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Reporting

Service

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2000/073 Kyrgyzstan is a new EPPO member country

Kyrgyzstan joined EPPO in 2000-04. EPPO now has 43 member countries. The contact point for Kyrgyzstan is:

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Source: **French Ministry of Foreign Affairs.**
EPPO Secretariat, 2000-04.

Additional key words: new member **Computer codes:** KG

2000/074 The EPPO Plant Protection Thesaurus is now available

The EPPO Plant Protection Thesaurus is now available on a CD-Rom. This searchable database covers important organisms in agriculture and crop protection: crops, animal plant pests, wild-life, pathogens, weeds, natural enemies, organisms used in ecotoxicological studies. So far, it includes 27,000 plants, 18,000 animals and 3,000 microorganisms.
For each organism, it provides:

- preferred scientific name
- Bayer code (each organism has a unique code)
- synonyms
- common names in many languages
- taxonomic relationships and other classifications

The EPPO Plant Protection Thesaurus can be ordered from the EPPO Secretariat at a price of 150 EUR. Users who already have a licence to use the Bayer code system can obtain it at the reduced price of 100 EUR. It is planned to update the database annually and updates will be available at the price of 50 EUR.

Note: EPPO can also supply the Bayer codes as data files on diskettes for incorporation in users' own systems (core files, no search interface). A licence fee of 180 EUR is charged for this. The EPPO Plant Protection Thesaurus on CD-Rom does not give the user the right to use the data in this way.

Source: **EPPO Secretariat, 2000-04.**

2000/075 Details on the situation of *Bactrocera zonata* in Egypt

As reported in EPPO RS 99/060, *Bactrocera zonata* (EPPO A1 quarantine pest) has been reported for the first time in Egypt. It can be noted that this pest is absent from any other Mediterranean or African countries (with the exception of Mauritius where some adventive populations have been recorded). The origin of this introduction is unknown. *B. zonata* was first noticed on guava (*Psidium guajava*) in Agamy and Sabahia districts near the city of Alexandria during summer 1997. *B. zonata* has a wide host range (peach, guava, mango, date palm, apples, bitter gourd, okra, pomegranate, papaya, fig, quince, citrus, etc.). A mission was set up in 1999 to evaluate the situation and propose measures for control and eradication of the pest. Apparently, *B. zonata* is established and present in the delta, lower, middle and upper Nile (up to Aswan), up to Suez canal towards the east. However, it is thought that some areas (north Sinai or oases to the west of the Nile) are still free from the pest. A control and eradication programme is proposed, as well as measures to prevent any further spread.

Source: Joomaye, A.; Knight, J.; Routhier, W. (1999) Evaluation of the peach fruit fly problem in Egypt with recommendations for its control and eradication, including a limited cost-benefit analysis. A report on a mission to Egypt June 11 to June 24 1999.

Additional key words: detailed records **Computer codes:** DACUZO, EG

2000/076 Situation of glasshouse quarantine pests in Slovenia

The NPPO of Slovenia has recently informed the EPPO Secretariat of the current situation of several glasshouse quarantine pests which are subject to official surveys in Slovenia.

Bemisia tabaci (EPPO A2 quarantine pest) is not present, but it has been intercepted a few times since December 1996 on Poinsettia consignments. In 1998 it was found in a glasshouse and eradicated.

Frankliniella occidentalis (EPPO A2 quarantine pest) occurs in Slovenia but is controlled.

*Helicoverpa armigera** (EPPO A2 quarantine pest) is widespread in Slovenia, except in the most Eastern part. Due to its migratory behaviour, only single specimens were observed in several locations. No economic damage is reported in glasshouse or outdoor crops. *Spodoptera littoralis* (EPPO A2 quarantine pest) is absent.

*Liriomyza bryoniae** (EU Annexes) is widespread and present on the following hosts: *Physalis alkekengi*, *Lupinus polyphyllus*, *Lamium galeobdolon*, *Galeopsis tetrahit*,

Antirrhinum majus, *Lagenaria siceraria*, *Benincasa hispida*, chrysanthemum and *Phaseolus vulgaris*.

Liriomyza huidobrensis (EPPO A2 quarantine pest) was found in 1999 in a few glasshouses and was successfully eradicated.

