leaf curl virus* and *Tomato leaf curl Taiwan virus* invade South-east coast of China. *Journal of Phytopathology* **156**(4), 217-221.

Additional key words: detailed record **Computer codes:** TYLCV0, CN

2009/221 Simultaneous detection of six viruses of tomato

Studies have been carried out in Spain to develop a polyprobe for the simultaneous detection by molecular hybridization of six tomato viruses which can occur in single or multiple infections in commercial crops:
- *Cucumber mosaic virus* (*Cucumovirus*, CMV),
- *Parietaria mottle virus* (*Ilarvirus*, PMoV),
- *Pepino mosaic virus* (*Potexvirus*, PepMV – EPPO Alert List),
- *Potato Y virus* (*Potyvirus*, PVY),
- *Tomato mosaic virus* (*Tobamovirus*, ToMV),
- *Tomato spotted wilt virus* (*Tospovirus*, TSWV – EPPO A2 List).

The sensitivity and specificity of the polyprobe were found equivalent to those of individual probes. The polyprobe could also be used in combination with tissue-printing as a sample preparation technique. The authors concluded that this new method (polyprobe/tissue printing) could be a useful tool for the routine screening to tomato plants to verify the presence of these viruses (alone or in combination).

Source: Aparicio F, Soler S, Aramburu J, Galipienso L, Nuez F, Pallás V, López C (2009) Simultaneous detection of six RNA plant viruses affecting tomato crops using a single digoxigenin-labelled polyprobe. *European Journal of Plant Pathology* **123**(1), 117-123.

Additional key words: diagnostics **Computer codes:** PEPMV0, TSWV00

2009/222 *Verbesina encelioides* in the Indian Ocean

Verbesina encelioides (Asteraceae, EPPO Alert List) is recorded in the islands of Reunion, Mauritius, and Rodrigues as common on road sides and sandy coastlines. The first observations are reported in de Cordemoy (1895). The species might have been introduced there for cultivation (ornamental plant). Local names are Soleil and Chardon in Mauritius, Petit soleil and Herbe Marie-Thérèse in Reunion Island.
In Reunion Island, the species has been recently recorded in the following localities:

- In Etang Salé: it was first observed in2001 by Lavergne in a forest clearing on sandy soils. In 2005, it was then observed by Le Bourgeois and Hivert on 2 to 3 km of a road side along the main road (RN1), with 30 to 50% cover, and in vegetable crops, covering 10 to 50%;
- In Saint Louis: observed in 2005 by Hivert at the "Camp du Gol";
- In Saint Leu: observed in 2006 by Hivert at the site "les sables";
- In Saint Paul: observed in 2006 by Hivert at the site "les nèfles".

So far, the species is not perceived as a threat in Reunion Island.

Source: MASCARINE (1999) Base de données relationnelle sur la flore et les habitats de La Réunion. [Base de données locale]. Conservatoire Botanique National de Mascarin, Saint Leu, Réunion. Consultée en novembre 2009.

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de Cordemoy JE (1895, réimp. 1972) Flore de l'île de la Réunion. Paul Klincksieck, Paris, 574 p.

Thomas Le Bourgeois, pers. comm., 2009, thomas.le_bourgeois@cirad.fr, Christophe Lavergne, pers. comm., 2009 clavergne@cbnm.org

Additional key words: invasive alien plants, detailed record **Computer codes:** VEEEN, FR, MU

2009/223 A new legislation on invasive alien plants in the Comunidad Valenciana (ES)

The decree of 20 November 2009 on invasive alien species gathers all existing legislations published between 1994 and 2007. The scope of this decree is to prevent the introduction and proliferation of invasive alien species in the Comunidad Valenciana. It states the following obligations:

- A database on the invasive species which have major impacts in the Comunidad Valenciana should be created and should contain georeferenced information, so that their evolution can be followed.

