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CONTENTS

97/184 First report of *Puccinia horiana* in Crete, Greece

In late winter 1995, a severe attack of *Puccinia horiana* (EPPO A2 quarantine pest) was observed on chrysanthemum grown in a glasshouse close to Fodele village in Heraklio, Crete (GR). Since then, the pathogen spread to other areas in the island, causing severe damage. It can be noted that the disease is absent in other parts of Greece. This is the first report of *Puccinia horiana* in Greece.

Source: Vakalounakis, D.J. (1997) First record of *Puccinia horiana* on *Dendranthema* x *morifolium* in Greece.
Bulletin OEPP/EPPO Bulletin, 27(2) in press.

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

97/185 First report of plum pox potyvirus in the Azores, Portugal

In 1996, a survey has been carried out in the islands of Terceira and Graciosa, Azores (PT) on the phytosanitary status of stone fruit crops. DAS-ELISA tests were performed to determine the presence or absence of plum pox potyvirus (EPPO A2 quarantine pest), prune dwarf ilarvirus, prunus necrotic ringspot ilarvirus and apple chlorotic leaf spot trichovirus. It was not surprising to find some positive samples for prune dwarf ilarvirus, prunus necrotic ringspot ilarvirus and apple chlorotic leaf spot trichovirus, but the finding of plum pox potyvirus was an unexpected result. The virus was essentially detected in young plants, suggesting a recent introduction. It can be recalled that the disease was found for the first time in mainland Portugal in 1984. This is the first report of plum pox potyvirus in the Azores (Terceira and Graciosa).

Source: Mendonça, D.; Lopes, M.S.; Laimer da Câmara Machado, M.; da Câmara Machado, A. (1997) Diagnosis of viral diseases in stone fruits cultivated in the Azorean islands Terceira and Graciosa.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 40.

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

97/186 Characterization of the sweet cherry isolate of plum pox potyvirus

Until recently, cherry trees were considered resistant to plum pox potyvirus (PPV – EPPO A2 quarantine pest), but a sour cherry strain of PPV has recently been characterized on plant material from Moldova (EPPO RS 96/149). In southern Italy, a natural infection was also reported on sweet cherry (EPPO RS 94/144). This sweet cherry isolate (PPV-SwC) has been characterized and results of biological, serological and molecular studies showed that PPV-SwC is different from conventional strains of PPV (PPV-D, PPV-M) but closely related to the sour cherry isolate of PPV from Moldova. The authors noted that their results give further support to the hypothesis that cherry isolates of PPV are members of a different strain group for which the name PPV-C (cherry) has been proposed.

Source: Crescenzi, A.; d'Aquino, L.; Comes, S.; Nuzzaci, M.; Pizazzolla, P.; Boscia, D.; Hadidi, A. (1997) Characterization of the sweet cherry isolate of plum pox potyvirus.
Plant Disease, 81(7), 711-714.

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

97/187 Plum pox potyvirus in cherry in eastern Europe

After the first report of plum pox potyvirus in cherry in Moldova (in 1989) and later in Bulgaria (in 1992), this virus was also included in regular serological screening of cherry mother trees in Hungary since 1992 (Kölber *et al.*, 1997). During a five-year survey, approximately 4000 sweet cherry trees (including 22 cultivars), 5000 sour cherry trees (including 16 cultivars) and rootstocks were tested by ELISA. As a result, 385 out of more than 9000 tested trees gave positive results by ELISA. Some of the trees which gave high ELISA values were indexed on peach GF305 and GF31 in the field or in the greenhouse. In spring 1997, slight leaf symptoms appeared only on one GF 305 indicator plant (out of four) for one ELISA positive cherry tree of cultivar Van. This cultivar, as well as several other sweet and sour cherry cultivars, were then found to be infected with PPV in spring 1997 by ELISA, RT-PCR and IC-RT-PCR.

The Hungarian isolate from sweet cherry cv. Van was studied by molecular techniques and it was shown that it belonged to the established PPV-C subgroup (Nemchinov *et al*., 1997). It is felt that PPV-C may be more widespread in eastern Europe than was originally thought.