Liriomyza trifolii (EPPO A2 quarantine pest) has been found in a few isolated cases on glasshouse crops and also on field crops of *Trifolium* spp. Because of the climate severity prevailing in the northern part of Slovenia, *L. trifolii* is unlikely to survive outdoors. The distribution of *Liriomyza trifolii* in glasshouses is restricted.

Liriomyza sativae (EPPO A1 quarantine pest) is absent.

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* The EPPO Secretariat had previously no data on the occurrence of this pest in Slovenia.

Source: **NPPO of Slovenia, 2000-04.**

Additional key words: new records, detailed records

Computer codes: BEMITA, FRANOC, HELIAR, LIRIBO, LIRIHU, LIRISA, LIRITR, SPODLI, SI

2000/077 Details on quarantine pests in Italy: 1999 situation

The Italian journal 'Informatore Fitopatologico' presents the phytosanitary status of the main crops in the Italian regions in 1999. The EPPO Secretariat has extracted the following details on several pests and diseases of quarantine interest.

Aphelenchoides besseyi (EPPO A2 quarantine pest): found at low levels in rice seeds in Piemonte-Valle d'Aosta and Lombardia (see also EPPO RS 99/086).

Apple proliferation phytoplasma (EPPO A2 quarantine pest): is reported in Trentino and studies have been initiated to better understand its epidemiology.

Cameraria ohridella (EPPO Alert List): continues to spread rapidly in Italy. It presence is reported in Friuli-Venezia Giulia, Lombardia, Veneto, and Emilia-Romagna (see also EPPO RS 99/122).

Ceratocystis fimbriata f.sp. *platani* (EPPO A2 quarantine pest): occurs in Campania, , Emilia-Romagna (spreading in Bologna city and in Ferrara province), Lazio, Lombardia (Brescia, Como, Cremona, Lecco, Milano, Varese), Veneto.

Diabrotica virgifera virgifera (EPPO A2 quarantine pest): the first foci was found in 1998 near the International airport of Venezia. Eradication measures were taken, and in 1999 only 2 adult specimen were caught in pheromone traps. It is hoped to eradicate this pest. A monitoring programme was set up in Lombardia using pheromone traps and no insects were caught (see also EPPO RS 2000/031).

Erwinia amylovora (EPPO A2 quarantine pest): No major progression of the disease is reported in 1999, climatic conditions were less favourable than in 1998 and the disease was contained. In Emilia-Romagna, the situation remains stable compared to 1998, the disease is essentially found in the same areas (provinces of Bologna, Ferrara, Modena, Reggio Emilia and Ravenna). In Lombardia, it was first reported in 1997. 11 foci were reported in 1997, and 5 in 1998 (provinces of Bergamo and Mantova). In 1999, symptoms reappeared only in 3 sites of the province of Mantova. All surveys carried out in nurseries gave negative results. In Veneto, *E. amylovora* was successfully contained in 1999 to areas previously contaminated. It mainly occurs on pear trees in Basso Veronese (see also EPPO RS 99/095). Fireblight was found in Alto Adige (see EPPO RS 2000/022).

Globodera rostochiensis and *G. pallida* (EPPO A2 quarantine pests): in Piemonte-Valle d'Aosta region, potato cyst nematodes are only found in mountainous parts in private gardens.

Grapevine flavescence dorée (EPPO A2 quarantine pest): is of growing concern to many grapevine-growing regions of northern Italy. In Piemonte-Valle d'Aosta, the disease and the vector *Scaphoideus titanus* have been found in a small isolated foci near Cuneo. In Liguria, the disease has been observed on a few 8 year-old grapevines near Albenga. Flavescence dorée is spreading in Lombardia and serious outbreaks have been found in the area of Oltepro pavese (area south of Pavia - 50 % incidence) and province of Brescia (60-70 % incidence). Affected plants are being destroyed and chemical control is being applied against the vector. In Friuli-Venezia Giulia, only a small outbreak has been found bordering the Veneto region. It is, however, considered as a very serious threat and measures are being taken to prevent any further spread (destruction of affected plants, chemical control of *S. titanus*, monitoring programme). The disease is present in Veneto and active control methods are being taken. In Emilia-Romagna, a general increase of grapevine yellows has been observed. In most cases, bois noir phytoplasma is the causal agent, and flavescence dorée only occurs in the province of Piacenza.