- A monitoring network should be established integrating civil servants of the environmental sector, as well as staff of parks and reserves. Other entities and individuals could be involved, but all participants should be trained so as to be able to identify invasive or potentially invasive species. Public administrations and institutions in charge of managing land and waters should report the occurrence of invasive alien species.

- The decree also contains lists of invasive alien species (Annexes 1 and 2) which have been registered on the basis of scientific information, after the approval of the competent authority.

Species listed in Annex 1:
The decree prohibits the planting, trade, exchange and transport (except for the scope of eradication) of species listed in this annex. Derogation may be granted upon guaranty that the species cannot escape. Commodities infested with species listed in Annex 1 (at any plant stage) should be intercepted and eventually destroyed. Persons possessing species listed in Annex 1 should at the time of enforcement of this decree take measures to avoid their escape and spread.

Annex 1

Species	**Comments**
Azolla spp. all species (Azollaceae)	*A. filiculoides* is on the EPPO list of invasive alien plants (IAP)
Caulerpa racemosa, C. taxifolia (Caulerpaceae)	Marine species
Cylindropuntia spp. (Cactaceae)	/
Eichhornia crassipes (Pontederiaceae)	EPPO A2 List
Ludwigia spp.	*L. peploides* and *L. grandiflora* are on the EPPO List of IAP
Pennisetum setaceum, P. villosum (Poaceae)	*P. setaceum* is on the EPPO Alert list
Pistia stratiotes (Araceae)	EPPO Alert list
Salvinia spp. (Salviniaceae)	*S. molesta* is on the EPPO Alert list
Egeria densa (Hydrocharitaceae)	EPPO List of IAP
Elodea canadensis (Hydrocharitaceae)	/

Species listed in Annex 2:
The decree prohibits the introduction and planting, in specified forests and wetlands or along transport routes of species, listed in this annex. These limitations do not affect the use of those species in confined environments.

Annex 2

Species
Abutilon theophrasti (Malvaceae)
Acacia cyclops (Fabaceae)
Acacia farnesiana (Fabaceae)
Acacia saligna (Fabaceae)
Acacia retinodes (Fabaceae)
Agave spp. (Agavaceae)
Ailanthus altissima (Simaroubaceae) **EPPO List of IAP**
Aloe arborescens (Aloaceae)
Aptenia spp. (Aizoaceae)
Araujia sericifera (Asclepiadaceae) **EPPO Alert List**
Arctotheca calendula (Asteraceae)
Arundo donax (Poaceae)
Carpobrotus spp. (Aizoaceae) **EPPO List of IAP**
Cenchrus ciliaris (Poaceae)
Chloris gayana (Poaceae)

Species
Cortaderia selloana (Poaceae) **EPPO List of IAP**
Cyperus alternifolius subsp. *flabelifornis* (Cyperaceae)
Disphyma crassifolium (Aizoaceae)
Fallopia baldschuanica (Polygonaceae) **EPPO Alert List**
Gazania spp. (Asteraceae)
Helianthus tuberosus (Asteraceae) **EPPO List of IAP**
Heteranthera limosa (Pontederiaceae)
Heteranthera reniformis (Pontederiaceae)
Hydrilla verticillata (Hydrocharitaceae) **EPPO Alert List**
Ipomoea cairica (Convolvulaceae)
Ipomoea indica (Convolvulaceae)
Ipomoea purpurea (Convolvulaceae)
Kalanchoe x hybrida (Crassulaceae)

Species
Lonicera japonica (Caprifoliaceae)
Nicotiana glauca (Solanaceae)
Oenothera biennis (Onagraceae)
Opuntia spp. (Cactaceae)
Oxalis pes-caprae (Oxalidaceae) **EPPO List of IAP**
Pelargonium capitatum (Geraniaceae)

Species
Ricinus communis (Euphorbiaceae)
Robinia pseudoacacia (Fabaceae)
Senecio angulatus (Asteraceae)
Solanum bonariense (Solanaceae)
Tradescantia spp. (Commelinaceae)
Yucca aloifolia (Agavaceae)

- For species listed in Annexes 1 or 2, it is prohibited to dispose of untreated waste or propagules into the environment, except for *Arundo donax* which is traditionally used (e.g. as a wind break).