Source: Kölber, M.; Németh, M.; Papp., E.; Kiss, E.; Pocsai, E.; Hangyal, R.; Tokes, G.; Krizbai, L.; Bereczki, Zs.; Szonyegi, S.; Pete, A.; Vollent, A.; Takacs, M.; Bencze, E.; Mero, F.; Hajnoczy, G.Y.; Imre, P. (1997) Five-year study for the determination of eventual occurrence of plum pox virus in cherry cultivars in Hungary.
Abstract of a poster presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 132.

Nemchinov, L.; Kölber, M.; Németh, M.; Hadidi, A. (1997) Molecular evidence for the occurrence of plum pox virus-C subgroup in Hungary.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 54.

Additional key words: detailed record **Computer codes:** PLPXXX

97/188 Monoclonal antibodies specific to M or D serotypes of plum pox potyvirus

European isolates of plum pox potyvirus (PPV - EPPO A2 quarantine pest) fall into two main groups which can be differentiated because of molecular properties (electrophoretic mobility of dissociated coat protein, restriction site polymorphism in the coat protein gene). These PPV groups, originating from Eastern and Western Europe, respectively, proved to be related to the PPV serotypes M and D. Specific detection of the different serotypes is important as their epidemiology differs. PPV-M is more aggressive on peach, and spreads more rapidly in orchards. It is readily transmitted by aphids to peach, plum and apricot, whereas PPV-D is little or not transmissible to and between peach trees. So far, specific monoclonal antibodies were only available for PPV-D. However, recently, a monoclonal antibody to an Albanian isolate of PPV was obtained and it specifically recognizes PPV-M.

Source: Boscia, D.; Zeramdini, H.; Cambra, M.; Potere, I.; Gorris, M.T.; Myrta, A.; Di Terlizzi, B.; Savino, V. (1997) Production and characterization of a monoclonal antibody specific to the M serotype of plum pox potyvirus.
European Journal of Plant Pathology, 103(5), 477-480.

Additional key words: detection methods **Computer codes:** PLPXXX

97/189 Characterization of plum pox potyvirus isolates in Romania and Czech Republic

Studies on the characterization of plum pox potyvirus isolates (PPV - EPPO A2 quarantine pest) were carried out in Romania and Czech Republic.

In Romania, in the region of north Transylvania (Bistrita Nasaud, Cluj, Suceava), samples of plum trees (*Prunus domestica*) showing visible symptoms on the leaves were collected and studied. On the 14 samples tested, 5 contained PPV strain M, others contained PPV strain D (Ravelonandro & Minoiu, 1997).

In Czech Republic, 83 representative PPV isolates collected from different hosts and fruit growing areas were tested by ELISA-DASI using different monoclonal antibodies. Ten PPV isolates were recognized as PPV-M. 72 isolates were recognized at least by one of the PPV-D specific monoclonal antibodies. Only one PPV-M/PPV-D mixed infection was observed (Navratil *et al*., 1997).

Source: Ravelonandro, M.; Minoiu, M. (1997) Characterization of plum pox potyvirus infecting plum trees in north Transylvania and north Moldova of Romania.
Abstract of a poster presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 133.

Navratil, M.; Paprstein, F.; Karesova, R. (1997) Detection and serological identification of plum pox virus isolates in the Czech Republic.
Abstract of a poster presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 137.

