EPPO

Reporting

Service

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96/061 EPPO Electronic Documentation Service - update

In RS 96/021 we announced the new service developed by EPPO through its mailserver. We remind you that, to receive instructions, you should send to:
mail-server@eppo.fr
the message: SEND instructions.
To the current contents then available, we now add (in English and/or French, as indicated):

- EPPO Reporting Service for March 1996
  File names: rse-9603.doc, rsf-9603.doc
- EPPO Summary of the phytosanitary regulations of Russia
  File names: sue-ru.exe, suf-ru.exe
- EPPO Summary of the phytosanitary regulations of Ukraine
  File name: sue-ua.exe
- EPPO Summary of the phytosanitary regulations of Estonia
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- Text of the phytosanitary regulations of Estonia
  File name: pre-ee.exe

Please note that new texts and summaries of phytosanitary regulations will appear every month. They are also distributed on paper to the Plant Protection Services of EPPO member governments. They will eventually be compiled into a book which will be available for sale. For the moment, they are generally available only from the EPPO mailserver.

Source: EPPO Secretariat, 1996-04

96/062 *Tilletia indica* in United States

We publish here the NAPPO report concerning the first record of *Tilletia indica* (EPPO A1 quarantine pest) in United States.

'The U.S. Department of Agriculture in conjunction with the Arizona Department of Agriculture, announced on March 8, 1996, that Karnal bunt, a fungal disease of grain, was detected in durum wheat seed in the State of Arizona. Suspect seed samples were detected at a seed dealership during routine testing by the Arizona Department of Agriculture. After forwarding samples to the State's agricultural lab, USDA's Agricultural Research Service was given samples for final confirmation. The disease was confirmed as Karnal bunt on March 8, 1996.

Karnal bunt, or partial bunt, is a fungal disease of wheat, durum wheat, and triticale, a hybrid of wheat and rye. Infected plants produce less grain, and the quality of the grain itself is lessened. Typically, only a portion of the kernel is affected, which is why the disease is sometimes called partial bunt. The disease is caused by the smut fungus (*Tilletia indica* Mitra (also known as *Neovossia indica*) and is spread by spores. It has been reported in India, Pakistan, Afghanistan, Iraq, Brazil and Mexico. This is the first report from the United States.

Following the detection of Karnal bunt in Arizona, a scientific panel comprised of State, Federal and industry technical experts was convened to determine further actions. Investigators are tracing the source and distribution of all confirmed Karnal bunt positive seed while officers of USDA's Animal and Plant Health Inspection Service and State regulators impose the appropriate regulatory actions to prevent the further spread of Karnal bunt. A statewide survey of all Arizona wheat varieties continues.

As of March 20, 1996, Karnal bunt has been confirmed in four varieties of durum wheat: Reva, Durex, Ocotillo and Kronos, in Arizona. Two samples of wheat which originated in Arizona and were submitted to New Mexico's State Agriculture laboratory were also confirmed positive for Karnal bunt. One sample is from Durex variety seed that originated in Arizona and has been planted near Fabens, Texas. The second sample is from Durex variety seed that originated in Arizona and has been planted near Demming, New Mexico.

According to USDA's Economic Research Service's Wheat Yearbook, durum wheat is expected to account for 4.7 percent of the total wheat produced in the United States in fiscal year 1995-96.

Emergency quarantines have been issued to restrict the movement of seed, machinery, and soil from farms where the infected seed has been planted. State and Federal quarantines will be placed to augment this emergency action. In accordance with the International Plant Protection Convention, trading partners are being informed of the detection through the Food and Agriculture Organization (FAO) of the United Nations and NAPPO. A wheat export certification team has been established by APHIS/PPQ to develop options for dealing with potential trade issues. For further information, contact the Phytosanitary Issue Management Team, PPQ/APHIS, Riverdale, Maryland, telephone (301) 734-5261, and fax (301) 734-7639.'

Source: NAPPO Newsletter, 16 (2), in press.

Additional key words: new record **Computer codes:** NEOVIN, US

96/063 Situation of *Bactrocera carambolae* in Suriname, Guyana and French Guiana

Bactrocera carambolae (EPPO A1 quarantine pest) originates from south-east Asia but is now also present in French Guiana, Guyana and Suriname. *B. carambolae* was first found in Suriname in 1975, but was not identified until 1981. In 1981, it was considered as being a *Dacus* species, and in 1986 as *Dacus dorsalis*. Further studies revealed that it was not *Bactrocera* (*Dacus*) *dorsalis* but a close relative and the name carambola fruit fly was given. In 1994, Drew and Hancock revised the *B. dorsalis* complex and the name *B. carambolae* was proposed (see EPPO RS 95/049).

Surveys have been carried out by the Ministries of Agriculture respectively since 1986 in Suriname and 1987 in Guyana. Cooperation between the two countries started in 1993 and was extended to include French Guiana in 1995.