Plum pox potyvirus (EPPO A2 quarantine pest): is subject to a national monitoring programme. In Piemonte-Valle d'Aosta, 498 plots were inspected (187.000 trees), and the virus was found at a low incidence on apricot and plum (0.75% of inspected trees were infected) and M type strains were not detected. In Lombardia, 6 foci were found on peach trees (5 in Brescia and 1 in Mantova). Disease incidence was low. In Veneto, 1.700 ha have been inspected. 111 ha (mainly peach trees near Verona) were found infected and destroyed. Disease incidence is uniform and rather high in places where it was already found in 1997/98, but in other areas, disease incidence remains very low.

Puccinia horiana (EPPO A2 quarantine pest): a few outbreaks were observed on chrysanthemum (cut flower production) in Liguria and Lombardia.

Ralstonia solanacearum (EPPO A2 quarantine pest): an isolated outbreak was reported in 1995 in Veneto. A monitoring programme was implemented on potatoes and *Solanum dulcamara*, and during the last four years the bacterium was not found again. The authorities now consider that Veneto region is free from *R. solanacearum* (see also EPPO RS 97/111).

Rhagoletis completa: continues to damage walnut trees in Piemonte-Valle d'Aosta region.

Spodoptera littoralis (EPPO A2 quarantine pest): outbreaks are reported in Liguria on cyclamen and basil (*Ocimum basilicum*).

Tomato spotted wilt tospovirus: is reported in Abruzzo, Campania (tomato), Basilicata (tomato), Calabria (tomato), Liguria (chrysanthemum, *Dimorphotheca*, artichoke, tomato, pepper), Lombardia (sporadically on tomato), Molise (tomato), Puglia (tomato), Toscana (chrysanthemum, pepper), Veneto (tomato).

Xanthomonas vesicatoria (EPPO A2 quarantine pest): was found on tomato grown for seed production in Lombardia (Casalasco). A few outbreaks were reported from Umbria and Sardegna; infected plants have been destroyed.

Source: (1999) Bilancio Fitosanitario delle'anno 1999.
Informatore Fitopatologico, no 1-2, 5-32.
Informatore Fitopatologico, no 3, 5-38.

Additional key words: detailed records

Computer codes: APLOBE, APPXXX, CERAFP, DIABVI, ERWIAM, GVFDXX, HETDPA, HETDRO, LITHOD, PLPXXX, PSDMSO, PUCCHN, RHAGCO, SPODLI, TMSWXX, XANTVE, IT

2000/078 EU additional and temporary measures against the dissemination of *Bursaphelenchus xylophilus*

As reported in EPPO RS 99/152, *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) has been found in a limited area in Portugal. In reaction to the introduction of this pest into Europe, the EU has taken additional and temporary measures (subject to revision in December 2000) to prevent any further spread of *B. xylophilus* within EU territory. Official surveys have to be carried out by all EU member states to confirm the absence of *B. xylophilus* and by Portugal to determine the extent of the infestation and to establish pest-free areas. Phytosanitary measures mainly concern the movement of wood and isolated bark of conifers (other than *Thuja*) and of plants of *Abies*, *Cedrus*, *Larix*, *Picea*, *Pinus*, *Pseudotsuga* and *Tsuga* within Portugal (with a final aim of eradication), and between Portugal and other EU member states. In summary, the phytosanitary measures relating to movements of concerned commodities from Portugal to other EU member states include: consignment and place of production freedom for host plants; kiln-drying for wood and bark; fumigation of chips, particles and wood waste; absence of bark and grub holes, moisture content < 20°C at manufacture time for packing material. In addition, plant passports should accompany the movements of plants, wood, bark, chips and particles of commodities concerned.

Source: Commission Decision (2000/58/EC) of 11 January 2000 authorizing Member States temporarily to take additional measures against the dissemination of *Bursaphelenchus xylophilus* (Steiner et Bührer) Nickle *et al*. as regards areas in Portugal, other than those in which *Bursaphelenchus xylophilus* (Steiner et Bührer) Nickle *et al*. is known not to occur.

