

EPPO

Reporting

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99/168 New data on quarantine pests

By browsing through the literature, the EPPO Secretariat has extracted the following new data concerning quarantine pests.

- **New geographical records**

In China, *Liriomyza huidobrensis* (EPPO A2 quarantine pest) is reported in Yunnan. The EPPO Secretariat had previously no data on the occurrence of this pest in China. Review of Agricultural Entomology, 87(11), p 1416 (10585).

Phyllocnistis citrella was found in Chile in 1998. Review of Agricultural Entomology, 87(11), p 1428 (10680).

Scaphoideus titanus, vector of grapevine flavescence dorée phytoplasma (EPPO A2 quarantine pest), was discovered in 2 vineyards in the province of Massa Carrara, Toscana, Italy, in 1998. But grapevine flavescence dorée phytoplasma has not been found. Review of Plant Pathology, 78(10), p 955 (7216).

In Poland, *Stephanitis takeyai* (EPPO Alert List) was discovered in a nursery on *Pieris japonica* imported from Germany (this pest is not known to occur there). Review of Agricultural Entomology, 87(10), p 1325 (9901).

In Kuwait, tomato yellow leaf curl begomovirus (EPPO A2 quarantine pest) has been causing a devastating disease in field-grown tomatoes since 1993. Major yield losses are observed. Review of Plant Pathology, 78(11), p 1043 (7877).

- **Detailed records**

Bean golden mosaic begomovirus (EPPO A1 quarantine pest) occurs on beans in the State of Bahia in Brazil. Bianchini, A. (1999) Resistance to bean golden mosaic virus in bean genotypes. Plant Disease, 83(7), 615-620.

Citrus leprosis ?rhabdovirus (EPPO A1 quarantine pest) and its vector *Brevipalpus phoenicis* were found for the first time in the State of Tocantins, Brazil. Review of Plant Pathology, 78(11), p 1053 (7947).

Citrus ringspot ?virus (EU Annexes) is one of the major constraint of citrus production in India. It is widely distributed in citrus-growing areas in Punjab, Haryana, Rajasthan, Uttar Pradesh, Andhra Pradesh and Karnataka with incidence ranging from 10 to 100%. Review of Plant Pathology, 78(10), p 956 (7219).

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Liriomyza bryoniae (EU Annexes) and *Liriomyza sativae* (EPPO A1 quarantine pest) are both present in Henan Province, China, on vegetable crops. The most widespread and damaging is *L. sativae*. These two species also occur in the suburbs of Beijing. Review of Agricultural Entomology, 87(11), p 1407 & 1420 (10522 & 10620).

Mycosphaerella dearnessii (EPPO A2 quarantine pest) occurs in Jiangsu Province, China. Review of Plant Pathology, 78(11), p 1072 (8088).

Spodoptera litura (EPPO A1 quarantine pest) occurs in Zhejiang Province, China. Review of Agricultural Entomology, 87(10), p 1291 (9651).

Ralstonia solanacearum (EPPO A2 quarantine pest) is present on tomato in Orissa, India. Review of Plant Pathology, 78(10), p 943 (7125).

- **New vector**

The glassy-winged sharpshooter, *Homalodisca coagulata* is a new vector of *Xylella fastidiosa* (EPPO A1 quarantine pest). It occurs in southern USA and northern Mexico. In Georgia, Florida and other southern states it is considered as a major vector of *X. fastidiosa* to peach and grape. It has recently become established in California, and is perceived as a very serious threat to vineyards and almond orchards. It is also felt that it could play an important role in the spread of oleander leaf scorch disease (also caused by *X. fastidiosa*). Review of Plant Pathology, 78(10), p 902 (6825).

Further reading on INTERNET

<http://www.cnr.berkeley.edu/xylella/oss.html>

<http://www.cdfa.ca.gov/pests/>

Source: EPPO Secretariat, 1999-11.

Review of Agricultural Entomology, 87(10 & 11). October & November 1999.

Review of Plant Pathology, 78(10 & 11). October & November 1999.

Additional key words: new records, detailed records

Computer codes: BNGMXX, CSLXXX, CSRSXX, LIRIBO, LIRIHU, LIRISA, PHYNCI, PSDMSO, PRODLI, SCAPLI, SCIRAC, STEPTA, TMYLCX, XYLEFA, BR, CL, CN, IN, IT, KW, PL, US

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99/169 First report of plum pox potyvirus in USA (Pennsylvania)

Plum pox potyvirus (PPV- EPPO A2 quarantine pest) has been detected for the first time in USA, in Pennsylvania. It was found on a fruit farm in Adams county. The strain of PPV present in Pennsylvania belongs to the D (Dideron) type. The area concerned will be placed under quarantine, movement of stone fruit trees or budwood material will be prohibited and infected trees will be destroyed. Surveys are being carried out to determine the extent of the infection.

Source: USDA News releases on INTERNET, 1999-10-20.
<http://www.aphis.usda.gov/lpa/press/1999/10/plumpox.txt>

ProMED posting of 1999-10-25. Plum pox virus - USA (Pennsylvania).
<http://www.healthnet.org/programs/promed-hma/9910/msg00159.html>

Additional key words: new record

Computer codes: PLPXXX, US

99/170 First report of beet necrotic yellow vein benyvirus in Syria

Surveys were carried out in Syria during 1996-1998 to detect rhizomania (beet necrotic yellow vein benyvirus - EPPO A2 quarantine pest). 2019 samples were collected from 290 sugar beet fields in Homs, Aleppo and Hama governorates and were tested by DAS-ELISA. Results showed that rhizomania is the most severe virus disease on sugar beet in Syria. In the Homs governorate, the disease was particularly severe in the region of Qsair, where 79 % of the fields were infected with an average disease incidence of 44 %. In the Aleppo governorate, similar results were obtained with 76 % of infected fields and an average disease incidence of 41 %. In the governorate of Hama, 16 % fields were found infected with a disease incidence of 16 %. The EPPO Secretariat had previously no data on the occurrence of beet necrotic yellow vein benyvirus in Syria.

