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Reporting

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CONTENTS

99/034 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

Aphelenchoides besseyi (EPPO A2 quarantine pest) is reported for the first time in Turkey, in 1995, on rice plants and seeds grown in Ipsala (near Edirne) and Gönen (near Balikesir - both in Marmara region). Nematological abstracts, 67(4), p 222 (1847).

Cowpea mild mottle carlavirus (EU Annex I/A1) occurs in Jordan. It was isolated from aubergines (*Solanum melongena*) showing mild leaf mosaic (Mansour *et al*., 1998).

Potato spindle tuber viroid (PSTVd - EPPO A2 quarantine pest) occurs in Belarus. It is reported that PSTVd is widespread in Belarus and up to 30 % of the plants can be infected. Review of Plant Pathology, 78(1), p 62 (475).

Detailed records

Bemisia tabaci biotype B (also referred to as *B. argentifolii* - EPPO A2 quarantine pest) is newly reported to occur in: American Samoa, Fiji, Marshall islands, Niue, Northern Mariana islands, and French Polynesia (Tahiti). Review of Agricultural Entomology, 87(2), p 149 (1104).

Elsinoe fawcettii (EU Annex II/A1) occurs on citrus in Cheju island, Korea Republic. Review of Plant Pathology, 78(2), p 197 (1466).

Impatiens necrotic spot tospovirus (EPPO A2 quarantine pest) has been observed for the first time on cyclamen plants in Veneto, Italy. Review of Plant Pathology, 78(2), p 217 (1606).

Liriomyza sativae (EPPO A1 quarantine pest) occurs in Zhejiang province, China. The pest damages vegetable field crops (aubergines, Chinese cabbages, faba beans, lettuces, and melons). Review of Agricultural Entomology, 87(1), p 72 (550).

Phyllocnistis citrella occurs on citrus in Espirito Santo, Brazil. Review of Agricultural Entomology, 87(1), p 94 (707).

Phytophthora cinnamomi (EU Annex II/B) was found for the first time on avocado (*Persea americana*) in Italy, in spring 1998. Symptoms were observed in an experimental field near Rocca di Caprileone, in Sicily. Review of Plant Pathology, 78(2), p 198-199 (1476).

Scirtothrips dorsalis (EPPO A1 quarantine pest) occurs in Rajasthan, India. Review of Agricultural Entomology, 87(2), p 201 (1490).

New data on grapevine yellows

Molecular studies (RFLP analysis of PCR-amplified 16S rDNA) showed that Virginia grapevine yellows phytoplasma is distinct from all other phytoplasmas studied. There was no evidence of grapevine flavescence dorée (EPPO A2 quarantine pest), bois noir or Australian grapevine yellows phytoplasmas in Virginia (US). Review of Plant Pathology, 78(2), p 194 (1445).

Surveys were carried out during 1995 in 5 German vineyards to determine the host plants of *Hyalesthes obsoletus* (vector of Vergilbungskrankheit, VK - grapevine yellows). Hosts plants were *Convolvulus arvensis*, *Urtica dioica*, *Artemisia vulgaris*, *Senecio erucifolius*, *Ranunculus bulbosus* and *Solanum nigrum*. Vineyards with a high abundance of *C. arvensis* showed a high level of infection (30-34 %) of *H. obsoletus* by VK. Review of Plant Pathology, 78(2), p 194 (1447).

Source:

EPPO Secretariat, 1999-02.
Nematological abstracts, 67(4). December 1998.
Review of Agricultural Entomology, 87(1 & 2). January & February 1999.
Review of Plant Pathology, 78(1 & 2). January & February 1999.

Mansour, A.; Al-Musa, A.; Vetten, H.J.; Lesemann (1998) Properties of a cowpea mild mottle virus (CPMMV) isolate from eggplant in Jordan and evidence for biological and serological differences between CPMMV isolates from leguminous and solanaceous hosts.
Journal of Phytopathology, 146(11-12), 539-547.

Additional key words: new records, detailed records

Computer codes: APLOBE, BEMIAR, CPMMOX, ELSIFA, INSVXX, LIRISA, PHYNCI, PHYTCN, POSTXX, SCITDO, AS, BR, BY, CN, FJ, IN, IT, JO, KR, MH, MP, NU, PF, TR

99/035 APS Conference: new data

By browsing through the abstracts of papers presented at the APS/ESA Joint Annual Meeting (Las Vegas, US, 1998-11-08/12), the EPPO Secretariat has extracted the following data concerning quarantine pests or pests of potential quarantine interest.

Citrus mosaic disease. It has previously been reported that citrus mosaic disease (EU Annex II/A1) is associated with a badnavirus (EPPO RS 96/137). This disease is widely distributed in India, especially on sweet orange (*Citrus sinensis*) and pummelo (*C. grandis*). Studies made in quarantine conditions in Florida (US) showed that an Indian isolate of citrus mosaic badnavirus could be experimentally transmitted with *Planococcus citri* to sweet orange seedlings (S31).

Claviceps africana. Details are given on the spread of *Claviceps africana* in Mexico. In addition to Guanajuato, Jalisco, Michoacan and Tamaulipas, the fungus also occurs in San Luis Potosi, Sinaloa and Veracruz states (S.123).

Ditylenchus dipsaci. *Ditylenchus dipsaci* (EPPO A2 quarantine pest) occurs in lucerne crops in Colorado, US (S107).

Peach X-disease phytoplasma. A new outbreak of western-X disease (caused by peach X-disease phytoplasma - EPPO A1 quarantine pest) is reported in cherry orchards near Placerville, in California (US). In June 1997, symptoms were observed and the presence of the phytoplasma was confirmed by PCR (using specific primers). Disease incidence was 4% in one orchard, 13-17% in several orchards and up to 50% in two others. Control measures including timely insecticide applications against leafhopper vectors and sanitation were applied (S91).