- In Suriname: *B. carambolae* was first found in the district of Paramaribo and Saramacca, and surveys soon revealed that the fruit fly occurred throughout most of the coastal area. It was then found in the Coronie district but is still absent from the Nickerie district. In the interior of the country, it is present up to Brokopondo Lake and in some villages along the Coppename, Wayambo and Corentyne rivers. High levels of populations were observed in Apura and Washabo, along the Corentyne river.
- In Guyana: since 1993, *B. carambolae* has been found occasionally in the villages of Siparuta and Orealla in the upper Corentyne river area, near Apura and Washabo (cities situated in Suriname).

- In French Guyana: *B. carambolae* is present throughout the coastal area of French Guiana and in some isolated villages in the interior of the country. It has been found along the Oyapuk river, which forms the border with Brazil.

During these surveys, the following information was also gathered on host plants.
Major hosts: carambola (*Averrhoa carambola*), Curacao apple (*Syzygium samarangense*).
Minor hosts: West Indian cherry (*Malpighia punicifolia*), mango (*Mangifera indica*), sapodilla (*Manilkara achras*), guava (*Psidium guajava*) and Indian jujube (*Zizyphus jujuba*).
Occasional hosts: cashew nut (*Anacardium occidentale*), star apple (*Chrysophyllum cainito*), sour orange (*Citrus aurantium*), grapefruit (*C. paradisi*), tangerine (*C. reticulata*), sweet orange (*C. sinensis*), Suriname cherry (*Eugenia uniflora*), moendoe (*Garcinia dulcis*), golden apple (*Spondias cytherea*), Malay apple (*Syzygium malaccense*) and tropical almond (*Terminalia catappa*).
Studies have also been conducted on wild forest fruits but until now no forest fruits have been found infested by *B. carambolae*. However, traps placed in forest areas of French Guiana have consistently detected low numbers of fruit flies.

To control *B. carambolae*, the male annihilation technique has been tested in Suriname and Guyana for several years with reasonable success. The authors considered that based on their experience of the past seven years, the spread of *B. carambolae* can be expected to other countries in South America, Central America and the Caribbean if no action is taken. They felt that a regional eradication programme based on the male annihilation technique should be implemented while the distribution of *B. carambolae* is still limited.

Source: van Sauers-Muller, A.; Vokaty, S. (1996) Carambola fruit fly projects in Suriname and Guyana.
CARAPHIN News, IICA, no. 13, 6-8.

Additional key words: detailed records **Computer codes:** BCTRCB, GF, GY, SR

96/064 Eradication of *Ceratitis capitata* in Chile

The EPPO Secretariat has been informed by IICA and the Plant Protection Service of Chile that *Ceratitis capitata* (EPPO A2 quarantine pest) has successfully been eradicated from Chile. Previously, the Mediterranean fruit fly was limited to the region of Arica (North of Chile) and was absent from the rest of the country (see EPPO RS 512/17, 1991). An eradication campaign was set up and included inspections of the infested areas, release of sterile fruit flies and chemical treatments. The last larvae were observed in April 1995. The last adult fly was caught in May 1995. Although the number of degree days would have allowed the development of 2 generations, *C. capitata* has never been found again since that date. The official authorities consider that Chile is now free from *C. capitata*.

Source: **IICA, Coronado (CR) and Plant Protection Service of Chile, 1996-02.**

Additional key words: eradication **Computer codes:** CERTCA, CL

96/065 Geographical distribution of *Bactrocera cucurbitae* and *Dacus ciliatus*

According to the recently published revision of CABI pest map no. 64, *Bactrocera cucurbitae* (EPPO A1 quarantine pest) occurs in the following countries or subnational units not previously known to the EPPO Secretariat: China (Guangxi, Yunnan), India (Andaman Islands, Karnataka, Maharashtra, West Bengal), Saudi Arabia.

According to the recently published revision of CABI pest map no. 323, *Dacus ciliatus* (EPPO A1 quarantine pest) similarly occurs in: Eritrea, India (Maharashtra, Uttar Pradesh), Iran, Lesotho, Myanmar, Rwanda and Togo. The record in Sri Lanka is a misidentification. Besides, the Plant Protection Service of Israel has recently reported a local outbreak of this pest at Neot Smadar in the Arava Valley (between the Dead Sea and the Red Sea). The pest is now under eradication.

Source: **CABI International.**
Plant Protection Service of Israel, 1996-03.

Additional key words: new records **Computer codes:** DACUCU, DACUCI

96/066 Development of traps for *Ceratitis capitata* and *Anastrepha ludens*

An insect trap for monitoring populations of *Ceratitis capitata* (EPPO A2 quarantine pest) and *Anastrepha ludens* (EPPO A1 quarantine pest) has been developed, tested in the field in Guatemala and compared with McPhail traps. This trap is constructed with clear plastic rolled into a cylinder which is painted (yellow, orange, or green), with entrance holes for the insects. Toxicant panels, painted and containing a pesticide (methomyl) and a feeding stimulant (sucrose), are placed at the two ends of the cylinder. The trap is also baited with a blend of ammonium acetate and putrescine (1,4 diaminobutane). The results showed that a combination of ammonium acetate and putrescine was better than one of these compounds alone. More female *C. capitata* were trapped in green traps than colourless traps, males were more attracted by yellow traps than by orange traps. Neither males or females of *A. ludens* differentiated between orange, green and yellow traps, but all were more attracted by any coloured traps than colourless traps. McPhail traps with standard protein bait captured more *A. ludens* than the plastic traps. But for *C. capitata* equivalent numbers were caught by McPhail and plastic traps. Nevertheless, the authors pointed out that plastic traps are much easier to handle than McPhail traps. In addition they are highly specific as they caught few non-target flies. During the field studies several other *Anastrepha* species were also captured: *A. obliqua*, *A. serpentina*, *A. fraterculus* and *A. striata*. **The EPPO Secretariat had previously no information of the occurrence of *A. striata* in Guatemala.**