Source: Al-Chaabi, S.; Esmael, F.; Mando, J.; Darwesh, A.; Numan, S.; Matrod, L.
(1999) A survey of rhizomania disease on sugar beet and evaluation of monogerm cultivars performance to disease (BNYVV) in Syria.
Arab and Near East Plant Protection Newsletter, FAO, no. 28, p 29.

Additional key words: new record

Computer codes: BTNYVX, SY

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99/171 First report of lime witches' broom phytoplasma in India

Acid lime (*Citrus aurantifolia*) is one of the most important citrus crops in India (20% of total citrus production). In 1995, unusual symptoms of witches' broom, leaf fall and branch dieback were observed on a 6-year old *C. aurantifolia* in eastern Maharashtra. Surveys carried out from 1995 to 1998 revealed that disease incidence reached 5 % in Maharashtra and other major lime-growing states: Andhra Pradesh, Tamil Nadu and Karnataka. Phytoplasmas were constantly observed in diseased plants. This is the first report of lime witches' broom phytoplasma (EU Annexes) in India.

Source: Ghosh, D.K.; Das, A.K.; Singh, S.; Singh, S.J.; Ahlawat, Y.S.; (1999) Occurrence of witches' broom, a new phytoplasma disease of acid lime (*Citrus aurantifolia*) in India. **Plant Disease**, 83(3), p 302.

Additional key words: new record

Computer codes: CSLWBX, IN

99/172 *Maconellicoccus hirsutus* found in California (US) and Baja California (MX)

It is reported that the pink hibiscus mealybug, *Maconellicoccus hirsutus* (EPPO Alert List) has been found at El Centro and Calexico, in the south of California (US). It was found in urban areas on branches of mulberry and fig trees, trumpet vines (*Campsis radicans*) and grapevines. This is the first report of this pest in USA.

During the NAPPO Annual Meeting, it was reported that *M. hirsutus* has been found in Mexicali, Baja California, in Mexico. This confirms earlier reports.

Source: Pest Alert posting, University of Florida, 1999-09-03. Pink hibiscus mealybug.
<http://extlab7.entnem.ufl.edu/PestAlert/>

NAPIS - What's new on the NAPIS web page(s) during 1999
<http://www.ceris.purdue.edu/napis/update99.html>

NAPPO Annual Meeting, 1999-10-11/22, Cancún (MX).

Additional key words: new records

Computer codes: PHENHI, MX, US

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99/173 New foci of *Erwinia amylovora* in France

During summer 1999, two new foci of *Erwinia amylovora* (EPPO A2 quarantine pest) were found in a fireblight protected zone in France. The two foci were detected in the region Provence-Alpes-Côte d'Azur. One was located in the Vaucluse département and the other in Bouches du Rhône. *Erwinia amylovora* was essentially found in apple orchards and several hundred trees were infected. Trees or parts of contaminated trees have been destroyed, and orchards where high infection occurred were totally destroyed. Surveys are being done to determine the extent of fireblight in this region, and investigations are under way to trace back the origin of the infection.

Source: **NPPO of France, 1999-09.**

Additional key words: detailed record

Computer codes: ERWIAM, FR

99/174 Phytosanitary incident: *Liriomyza huidobrensis* found in a glasshouse in Ireland

In Ireland, *Liriomyza huidobrensis* (EPPO A2 quarantine pest) has been found in a glasshouse in north County Dublin. The glasshouse, of less than one hectare, produced various food crops. All infested material is being destroyed. The origin of this introduction is not known.

Source: **NPPO of Ireland, 1999-10.**

Additional key words: phytosanitary incident

Computer codes: LIRIHU, IE

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99/175 Results of the 1998 survey on *Erwinia amylovora* in Slovakia

In Slovakia, detection surveys have been regularly conducted since 1997 on *Erwinia amylovora* (EPPO A2 quarantine pest). In 1997, *E. amylovora* was not found. The results of the 1998 survey are presented below. Many host plants of fireblight were inspected. If suspicious symptoms were found, samples were taken and tested in the laboratory according to the EPPO Quarantine Procedure no. 40 for *E. amylovora*. Apple trees are the most widely grown host species. Commercial orchards, private gardens and trees planted along the roads were inspected (corresponding to 4,761.2 ha). Pears which are less important crops were also inspected (46.2 ha). Quince (*Cydonia* spp.) are essentially grown in eastern Slovakia and inspections were done on 0.3 ha. For ornamental host plants, inspection were most frequently done in public and private gardens, as well as in nurseries. The main plants concerned were *Cotoneaster* (6 ha inspected), *Sorbus* (0.02 ha), *Pyracantha* (1.06 ha) and *Chaenomeles* (0.007 ha). Wild hosts like hawthorns (*Crataegus* spp.) were also inspected (286.7 ha). During the 1998 survey, *Erwinia amylovora* was not found in Slovakia.