Additional key words: phytosanitary measures **Computer codes:** BURSXY

2000/079 Tomato chlorosis crinivirus found in Spain

Since summer 1997, tomato plants in Málaga and Almería provinces in Spain have been showing unusual symptoms. Affected plants presented interveinal yellowing, initially on lower leaves then progressing towards the upper part of the plant. Severe yield losses were observed due to reduced fruit growth and delayed ripening. During the 1998 and 1999 growing seasons, the disease became more widespread and occurred at high incidence levels in the province of Málaga. Outbreaks were associated with high populations of *Bemisia tabaci* (EPPO A2 quarantine pest). It was demonstrated in the laboratory that the disease is transmitted by *B. tabaci* biotype Q. PCR assays with specific primers showed that tomato chlorosis crinivirus (EPPO Alert List) was present in symptomatic tomato plants. So far, tomato chlorosis crinivirus had only been found in USA (Colorado, Florida, Louisiana). In USA, it was observed that this virus is transmitted by *Trialeurodes vaporariorum*, *Bemisia tabaci* biotypes A and B, and *T. abutilonea*. This is the first report of tomato chlorosis crinivirus in Europe, and the authors consider that it represents a new threat to tomato crops.

Source: Navas-Castillo, J.; Moriones, E. (2000) ToCV: a new threat to European horticulture.
EWSN Newsletter, no. 03, coordinated by Dr Ian D. Bedford, Dr Michael de Courcy Williams, 4 pp.

Additional key words: new record **Computer codes:** TMCXXX, ES

2000/080 First report of cucurbit yellow stunting disorder crinivirus in USA (Texas) and Mexico

In late summer 1999, severe symptoms of yellowing and stunting were observed on field and glasshouse-grown melons (*Cucumis melo*) near Donna in southern Texas (US) and near Reynosa in northern Mexico. High populations of *Bemisia tabaci* (EPPO A2 quarantine pest) were associated with infected crops. Molecular analysis showed that symptomatic melon plants from both areas were infected by cucurbit yellow stunting disorder crinivirus (EPPO Alert List). This is the first report of this virus in North America.

Source: Kao, J.; Jia, L.; Tian, T.; Rubio, L.; Falk, B.W. (2000) First report of cucurbit yellow stunting disorder virus (Genus crinivirus) in North America.
Plant Disease, 84(1), p 101.

Additional key words: new records **Computer codes:** KUYSXX, MX, US

2000/081 Two unusual ilarviruses found on tomatoes in France

In the South of France, in June and July 1997, several growers of tomato (grown for can-processing) observed unusual symptoms. Similar observations were made during the 2 following years. Affected young green fruits showed brown chlorotic rings, becoming sometimes corky lesions, and leaves presented necrotic spots. Studies have showed that 2 unusual ilarviruses might be involved in the disease: tobacco streak ilarvirus and another ilarvirus (TI 1) serologically related to Parietaria mottle ilarvirus. The ilarvirus TI 1 has previously been found on tomatoes showing similar symptoms in Liguria, Italy. Tobacco streak ilarvirus occurs in America, Australia, New Zealand, Japan and Europe. It has been reported on tomato in North America, and also in France on several ornamental plants. Parietaria mottle ilarvirus has only been described in Italy, and was originally found on *Parietaria officinalis*. This virus has been observed in Liguria, Piemonte, Lazio and Sardegna. The authors felt that the appearance of these tomato ilarviruses is probably not related to tomato seeds, as no seed transmission of ilarviruses is known in tomato, and seed transmission experiments carried out in Italy gave negative results. They thought that transmission is most likely ensured by pollen and thrips vectors.

Source: Marchoux, G.; Parrella, G.; Gebre-Selassie, K.; Gognalons, P. (1999) Identification de deux ilarvirus sur tomate dans le sud de la France.
Phytoma - La Défense des Végétaux, no. 222, 53-55.

Additional key words: new pests **Computer codes:** FR

2000/082 *Phytophthora cambivora* added again to the EPPO Alert List

As reported in EPPO RS 2000/048, the EPPO Panel on Phytosanitary Measures decided at its last meeting in January 2000 to remove *Phytophthora cambivora* (on alder) from the EPPO Alert List. It was felt that this pathogen of alder was essentially causing problems for the environment and could not really be handled by plant quarantine. However, Dr Gibbs from the Forestry Commission of UK has stressed that despite a fair amount of searching in several European countries, the pathogen has only been found in Austria, France, Germany, Netherlands, Sweden and UK. There are no records of this disease in other EPPO countries and alder is a common and important tree in Europe. There is also some evidence to suggest that this pathogen is a new organism, related to *P. cambivora* but distinct from it. Finally, the pest can be disseminated in the EPPO region through the movement of nursery plants. It has accordingly been decided to reinstate *P. cambivora* in the EPPO Alert List. It is recalled that the EPPO Alert List is maintained on the EPPO web site (www.eppo.org).