Source: Heath, R.; Epsky, N.D.; Guzman, A.; Dueben, B.D.; Manukian, A.; Meyer, W.L. (1995) Development of a dry plastic insect trap with food-based synthetic attractant for the Mediterranean and Mexican fruit flies (Diptera: Tephritidae).
Journal of Economic Entomology, 88(5), 1307-1315.

Additional key words: new record, traps

Computer codes: ANSTFR, ANSTLU, ANSTOB, ANSTSE, ANSTST, GT

96/067 EPPO Distribution List of *Bactrocera cucurbitae*

Considering the new record of *Bactrocera cucurbitae* in Saudi Arabia, detailed information on its presence in China and India (EPPO RS 96/065), and its eradication from the Ryukyu islands in Japan (EPPO RS 94/220), the distribution list for *B. cucurbitae* is the following.

EPPO Distribution List: *Bactrocera cucurbitae*

EPPO region: Egypt (potential EPPO country).

Asia: Afghanistan, Bangladesh, Brunei Darussalam, Cambodia, China (Guangdong, Guangxi, Hainan, Jiangsu, Yunnan), Christmas Island, Hong Kong, India (Andaman Islands, Andhra Pradesh, Bihar, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal), Indonesia (Irian Jaya, Java, Kalimantan, Nusa Tenggara, Sulawesi, Sumatra), Iran, Lao, Malaysia (Peninsular, Sabah, Sarawak), Myanmar, Nepal, Oman, Pakistan, Philippines, Saudi Arabia, Singapore, Sri Lanka, Taiwan, Thailand, United Arab Emirates and Viet Nam.

Africa: Adventive populations in Egypt, Kenya, Mauritius, Réunion, Tanzania.

North America: USA, trapped in the wild in California, but eradicated; adventive populations in Hawaii, since the 1980s.

Oceania: Australia (records are mistaken, owing to confusion with *B. cucumis*), Guam (adventive populations), Kiribati, Nauru, Northern Mariana Islands (eradicated using the sterile insect technique, but re-established on Rota in 1981), Papua New Guinea (including New Britain, New Ireland and Bougainville Islands), Solomon Islands (established in the Shortland Islands group, where it has been subjected to an eradication campaign).

Source: EPPO Secretariat, 1996-04.

96/068 EPPO Distribution List for *Dacus ciliatus*

Due to the new records of *Dacus ciliatus* in Eritrea, Iran, Israel, Lesotho, Myanmar, Rwanda, Togo (EPPO RS 96/065), its distribution list can be modified as follows.

EPPO Distribution List: *Dacus ciliatus*

EPPO region: Egypt (potential EPPO country), Israel (under eradication).

Asia: Bangladesh (unconfirmed), India (Delhi, Gujarat, Himachal Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh), Iran, Myanmar, Pakistan, Saudi Arabia, Yemen.

Africa: Angola, Benin, Botswana, Cameroon, Cape Verde, Chad, Egypt, Eritrea, Ethiopia, Ghana, Guinea, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Réunion, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, St Helena (possibly interception only), Sudan, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe.

This distribution list replaces all previous published EPPO Distribution Lists on *Dacus ciliatus*!

Source: EPPO Secretariat, 1996-04.

96/069 EPPO Distribution List for *Ceratitis capitata, C. cosyra* and *C. rosa*

Due to the eradication of *Ceratitis capitata* in Chile (EPPO RS 96/064), and the modifications made by several EPPO countries during the validation of geographical data, the distribution of *C. capitata* can be modified as follows. We have also added the geographical distribution for *C. cosyra* and *C. rosa*.

EPPO Distribution List: *Ceratitis capitata*.

C. capitata originates in tropical Africa, from where it has spread to the Mediterranean area and to parts of Central and South America.

EPPO region: Southern part of the EPPO region, i.e. Albania, Algeria (potential EPPO country), Cyprus, Egypt (potential EPPO country), France (locally distributed in south only), Greece (including Crete), Israel, Italy (including Sardegna, Sicilia), Lebanon (potential EPPO country), Libya (potential EPPO country), Malta, Morocco, Portugal (including Azores and Madeira), Slovenia (locally), Spain (including Baleares, Canary Islands), Syria (potential EPPO country), Switzerland (locally), Tunisia, Turkey, Yugoslavia. Records in northern or central Europe refer to interceptions or short-lived adventive populations only (e.g. Austria, Germany, Hungary, Luxembourg, Netherlands, United Kingdom). Found in the past but eradicated in southern Ukraine.

Asia: Afghanistan, Cyprus, Israel, Jordan, Lebanon, Saudi Arabia, Syria, Turkey, Yemen.