Xanthomonas axonopodis* pv. *dieffenbachiae. Field studies have shown that *Xanthomonas axonopodis* pv. *dieffenbachiae* (EPPO A1 quarantine pest) can survive over a period of 6 months in leaf and petiole tissues left on the surface or buried in the field. The pathogen remained viable and infectious even after decomposition of tissues. The bacterium could also

be isolated from root tissues, which identifies roots of systemically-infected anthurium as a potential inoculum source after that diseased plants have been removed from the field (S23).

Source: de Tomasel, C.M.; McIntyre, G.A. (1998) Distribution and biology of *Ditylenchus dipsaci* and *Aphelenchoides ritzema-bosi* in Colorado (S107).

Duffy, B.K. (1998) Field survival of the anthurium blight pathogen, *Xanthomonas campestris* pv. *dieffenbachiae*, in crop debris (S23).

Garnsey, S.; Behe, C.G.; Lockhart, B.E. (1998) Transmission of citrus yellow mosaic badnavirus by the citrus mealybug (S43).

Uyemoto, J.K.; Moratorio, M.S. (1998) A new outbreak of western-X disease in cherry orchards in California (S91).

Velasquez-Valle, R.; Odvody, G.; Isakeit, T.; Williams, H. (1998) Spread of sorghum ergot in the USA and Mexico (S123).
Abstracts of papers presented at the APS/ESA Joint Annual Meeting, Las Vegas, US, 1998-11-08/12. Phytopathology, 88(9), Supplement, 144 pp.

Additional key words: biology, detailed records

Computer codes: CLAVAF, CSMXXX, DITYDI, PCXXXX, XANTDF, MX, US

99/036 New data on geminiviruses

By browsing through the abstracts of papers presented at the APS/ESA Joint Annual Meeting (Las Vegas, US, 1998-11-08/12), the EPPO Secretariat has extracted the following data concerning geminiviruses[*].

- Bean calico mosaic geminivirus which was found on bean in Sonora, Mexico, is considered as a distinct virus. It is most closely related to the geminivirus cluster including squash leaf curl, cabbage leaf curl and Texas pepper geminiviruses (S11a).

- Koch's postulates have been verified for chino del tomate geminivirus. It is a distinct geminivirus with closest affiliation to the Abutilon mosaic geminivirus cluster (S11b).

- Tabasco pepper plant samples showing leaf distortion and yellow mottle symptoms were collected from several farms in the south-west region of Costa Rica. Molecular studies showed that it could possibly be a new geminivirus. It is transmitted by *Bemisia tabaci* biotype B. It has been tentatively called pepper yellow mottle geminivirus (S21).

- Three whitefly-transmitted geminiviruses were identified on tomatoes in Puerto Rico during 1991-1998. These viruses are transmitted by *Bemisia tabaci* biotype B.
  - Merremia mosaic geminivirus (previously known to cause a yellow mosaic on the weeds *Merremia quinquefolia* and *M. aegyptia*)
  - Potato yellow mosaic geminivirus
  - Tomato mottle geminivirus (S42).

Source:

Brown, J.K.; Ostrow, K.M.; Idris, A.M.; Stenger, D.C. (1998) Biotic, molecular and phylogenetic characterization of bean calico mosaic geminivirus. S11 (a).

Brown, J.K.; Ostrow, K.M.; Idris, A.M.; Stenger, D.C. (1998) Molecular characterization and Koch's postulates for chino del tomate geminivirus with purified virions and full-length infectious clones. S11 (b).

de la Torre, R.; Lotrakul, P.; Valverde, R.; Sim, J.; Gomez, A. (1998) Identification of a geminivirus infecting pepper in Costa Rica. S21.

Idris, A.M.; Lee, S.H.; Lewis, E.A.; Bird, J.; Brown, J.K. (1998) Three tomato-infecting begomoviruses from Puerto Rico. S42.
Abstracts of papers presented at the APS/ESA Joint Annual Meeting, Las Vegas, US, 1998-11-08/12. Phytopathology, 88(9), Supplement, 144 pp.

[*] For more information on tomato geminiviruses in the Americas see also EPPO RS 98/044.

99/037 *Unaspis citri* occurs in São Miguel island, Azores (Portugal)

Unaspis citri (EPPO A1 quarantine pest) was recorded for the first time in the island of São Miguel, Azores (Portugal) in the 1920s and caused at that time serious damage to citrus. In PQR (EPPO database on quarantine pests), *U. citri* was considered as 'found in the past but not established' in the Azores, as no further information was given since this old report. However, a recent publication indicates that this is not the case and that *U. citri* is established in the island of São Miguel. It is reported that *Lepidosaphes beckii* and *Unaspis citri* are the most abundant armoured scale species in citrus orchards (representing 80 % of the total frequency of Homoptera, Coccoidea) and that chemical treatments are applied regularly. Studies have also showed that *Encarsia citrina* contributes considerably to the biological control of *Lepidosaphes beckii* and *Unaspis citri*.

Source: Soares; A.O.; Elias, R.B.; Schanderl, H. (1997) *Encarsia citrina* (Crawford) (Hymenoptera, Aphelinidae) a parasitoid of *Unaspis citri* (Comstock) and *Lepidosaphes beckii* (Newman) (Homoptera, Diaspididae) in citrus orchards of São Miguel island (Azores).
Boletin de Sanidad Vegetal. Plagas, 23(3), 449-456.