Phytophthora cambivora (a new root disease of alder)

Why	This came to our attention because a new root disease of alder causing tree mortality was first reported in UK in 1993.
Where	UK, and then in the Netherlands. According to the UK Forestry Commission, the fungus has also been found in Austria, Denmark, France, Germany, Sweden (UK Forestry Commission Web site).
On which plants	Common alder (*Alnus glutinosa*).
Damage	Dead roots, leaf fall, dieback, presence of tarry or rusty spots on the stem base of trees. Tree mortality has been observed. In 1994, it was reported that more than 20,000 alders were affected in southern Britain (UK).
Possible identity	An unusual form of *Phytophthora cambivora*.
Pathway	Alder plants for planting and wood(?) from infested countries.
Possible risks	Alders are important trees in the landscape. Tree mortality is reported. Further work is needed on the identity of the pathogen and possible means of control.
Source(s)	Annual Report 1996, Diagnostic Centre, Plant Protection Service, Wageningen, Netherlands, 114 pp. Brasier, C.M.; Rose, J.; Gibbs, J.N. (1995) An unusual *Phytophthora* associated with widespread alder mortality in Britain. Plant Pathology, 44(6), 999-1007. Gibbs, J. (1994) *Phytophthora* root disease of common alder. Research information Note 258. Forestry Authority, Forestry Commission, Wrecclesham, Farnham, Surrey, GB, 4p. Gibbs, J.N.; Lipscombe, M.A.; Peace, A.J. (1999) The impact of *Phytophthora* disease on riparian populations of common alder (*Alnus glutinosa*) in Southern Britain. European Journal of Forestry, 29(1), 1-88. Streito, J-C.; de Villartay, G.; Tabary, F. (1999) Une nouvelle espèce de Phytophthora s'attaque à l'aulne. Phytoma - La Défense des Végétaux, no. 519, 38-41. Web site of the UK Forestry Commission - http://www.forestry.gov.uk/research/summary.html Web site of the Laboratoire National de la Protection des Végétaux, Nancy (FR) Le Phytophthora de l'aulne. http://perso.wanadoo.fr/lnpv/nancy/aldphyt.htm Personal communication with Dr J.N. Gibbs, Forestry Commission, UK, 2000-03.
EPPO RS 95/010, 96/041, 98/023, 99/084, 99/156, 2000/083	
Panel review date	1999-01 Entry date 1995-01

Source: Dr J.N. Gibbs, Forestry Commission, UK, 2000-03.

Additional key words: addition to the EPPO Alert List **Computer codes:** PHYTCM

2000/083 *Acremonium cucurbitacearum* can cause sudden collapse of melons

In Spain, serious losses have been observed on melons (*Cucumis melo*) and watermelons (*Citrullus lanatus*) since the 1980s (see EPPO RS 93/083 and 99/111). Symptoms are characterized by a sudden collapse of the plants, usually as the fruits approach maturity. Affected root systems show a corky appearance, absence of root hairs and small rootlets. The cause of this syndrome has been subject to controversy. In Spain, *Acremonium* sp. has been consistently isolated from diseased plants and pathogenicity tests have showed that the fungus could induce disease symptoms. However, other researchers have found that *Monosporascus cannonballus* (EPPO Alert List) was responsible for the disease in many countries. In Spain, it is frequent to find both fungi in diseased plants, with a prevalence of *M. cannonballus* in certain areas, although *Acremonium* sp. has been isolated from more than 90 % of the fields studied. It is also noted that an *Acremonium* species was isolated from roots of diseased melons in USA, in California (from Sacramento valley to upper San Joaquin valley) and Texas (Lower Rio Grande). The *Acremonium* species occurring in Spain which is pathogenic to cucurbits has been described as a new species called *Acremonium cucurbitacearum*, and recent studies of molecular characters and vegetative compatibility confirmed the distinctness of this fungi from other *Acremonium* species. It is thought that *Acremonium cucurbitacearum* and *Monosporascus cannonballus* are both pathogenic to cucurbits and induce similar symptoms, but that they may occur under slightly different ecological conditions.
EPPO note: the entry previously concerning *Monosporascus cannonballus* in the EPPO Alert List will be extended to cover both fungi.