Africa: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde Islands, Congo, Côte d'Ivoire, Egypt, Ethiopia, Gabon, Ghana, Guinea, Kenya, Liberia, Libya, Madagascar (also the related species *C. malgassa* Munro), Malawi, Mali, Mauritius, Morocco, Mozambique, Niger, Nigeria, Réunion, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, St Helena, Sudan, Tanzania, Togo, Tunisia, Uganda, Zaire, Zimbabwe.

North America: Bermuda (unconfirmed), Mexico (unconfirmed), USA (only Hawaii; introduced and eradicated several times in California during 1980s; introduced, eradicated and still absent in Florida and Texas).

Central America and Caribbean: Costa Rica, El Salvador, Guatemala (locally), Jamaica (unconfirmed), Nicaragua, Netherlands Antilles, Panama. Eradicated from Belize and Puerto Rico.

South America: Argentina (locally), Bolivia, Brazil, Colombia, Ecuador (locally), Honduras, Paraguay, Peru, Suriname (few reports), Uruguay, Venezuela.

Oceania: Australia (Western Australia), Northern Mariana Islands.

EPPO Distribution List: *Ceratitis cosyra*.

Africa: Cameroon, Comoros, Kenya, Madagascar, Malawi, Mozambique, Seychelles, South Africa, Sudan, Tanzania, Togo, Zaire, Zambia, Zimbabwe (locally).

EPPO Distribution List: *Ceratitis rosa*.

Africa: Angola, Ethiopia, Kenya, Malawi, Mali, Mauritius, Mozambique, Nigeria, Réunion, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zaire, Zambia, Zimbabwe (unconfirmed).

These distribution lists replace all previous published EPPO Distribution Lists on *Ceratitis capitata*, *C. cosyra* and *C. rosa*!

Source: EPPO Secretariat, 1996-04.

95/070 Occurrence of *Fusarium subglutinans* f.sp. *pini* in South Africa

Fusarium subglutinans f.sp. *pini* is the causal agent of pine pitch canker. Symptoms of the disease are characterized by resinous cankers on the main trunk and large branches, and shoot die-back in the upper crown. In 1974, the disease reached epidemic proportions in plantations and seed orchards of *Pinus elliottii* and *P. taeda* in the Southern United States. More recently, it has been reported from California (in 1987), Japan (1989) and Mexico (1991). Between 1990 and 1992, *F. subglutinans* f.sp. *pini* has been observed in South Africa where it caused a serious root disease of pine seedlings. However, the disease has not yet been detected on mature trees in commercial forests. The authors noted that all pine species grown in South Africa (*P. patula*, *P. elliottii* and *P. radiata*) are exotic species. As the recent appearance of pitch canker in South Africa is of considerable concern, the authors have studied the susceptibility of *P. patula*, *P. elliottii* and *P. radiata* to *F. subglutinans* f.sp. *pini*. One-year-old seedlings of the three pine species were inoculated with eight isolates of the fungus. In all cases canker development and shoot mortality were obtained. Disease development was significantly more severe on *P. patula* and *P. radiata* than on *P. elliottii*.

Source: Viljoen, A.; Wingfield, M.J.; Kemp, G.H.J.; Marasas, W.F.O. (1995) Susceptibility of pines in South Africa to the pitch canker fungus *Fusarium subglutinans* f.sp. *pini*. **Plant Pathology, 44(5), 877-882**.

Additional key words: new record .

96/071 Occurrence of *Malacosoma disstria* in Pennsylvania (US)

In 1994, severe defoliation caused by *Malacosoma disstria* (EPPO A1 quarantine pest) and other native insects was observed on *Acer saccharum* in northern and south-central Pennsylvania (US). Subsequent refoliation of trees in affected stands was extremely poor and the presence of a fungi, *Discula campestris* was noted. Affected stands then showed extensive crown dieback and potential for significant tree mortality for 1995.

Source: Hall, T.J. (1995) Effect of forest tent caterpillar and *Discula campestris* on sugar maple in Pennsylvania in 1994. Abstracts of presentations made at the 1995 APS annual meeting, Pittsburgh, Pennsylvania, 1995-09-12/16. **Phytopathology, 85(10), p 1129.**