Additional key words: detailed record **Computer codes:** PLPXXX, CZ, RO

97/190 Situation of plum pox potyvirus in France

Plum pox potyvirus (PPV - EPPO A2 quarantine pest) was first found in France in the 1970s, and was probably introduced on infected plant material. The serotype detected was PPV-D, and was mainly affecting apricot orchards. At the end of the 1980s, despite strict eradication measures an upsurge of the disease was observed particularly in peach orchards, and a new serotype was identified (PPV-M). From 1973 to 1990, it is estimated that 91,854 *Prunus* trees have been destroyed (as a curative or preventive measure). In France, PPV is mainly present in the south-east. Three regions are concerned: Languedoc-Roussillon, Provence-Alpes-Côte d'Azur and Rhône-Alpes. When considering the number of affected trees during the last five years, after a progression in 1993, the situation appeared stable in 1994 with a significant reduction in 1995 (-23 %). However in 1996, the incidence of the disease rose again, essentially because of a sharp increase in the Rhône-Alpes region where most contaminations were due to PPV-M. In Provence-Alpes-Côte d'Azur, disease incidence decreased and the situation was rather variable in Languedoc-Roussillon, depending on the foci studied. Intensive surveys and official control of the disease will continue in France.

Source: Ferreira, B.; Volay, T. (1997) La sharka: une maladie d'actualité. Le point sur les situations régionales.
Phytoma – La Défense des Végétaux, no. 496, 13-16.

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

97/191 Situation of plum pox potyvirus in Valencia, Spain

Plum pox potyvirus (PPV- EPPO A2 quarantine pest) was first detected in Spain in 1984 on Japanese plum (*Prunus salicina* cv. Red Beaut) grown in Sevilla, Murcia and Valencia and on peach (cv. Rojo del Rito) grown in Lerida. So far, only PPV-D isolates have been found in Spain. In the Valencia region, a significant spread of PPV has been observed since 1988, with severe losses, particularly in early apricot cultivars. Between 1991 and 1996 more than 600,000 infected trees (apricots and Japanese plums) were removed in Valencia, but spread of the disease was not restrained. However, it is noted that peach trees are scarcely affected by PPV. This situation in Valencia might be explained by different factors: 1) PPV was first introduced on Japanese plum, which was a new natural host at that time, and this probably allowed the disease to spread for several years without being noticed; 2) PPV is not causing significant symptoms and losses in Japanese plum fruits, which rendered early eradication more difficult; 3) in Valencia region, there is a predominance of small plots where Japanese plum, apricot and peach are grown together, within a large area of extensive citrus cultivation, which implies a great abundance of aphid vector populations.

Source: Llácer, G.; Cambra, M. (1997) Thirteen years of sharka disease in Valencia, Spain.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 32.

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

97/192 First findings of M isolates of plum pox potyvirus in Italy

In Italy, plum pox potyvirus (PPV - EPPO A2 quarantine pest) was detected for the first time in 1973 in apricots in Alto Adige. In Trentino, it was first observed in 1975 on apricot and plum. In this region, despite a strict programme of control, the disease continued to spread in plum orchards. The authors recalled that PPV isolates can be separated into three groups, although recently a fourth group concerning cherry isolates has been proposed. So far, PPV-D isolates have been found in: Austria, Czech Republic, France, Germany, Poland, Romania, Spain, and former Yugoslavia. PPV-M isolates are present in: Bulgaria, Cyprus, France, Germany, Greece, Hungary, Turkey and former Yugoslavia. The third group contains the El-Amar isolate which was found in Egypt. In Italy, until recently only PPV-D isolates were detected. PPV-M was found for the first time in 1995 and 1996 on peach in Veneto and Emilia-Romagna (Poggi-Pollini *et al*., 1996). Studies have been carried out in Trentino to characterize the isolates of PPV; and results showed that both PPV-D and PPV-M isolates could be detected on symptomatic plums (*Prunus domestica*). The authors noted that this is the first time that PPV-M isolates are detected on plum in Italy.

Source: Frishinghelli, C.; Grando, M.S.; Vindimian, M.E. (1997) La sharka: individuazione di isolati D e M del plum pox virus in Trentino.
Informatore Fitopatologico, no. 7-8, 61-63.

Poggi Pollini, C. Bissani, R.; Giunchedi, L.. Gambin, E.; Goio, P. (1996) [Sharka: discovery of a dangerous strain of the virus in peach crops.]
Informatore Agrario, 52(32), 77-79.