Additional key words: detailed record **Computer codes:** UNASCI, PT

99/038 Peach latent mosaic viroid occurs in China

In China, cuttings were collected in a peach orchard (*Prunus persica* cv. Okubo) in Liaoning province, in September 1996. These cuttings were tested on the indicator plant *P. persica* GF 305 and also by a molecular hybridization technique (dot-blot with digoxigenin-labelled riboprobe). Peach latent mosaic viroid (EPPO A2 quarantine pest) was detected in 9 out of the 14 peach samples from Liaoning province. This finding confirms an earlier report of peach latent mosaic viroid from China.

Source: Turturo, C.; Minafra, A.; Ni, H.; Wang, G.; Di Terlizzi, B.; Savino, V. (1998) Occurrence of peach latent mosaic viroid in China and development of an improved detection method.
Journal of Plant Pathology, 80(2), 165-159.

Additional key words: new record **Computer codes:** PCLMXX, CN

99/039 *Bactrocera tryoni* is absent from and has never been present in Tasmania (AU)

In the recently published 'Distribution Maps of Quarantine Pests for Europe', *Bactrocera tryoni* (EPPO A1 quarantine pest) is given as 'Present, no details' in Tasmania (AU). The EPPO database PQR (version 3.7) has equivalent information. The second edition of 'Quarantine Pests for Europe' refers to the situation as 'recently found in Tasmania, where it is now under eradication'. All these records are incorrect, and EPPO is officially informed by the Australian NPPO that *B. tryoni* is absent from and has never been found in Tasmania.
This error arose from an incorrect abstract, published in the Review of Applied Entomology and on CABPESTCD, of an article by Dadour *et al*. (1992) in Journal of Economic Entomology. This original article referred to eradication of *B. tryoni* in southwestern Australia, not in Tasmania.
The absence of *B. tryoni* in Tasmania has been recognized by the USA, Japan and other countries.

Source: **NPPO of Australia, 1999-03.**

Additional key words: absence **Computer codes:** DACUTR, AU

99/040 Quarantine treatment of blueberries against *Bactrocera tryoni*

The efficacy of cold storage of blueberries against *Bactrocera tryoni* (EPPO A1 quarantine pest) was tested in Australia. *Vaccinium ashei* and *V. corymbosum* were artificially infested with immature stages of *B. tryoni* and stored at 1.0 ± 0.2°C for several days. It was observed that the 1st instar larva is the most cold-tolerant life stage. It was also shown that cold storage at 1°C for 12 days was an effective quarantine treatment, as **no** larvae out of 100.000 tested was able to survive.

Source: Jessup, A.J.; Sloggett, R.F.; Quinn, N.M. (1998) Quarantine disinfestation of blueberries against *Bactrocera tryoni* (Frogatt) (Diptera: Tephritidae) by cold storage.
Journal of Economic Entomology, 91(4), 964-967.

Additional key words: quarantine treatment **Computer codes:** DACUTR

99/041 News from CPPC: *Trogoderma granarium* absent from Venezuela, *Phyllocnistis citrella* found in Grenada

Trogoderma granarium (EPPO A2 quarantine pest) is **not** present in Venezuela. This statement is made on the basis of surveys carried by officers of the Plant Health Service at storehouses in different cities of the country between January and March 1998.

Phyllocnistis citrella was observed for the first time in Grenada in August 1998. Preliminary data showed that the citrus leaf miner is present in almost all citrus-growing areas of the country.

Source: Pollard, G.V. (1998) Absence of kapra beetle in Venezuela. Citrus leaf miner, *Phyllocnistis citrella*.
CPPC Circular Letter, no. 3/98, 1st December 1998. FAO Sub Regional Office for the Caribbean, Barbados.

Additional key words: absence, new record **Computer codes:** PHYNCI, TROGGA, GD, VE

99/042 Details on *Cacyreus marshalli* in France

Cacyreus marshalli (EPPO A2 quarantine pest), a pelargonium pest, was first found in France in the département of Pyrénées Orientales (south of France) in 1997 (EPPO RS 98/080). It is now present around the Mediterranean coast in the following départements: Alpes-Maritimes, Aude and Hérault. Data is still lacking to assess its potential for establishment in France. However, it seems that climatic conditions in the Mediterranean area are favourable to the survival of *C. marshalli* during winter. In northern parts of France, it can develop under glasshouse conditions. It is also noted that, in many cases, pelargonium plants are kept indoors by gardeners and this may ensure survival of the pest during winter. In order to avoid further spread it is necessary to verify that the insect (eggs and larvae) is not present on plants and cuttings sent to areas where it is still absent. It is also noted that chemical control is difficult, as larvae live inside the plants, and this renders eradication difficult.

Source: Germain, J.F. (1999) Un nouveau ravageur des 'géraniums' en France. Les chenilles de *Cacyreus marshalli* Butler s'attaquent aux hybrides de *Pelargonium* cultivés.
Phytoma - La Défense des Végétaux, no. 513, 53-55.

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

99/043 Details on *Frankliniella occidentalis* and *Globodera rostochiensis* in Japan

In Japan, during a survey on Thysanoptera carried out in 1997 near sea ports and airports, *Frankliniella occidentalis* (EPPO A2 quarantine pest) was found at Otaru port, Hokkaido. It is recalled that *F. occidentalis* was first reported in Japan in 1990, in Honshu (Chiba and Saitama prefectures) and in Hokkaido in 1996 (Masumoto *et al*., 1998).

Globodera rostochiensis (EPPO A2 quarantine pest) was reported for the first time in Nagasaki prefecture in 1992, Kyushu, Japan. It was previously reported only from Hokkaido. The pathotype present in Nagasaki Prefecture was Ro1, as in Hokkaido (Aihara *et al*., 1998).