Additional key words: detailed record **Computer codes:** MALADI, US

96/072 Studies on transmission of blue-stain fungi by *Ips pini*

Ips pini (EPPO A1 quarantine pest) is one of the most widely distributed bark beetles in North America. In Idaho, it kills *Pinus ponderosa* and *P. contorta*. Blue-stain fungi which can be tree-pathogenic are often found in association with *Dendroctonus* and *Ips* species, as they enable bark beetles to colonize live conifers successfully by overcoming their defence. A blue-stain fungus, *Ophiostoma ips* is found in association with *Ips pini* in California, Massachusetts, Minnesota*, Wisconsin* and Ontario. This fungus, which is pathogenic to pines, probably occurs throughout the range of *Ips pini* and is also reported in association with other *Ips* species, including *Ips calligraphus* in Florida, North Carolina, Maryland* and New Jersey*, *Ips grandicollis* in Florida, *Ips lecontei* in Arizona. Other blue-stain fungi reported in association with *Ips pini* are *Ophiostoma nigrocarpum* in Wisconsin, *O. huntii* in British Columbia and Colorado, and *Ambrosiella ips* in Minnesota.
Studies have been carried out on the transmission of *O. ips* by *I. pini*. By using electron microscopy, it was shown that strial pits on the elytra of *I. pini* carry spores like those of *O. ips*, yeast and other fungi. *O. ips* ascospores develop on the walls of pupal chambers in the phloem of infested pines and adhere to newly transformed *I. pini* adults. Inoculation of severed pine stem sections with body parts excised from beetles washed in water or alcohol produced phloem lesions characteristic of the hypersensitive wound reaction to *O. ips*. The fungi could be then reisolated from wood beneath the inoculation lesions. Similar studies have been carried out on live trees, inoculation with an elytron-derived culture of the fungi caused necrosis of sapwood (radially inward from lesions), and tree mortality when lesions encircled the stem (spacing between lesions <1 cm).

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* New detailed records.

Source: Furniss, M.M.; Harvey, A.E.; Solheim, H. (1995) Transmission of *Ophiostoma ips* (Ophiostomatales: Ophiostomataceae) by *Ips pini* (Coleoptera: Scolytidae) to Ponderosa pine in Idaho.
Annals of the Entomological Society of America, 88(5), 653-660.

Additional key words: biology, detailed records **Computer codes:** IPSXGR, IPSXLE, IPSXPI, US, CA

96/073 Outbreak of *Dendroctonus rufipennis* in Alaska (US)

In Alaska (US), forests of *Picea glauca* and *P. glauca* x *lutzii* are subject to mortality from a variety of causes (e.g. wind, fire, pests). Among these, *Dendroctonus rufipennis* (EPPO A1 quarantine pest) is the most devastating. Ongoing and new infestations currently affect 283,500 ha of spruce in Alaska. A study was carried out in the Resurrection Creek river of the Chugach National Forest in Alaska, in order to assess the impact of an outbreak of *D. rufipennis* on tree mortality, stand structure, timber volume loss and succession of understory vegetation. In this area (1280 ha), 51 % of the *P. glauca* x *lutzii*, or nearly
90 % of the commercial stand volume was killed during a 16 year period (since 1976). The majority of the losses occurred in the first 10 years of the outbreak. In June 1984, a prescribed burn was conducted on a part of the studied area (610 ha) to improve habitat for moose. Forest structure changed with decreased tree density, and species richness declined significantly on the unburned, infested plots. On the burnt plots, although species richness did not change 7 years after the prescribed fire, species composition did change.

Source: Holstein, E.H.; Werner, R.A.; Develice, R.L. (1995) Effects of a spruce beetle (Coleoptera: Scolytidae) outbreak and fire on Lutz spruce in Alaska.
Environmental Entomology, 24(6), 1539-1547.

Additional key words: detailed record **Computer codes:** DENCRU, US

96/074 Phytosanitary situation of fruit crops in Albania

From 1991 to 1994, Albania has faced extremely important economic and social changes which have also affected agriculture, and in particular fruit production. In 1990, 13 million trees were grown in Albania, but in 1994 this was reduced to 3.5 million trees. The main crops are plum, apple, fig, cherry, pear, and also apricot and peach. The authors stressed that for many reasons, it is difficult to describe precisely the phytosanitary situation of orchards in Albania, but that the following main characteristics can be given.

The main fungal pathogens on apple and pear are *Venturia inaequalis* and *V. piricola*. Some apple cultivars are also very susceptible to *Podosphaera leucotricha*. On peach, *Taphrina deformans* is the most damaging disease. On plum, *Taphrina pruni* and *Polystigma rubrum* can cause losses. During 1993-1994, extensive surveys were carried out on viruses, in 81 commercial orchards and 9 collections (see also EPPO RS 94/142). Plum pox potyvirus (EPPO A2 quarantine pest) is the most dangerous virus disease, especially in the areas where apricot and peach are grown. Plum is affected by plum pox potyvirus (PPV) in the South East of the country where 2/3 of the plants show symptoms. In other infected regions, the level of infection is 10-20 %. But in the North and South of Albania, PPV is not found. Other viruses detected were apple chlorotic leaf spot trichovirus, prune dwarf ilarvirus and prunus necrotic ringspot ilarvirus.

Concerning bacteria, *Agrobacterium tumefaciens* can cause problems in nurseries. *Erwinia amylovora* (EPPO A2 quarantine pest) was reported last year in the district of Pogradeci, based on symptoms observed in a pear orchards grown from imported material. Recently the occurrence of fireblight has been confirmed by laboratory tests. The authors stressed that further data on the distribution of this dangerous disease are needed.

The main pests found in orchards are the following. *Cydia pomonella* is common on apple, *Quadraspidiotus perniciosus* (EPPO A2 quarantine pest) is widespread and especially harmful on apple, *Iponomeuta malinellus* is normally not very dangerous in commercial orchards but can be very abundant on abandoned trees. *Leucoptera malifoliella, Phyllonorycter blancardella*, *Panonychus ulmi* and *Psylla pyri* are also commonly reported in Albania.