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

97/193 Genetic studies on peach yellow leaf roll phytoplasma

By using molecular techniques, significant advances have been made in the characterization of phytoplasmas affecting stone fruits. In Europe, most or all phytoplasma diseases of stone fruits are caused by a relatively homogeneous pathogen, the European stone fruit yellows phytoplasma (EPPO A2 quarantine pest). This pathogen is closely related to phytoplasmas inducing apple proliferation and pear decline, and it is considered that it belongs to the apple proliferation group.
In North America, the X-disease (peach X-disease phytoplasma is listed as an EPPO A1 quarantine pest) is thought to be induced by a highly variable pathogen whose numerous strains vary considerably in virulence, symptomatology, geographical distribution. Therefore, the various disease manifestations have been described under several names: X-disease,

western X-disease, eastern X-disease, cherry buckskin, peach yellow leaf roll, peach leaf casting yellows, etc. It has been shown that the phytoplasmas inducing typical X-disease in western and eastern USA and Canada are genetically similar. Most of these strains belong to a different phylogenetic cluster, the western X-disease phytoplasma group (which is distinct from the apple proliferation group).

Concerning peach yellow leaf roll disease, it appeared in previous studies that different phytoplasmas could be involved. In California, one form of the disease is caused by a strain of the X-disease phytoplasma (called WX1 strain), but it was observed that two strains from peach trees also showing symptoms of peach yellow leaf roll were closely related to the European fruit tree phytoplasmas of the apple proliferation group. Studies were therefore carried out to compare the genetic relationships between isolates of peach yellow leaf roll phytoplasma from California and phytoplasmas causing fruit tree diseases in Europe, by using molecular techniques (PCR, RFLP, Southern blot). Twelve diseased peach trees showing typical peach yellow leaf roll symptoms were sampled in October 1993 in four orchards located in the Sacramento valley, California (US). Results showed that peach yellow leaf roll phytoplasma is closely related to apple proliferation, pear decline and European stone fruit yellows phytoplasmas, and that it is a member of the apple proliferation group. The peach yellow leaf roll phytoplasma could be clearly distinguished from the apple proliferation and the European stone fruit yellows phytoplasmas (by RFLP of ribosomal DNA and by Southern blot) but was indistinguishable from the pear decline phytoplasma (by RFLP of ribosomal DNA).

The authors noted that this is not the first time that two genetically different pathogens (the peach yellow leaf roll phytoplasma and the WX1 strain from peach showing symptoms of peach yellow leaf roll) are able to cause similar symptoms. This is also observed in grapevine where grapevine flavescence dorée phytoplasma (member of the elm yellows group) and the phytoplasmas causing bois noir or Vergilbungskrankheit, which are closely related to or identical with the stolbur phytoplasma (members of the aster yellows group), induce very similar symptoms.

Source: Kison, H.; Kirkpatrick, B.C.; Seemüller, E. (1997) Genetic comparison of the peach yellow leaf roll agent with European fruit tree phytoplasmas of the apple proliferation group.
Plant Pathology, 46(4), 538-544.

Additional key words: genetics **Computer codes:** APPXXX, PRDXXX, PCXXX

97/194 Situation of peach mosaic in North America

As reported previously in EPPO RS 96/175, the American peach mosaic disease is not caused by peach latent mosaic viroid (EPPO A1 quarantine pest – quarantine status under review). Peach mosaic might be associated with an uncharacterized flexuous virus (James & Howell, 1997). Peach mosaic disease was initially discovered in 1931 in the Western USA (Texas and Colorado), and later in the states of California, Utah, New Mexico, Arizona and also in nearby Mexico. It only affects *Prunus* species: *P. persica* (peach), *P. persica* var. *nectarina* (nectarine), *P. dulcis* (almond), *P. armeniaca* (apricot), *P. besseyi*, *P. serrulata* and several species of plum. The main affected hosts are peaches and nectarines. Peach mosaic retards bud development in spring, deforms flower petals and causes flower breaking, foliar mosaic, leaf deformation, shoot rosetting. Diseased fruits are deformed (bumpy) and cannot be marketed. A rapid spread of the disease was observed during 1932-1935, especially in California and Colorado. Quarantine programmes were started in 1936. Spread of peach mosaic to peach production regions situated in the east of the Mississippi river could be prevented, but total tree losses in California and Colorado before 1995 exceeded 390,000 trees. Then, a decrease in incidence was observed. For example in Colorado, annual tree losses dropped below 1,000 in 1960, below 100 in 1969, below 10 in 1982, below one in 1983, and finally to zero in 1987. In Colorado, the only documented incidence since 1987 occurred in 1991. It is felt that the current rarity of the disease reflects the success of the control programme. The situation in Mexico where no such programme was applied, is quite different and symptomatic trees were commonly observed as recently as in 1993 (Larsen, 1997; Larsen *et al.*, 1997).