Source: Vicente, M.J.; Cifuentes, D.; Cenis, J.L.; Abad, P. (1999) RAPD-PCR polymorphism and vegetative compatibility group variation in Spanish isolates of *Acremonium cucurbitacearum*.
Mycological Research, 103(9), 1173-1178.

Additional key words: new pest **Computer codes:** ACRESP, MSPSCB

2000/084 Differentiation between *Monilinia laxa*, *M. fructigena* and *M. fructicola* by using total mycelial protein SDS-PAGE

An electrophoresis method to distinguish between *Monilinia laxa*, *M. fructigena* and *M. fructicola* (EPPO A1 quarantine pest) has been developed in Italy. 46 isolates of *Monilinia laxa*, *M. fructigena* and *M. fructicola* from various parts of the world (Asia, Europe, North America, Oceania) were compared using SDS-PAGE of total mycelial proteins. Results showed that total mycelial protein profiles can be used to differentiate between the 3 species of *Monilinia*. Only two isolates from Australia presented atypical profiles. The authors concluded that total mycelial protein SDS-PAGE analysis is a generally reliable method to discriminate between the 3 species, apart from very few ambiguous cases for which further analysis with other methods is necessary.

Source: Belisario, A.; Luongo, L.; Corazza, L. (1999) Identification of *Monilinia* species by total mycelial protein SDS-PAGE.
Phytopathologia Mediterranea, 38(3), 115-121.

Additional key words: diagnostic method **Computer codes:** MONIFC

2000/085 Relationships between phytoplasmas associated with elm yellows

Phytoplasma diseases causing elm yellows have been described in North America and in Europe. In USA, significant outbreaks of a lethal yellows occur sporadically on indigenous elms (*Ulmus americana*, *U. rubra*, *U. alata*, *U. serotina* and *U. crassifolia*), Bbt elms of Eurasian origin are rarely damaged by this disease. In Europe (notably in Italy and France), several phytoplasma strains have been identified on declining Eurasian elm species and hybrids. In most cases, it has been shown that these phytoplasma strains belonged to the Elm Yellows group sensu lato (group 16SrV). In addition to elms, phytoplasmas of this group occur in many other plant species: e.g. *Apocynum*, *Prunus*, *Rubus*, *Vitis*, *Ziziphus*. Molecular studies (RFLP analysis of 16S rDNA, plus 16S-23S spacer region for some samples) have been carried out to obtain a better understanding of the relationships between these phytoplasmas. The study included: 9 phytoplasmal DNA samples obtained from symptomatic *Ulmus* in USA and Italy (*U. americana*, *U. rubra*, *U. minor* (= *U. carpinifolia*), *U. chenmoui* and a hybrid clone Lobel); 1 sample obtained from an *Apocynum cannabinum* plant growing near an outbreak of elm yellows and infected by a phytoplasma belonging to the 16SrV group; 5 samples obtained from previous studies and collected from other plants (*Rubus fruticosus*, *Vitis vinifera*, *Ziziphus jujuba*, *Prunus*).

Results showed that although all these strains belong to the 16SrV group there is some variation among them. Strains from *Ulmus* can be differentiated from strains collected on other hosts. In particular, the strain from *Apocynum cannabinum* collected near diseased elms showed a unique RFLP pattern, and was more closely related to strains from *Vitis vinifera* and *Rubus fruticosus* than from elms. Among phytoplasmas associated with elms, European strains are related to but different from North American ones. It appears that there is more variation among American phytoplasmas than among European ones. A comparison was made between the Italian strains and an already known French strain, and they appeared similar. The authors concluded that their study supports the concept that phytoplasmas associated with elm yellows compose a taxonomically discrete but non-uniform sub-group (16SrV-A). More studies are needed.

Note: So far, the lethal disease associated with phloem necrosis symptoms in USA has been attributed to elm phloem necrosis phytoplasma. This pathogen was listed as an EPPO A1 quarantine pest, assuming that it was different from phytoplasmas associated with elm yellows in Europe. Molecular studies appear to support this hypothesis, but more work is still needed in this rapidly evolving area of phytoplasma taxonomy.