The records of *Erwinia amylovora* and *Quadraspidiotus perniciosus* in Albania are new according to the EPPO Secretariat.

Source: Isufi, E.; Myrta, A. (1996) [Disease and pest control of fruit trees in Albania: problems and perspectives]. **Informatore Fitopatologico, no.1, 33-36.**

Additional key words: new records **Computer codes:** ERWIAM, QUADPE, AL

96/075 Situation of peach latent mosaic viroid in Campania (IT)

Surveys were carried out in peach orchards, in Campania (South of Italy), in order to study the incidence of peach latent mosaic viroid (EPPO A1 quarantine pest). This viroid induces a complex symptomatology: calico, yellow mosaic, discoloration of fruit skin, chlorosis, dieback or the disease may remain completely latent. Tests have been carried out on symptomatic and apparently healthy trees. Detection was performed by using polyacrylamide gel electrophoresis of the nucleic acid extracts and/or a molecular probe of the viroid (obtained from Spain). The results of this study showed that the viroid was constantly present in trees showing symptoms. In addition, the viroid was also detected in more than 50 % of apparently healthy trees. The observation of various symptoms and various electrophoretic profiles lead the authors to suppose that several strains could be present in the field. However, this hypothesis could not be verified in this study. It can be recalled that peach latent mosaic viroid had previously been reported in peach and nectarine orchards, in a well-defined area of Emilia-Romagna (Albanese *et al*., 1992). Peach latent mosaic viroid is also reported as present in France, Spain and Greece.

EPPO note: the relationships between the peach latent mosaic viroid observed in Europe and agents (probably also viroids) causing similar diseases in America (peach American mosaic) and in Asia (peach yellow mosaic) have not been clarified. Therefore in the meantime, EPPO still considers viroids causing peach mosaic in America and Asia as A1 quarantine pests. However, if similarities can be established between the European and the non-European viroids, the quarantine status of peach latent mosaic viroid will have to be revised.

Source: Di Serio, F.; Ragozzino, A. (1995) [Investigation on the occurrence of the peach latent mosaic viroid (PLMVd) in peach trees in Campania].
Informatore Fitopatologico, no. 9, 57-61.

Albanese, G.; Giunchedi, L.; La Rosa, L.; Poggi Pollini, C. (1992) Peach latent mosaic viroid in Italy.
Acta Horticulturae, 309, 331-338.

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

96/076 *Radopholus similis* and *Aphelenchoides besseyi* intercepted in Italy

During routine surveys carried out in Italy, the following two nematodes species were found. *Radopholus similis* (EPPO A2 quarantine pest) was observed on roots of a rather large number of plants of *Maranta makoyana* imported from Netherlands and grown in a glasshouse of Piancastagnaio (Siena). Four specimens of *Aphelenchoides besseyi* (EPPO A2 quarantine pest) were observed in rice seeds from a farm located in the Province of Bologna (Molinella). *R. similis* had previously been reported in Italy in 1978 in Toscana, also on plants of *Maranta makoyana* imported from the Netherlands. The report of *A. besseyi* is a confirmation of an earlier observation, made in 1954, of typical symptoms on rice in the Province of Vercelli (but the nematode itself could not be observed at that time). *A. besseyi* had also been reported in 1973 on ornamentals, in the south of Italy. The author stressed the need of these phytosanitary checks which are absolutely necessary to try to exclude certain dangerous species from the Italian territory, and he also presented possible control methods against the two nematode species.

Source: Tacconi, R. (1996) [Detection of *Radopholus similis* on roots of *Maranta makoyana* and *Aphelenchoides besseyi* in kernels of *Oryza sativa* at the phytopathological control]
Informatore Fitopatologico, no. 2, 40-42.

Additional key words: detailed records **Computer codes:** APLOBE, RADOSI, IT

<u>96/077</u> <u>Effects of host plants and temperature on the development of *Thrips palmi*</u>

The effects of three temperatures (15, 26, 32 °C) and four host plants (*<u>Benincasa hispida</u>*, *<u>Capsicum annuum</u>*, *<u>Cucumis sativus</u>*, *<u>Solanum melongena</u>*) on the growth and reproduction of *<u>Thrips palmi</u>* (EPPO A1 quarantine pest) were studied in laboratory conditions, in Florida (US). Survival and egg production were the highest when thrips were reared at
26 °C on *<u>B. hispida</u>*, cucumber and aubergine compared to capsicum. However, because of shorter development time the rates of natural increase for *<u>T. palmi</u>* were highest at 32 °C on those three host plants. At 26 °C, development time is similar on the 4 host plants, but survival and reproduction are much lower for thrips reared on capsicum leaves. At 15 °C and 32 °C, these differences are even greater with only 40 and 48 % of thrips reared on capsicum which survive at these temperatures. *<u>T. palmi</u>* tolerates low temperatures better than high temperatures. 100 % adult mortality was observed at 40 °C after a 15 h treatment. Adult mortality was 55.8 % at 0 °C after 15 h and only 24.3 ± 10.8 % at -10 °C after 30 min. The authors felt that this could explain why populations are low in summer months and high in winter/spring season in aubergine, cucumber and *<u>B. hispida</u>* fields in Florida. They also expressed concerns that the insect could expand into the south-eastern states of USA where the mild winter could permit the insect to overwinter in low numbers.