Source: Masumoto, M.; Kitagawa, K.; Iwaizumi, R.; Oda, Y. (1998) Thysanoptera collected form port area at east Japan. II. Hokkaido.
Research Bulletin of the Plant Protection Service Japan, no. 34, 59-61.

Aihara, T.; Sumiya, T.; Suzuki, K. (1998) [Studies on the pathotype of the potato cyst nematode (*Globodera rostochiensis*) in Nagasaki prefecture.]
Research Bulletin of the Plant Protection Service Japan, no. 34, 71-79.

Additional key words: detailed records **Computer codes:** FRANOC, HETDRO, JP

99/044 A new chestnut yellows observed in Italy

In Italy in summer 1996, an unusual vegetative disorder was observed on 2 contiguous chestnut trees (*Castanea sativa*) growing on the slopes of the Apennino Tosco-Emiliano (orchard of Monte Romano, Brisighella, Province of Ravenna, Emilia-Romagna). Affected trees showed leaf interveinal chlorosis. On one tree, half of the canopy was affected, showing a striking yellow colour. Leaves also showed brownish desiccated margins, generally curling down. Twigs were shortened, leading to some cases to formation of rosettes (but no witches' broom). Fruiting was severely impaired. Other trees showing symptoms were later seen (1996-97) in the same orchard of Monte Romano (20 trees affected and some were dying), and also a few kilometres away, on the same slopes of the Apennino (Marradi and Borgo San Lorenzo, Province of Firenze, Toscana). Surprisingly, similar symptoms were seen 300 km away in the region of Trentino-Alto Adige, along the national road 349 connecting Trento to the plateau of Lavarone, near the locality of Centa San Niccolò, and the plateau of Tesino near the village of Pieve Tesino. Preliminary attempts to detect phytoplasmas in diseased trees

failed. Considering the severe effects on the fruiting and survival of chestnut trees, the authors stressed that further studies will be carried out to clarify the etiology of this disorder and to determine its extent in Italy.

Source: Mittempergher, L.; Sfalanga, A; (1998) Chestnut yellows: a new disease for Europe.
Phytopathologia mediterranea, 37(3), 143-145.

Additional key words: new pest **Computer codes:** IT

99/045 Introduction of *Vaccinium* pests in Italy: *Dasineura oxycoccana* and aphids

Vaccinium corymbosum (highbush blueberry - a North American species) has been introduced into Italy in 1963, and is now grown on 104.5 ha (of which 58 ha are located in Piemonte). In Europe, V*. corymbosum* is essentially cultivated in Germany, France, Netherlands, Poland and Romania. Other cultivated *Vaccinium* of North American origin are *V. ashei* (rabbit eye blueberry) and *V. macrocarpa* (cranberry). In 1996, unusual damage on a few *V. corymbosum* crops and in a nursery specialized in the production of *V. corymbosum* and *V. ashei* was reported in Piemonte, and the presence of *Dasineura oxycoccana* (Diptera, Cecidomyiidae) was observed. *D. oxycoccana* (cranberry tip worm or cranberry midge) is a north American pest of *Vaccinium*. Eggs are laid near the young buds. Larvae of *D. oxycoccana* feed inside vegetative meristems and cause leaf distortion, blackening and death of young buds. Serious attacks on vegetative parts can affect the next season's harvest, as infested bushes develop fewer blossoms. Larvae then pupate in the soil. Several overlapping generations can be observed per year. So far, only damage on vegetative parts has been observed in Italy (as in north-eastern USA). However, another type of damage is observed in south-eastern USA (e.g. in Florida) as larvae appearing earlier in the year can attack flowering buds (20-80 % of the buds can be destroyed). This is the first report of *D. oxycoccana* in Italy and in Europe.

It is also interesting to note that in Piemonte during studies made in 1997 on *V. corymbosum* in the province of Cuneo, and in a nursery in the province of Torino (producing *V. corymbosum*, *V. ashi* and *V. angustifolium* (lowbush blueberry) and *Vaccinium* hybrids) that the following 'new' aphid species were identified (Barbagallo *et al*., 1998).

- *Ericaphis scammelii*: present in several states in USA and Canada, introduced into the Netherlands and UK (reported there under the name *Fimbriaphis fimbriata* ssp. *pernettyae*, which is considered as a synonym). It is a new species for Italy.
- *Illinoia azaleae*: originates from North America, considered as sub-cosmopolitan. Previously reported in Italy on protected azalea. It is noted that another species *Illinoia pepperi* is a vector of blueberry shoestring sobemovirus which does not occur in Italy.

- *Aulacorthum circumflexum*: already present in Italy and other European countries but on other host plants.

Source: Barbagallo, S.; Bosio, G.; Brussino, G.; Scarpelli, F. (1998) [Aphids infesting cultivated blueberries and cranberries in Italy.]
Informatore Fitopatologico, no.10, 65-71.

Bosio, G.; Bogetti, C.; Brussino, G.; Gremo, F.; Scarpelli, F. (1998) [*Dasineura oxycoccana*, a new pest of blueberry (*Vaccinium corymbosum*) in Italy.]
Informatore Fitopatologico, no.11, 36-41.

Additional key words: new records **Computer codes:** DASYVA, MYZYCI, IT

99/046 Examples of direct damage of *Frankliniella occidentalis* to outdoor crops in Europe

Frankliniella occidentalis (EPPO A2 quarantine pest) is a very polyphagous pest which transmits viruses (e.g. tomato spotted wilt tospovirus) and causes direct damage to crops. In Europe, it is generally found on glasshouse vegetables and ornamentals but in southern countries direct damage and losses are also reported on several outdoor crops such as strawberries, melons, tomatoes, aubergines, pepper and fruit crops. Some examples of direct damage are given below.