Source: Griffiths, H.M.; Sinclair, W.A.; Boudon-Padieu, E.; Daire, X.; Lee, I.M.; Sfalanga, A.; Bertaccini, A. (1999) Phytoplasmas associated with elm yellows: molecular variability and differentiation from related organisms. **Plant Disease, 83(12), 1101-1104.**

Additional key words: etiology **Computer codes:** EMPNXX

2000/086 Studies on irradiation against *Anastrepha ludens* and *A. obliqua*

Irradiation can be used as a quarantine treatment against fruit flies, in particular against *Anastrepha ludens* and *A. obliqua* (both EPPO A1 quarantine pests) on citrus. The currently accepted criterion to assess the efficacy of irradiation as a quarantine treatment of fruit flies is prevention of adult emergence, as insects are not killed in a reasonable amount of time at the doses allowed on fresh commodities (≤ 1kG). Irradiation would generally be applied after fruit packing. Packed fruits such as citrus are likely to stay at ambient conditions for a few days before being irradiated, allowing third instars to emerge and pupate within the packaging. As pupae are more tolerant to irradiation than eggs and larvae, studies were done in USA to determine the tolerance of these immature stages (feeding third instar, pupariation to pharate adult) of *A. ludens* and *A. obliqua* in grapefruit. According to their results, the authors recommended that grapefruit should not remain at ambient temperature (≈25°C) for more than 2 or 3 days before being irradiated.

Source: Hallman, G.J.; Worley, J.W. (1999) Gamma radiation doses to prevent adult emergence from immatures of Mexican and West Indian fruit flies (Diptera: Tephritidae).
Journal of Economic Entomology, 92(4), 967-973.

Additional key words: quarantine treatment **Computer codes:** ANSTLU, ANSTOB

2000/087 Possible use of insect growth regulators as chemosterilants against *Ceratitis capitata*

In laboratory experiments conducted in Spain, 10 insect growth regulators were tested as chemosterilizing agents for *Ceratitis capitata* (EPPO A2 quarantine pest). The compounds were given to adult flies, mixed with their food. Sterilizing activity was studied on virgin or mated females and on males. The best results were obtained with lufenuron and triflumuron, and more particularly with lufenuron. None of the tested products prevented fecundity completely, as some eggs were produced. However, lufenuron completely prevented egg hatch at a dosage of 1,000 ppm for 3 h in mated and virgin females, and at 5,000 ppm in males. Further studies in the natural habitat of *C. capitata* are needed to confirm the possibility of substituting organophosphates with lufenuron applied in traps or sprayed (as spot treatments), combined with attractants (lure and food bait).

Source: Casaña-Giner, V.; Gandía-Balaguer, A.; Mengod-Puerta, C.; Primo-Millo, J.; Primo-Yúfera, E. (1999) Insect growth regulators as chemosterilants for *Ceratitis capitata* (Diptera: Tephritidae).
Journal of Economic Entomology, 92(2), 303-308.

Additional key words: control methods **Computer codes:** CERTCA

2000/088 EU project on *Diabrotica virgifera virgifera*

An EU project on *Diabrotica virgifera virgifera* (EPPO A2 quarantine pest) has been set up and is entitled 'The threat to maize production in the EU by the invasive quarantine pest, Western Corn Rootworm (*Diabrotica virgifera virgifera*): a new sustainable crop management approach'. This 3-year research project involves 7 European countries and can be divided into 4 parts:

- Ecology of the pest (host plant relationships, hosts preferences of adults and larvae)
- Field monitoring of pest populations and design of crop rotations to be incorporated in sustainable crop management programmes.
- Survey for natural enemies of *D. virgifera virgifera* in Europe and in the area of origin which could be used as biocontrol agents.
- Analysis of potential dispersal rate and risk of further establishment of *D. virgifera virgifera* in Europe, especially in the EU.

Source: Kuhlmann, U.; Vidal, S; (1999) EU shared-cost RTD action on western corn rootworm: objectives, project workplan, and expected achievements.
Paper presented at the 4th meeting of the EPPO ad hoc Panel on *Diabrotica virgifera* and 6th International IWGO Workshop on *Diabrotica virgifera* (Paris, 1999-11-04/05)
EPPO Secretariat, 2000-04.