Source: Tsai, J.H.; Yue, B.; Webb, S.E.; Funderburk, J.E.; Ti Hsu, H. (1995) Effects of host plant and temperature on growth and reproduction of *<u>Thrips palmi</u>* (Thysanoptera: Thripidae).
Environmental Entomology, 24(6), 1598-1603.

Additional key words: biology **Computer codes:** THRIPL

96/078 Influence of trap shape, size and background colour on captures of *Frankliniella occidentalis*

Different types of sticky traps to catch *Frankliniella occidentalis* (EPPO A2 quarantine pest) have been studied and compared in a cucumber greenhouse, in Canada. Four, three-dimensional trap shapes were tested: a sphere, a cube, an cylinder and a rectangular prism. The influence of size, colour (violet or yellow) of the traps was studied. Traps were suspended inside plywood frames, painted on the inside (violet, yellow, blue or green) and the influence of this background colour was also evaluated. Among traps with cubic, spherical, rectangular prism, or cylindrical shapes of approximately the same surface areas, only yellow cylindrical traps in front of a violet background were significantly more attractive than the other shapes. Yellow or violet traps placed in front of their identical background colours trapped fewer thrips than if placed in front of certain backgrounds that provide better contrast. When comparing three dimensional traps with two-dimensional traps, blue cylindrical traps did not catch significantly more thrips per square centimetre of trap area than the flat trap of similar diameter and height. The authors concluded that their data indicate that the use of three-dimensional traps will not improve trapping efficacy. Flat traps are less expensive and easier to handle. But their efficacy could be improved by placing yellow traps in front of blue or violet background, or if violet of blue traps were placed over a yellow background. However, the authors recognize that the placing of permanent coloured background structures would not be economically justified for existing monitoring programmes that do not intend to use mass trapping as a management strategy against *F. occidentalis*.

Source: Vernon, R.S.; Gillespie, D.R. (1995) Influence of trap shape, size, and background colour on captures of *Frankliniella occidentalis* (Thysanoptera: Thripidae) in a cucumber greenhouse.
Journal of Economic Entomology, 88(2), 288-293.

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

96/079 Resistance of *Aonidiella aurantii* and *A. citrina* to organophosphates and carbamates

In California (US), citrus growers have mainly used organophosphorous and carbamate insecticides for scale insect control. *Aonidiella aurantii* (EU Annex II/A1) and *A. citrina* are key pests in the San Joaquin Valley orchards. When organophosphorous insecticides first came into use, growers were able to maintain economic control of armoured scales with one spray application of parathion every 2-3 years. More recently, growers observed that these insects are becoming increasingly difficult to control. Citrus fruit infested with these two scale species were collected from 68 orchards in four counties of the San Joaquin Valley over three seasons to test for insecticide resistance. Results of laboratory tests suggest that resistance to organophosphorous compounds (chlorpyrifos and methidathion) is developing in *Aonidiella aurantii* and *A. citrina* in this region of California. Resistance to carbamate insecticide (carbaryl) appears less intense. The authors stressed the need for better management programmes. Traps could be used to monitor these pests so that insecticides are applied only when scale populations are above the established economic threshold. Organophosphorous and carbamate insecticides should be used in rotation with petroleum oils to delay the appearance of resistance. And in places where resistance have appeared, growers should replace the application of organophosphorous and carbamate insecticides by biological control. The use of parasitoids (*Aphytis* spp. and *Comperiella* spp.) can be combined with the more selective petroleum oil sprays.

Source: Grafton-Cardwell, E.E.; Vehrs, S.L.C. (1995) Monitoring for organophosphate- and carbamate- resistant armored scale (Homoptera: Diaspidideae) in San Joaquin Valley citrus.
Journal of Economic Entomology, 88(3), 495-504.

Additional key words: resistance **Computer codes:** AONDCI

96/080 Studies on the biology of *Unaspis citri*

Laboratory studies have been carried out in USA to assess the influence of temperature and relative humidity on development and mortality of *Unaspis citri* (EPPO A1 quarantine pest). Nine different combinations of constant temperature (16, 21, 24, 28, 30 °C) and relative humidity (60, 70 % RH) were studied. Optimal temperatures for development ranged between 25 and 38 °C for all stages and both sexes. Upper developmental thresholds ranged between 34 and 44 °C, and the lower threshold was estimated at 12 °C,. In this study, the effect of relative humidity was not consistently significant. Temperature most notably affected mortality associated with 1st and 2nd instars and males. Relative humidity effects were shown to be important for survival of 1st and 2nd instars and for 2nd instars at low temperatures. It can be recalled that the scale armour is an effective protection against environmental hazards and that 1st instar lack this protection.

Source: Arias-Reverón, J.M.; Browning, H.W. (1995) Development and mortality of the citrus snow scale (Homoptera: Diaspididae) under constant temperature and relative humidity.
Environmental Entomology, 24(5), 1189-1195.