Table grapes
In Italy, it is reported that since 1989-90, *F. occidentalis* is the second most important pest (after *Lobesia botrana*) of table grapes (Moleas *et al*., 1996), particularly in Puglia and Sicilia. Damage is caused by oviposition at flowering which then causes lesions on the berries. This type of damage is also observed in France, notably on white cultivars grown under protected conditions (Grasselly, 1996).

Peaches, nectarines and apricots
In southern France particularly in Roussillon (Grasselly, 1986), damage on peach has been reported since 1988. Peach is the most severely attacked stone-fruit crop. Feeding damage is caused to the epidermis of peaches and nectarines ('silvering'), usually just before harvest. This type of damage is also oberved in Italy (Guarino & Tocci, 1995). In hot regions of Spain (e.g. in the Valle del Guadalquivir) severe losses have been observed on nectarines (Gonzàlez *et al*., 1994). As the thrips can also attack trees during flowering, flower abortion, fruit deformation and discoloration (russeting) are observed (in addition to silvering which is observed when nearly mature fruit are infested). In Israel, *F. occidentalis* is reported as seriously retarding the vegetative growth of apricot trees of most cultivars in all growing

areas, especially in nurseries (Klein *et al*., 1995). Larvae feed within the apical buds which cause abnormal leaves, and loss of apical dominance. New branches have shortened internodes and infested buds may die early in the summer. No damage on apricot fruit was observed.

Apples

In southern France (Grasselly, 1986), damage is occasionally reported on apples, essentially on the cultivar Granny Smith. Damage is caused by oviposition on the young fruit which induces necrotic spots surrounded by a white halo.

Sunflower

Severe damage on commercial sunflower crops (*Helianthus annuus*) was reported in 1992-93 in Israel (Chyzik *et al*., 1995). Adults of *F. occidentalis* appeared at the beginning of flowering and population decreased towards completion of anthesis, and they damaged kernels.

Source:

Gonzàles, E.; Alvarado, M.; Berlanga, E.; Serrano, A.; de la Rosa, A. (1994) Damage to nectarines caused by thrips in the Guadalquivir Valley.
Boletin de Sanidad Vegetal, Plagas, 20(1), 229-241.

Grasselly, D. (1996) Le thrips *Frankliniella occidentalis* en cultures légumières et fruitières. Description des dégâts directs.
Phytoma - La Défense des Végétaux, no. 482, 42-43.

Guarino, F.; Tocci, A. (1995) *Frankliniella occidentalis* on peach and nectarine in Calabria (south Italy).
Bulletin OILB-SROP, 18(2), 21-23.

Klein, M.; Chyzik, R.; Ben-Dov, Y.; (1995) The western flower thrips *Frankliniella occidentalis* damages the vegetative growth of apricot trees in Israel.
Alon Hanotea, 49(12), 540-544.

Moleas, T.; Baldacchino, F.; Addante, R. (1996) Integrated control of *Frankliniella occidentalis* (Pergande) on table grapes in 1992-94.
Difesa delle Piante, 19(1), 41-48.

Additional key words: damage **Computer codes:** FRANOC

99/047 Epidemiological studies on *Xanthomonas arboricola* pv. *pruni*

In Italy, *Xanthomonas arboricola* pv. *pruni* (EPPO A2 quarantine pest) has caused severe outbreaks with heavy losses on plum (*Prunus domestica*) and peach (*P. persica*), in the Po Valley and north-eastern areas. In the fruit-growing areas of the Po Valley, it has been observed that summer cankers on plum trees provide important overwintering sites and sources of inoculum for 2 to 3 years on peaches. However in other regions, severe outbreaks have been observed even in the absence of this summer canker phase. It is noted that in France, where the disease has recently been found (see EPPO RS 97/112), cankers are also rarely seen. Therefore, studies were carried in two peach orchards near Verona on the overwintering of *X. arboricola* pv. *pruni* in infected fallen leaves, terminal and axillary buds and leaf scars. Survival of the bacterium in the field was studied by using resistant mutants (to antibiotics), inoculated to branches, buds, and leaf scars of peach trees (*P. persica* cv. Elegant lady). This survival was assessed by periodic reisolation onto appropriate growing medium from plant samples (buds/leaf scars) and from debris of infected leaves present on the soil. Results showed that the bacterium can be recovered from infected fallen leaves, buds and leaf scars, up to 6-7 months after contamination. In these fields, no cankers were observed during summer. The authors concluded that buds, leaf scars and infected leaf debris on the soil can provide overwintering sites and potential sources of inoculum for primary infections.

Source: Zaccardelli, M.; Malaguti, S.; Bazzi, C. (1998) Biological and epidemiological aspects of *Xanthomonas arboricola* pv. *pruni* on peach in Italy.
Journal of Plant Pathology, 80(2), 125-132.