Source:

James, D.; Howell, W.E. (1997) Identification of a flexuous virus associated with peach mosaic disease.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 75.

Larsen, H.J. (1997) Impact and control of peach mosaic in North America.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 72.

Larsen, H.J; Hatch, A.H.; Yu, K.S. (1997) Expression of peach mosaic symptoms in nectarine and peach cultivars.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 74.

Additional key words: detailed record **Computer codes:** PCLMXX, MX, US

97/195 New diseases of fruit trees

At the ISHS International Symposium on virus diseases of fruit trees (Bethesda, US, 1997-06-23/27), the following new or newly characterized diseases of fruit trees were reported.

- **Cherry A capillovirus**

Cherry A capillovirus has recently been identified and characterized as a new virus in sweet cherry. Preliminary surveys indicated a wide distribution of the virus in sweet cherry sources from Europe and Canada. However, no data are given on the impact of this virus. (James & Jelkmann, 1997; Eastwell & Bernardy, 1997)

- **Olive witches' broom disease**

A new olive disorder has recently been reported in Central Italy. Diseased plants showed dwarfed branches with shortened internodes, leaf deformation and chlorosis, proliferation of axillary buds with witches' broom. Phytoplasmas were detected in affected trees. Preliminary investigations on the entomofauna revealed the presence of several potential vectors of phytoplasmas, including some specimens of the genus *Hyalesthes* (known to be a vector of phytoplasmas). This disease has been observed in many olive orchards in central Italy, and is causing severe economic problems (Del Serrone & Barba, 1997).

- **Stocky prune nepovirus**

In several regions of south-western France, a disease of plum characterized by shortened internodes in spring, chlorotic and rolled leaves, small fruits which drop rapidly has been observed for a long time, particularly on Prune d'Ente (used for dried prune production). This disease has a limited impact and geographical distribution. It has been diversely named: stocky prune disease, dégénérescence du Prunier d'Ente, maladie du prunier stérile, maladie des pruniers mâles, maladie de Brugères. Epidemiological observations indicated that a soil-borne virus could be responsible of the disease. Recent studies have shown that a previously unknown virus is associated with the disease, it has been characterized and the name stocky prune nepovirus has tentatively been proposed (Candresse *et al*., 1997).

Source: Candresse, T.; Desvignes, J.C.; Delbos, R.P.; LeGall, O.; Dunez, J. (1997) Characterization of stocky prune virus, a new nepovirus detected in French plums. **Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 112-113.**

Del Serrone, P.; Barba, M. (1997) Olive witches' broom: a new olive disorder associated with phytoplasmas. **Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 119.**

Eastwell, K.C.; Bernardy, M.G. (1997) Relationship of cherry virus A to little cherry disease in British Columbia. **Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 118.**

James, D.; Jelkmann, W. (1997) Detection of cherry virus A in Canada and Germany. **Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 117.**