Source: **NPPO of Slovakia, 1999-08.**

Additional key words: absence

Computer codes: ERWIAM, SK

99/176 Details on glasshouse quarantine pests in Croatia

The NPPO of Croatia has recently provided the EPPO Secretariat with the following information on glasshouse quarantine pests:

- *Frankliniella occidentalis* (EPPO A2 quarantine pest) was introduced in 1989, and since then has spread to all glasshouses in Croatia, causing serious damage to vegetable and ornamental crops.
- *Liriomyza trifolii* (EPPO A2 quarantine pest) and *Liriomyza bryoniae* (EU Annexes) occur in Croatia (The EPPO Secretariat had previously no data on the occurrence of *L. bryoniae*).
- Tomato spotted wilt tospovirus (EPPO A2 quarantine pest) occurs with a restricted distribution.
- The Croatian NPPO states that *Bemisia tabaci*, *Liriomyza huidobrensis* and *Spodoptera littoralis* (all EPPO A2 quarantine pests) do not occur in Croatia.

Source: **NPPO of Croatia, 1999-09.**

Additional key words: new record, detailed records,
absence

Computer codes: BEMITA, FRANOC, LIRIBO,
LIRIHU, LIRITR, SPODLI, TMSWXX, HR

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99/177 News from the Caribbean

The Plant Health Report for 1998 has been prepared by IICA Office in Trinidad and Tobago and compiles replies to a questionnaire on quarantine pests received from several countries in the Caribbean (Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Martinique, Netherlands Antilles, St Kitts & Nevis, St Lucia, St Vincent and the Grenadines, Suriname, Trinidad & Tobago). The records which are new to the EPPO Secretariat or giving additional details are presented below.

Aleurocanthus woglumi (EPPO A1 quarantine pest): St Lucia, Trinidad and Tobago.

Citrus tristeza closterovirus (EPPO A2 quarantine pest): Aruba, Netherlands Antilles (Bonaire and Curaçao).

Palm lethal yellowing phytoplasma (EPPO A1 quarantine pest): Belize (mainly found along the coast).

Phyllocnistis citrella: Aruba, Dominica, Dominican Republic, Jamaica (confirmation of earlier reports), Guyana, Martinique, Netherlands Antilles (Bonaire and Curaçao), St. Kitts and Nevis, Trinidad and Tobago.

Radopholus similis (EPPO A2 quarantine pest): Dominica (confirmation of earlier reports).

Thrips palmi (EPPO A1 quarantine pest): Netherlands Antilles (Curaçao).

Toxoptera citricida (EPPO A1 quarantine pest): Aruba, Grenada, Netherlands Antilles (Bonaire, Curaçao).

Toxotrypana curvicauda (papaya fruit fly): Dominican Republic, St. Kitts and Nevis.

Xanthomonas axonopodis pv. dieffenbachiae (EPPO A1 quarantine pest): Barbados (incidence is very low and most commercial crops are free).

Source: Anonymous (1999) CARAPHIN - Plant Health Report 1998, 59 pp, IICA, Trinidad and Tobago.

Additional key words: new records, detailed records

Computer codes: ALECWO, CSTXXX, PALYXX, PHYNCI, RADOSI, THRIPL, TOXOCI, TOXTCU, XANTDF, AN, AW, BB, BZ, DM, DO, GD, GY, JM, KN, LC, MQ, TT

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99/178 Chino del tomate and pepper huasteco begomoviruses occur in Sonora, Mexico

In Sonora, Mexico, tomato plants in commercial glasshouses showed two types of symptoms: yellow mosaic, leaf curling and stunting, or chlorosis and feathery appearance of leaves, in December 1997 and again in October 1998. Molecular studies (PCR, comparisons of CP gene sequences) showed that pepper huasteco and chino del tomate begomoviruses were present in diseased tomatoes. This is the first report of these two viruses in Sonora, Mexico. Their geographical distribution is now the following:

Pepper huasteco begomovirus: Mexico (Guanajuato, Quintana Roo, Sinaloa, Sonora, Tamaulipas), USA (Texas).

Chino del tomate begomovirus: Mexico (Chiapas, Morelos, Sinaloa, Sonora, Tamaulipas)

Source: Idris, A.M.; Lee, S.H.; Brown, J.K. (1999) First report of Chino del tomate and pepper huasteco geminiviruses in greenhouse-grown tomato in Sonora, Mexico.
Plant Disease, 83(4), p 396.

Additional key words: detailed record

Computer codes: MX

99/179 Studies on Geminiviridae on bean in Brazil

Bean golden mosaic begomovirus (BGMV - EPPO A1 quarantine pest) was first described in Brazil. Initially the disease caused minor losses but during the 1970s, it became a major constraint for bean production throughout Brazil, Central America, Caribbean basin and Florida (US). Recent studies on molecular properties and mechanical transmission have concluded that BGMV from Brazil (BGMV-BZ) was distinct from BGMV from Dominican Republic, Guatemala and Puerto Rico. Molecular studies were carried out in Brazil on the variability of BGMV isolates. Samples of plants (beans (*Phaseolus vulgaris*), lima beans (*P. lunatus*) and a weed *Leonurus sibiricus*) showing symptoms were collected from the main bean-producing areas in Brazil and their genotypic variability was assessed by using molecular techniques (PCR, comparison of DNA sequences). Results showed that all isolates from *P. vulgaris* (collected from Goiás, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco*, Rio Grande do Sul, São Paulo) were similar to BGMV-BZ. The authors noted that this lack of variability among the viral fragments studied could indicate that BGMV present in these main bean-producing areas can be considered as a single population.

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This may have implications for breeding resistant bean cultivars. The sample from *P. lunatus* presented a distinct viral sequence, and it was considered that this represented a new geminivirus named lima bean golden mosaic virus. A mixed infection with abutilon mosaic begomovirus was also found in a single bean sample from São Paulo. Finally, the virus isolated from the weed *Leonurus sibiricus* was considered as a distinct virus named leonurus mosaic virus.