Additional key words: epidemiology, biology **Computer codes:** XANTPR

99/048 Studies on *Erwinia amylovora* strains from the Euro-Mediterranean region

Using classical assays (serology, biochemistry, DNA hybridization, host range tests), *Erwinia amylovora* (EPPO A2 quarantine pest) appeared as an homogeneous species. However, by using other techniques such as PFGE (pulsed-field gel electrophoresis) of genomic DNA, strains of *E. amylovora* from the Euro-Mediterranean countries could be differentiated into 5 groups according to their types of PFGE patterns. Several strains from different European and Mediterranean countries: Albania (1 strain), Austria (2), Bulgaria (2), Croatia (3), Czechia (1), Egypt (2), France (3), Germany (1), Greece (3), Hungary (6), Israel (4), Italy (9), Spain (1), Switzerland (3) were analysed. Strains from eastern Europe were placed into the same group (Pt2) with a few exceptions (1 strain from Bulgaria and 2 from Israel). Strains from Austria and Czechia belonged to the Central European type (Pt1). Strains from Italy could be

divided into 3 groups: patterns similar to those observed for strains from northern France (Pt3), Mediterranean region (Pt2) and Central Europe (Pt 1). The authors felt that further work on a greater number of strains is needed to try to understand better the spread of *E.amylovora* and how it is locally distributed in Europe.

Source: Zhang, Y.; Merighi, M.; Bazzi, C.; Geider, K. (1998) Genomic analysis by pulsed-field gel electrophoresis of *Erwinia amylovora* strains from the Mediterranean region including Italy.
Journal of Plant Pathology, 80(3), 225-232.

Additional key words: genetics **Computer codes:** ERWIAM

99/049 Laboratory studies on *Monochamus alternatus* and *M. carolinensis*

Laboratory studies were carried out to compare oviposition and longevity of *Monochamus alternatus* and *M. carolinensis* (both EPPO A1 quarantine pests), which are vectors of *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest). Mated and unmated females were reared in the laboratory. Results showed that *M. alternatus* females lived longer than *M. carolinensis* and that *M. carolinensis* deposited a greater number of eggs per day. Unmated females for both species lived longer than mated females but laid fewer eggs per day (resulting in a higher fecundity for mated females). The distribution of eggs was similar between the two species, and between mated and unmated females. The majority of oviposition sites contained a single egg. The authors concluded that the abundant egg laying capacity of unmated *Monochamus* females could have implications for the introduction of *B. xylophilus*. The possible introduction of unmated females on wood consignments cannot lead to the establishment of insect populations (eggs are not fertile), but the introduction of nematodes remains a possibility. It is stated that studies are under way to determine whether transmission of pinewood nematode dispersal juveniles is possible through oviposition wounds made by unmated *Monochamus* females.

Source: Zang, X.; Linit, M.J. (1998) Comparison of oviposition and longevity of *Monochamus alternatus* and *M. carolinensis* (Coleoptera: Cerambycidae) under laboratory conditions.
Environmental Entomology, 27(4), 885-891.

Additional key words: biology **Computer codes:** BURSXY, MONCAL, MONCAA

99/050 Specific identification of coconut tinangaja viroid

Tinangaja is a lethal disease of coconut palm which was first described in 1917 in Guam. This disease resembles coconut cadang-cadang which occurs in the Philippines and is caused by coconut cadang-cadang viroid (CCCVd - EPPO A1 quarantine pest). Coconut tinangaja viroid (CTiVd) is associated with tinangaja disease, although it has not been verified that inoculation of this viroid causes the disease. These two viroids although similar (65% homology) are distinct. It is reported that since the early outbreaks of tinangaja, coconut groves have been neglected on Guam, and the disease has not been considered as economically important. However, a high incidence of tinangaja has again been observed in some areas of Guam. Therefore, there is a need for adequate diagnostic methods to understand better the epidemiology of the disease and develop control measures. A method has been developed to detect and identify CTiVd in leaf samples. Detection is based on extraction from plant tissues followed by agarose gel electrophoresis. Confirmation of the identity of CTiVd (and also detection of low levels of viroid) is achieved by using molecular techniques (DOP-hybridization (diagnostic oligonucleotide probe) or RT-PCR). This procedure can also be used for CCCVd, and oligoprobes designed to be specific for either CCCVd and CTiVd can distinguish between the two viroids in coconut leaf extracts.

Source: Hodgson, R.A.J.; Wall, G.C.; Randles, J.W. (1998) Specific identification of coconut tinangaja viroid for differential field diagnosis of viroids in coconut palm.
Phytopathology, 88(8), 774-781.

Additional key words: detection and identification methods **Computer codes:** CCCVd, CTiVd

99/051 Evaluation method for teliospores of *Tilletia indica*, *T. controversa* and *T. barclayana* in the soil

A simple and reliable method to evaluate the presence of teliospores of *Tilletia indica* (EPPO A1 quarantine pest), *T. controversa* (EPPO A2 quarantine pest) and *T. barclayana* in soil was developed in USA. This method is based on successive filtration of soil put into suspension and centrifugation in a sucrose solution. With this method, teliospores of *T. indica*, *T. controversa*, and *T. barclayana* could be recovered, with a spore density as low as 10 teliospores per gram of soil. No significant difference in recovery rates of teliospores was obtained between the three *Tilletia* species. Formulas were proposed to estimate the actual numbers of spores in naturally infested soils (as a function of the number of teliospores recovered from soil by this method).

Source: Babadoost, M.; Mathre, D.E. (1998) A method for extraction and enumeration of teliospores of *Tilletia indica*, *T. controversa*, and *T. barclayana* in soil.
Plant Disease, 82(12), 1357-1361.

Additional key words: detection method **Computer codes:** NEOVIN, TILLCO

99/052 EPPO report on selected intercepted consignments

The EPPO Secretariat has gathered the intercepted consignment reports:
1) for **1998** received since the previous report (EPPO RS 99/032) from the following countries: France, Greece, Netherlands, Romania.
2) for **1999** received from the following countries: Denmark, Estonia, Finland, France, Greece, Ireland, Israel, Netherlands, Norway, Portugal, 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.