Additional key words: biology **Computer codes:** UNASCI

96/081 New phytoplasma associated with cherry lethal yellows in China

An outbreak of a lethal yellows disease on Chinese cherry (*Prunus pseudocerasus*) was reported in 1989 in Sichuan province, China. The diseased trees developed a diffuse yellow discoloration of foliage in late spring, leaves fall prematurely and fruit production is low or nil. Infected trees die in 3-4 years. Studies have revealed the occurrence of phytoplasmas associated with the disease

Source: Lee, I.M.; Zhu, S.; Gundersen, D.E.; Zhang, C.; Hadidi, A. (1995) Detection and identification of a new phytoplasma associated with cherry lethal yellows in China.
Abstracts of presentations made at the 1995 APS annual meeting, Pittsburgh, Pennsylvania, 1995-09-12/16.
Phytopathology, 85(10), p 1179.

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

96/082 Chrysanthemum stem necrosis possibly due to a new tospovirus

In Brazil, in several commercial crops of the county of Atibaia (São Paulo State), chrysanthemum plants were found with necrotic lesions surrounded by yellow areas on leaves. Lesions are followed by necrosis on stems, peduncles and floral receptacles. Serious damage has been reported, especially in the cv. Polaris. Host range, *in vitro* properties and particle morphology of the causal virus were typical of a tospovirus. The authors have demonstrated that this virus is serologically different from other tospoviruses (tomato spotted wilt, tomato chlorotic spot, groundnut ringspot and impatiens necrotic spot tospoviruses). They concluded that this pathogen may be a new serogroup of tomato spotted wilt tospovirus (potential EPPO A2 quarantine pest) or a new virus.

Source: Duarte, L.M.L.; Rivas, E.B.; Alexandre, M.A.V.; De Avila, A.C.; Nagata, T.; Chagas, C.M. (1995) Chrysanthemum stem necrosis caused by a possible novel tospovirus.
Journal of Phytopathology 143(9), 569-571.

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

96/083 Methyl iodide could replace methyl bromide as a soil fumigant

The authors of this paper felt that methyl iodide could directly replace methyl bromide as a soil fumigant. This compound has the same activity and efficacy for soil fumigation as methyl bromide. Methyl iodide is liquid with a boiling point of 42°C which makes it easier to handle and safer for workers. Its ozone depletion potential (0.02) is lower than for methyl bromide (0.6), and lower than the threshold of 0.2 given by the Montreal Protocol for removing ozone depleters. In their laboratory and field trials, when compared at molar equivalent rates, the authors have found that methyl iodide was equal to or better than methyl bromide in controlling tested soilborne fungal plant pathogens, nematodes and weeds.

Source: Ohr, H.D.; Sims, J.J.; Grech, N.M.; Becker, J.O. (1995) Methyl iodide, a direct replacement for methyl bromide as a soil fumigant;
Abstracts of presentations made at the 1995 APS annual meeting, Pittsburgh, Pennsylvania, 1995-09-12/16.
Phytopathology, 85(10), p 1168.

Additional key words: chemical treatments

96/084 New ISO codes for country names

New country codes have been proposed by ISO for:

Eritrea	ER
Bosnia and Herzegovina	BA
The former Yugoslav Republic of Macedonia	MK

Concerning names, Cambodia is now preferred to Kampuchea, and Myanmar to Burma. The ISO code for Myanmar is now MM, no longer BU.

For convenience, we reming you that the ISO codes for other new countries (ex-USSR Republics, ex-Yugoslav Republics, Czech and Slovak Republics) are:

Armenia	AM
Azerbaijan	AZ
Belarus	BY
Croatia	HR
Czech Republic	CZ
Estonia	EE
Georgia	GE
Kazakhstan	KZ
Kyrgyzstan	KG
Latvia	LV
Lithuania	LT
Moldova, Republic of	MD
Russian Federation	RU
Slovakia	SK
Slovenia	SI
Tajikistan	TJ
Turkmenistan	TM
Ukraine	UA
Uzbekistan	UZ

The full list of ISO codes for country names and currencies can now be obtained on diskette from:

ISO Central Secretariat
rue de Varembré 1, 1211 Geneva 20
Switzerland
Tel: (41) 22 749 01 11
Fax: (41) 22 733 34 30

Source: ISO Central Secretariat, Geneva (CH), 1996-03.

EPPO *Reporting Service*

96/085 *Meloidogyne chitwoodi* - a meeting to present EU research project **[URGENT!]**

A research project to study the relationship between *Meloidogyne chitwoodi* (EPPO A2 quarantine pest) and other *Meloidogyne* species/populations in Europe has been approved by the IVth Framework Programme of the European Union. The coordinator of the project, Dr. D. Mugniery of INRA, Rennes (FR), is organising a meeting at IPO-DLO in Wageningen, which will take place on **25 and 26 April, 1996**, and which will present an overall outline of the project and details of the separate research tasks involved. Representatives of the plant protection services of EPPO member countries are invited to participate in this meeting, with the aim of discussing how they might benefit from or participate in the project, especially in providing populations of *Meloidogyne* from their countries that are of concern to their agriculture.

For details of the meeting, contact: Dr. D. Mugniery, INRA,
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Source: **EPPO Secretariat, 1996-04**