* New detailed record

Source: Faria, J.C.; Maxwell, D.P. (1999) Variability in geminivirus isolates associated with *Phaseolus* spp. in Brazil.
Phytopathology, 89(3), 262-268.

Additional key words: genetics, new detailed record

Computer codes: BNGMX, BR

99/180 Further studies on two new tospoviruses in Brazil - Addition of zucchini lethal chlorosis tospovirus to the EPPO Alert List

In Brazil, the diversity of tospovirus species is increasing. Tomato spotted wilt tospovirus was initially reported in the 1940s, but during the last decades three more species were found: tomato chlorotic spot, groundnut ring spot and iris yellow spot tospoviruses. More recently, two more were reported one on chrysanthemum and another on courgette.

In 1994, growers in Atibaia county, São Paulo State, observed unusual symptoms on chrysanthemum. The virus was later designated as chrysanthemum stem necrosis tospovirus (EPPO Alert List). It also occurs in the Netherlands and recently it has been found on tomato crops in Minas Gerais, Brazil (see EPPO RS 96/082, 96/198, 98/130 and 99/094).

Another tospovirus initially designated as BR-09 and later as zucchini lethal chlorosis tospovirus (see EPPO RS 96/198) was observed in experimental fields of courgette (*Cucurbita pepo* cv. Caserta) in São Paulo State, in 1991. Infected courgettes showed symptoms of stunting and high yield losses of marketable fruits. Plants infected before flowering usually died within a few days. Plant infected after flowering showed similar symptoms, do not die but do not yield marketable fruits. Currently, large areas are affected by this virus which has spread from São Paulo State into central areas of Brazil (unspecified). A natural infection has been detected in a commercial field of cucumbers (*Cucumis sativus* cv. Hokushin) in the Federal District. Affected plants showed yellowing, mottling and vein banding on the leaves.

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Further studies have been carried out in Brazil on these two viruses. Biological and molecular studies showed that they are two new distinct tospoviruses. In transmission experiments, *Frankliniella occidentalis* and *F. schultzei* transmitted chrysanthemum stem necrosis tospovirus, but not *Thrips tabaci*. Preliminary studies showed that *F. schultzei* is a highly efficient vector. All attempts to transmit zucchini lethal chlorosis tospovirus with these three thrips species failed. Recently a new thrips species, *Frankliniella zucchini*, has been described and identified as a vector of zucchini lethal chlorosis tospovirus in Brazil.

Zucchini lethal chlorosis tospovirus (a new tospovirus of courgette and cucumber)

Why	Zucchini lethal chlorosis tospovirus came to our attention because it was recently reported as causing a new and severe disease of courgette in Brazil, which can also affect cucumber.
Where	Brazil (São Paulo State, Federal District). It is reported to occur in central areas of Brazil but without further details.
On which plants	Courgette (<i>Cucurbita pepo</i>), cucumber (<i>Cucumis sativus</i>). More data is needed on the host range of this virus and in particular on the possible susceptibility of other Cucurbitaceae.
Damage	Infected courgettes showed symptoms of stunting and high yield losses of marketable fruits. Plants infected before flowering usually died within a few days. Plant infected after flowering showed similar symptoms, do not die but do not yield marketable fruits. Affected cucumbers showed yellowing, mottling and vein banding on the leaves (mortality is apparently not reported on this host).
Transmission	A new thrips species, <i>Frankliniella zucchini</i> , has been described and identified as a vector. The virus is not transmitted by <i>Frankliniella occidentalis</i> , <i>F. schultzei</i> and <i>Thrips tabaci</i> .
Pathway	Infected courgette or cucumber plants from Brazil (vegetables?).
Possible risks	Courgettes and cucumbers are important crops in the EPPO region. Symptoms are severe on courgettes, as plant mortality and high yield reduction is observed. However, more data is needed on the host range and epidemiology of the disease. So far, the vector <i>Frankliniella zucchini</i> has never been reported in the EPPO region.
Source(s)	Bezzera, I.C.; de Resende, O.; Pozzer, L.; Nagata, T.; Kormelink, R.; de Avila, A.C. (1999) Increase of tospoviral diversity in Brazil with the identification of two new tospovirus species, one from chrysanthemum and one from zucchini. <i>Phytopathology</i> , 89(9), 823-830. Nagata, T.; de Resende, O.; Kitajima, E.W.; Costa, H.; Inoue-Nagata, A.K.; de Avila, A.C. (1998) First report of natural occurrence of zucchini lethal chlorosis tospovirus on cucumber and chrysanthemum stem necrosis tospovirus on tomato in Brazil. <i>Plant Disease</i> , 82(12), p 1403. Nakahara, S.; Monteiro, R.C. (1999) <i>Frankliniella zucchini</i> (Thysanoptera: Thripidae), a new species and vector of tospovirus in Brazil. <i>Proceedings of the Entomological Society of Washington</i> , 101(2), 290-294. Rezende, J.A.M.; Galleti, S.R.; de Resende, O.; de Avila, A.C.; Scagliusi, S.M.M. (1997) Incidence and the biological and serological characteristics of a tospovirus in experimental fields of zucchini in São Paulo State, Brazil. <i>Fitopatologia Brasileira</i> , 22(2), 92-95. (abst. on Internet: http://www.sbfito.com.br/sumario3.htm)

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Additional key words: Addition to the Alert List