♦ 1998 interceptions (remainder)

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Bemisia tabaci	*Anubias barteri*	Aquarium plants	Spain (Canary isl.)	France	1
	Anubias congensis	Aquarium plants	Spain (Canary isl.)	France	1
	Anubias nana	Aquarium plants	Spain (Canary isl.)	France	1
	Asclepias	Cut flowers	Israel	France	1
	Echinodorus cordifolius	Aquarium plants	Spain (Canary isl.)	France	1
	Echinodorus	Aquarium plants	Singapore	France	1
	Eryngium foetidum	Leaves	Thailand	France	1
	Eryngium	Cut flowers	Thailand	France	1
	Gypsophila	Cut flowers	Israel	France	1
	Gypsophila	Cut flowers	Israel	Portugal	1
	Hemigraphis exotica	Plants for planting	Spain (Canary isl.)	France	1
	Hibiscus sabdariffa	Leaves	Togo	France	1
	Hygrophila angustifolia	Aquarium plants	Indonesia	France	1
	Hygrophila polysperma	Aquarium plants	Singapore	France	2
	Hygrophila salicifolia	Aquarium plants	Singapore	France	3
	Hygrophila siamensis	Aquarium plants	Malaysia	France	1
	Hygrophila siamensis	Aquarium plants	Singapore	France	2
	Hygrophila stricta	Aquarium plants	Indonesia	France	1
	Hygrophila	Aquarium plants	Malaysia	France	1
	Manihot esculenta	Vegetables	Cameroon	France	1
	Ocimum basilicum	Vegetables	Israel	France	2
	Rosa	Cut flowers	Israel	France	1
Clavibacter michiganensis* subsp. *sepedonicus	*Solanum tuberosum*	Ware potatoes	Germany	Netherlands	6
Frankliniella occidentalis, Thrips tabaci	*Rosa*	Cut flowers	South Africa	Portugal	1
Liriomyza sativae	*Ocimum basilicum*	Vegetables	South Africa*	France	1
	Ocimum basilicum	Vegetables	Thailand	France	2
***Liriomyza* sp.**	*Ocimum basilicum*	Vegetables	Dominican Rep.	France	1
	Ocimum basilicum	Vegetables	Egypt	France	1
	Ocimum basilicum	Vegetables	Israel	France	2
	Ocimum basilicum	Vegetables	Morocco	France	4
	Phaseolus	Vegetables	Togo	France	1
	Solanum	Vegetables	Togo	France	1
Ralstonia solanacearum	*Solanum tuberosum*	Ware potatoes	Egypt	Greece	3
Thrips palmi	Orchidaceae	Cut flowers	Singapore	France	2
	Orchidaceae	Cut flowers	Thailand	France	2
Thysanoptera	*Dianthus*	Cut flowers	Ecuador	France	1
	Momordica charantia	Vegetables	Thailand	France	2
	Orchidaceae	Cut flowers	Singapore	France	3
Xanthomonas campestris* pv. *citri	*Citrus hystrix*	Fruits	Thailand	France	1

- **Fruit flies**

Pest	Consignment	Country of origin	C. of destination	nb
Bactrocera	*Psidium guajava*	Thailand	France	1
Ceratitis capitata	*Mangifera indica*	South Africa	France	1
Tephritidae	*Mangifera indica*	Mauritius	France	1

♦ 1999 interceptions

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
***Bemisia* sp.**	*Gardenia jasminoides*	Plants for planting	Sri Lanka	Denmark	1
Bemisia tabaci	*Alternanthera*	Aquarium plants	Singapore	Denmark	1
	Crossandra infundibuliformis	Cuttings	Sri Lanka	Denmark	2
	Dendranthema	Cut flowers	Netherlands	Ireland	4
	Eryngium	Cut flowers	Thailand	France	2
	Eustoma russelianum	Cut flowers	Israel	United Kingdom	3
	Fuchsia	Cuttings	Israel	United Kingdom	2
	Fuchsia	Plants for planting	Israel	United Kingdom	2
	Helianthus	Cut flowers	Israel	United Kingdom	1
	Hygrophila	Aquarium plants	Singapore	Denmark	1
	Hygrophila	Aquarium plants	Singapore	United Kingdom	1
	Hygrophila salicifolia	Aquarium plants	Malaysia	France	1
	Hygrophila salicifolia	Aquarium plants	Singapore	France	1
	Hygrophila stricta	Aquarium plants	Singapore	France	1
	Hypericum	Cut flowers	Israel	United Kingdom	2
	Hypericum androsaemum	Cut flowers	Israel	United Kingdom	1
	Leaves	Vegetables	Nigeria	United Kingdom	2
	Ludwigia	Cuttings	Singapore	United Kingdom	1
	Pelargonium	Cuttings	Israel	United Kingdom	1
	Solidago	Cut flowers	Israel	Ireland	2
	Solidago	Cut flowers	Israel	United Kingdom	6
	Solidago	Cut flowers	Netherlands	Ireland	2
	Solidago	Cut flowers	Netherlands	United Kingdom	2
	Solidago	Cut flowers	(Netherlands)	United Kingdom	2
	Solidago	Cut flowers	Turkey	United Kingdom	1
	Solidaster	Cut flowers	Israel	United Kingdom	1
	Trachelium	Cut flowers	Israel	United Kingdom	1
	Trachelium	Cut flowers	Netherlands	United Kingdom	2
	Verbena	Plants for planting	Israel	United Kingdom	1
Bemisia tabaci, Liriomyza	*Aster*	Cut flowers	Israel	United Kingdom	1
	Solidago	Cut flowers	Israel	United Kingdom	1
Bemisia tabaci, Liriomyza, Hymenia recurvalis	Leaves	Vegetables	Nigeria	United Kingdom	1
***Bemisia tabaci,* Noctuidae**	*Fuchsia*	Cuttings	Israel	United Kingdom	1
***Corynespora* sp.**	*Ocimum basilicum*	Vegetables	Thailand	United Kingdom	1
Dialeurodes citri	*Gardenia*	Plants for planting	USA	United Kingdom	1
Ditylenchus dipsaci	*Narcissus*	Bulbs	United Kingdom	Netherlands	4