97/196 Survey on strawberry viruses in Yugoslavia

A survey on strawberry viruses was conducted in Yugoslavia. Strawberry plants showing virus-like disease symptoms were collected from the main strawberry-growing areas of Yugoslavia (Cacak, Grocka, Knjazevac, Leskovac, Smederevo, Sabac and Vranje). Samples were tested by leaf grafting, and subsequently for positive samples by aphid (*Chaetosiphon fragaefolii*) transmission to several *Fragaria vesca* and *F. virginiana* standard indicator clones. In addition, samples were tested by mechanical inoculation to standard herbaceous indicator plants, by ELISA and dsRNA analysis. Results showed that in four of the strawberry-growing areas, cultivars Senga Sengana and Cacanska Rana were most frequently infected with strawberry mottle virus (20/26 fields) and occasionally (3/26 fields) with strawberry crinkle cytorhabdovirus (EU Annex II/A2). In the Lesovac growing area, strawberry mild yellow edge potexvirus* (EU Annex II/A2) was detected in 16 % of the Senga Sengana tested samples. In Grocka and Smederevo fields most plants of the cultivars Cacanska Rana, Favette, Pocahontas and Senga Sengana showed pronounced and unusual symptoms (chlorotic vein streaking with chlorotic spots and rings on leaflets). Identification of the putative causal virus(es) is under way.

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* New record according to the EPPO Secretariat.

Source: Dulik-Markovic, I.; Rankovic, M.; Converse, R.H. (1997) Occurrence of strawberry viruses in Yugoslavia.
Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 107.

Additional key words: new record **Computer codes:** SYCXXX, SYMYAX, YU

97/197 Detailed records of virus diseases of small fruits

In the ISHS Newsletter on virus disease of small fruit crops, the following detailed occurrences (no new geographical record) were reported.

Arabis mosaic nepovirus (EU Annex II/A2) was found causing a severe disease in black currant crops in southern Ireland.

Tomato black ring nepovirus (EU Annex II/A2) was detected for the first time in red currant in England (GB).

In Czech Republic, the occurrence of arabis mosaic nepovirus (EU Annex II/A2), raspberry ringspot nepovirus, tomato black ring nepovirus (EU Annex II/A2) and strawberry latent ringspot nepovirus (EU Annex II/A2) was studied on raspberry and blackberry. 56 samples of cultivated and 85 samples of wild raspberries, as well as 10 samples of wild blackberries were tested by DAS-ELISA. Out of the 158 tested samples, 28 (18.7 %) were found infected with at least one nepovirus. It is noted that the results obtained gave the first evidence of the occurrence of arabis mosaic, raspberry ringspot, tomato black ring and strawberry latent ringspot nepoviruses in cultivated raspberries, and the first evidence of raspberry ringspot nepovirus on raspberries and blackberries in Czech Republic.

Source: ISHS Newsletter – Virus diseases of small fruit crops, compiled by Dr B. Martin. January 1996, 11 pp.

Additional key words: detailed records **Computer codes:** ARMXXX, SYLRSX, TMBRXX

97/198 Comparison between detection methods for citrus tristeza closterovirus

Comparison studies were made in California (US) on detection methods for citrus tristeza closterovirus (CTV - EPPO A2 quarantine pest) in field trees, in particular during months when the virus titer may be low. From May 1994 to October 1995, six sweet orange trees infected with CTV from each of 2 geographic areas (Riverside and San Joaquin Valley) were tested monthly by three different methods: ELISA, RT-PCR and immunocapture RT-PCR. It was observed that during August (San Jaoquin) and September (Riverside, San Joaquin) several citrus samples presented such a low virus titer that CTV was not reliably detected by ELISA, whereas the two PCR methods were effective. In addition, the best type of plant tissue to be sampled was studied. Petioles and mid-ribs gave satisfactory results for ELISA testing, while distal leaf tips did not always give a positive result. All tissues were adequate for PCR methods. This study shows the usefulness of PCR techniques during the months when virus titer is low, and in the detection of early infection which is a critical point in the virus management.

Source: Mathews, D.M.; Riley, K.; Dodds, J.A. (1997) Comparison of detection methods for citrus tristeza virus in field trees during months of nonoptimal titer.
Plant Disease, 81(5), 525-529.

Additional key words: detection methods **Computer codes:** CSTXXX

97/199 First reports of *Bactrocera dorsalis* in Palau and French Polynesia

Bactrocera dorsalis (EPPO A1 quarantine pest) was found for the first time in Palau in late September 1996, during an official survey on fruit flies. This report from the South Pacific Commission also mentions without further details the occurrence of *B. dorsalis* in French Polynesia (Tahiti and Moorea only) which is a new record according to the EPPO Secretariat.