Computer codes: CHSNXX, BR

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99/181

Further characterization of lettuce chlorosis closterovirus

In the 1980s, in the Imperial Valley in California (US) yellowing symptoms were observed on weeds, lettuce, sugarbeet and the plants were found to be infected by lettuce infectious chlorosis closterovirus (EPPO A1 quarantine pest). In more recent years, stunted lettuces with yellow leaves and interveinal chlorosis were collected in 1992/1993 in the Imperial valley but lettuce infectious chlorosis closterovirus could not be detected. In fact authentic lettuce infectious chlorosis has not been detected in California in lettuce crops for the last 10 years. The symptoms seen in the 1990s are associated with a new distinct lettuce chlorosis closterovirus (LCV - see EPPO RS 97/018 and 98/085- EPPO Alert List). This virus was purified, partially characterized and polyclonal antisera were produced and used to study the disease in the field. Based on particle morphology and symptoms, LCV resembles other closteroviruses. The particle length is estimated at 750-950 nm. In general symptoms on lettuce of LCV and lettuce infectious chlorosis are indistinguishable. But Western blot analysis with the LCV antisera can distinguish the two viruses. In experimental lettuce plots, LCV was present during the 1995/1997 growing seasons. Yield losses were observed in symptomatic plants, and little yield loss in infected but asymptomatic plants. However it was difficult to conclude whether yield loss was due to the presence of the virus, as infected plants were also infested by *Bemisia tabaci* which causes feeding damage.

Source: McLain, J.; Castle, S.; Holmes, G.; Creamer, R. (1998) Physicochemical characterization and field assessment of lettuce chlorosis virus.
Plant Disease, 82(11), 1248-1252.

Additional key words: etiology

Computer codes: LECXXX, LEYIXX, US

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99/182 Update on the situation of *Xanthomonas axonopodis* pv. *citri* in Florida (US)

At present, *Xanthomonas axonopodis* pv. *citri* (EPPO A1 quarantine pest) occurs in Florida (US) in four areas: Collier, Dade and Browards, Hendry, Manatee counties. It can be recalled that after being thought eradicated, *X. axonopodis* pv. *citri* was found again in south Florida (Dade and Broward counties) in October 1995 (EPPO RS 95/228, 97/129). This area is mostly urban and virtually no infection was detected in commercial orchards. Infestations were found on an area of 676 km². In May 1997, citrus canker was detected in Manatee, essentially in commercial orchards. The infested area covers about 360 ha. In June 1998, it was found in Collier county (EPPO RS 98/160) in commercial orchards, on an area of 74 ha. In February 1999, citrus canker was detected in Hendry county on a area of approximately 97 ha, mainly in commercial orchards. Intensive surveys are continuing in Florida to detect all infected trees in commercial orchards, nurseries and their vicinity, as well as in private gardens. Many infected trees and nearby trees have been destroyed and measures are taken to prevent any further spread of citrus canker.

Source: **NAPPO Annual Meeting, 1999-10-19/22.**

Additional key words: detailed record

Computer codes: XANTCI, US

99/183 EPPO report on selected intercepted consignments

The EPPO Secretariat has gathered the intercepted consignment reports for 1999 received since the previous report (EPPO RS 99/164) from the following countries: Austria, Belgium, Czechia, Estonia, France, Finland, Germany, Ireland, Netherlands, Norway, Poland, Portugal Spain, Switzerland, United Kingdom. When a consignment has been re-exported and the country of origin is unknown, the re-exporting country is indicated in brackets. When the occurrence of a pest in a given country is not known to the EPPO Secretariat, this is indicated by an asterisk (*).

The EPPO Secretariat has selected interceptions made because of the presence of pests. Other interceptions due to prohibited commodities, missing or invalid certificates are not indicated. It must be pointed out that the report is only partial, as many EPPO countries have not yet sent their interception reports.

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Note: In EPPO RS 99/112, several consignments of maize from Hungary were intercepted by Austria because of the presence of *Pantoea stewartii* pv. *stewartii*. The Hungarian authorities have informed the EPPO Secretariat that this bacterium has never been observed in Hungary. In addition, maize fields corresponding to the lots in question were found free from this pathogen during inspections made in 1998. Seed samples were collected and tested in the laboratory and were all free from it.