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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Frankliniella occidentalis	*Cyclamen*	Pot plants	Denmark	Estonia	1
	Saintpaulia ionantha	Pot plants	Netherlands	Estonia	1
***Globodera* sp.**	*Solanum tuberosum*	Ware potatoes	Sweden	Finland	1
Helicoverpa armigera, Liriomyza	Leaves	Vegetables	Nigeria	United Kingdom	1
Liriomyza huidobrensis	*Allium fistulosum*	Vegetables	Zimbabwe*	United Kingdom	2
	Apium graveolens	Vegetables	Spain	United Kingdom	1
	Bupleurum	Cut flowers	Netherlands	United Kingdom	1
	Carthamus	Cut flowers	Israel	United Kingdom	2
	Carthamus	Cut flowers	Kenya*	United Kingdom	1
	Celosia	Cut flowers	Israel	United Kingdom	1
	Coriandrum sativum	Vegetables	Cyprus	United Kingdom	1
	Dendranthema	Cut flowers	Netherlands	United Kingdom	1
	Eustoma gentianaceae	Cut flowers	Kenya	United Kingdom	1
	Gypsophila	Cut flowers	Ecuador	United Kingdom	1
	Lysimachia	Cuttings	Portugal	United Kingdom	1
	Pisum sativum	Vegetables	Guatemala	United Kingdom	2
	Spinacia oleracea	Vegetables	Cyprus	United Kingdom	1
	Torenia fournieri	Cuttings	Netherlands	United Kingdom	1
	Trigonella foenum-graecum	Vegetables	Cyprus	United Kingdom	1
Liriomyza sativae	*Ocimum basilicum*	Vegetables	Thailand	France	2
	Ocimum sanctum	Vegetables	Thailand	France	1
***Liriomyza* sp.**	*Carthamus*	Cut flowers	Israel	United Kingdom	2
	Coriandrum sativum	Vegetables	USA	United Kingdom	1
	Gypsophila	Cut flowers	Israel	United Kingdom	2
	Gypsophila	Cut flowers	Netherlands	United Kingdom	2
	Lactuca	Vegetables	USA	United Kingdom	1
	Ocimum basilicum	Vegetables	Israel	France	1
	Ocimum basilicum	Vegetables	Thailand	Denmark	2
	Spinacia oleracea	Vegetables	Cyprus	Denmark	1
Liriomyza* sp., *B. tabaci	*Ocimum basilicum*	Vegetables	Thailand	Denmark	1
	Solidago	Cut flowers	Israel	United Kingdom	1
Liriomyza trifolii	*Argyranthemum frutescens*	Cuttings	Costa Rica	United Kingdom	1
	Aster	Cut flowers	Israel	United Kingdom	1
	Gypsophila	Cut flowers	Israel	United Kingdom	1
***Meloidogyne* sp.**	*Rosa*	Plants for planting	Denmark	Norway	2
Parabemisia myricae	*Murraya*	Vegetables	Ghana*	United Kingdom	1
Quadraspidiotus perniciosus	*Pyrus communis*	Fruits	Spain	Israel	2
Ralstonia solanacearum	*Solanum tuberosum*	Ware potatoes	Egypt	United Kingdom	1
	Solanum tuberosum	Ware potatoes	Syria*	Greece	1

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Thrips palmi	*Momordica*	Vegetables	India	United Kingdom	2
	Momordica	Vegetables	Thailand	United Kingdom	1
	Orchidaceae	Cut flowers	Thailand	Denmark	3
	Ornamentals	Cut flowers	Thailand	Finland	1

- **Fruit flies**

Pest	Consignment	Country of origin	C. of destination	nb
Bactrocera	*Mangifera indica*	French Polynesia	France	1
	Mangifera indica	Sri Lanka	France	1
***Ceratitis* sp.**	*Mangifera indica*	Kenya	France	2
	Syzygium javanica	Côte d'Ivoire	France	1

- **Bonsais**

8 consignments of bonsai plants (*Carmona*, *Gingko*, *Ilex*, *Ligustrum*, *Loropetalum*, *Podocarpus*, *Serissa*, *Zelkova*) from China were intercepted by United Kingdom (7) and Portugal (1) because of the presence of the following pests: *Dialeurodes*, *Helicotylenchus dihystera*, *Helicotylenchus* sp., *Rhizoecus hibisci*, *Saissetia neglecta*, *Tinocallis takachihoensis*

99/053 XIVth International Plant Protection Congress

The XIVth International Plant Protection Congress (Plant Protection towards the third millennium - where chemistry meets ecology) will be held in Jerusalem, Israel, on the 1999-07-25/30. The main topics will be the following:

1. IPM toward the 21st century: strategies and technologies
2. IPM implementation programs, difficulties and achievements
3. Ecological issues in plant protection
4. Biotechnology in plant protection
5. Resistance to pesticides: evolution and management
6. Innovative approaches in pesticide chemistry and chemical ecology
7. Technology for optimization of pesticide application
8. Regulations and risk assessment
9. Eco-toxicology and fate of pesticides in the environment

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Final date for registration at reduced fee (410 USD) is 1999-04-15.

Source: EPPO Secretariat, 1999-03.

Additional key words: conferences **Computer codes:**