Source: Allwood, A. (1997) Oriental fruit fly in Palau.
Ag-Alert, no. 17, 1997-06-10, South Pacific Commission, Fiji, 2 pp.

Additional key words: new records **Computer codes:** DACUDO, PF, PW

97/200 Details on *Bemisia argentifolii* in Bahia (Brazil)

In Brazil, in the state of Bahia, severe outbreaks of *Bemisia tabaci* biotype B (*B. argentifolii* – EPPO A2 quarantine pest) have recently been observed in various regions (Itaberaba, Iacú, Lençóis, Juazeiro, Guanambí and Barreiras). The pest is particularly damaging on cotton ; up to 26 insecticide applications per season have been made against it. In bean crops, it is estimated that the acreage has been reduced from 35.000 ha in 1995 to 25.000 ha at present. In cucurbit crops, losses of 50 to 100 % are observed. Tomatoes are also attacked. These severe losses are associated with very high level of populations of *B. tabaci* biotype B and the phytotoxic disorders it causes (e.g. irregular ripening of fruits). The transmission of geminiviruses is also a problem associated with *B. tabaci* biotype B.

Source: Anonymous (1997) Embrapa apóia a Bahia no controle da mosca branca.
Cenargenda, Embrapa, Brasília, no. 39, p 3.

Additional key words: new detailed record **Computer codes:** BEMIAR, BR

97/201 Irradiation against *Spodoptera litura*

Studies were conducted in Japan on the efficacy of irradiation against *Spodoptera litura* (EPPO A1 quarantine pest). Several stages of the insect (eggs, 3rd intar and 5th instar larvae) were irradiated at different doses (0, 100, 200, 300, 400 Gy). Results showed that a dose of 400 Gy inhibited hatching, larval growth and pupal development of *S. litura*. Although this dose did not always prevent the feeding of 5th instar larvae, no descendants could be obtained. As irradiation at 400 Gy does not cause severe damage to many varieties of cut flowers, the authors felt that irradiation at 400 Gy could be a useful quarantine treatment against *S. litura* on cut flowers.

Source: Dohino, T.; Masaki, S.; Takano, T.; Hayashi, T. (1996) Effects of electron beam irradiation of eggs and larvae of *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae).
Research Bulletin of the Plant Protection Service Japan, no. 32, 31-37.

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

97/202 Sulfuryl fluoride fumigation against wood pests

Studies were carried out in Japan on the efficacy of sulfuryl fluoride, as an alternative to methyl bromide fumigation, against 7 species of forest pests : *Semanotus japonicus*, *Callidiellum rufipenne*, *Monochamus alternatus* (EPPO A1 quarantine pest), *Cryphalus fulvus*, *Ips cembrae* (EU Annex II/B), *Phloeosinus perlatus*, *Sirahoshizo* sp. Five to seven different doses were applied at 15 °C during 24 h (larval, pupal and adults stages) and during 48 h (eggs). It was observed that the most resistant stage was the egg stage in all species, and the most resistant eggs were those of *Cryphalus fulvus*. It was estimated that in order to obtain 100 % mortality of *C. fulvus* eggs, the practical dose of sulfuryl fluoride should be at least 130 g/m^3 and applied for 24 h at 15 °C. However, it is felt that this high dose may not be practical in normal quarantine fumigation units and that further studies under higher temperatures or using mixtures with other fumigants are needed.

Source: Soma, Y.; Yabuta, S.; Mizoguti, M.; Kishino, H., Matsuoka, I; Goto, M.; Akagawa, T.; Ikeda, T.; Kawakami, F. (1996) Susceptibility of forest insect pests to sulfuryl fluoride. 1.Wood borers and bark beetles.
Research Bulletin of the Plant Protection Service Japan, no. 32, 69-76.

Additional key words: quarantine treatment **Computer codes:** IPSXCE, MONCAL