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Ambrosia</i>	<i>Helianthus annuus</i>	Stored products	Hungary	Poland	7
	<i>Helianthus annuus</i>	Stored products	Ukraine	Poland	2
<i>Ambrosia, Iva</i>	<i>Helianthus annuus</i>	Stored products	Ukraine	Poland	1
<i>Ambrosia, Iva xanthiifolia</i>	<i>Glycine max</i>	Stored products	Ukraine	Poland	1
<i>Bemisia afer</i>	<i>Laurus nobilis</i>	Plants for planting	Belgium	United Kingdom	1
<i>Bemisia tabaci</i>	<i>Abutilon striatum, Bacopa</i>	Cuttings	Israel	United Kingdom	1
	<i>Alternanthera ficoidea</i>	Aquarium plants	Singapore	United Kingdom	1
	<i>Alternanthera ficoidea</i>	Aquarium plants	Singapore	France	2
	<i>Alternanthera ?variegata</i>	Aquarium plants	Singapore	France	1
	<i>Althemanthera sessilis</i>	Aquarium plants	Singapore	France	1
	<i>Artemisia dracunculus</i>	Cut flowers	Israel	France	1
	<i>Eryngium</i>	Cut flowers	Thailand	France	3
	<i>Eryngium</i>	Cut flowers	Vietnam	France	2
	<i>Eryngium foetidum</i>	Cut flowers	Thailand	France	1
	<i>Euphorbia pulcherrima</i>	Pot plants	Germany	United Kingdom	2
	<i>Gypsophila</i>	Cut flowers	Israel	United Kingdom	1
	<i>Heteranthera</i>	Cuttings	Singapore	United Kingdom	1
	<i>Hygrophila augustifolia</i>	Aquarium plants	Morocco	France	1
	<i>Hygrophila augustifolia</i>	Aquarium plants	Singapore	France	1
	<i>Hygrophila corymbosa</i>	Aquarium plants	Morocco	France	1
	<i>Hygrophila corymbosa</i>	Aquarium plants	Singapore	France	6
	<i>Hygrophila polysperma</i>	Aquarium plants	Singapore	France	1
	<i>Hygrophila rosanervis</i>	Aquarium plants	Singapore	France	1
	<i>Hypericum</i>	Cut flowers	Israel	Belgium	1
	<i>Hypericum androsaemum</i>	Cut flowers	Israel	United Kingdom	2
	<i>Liatris graminifolia</i>	Cut flowers	Netherlands	United Kingdom	1
	<i>Limnophila</i>	Aquarium plants	Singapore	France	1
	<i>Limnophila aromatica</i>	Aquarium plants	Singapore	France	1
	<i>Lisianthus</i>	Cut flowers	Israel	Belgium	1
	<i>Manihot esculenta</i>	Vegetables	Nigeria	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables	Israel	France	2
	<i>Ocimum basilicum</i>	Vegetables	Morocco	France	1
	<i>Origanum majorana</i>	Vegetables	Israel	United Kingdom	1
	<i>Phlox drummondii</i>	Cut flowers	Israel	United Kingdom	1
	<i>Solanum melongena</i>	Vegetables	Togo	France	1
	<i>Solidago</i>	Cut flowers	(Netherlands)	United Kingdom	1
	<i>Solidago</i>	Cut flowers	Israel	France	1
	<i>Solidago</i>	Cut flowers	Israel	Ireland	4
<i>Solidago</i>	Cut flowers	Israel	United Kingdom	4	
<i>Solidago</i>	Cut flowers	Netherlands	Ireland	1	
<i>Solidago</i>	Cut flowers	Spain	United Kingdom	2	
<i>Trachelium</i>	Cut flowers	Israel	United Kingdom	3	
<i>Verbena</i>	Cuttings	Israel	United Kingdom	1	

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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Bemisia tabaci</i> , <i>Liriomyza</i>	<i>Dendranthema</i>	Cut flowers	Italy	Czech Republic	1
	<i>Gypsophila</i>	Cut flowers	Israel	United Kingdom	1
	<i>Solidago</i>	Cut flowers	Spain	United Kingdom	1
<i>Clavibacter michiganensis</i> subsp. <i>sepedonicus</i>	<i>Solanum tuberosum</i>	Ware potatoes	Germany	Netherlands	4
<i>Cryptolestes ferrugineus</i>	<i>Hordeum vulgare</i>	Stored products	Czech Republic	Poland	1
<i>Frankliniella</i>	<i>Dendrobium</i>	Cut flowers	Thailand	Germany	4
<i>Frankliniella occidentalis</i>	Ornamentals	Cut flowers	Netherlands	Poland	6
	<i>Rosa</i>	Cut flowers	Netherlands	Estonia	2
<i>Guignardia citricarpa</i>	<i>Citrus</i>	Fruits	Brazil	Spain	1
	<i>Citrus sinensis</i>	Fruits	Brazil	Belgium	1
	<i>Citrus sinensis</i>	Fruits	South Africa	Belgium	1
<i>Guignardia citricarpa</i> , <i>Parlatoria cinerea</i>	<i>Citrus</i>	Fruits	Brazil	Portugal	3
<i>Helicoverpa armigera</i>	<i>Capsicum annuum</i>	Vegetables	Morocco	Spain	1
	<i>Dianthus</i>	Cut flowers	Israel	France	1
	<i>Dianthus</i>	Cuttings	Spain	United Kingdom	3
	<i>Dianthus</i>	Cut flowers	Spain	United Kingdom	1
	<i>Dianthus</i>	Cut flowers	Turkey	United Kingdom	2
	<i>Pisum</i>	Vegetables	Zambia	United Kingdom	4
	<i>Pisum</i>	Vegetables	Zimbabwe	United Kingdom	1
<i>Iva</i>	<i>Helianthus annuus</i>	Stored products	Ukraine	Poland	1
<i>Iva xanthiifolia</i>	<i>Glycine max</i>	Stored products	Ukraine	Poland	1
<i>Liriomyza</i>	<i>Artemisia dracunculus</i>	Cut flowers	Israel	France	1
	<i>Gypsophila</i>	Cut flowers	Netherlands	United Kingdom	1
	<i>Ocimum basilicum</i>	Vegetables	Israel	France	2
	<i>Ocimum basilicum</i>	Vegetables	Morocco	France	1
	<i>Scaevola</i>	Cuttings	Israel	Germany	2
	<i>Solanum melongena</i>	Vegetables	Togo	France	1
<i>Liriomyza</i> (suspect <i>huidobrensis</i> & <i>trifolii</i>)	<i>Gypsophila</i>	Cut flowers	Israel	United Kingdom	1
<i>Liriomyza</i> (suspect <i>huidobrensis</i>)	<i>Carthamus</i>	Cut flowers	(Netherlands)	United Kingdom	2
	<i>Carthamus tinctorius</i>	Cut flowers	Israel	United Kingdom	1
	<i>Gypsophila</i>	Cut flowers	Israel	United Kingdom	3
	<i>Gypsophila</i>	Cut flowers	Spain	United Kingdom	1
	<i>Primula obconica</i>	Pot plants	Netherlands	Guernsey	1
<i>Liriomyza</i> (suspect <i>trifolii</i>)	<i>Dendranthema</i>	Cut flowers	(Netherlands)	United Kingdom	1
	<i>Gerbera</i>	Plants for planting	Netherlands	United Kingdom	1
	<i>Gypsophila</i>	Cut flowers	Israel	Czech Republic	2
	<i>Gypsophila</i>	Cut flowers	Israel	United Kingdom	3
	<i>Gypsophila</i>	Cut flowers	Netherlands	United Kingdom	2
	<i>Trigonella foenum graecum</i>	Vegetables	Cyprus	United Kingdom	2