- The competent authority will draft and implement management measures (for detection, eradication, containment and mitigation) and propose substitution plants for species listed in Annexes 1 and 2. In urgent cases, eradication should be undertaken even if the management program has not been completely finalized, particularly when priority habitats or species are threatened. Owners of land where eradication should take place must allow the access to their property.

- The competent authority shall elaborate a communication to inform the general public about responsible use and disposal of invasive alien species.

- The coordination of actions against invasive alien species will be undertaken between administrative bodies responsible for the environment, trade, management of public land and waters, transports and public areas.

- Infringements to this decree are considered administrative infractions. Offenders will have to pay for the damage they can cause. Trade of the species listed in Annex 1 can be subject to fines ranging from 5 000 to 200 000 Euros.

Source: Diari oficial de la comunitat Valenciana (2009) Decreto 213/2009 de 20 de noviembre. Num. 6151/24.11.2009 http://diaricomunitatvalenciana.es/portal/portal/2009/11/24/pdf/2009_13396.pdf

Additional key words: invasive alien plants, legislation

Computer codes: 1AGVG, 1APJG, 1AZOG, 1CBSG, 1GAZG, 1KYOG, 1LUDG, 1OPUG, 1SAVG, 1TRAG, ABKDO, ABUTH, ACACC, ACAFA, ACART, ACASA, AILAL, AJASE, ALFAR, AROCA, BIKBA, CDTSE, CHRGA, CYPFL, DPHCR, EICCR, ELDCA, ELDDE, HETLI, HELTU, HETRE, HYLLI, IPOAC, IPOCA, LONJA, NIOGL, OEOBI, OXAPC, PELCA, PESCI, PESSA, PESVI, PHBPU, PIIST, RIICO, ROBPS, SENAN, SOLBO, UCCAL, ES

2009/224 Second International Workshop on Invasive Plants in the Mediterranean Type Regions of the World (Trabzon, TR, 2010-08-02/06)

In May 2005, the first Workshop on Invasive Plants in the Mediterranean Type Regions of the World was organized in Mèze (France), all outcomes of this workshop - presentations, proceedings and the Mèze Declaration are available on the EPPO website. A second workshop will be organized in Trabzon, on the Black Sea on 2010-08-02/06.
The first workshop was successful and allowed many exchanges between participants and opportunities to discuss specific and concrete topics; the second workshop is organized in the same spirit.

This workshop will be co-organized by the Turkish Plant Protection Organization, the Council of Europe and EPPO. The organization of the workshop is still in its preliminary phase, and co-organizers, sponsors are most welcome. The workshop will consist of 2 days of presentations and discussions, and will be followed by 2 days of field work to create inventories of the exotic flora of the Trabzon area and to contribute to the knowledge on invasive alien plants. This Workshop is open to civil servants (NPPOs, Ministries of Environment), researchers, the horticultural industry and trade, land managers, etc.

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

International Workshop on Invasive Plants in the Mediterranean Type Regions of the World, Mèze, FR, 2005-05-25/27.
http://archives.eppo.org/MEETINGS/2005_meetings/workshop_invasive/workshop.htm

Additional key words: invasive alien plants, workshop **Computer codes:** TR

2009/225 Launching of an EPPO questionnaire on invasive alien plants in Mediterranean countries

In the framework of the organization of the 2nd Workshop on Invasive Alien Plants in Mediterranean Type Regions of the World, EPPO is launching a questionnaire to gather lists of invasive alien plants and eradication projects in the Mediterranean area. The conclusions will be shared during the workshop, and contributors will be acknowledged. Forms available on the website below can be returned to the EPPO Secretariat until the 2010-01-30:

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

Additional key words: invasive alien plants