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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Liriomyza bryoniae</i>	<i>Gypsophila</i>	Cut flowers	Spain	United Kingdom	1
<i>Liriomyza huidobrensis</i>	<i>Allium</i>	Vegetables	Kenya*	United Kingdom	1
	<i>Bupleurum</i>	Cut flowers	Zimbabwe*	United Kingdom	1
	<i>Dendranthema</i>	Cut flowers	Netherlands	United Kingdom	1
	<i>Gypsophila</i>	Cut flowers	(Netherlands)	United Kingdom	5
	<i>Gypsophila</i>	Cut flowers	Netherlands	Czech Republic	2
	<i>Gypsophila</i>	Cut flowers	Netherlands	Ireland	4
	<i>Gypsophila</i>	Cut flowers	Netherlands	United Kingdom	5
	<i>Pisum</i>	Vegetables	Zimbabwe*	United Kingdom	1
<i>Verbena</i>	Cuttings	Costa Rica	United Kingdom	2	
<i>Liriomyza huidobrensis, Helicoverpa armigera</i>	<i>Pisum</i>	Vegetables	Zimbabwe*	United Kingdom	1
<i>Liriomyza huidobrensis, L. trifolii</i>	<i>Gypsophila</i>	Cut flowers	Netherlands	Czech Republic	1
<i>Liriomyza sativae</i>	<i>Ocimum basilicum</i>	Vegetables	Israel	France	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	France	1
<i>Liriomyza trifolii</i>	<i>Gypsophila</i>	Cut flowers	Spain	United Kingdom	1
<i>Maruca testulalis</i>	<i>Phaseolus</i>	Vegetables	Ghana	United Kingdom	1
<i>Phyllocnistis, Parlatoria ? fulleri</i>	<i>Protea</i>	Cuttings	South Africa	Portugal	2
<i>Popillia</i>	<i>Cycas revoluta</i>	Plants for planting	Costa Rica	Germany	1
PVS, PVX	<i>Solanum</i>	Plant tissue culture	USA	Netherlands	1
<i>Ralstonia solanacearum</i>	<i>Curcuma</i>	Plants for planting	Zimbabwe	Netherlands	1
<i>Rhizopertha dominica</i>	<i>Hordeum vulgare</i>	Stored products	Slovakia	Poland	1
<i>Sitophilus oryzae</i>	<i>Helianthus annuus</i>	Stored products	Slovakia	Poland	1
<i>Spodoptera (suspect littoralis)</i>	<i>Ocimum basilicum</i>	Vegetables	Israel	France	1
<i>Spodoptera littoralis</i>	Unspecified plants	Aquarium plants	Morocco	France	1
<i>Thrips</i>	<i>Dendrobium</i>	Cut flowers	Thailand	Germany	1
<i>Thrips (suspect palmi)</i>	<i>Momordica charantia</i>	Vegetables	Dominican Rep.	United Kingdom	2
<i>Thrips palmi</i>	<i>Dendrobium</i>	Cut flowers	Thailand	Netherlands	1
	Orchidaceae	Cut flowers	Thailand	Finland	1
	Orchidaceae	Cut flowers	Thailand	France	3
	<i>Solanum melongena</i>	Vegetables	Suriname*	Netherlands	1
Thysanoptera	<i>Momordica charantia</i>	Vegetables	Thailand	France	2

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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Tribolium</i>	<i>Helianthus annuus</i>	Stored products	Ukraine	Poland	1
	<i>Hordeum vulgare</i>	Stored products	Czech Republic	Poland	1
	<i>Hordeum vulgare</i>	Stored products	Slovakia	Poland	1
	<i>Triticum aestivum</i>	Stored products	Czech Republic	Poland	1

- Fruit flies**

Pest	Consignment	Country of origin	C. of destination	nb
<i>Bactrocera</i>	<i>Mangifera indica</i>	Malaysia	France	1
	<i>Psidium guajava</i>	Thailand	France	1
	<i>Syzygium jambos</i>	Vietnam	France	1
<i>Ceratitis</i>	<i>Annona muricata</i>	Guinea	France	1
<i>Ceratitis capitata</i>	<i>Citrus nobilis</i>	Spain	Poland	6
	<i>Citrus nobilis</i> , <i>C. limon</i> , and other <i>Citrus</i> , <i>Cucumis sativus</i>	Spain	Poland	1
Tephritidae	<i>Citrus reticulata</i>	South Africa	Netherlands	1
	<i>Mangifera indica</i>	Mexico	France	1

- Wood**

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Insect galleries	Unspecified wood	Palettes	China	Belgium	2
<i>Monochamus</i>	Conifer	Wooden crates	China	Ireland	3
	Unspecified hardwood and softwood	Wood	China	Ireland	1
<i>Penicillium digitatum</i>	<i>Quercus robur</i>	Wood	Ukraine	Poland	1
Scolytidae	Conifer	Wooden crates	China	Ireland	3
Scolytidae (suspect <i>Monochamus</i>)	Conifer	Wooden crates	China	Ireland	1
Scolytidae, <i>Monochamus</i>	Conifer	Wooden crates	China	Ireland	1
<i>Tetropium, Tomicus piniperda</i>	<i>Abies</i>	Wood	Russia	Poland	1

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- **Bonsais**

United Kingdom has intercepted 4 consignments of bonsai plants (*Ligustrum*, *Serissa foetida*, *Serissa* sp.) from China because of the presence of: *Helicotylenchus dihystra*, *Rhizoecus* sp., *Rhizoecus hibisci*; and one consignment of *Serissa* plants re-exported from the Netherlands infested by *Rhizoecus hibisci*. In Italy, it has recently been reported (Pellizzari & Vettorazzo, 1999) that *Lopholeucaspis japonica* was intercepted in March 1999, at the port of Venezia, on *Acer* bonsai plants imported from China.

Source: **EPPO Secretariat, 1999-11.**
NPPO of Hungary, 1999-09.
Pellizzari, G.; Vettorazzo, M. (1999) Intercettazione di *Lopholeucaspis japonica* su bonsai importati dalla Cina.
Informatore Fitopatologico, no. 10, 17-18.

99/184 PQR Version 3.9 is now available.

The updated version of PQR (version 3.9), the EPPO database on plant quarantine, has just been released. It contains information on geographical distribution, host plants, scientific and common names of quarantine pests listed by EPPO and the European Union. Data on pests of quarantine interest to other Regional Plant Protection Organizations (RPPOs), addresses of National Plant Protection Organizations (NPPOs) and RPPOs, membership of RPPOs are also included.

PQR version 3.9 can be downloaded freely from the EPPO web site (www.eppo.org), or can be obtained on diskettes from the EPPO Secretariat, 1 rue Le Nôtre, 75016 Paris, France. The annual registration fee for PQR on diskettes is 50 EUR.

Source: **EPPO Secretariat, 1999-11.**

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98/185 New FAO/IPGRI Technical guidelines for the safe movement of
germplasm: Potato

A new FAO/IPGRI Technical guideline for the safe movement of germplasm is now available for potato. This guideline gives details on diseases which are likely to be transported by exchanges of potato germplasm. Information is given on symptoms, geographical distribution, significance, host range, transmission and treatments to be used in order to ensure safe movement of potato material. For example information is available on the following EPPO quarantine pests: potato spindle tuber viroid, potato Andean latent tymovirus, potato Andean mottle comovirus, Arracacha B nepovirus - oca strain, beet curly top curtovirus, potato T trichovirus, potato yellow dwarf nucleorhabdovirus, potato yellow vein disease, potato yellowing alfamovirus, tomato black ring nepovirus, tomato spotted wilt tospovirus, potato deforming mosaic disease, potato stolbur phytoplasma, potato purple-top wilt phytoplasma, *Ralstonia solanacearum*, *Clavibacter michiganensis* subsp. *sepedonicus*.

So far, FAO/IPBRI have published guidelines for 17 different crops: *Allium* spp. (published in 1997), cassava (1991), citrus (1991), cocoa (1989), coconut (1993), edible aroids (1989), *Eucalyptus* spp. (1996), grapevine (1991), legumes (1990), *Musa* spp. (2nd edition 1989), small fruits (1994), small-grain temperate cereals (1995), sugarcane (1993), stone fruits (1996), sweet potato (1989), vanilla (1991), yam (1989).

They can be obtained from: Publications Office, IPGRI Headquarters
Via delle Sette Chiese 142
00145 Rome
Italy

A Web site on the Internet, also provides details on all FAO/IPGRI publications concerning germplasm health at the following address: <http://www.cgiar.org/ipgri/publicat/quara.htm>

Source: **EPPO Secretariat, 1999-10**

Additional key words: publication

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99/186 The BioPesticide Manual

The first edition of the BioPesticide Manual has recently been published by BCPC. It is divided into five sections according to the type of biopesticide:

- Natural products (30 naturally-occurring chemicals which have been commercialised for use in crop protection strategies)
- Pheromones (45 pheromones used in mating disruption, lure and kill, or insect monitoring strategies)
- Living systems (60 baculoviruses, protozoa, bacteria, fungi, and nematodes widely used in crop protection)
- Insect predators (40 insects (predators and parasites) that are commercially sold and used to control insects and mites in glasshouse and field crops)
- Genes (information on genes (and their gene products) which have been used to transform crops)

For each entry, information is provided on the nature, origin, mode of action, use, commercial availability, mammalian toxicology and environmental impact.

EPPO welcomes the publication of this manual, which is the first of which we are aware that presents biological control agents as commercial products for practical use. The information provided largely fills the need defined by the EPPO Panel on Introduction of Biological Control Agents for fact sheets on the extent and safety of practical use of such agents.

The first edition of the BioPesticide Manual edited by L.G. Copping (1998) is available from:

BCPC Publication Sales
Bear Farm, Binfield, Bracknell,
Berks RG 42 5QE
United Kingdom

Tel: +44 118 934 2727 - Fax: +44 118 934 1998

E-mail: publications@bcpc.org

Internet: www.bcpc.org

Price: 85 GBP in the UK including postage or 135 Euro (90 GBP, 155 USD) elsewhere.

Source: **EPPO Secretariat, 1999-08.**

Additional key words: new publication