Additional key words: EU project **Computer codes:** DIABVI

2000/089 Present situation of the New Zealand flatworm (*Arthurdendyus triangulatus*) in UK

The New Zealand flatworm, *Arthurdendyus triangulatus* (*Artioposthia triangulata*), is a predatory planarian species feeding on earthworms which has been introduced 40 years ago into some north European countries. It originates in New Zealand, where it appears to be confined to woodlands and gardens in South Island. It was introduced into Northern Ireland in 1963, England and Scotland in 1965 and the Faroe Islands (Denmark) in 1982 (see EPPO RS 96/042), and is reported in Iceland and Ireland. A general review (Cannon *et al*., 1999) presents the current knowledge on *A. triangulatus* geographical distribution in UK, biology and ecology, and environmental impact.

- In Northern Ireland: *A. triangulatus* occurs in all six counties but is concentrated in the more populated areas, in particular around Belfast, in gardens and vegetable plots. However, it is found in grassland in some places, but its impact is difficult to appreciate. In grassland, studies have showed that after an increase of *A. triangulatus* populations from 1984 to 1988, they decreased from 1989 to 1992.

- In Scotland, it was first found in 1965 in the Royal Botanical Gardens of Edinburgh. It occurs throughout mainland Scotland (in particular central Scotland) and on the isles of Gigha, Islay, Bute and Orkney. It is found essentially in botanical and private gardens, and is not considered as a problem in agricultural land (e.g. in potato-producing areas).
- In England and Wales: it was first found in 1965 near Carlisle and not seen again for 27 years until it was found in a garden centre near Manchester in 1992. A gradual increase of populations has been observed but *A. triangulatus* is much less common in England and Wales than in Northern Ireland and Scotland.

The authors concluded that the distribution of *A. triangulatus* in UK is limited and discontinuous and that despite its rather long presence in UK, knowledge on its biology and ecology remains limited. Therefore, it is quite difficult to appreciate its potential distribution in Europe and its impact on the environment.

There are also published records of *A. triangulatus* in Ireland.

Note: *A. triangulatus* is not considered by EPPO to be a quarantine pest. However, work has been done on possible practical measures to prevent any further spread in Europe and two draft EPPO Standards are in preparation (Import requirements and Nursery inspection, exclusion and treatment). Under the Convention on Biodiversity, *A. triangulata* is probably to be considered as an "alien invasive species".

Source: Cannon, R.J.; Baker, R.H.A.; Taylor, M.C. Moore, J.P. (1999) A review of the status of the New Zealand flatworm in the UK.
Annals of Applied Biology, 135(3), 597-614.

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

2000/090 EPPO report on selected intercepted consignments

The EPPO Secretariat has compiled the intercepted consignment reports for 1999 from Croatia and for 2000 received since the previous report (EPPO RS 2000/071) from the following countries: Austria, Czechia, Denmark, Estonia, France, Finland, Germany, Ireland, Netherlands, Poland, Portugal, Slovenia, Sweden, 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.

Note: The EPPO RS 2000/052 mentioned a Dutch interception of *Mangifera indica* fruits infested by *Bactrocera dorsalis* from Brazil. It has since been specified that only larvae were found, which can only be described as *Bactrocera* sp. of the *dorsalis* complex. The Brazilian NPPO has stressed that *B. dorsalis* (in the strict sense) does not occur in Brazil. It may be noted that the related *B. carambolae* has been introduced into a limited area in the north of the country.

• 1999 Interceptions in Croatia

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Cacoecimorpha pronubana	*Dianthus*	Cut flowers	Italy	Croatia	1
Ephestia	*Glycine max*	Stored products	Brazil	Croatia	1
Lasioderma serricorne, Corcyra cephalonica	*Theobroma cacao*	Stored products	Ghana	Croatia	1

• 2000 Interceptions

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Aleurotuberculatus ?minutus	*Ixora*	Plants for planting	Costa Rica	Netherlands	1
Ambrosia	*Helianthus annuus*	Stored products	Hungary	Poland	1
	Zea mays	Stored products	Hungary	Poland	4
	Zea mays	Stored products	Slovakia	Poland	5
Ambrosia artemisiifolia	*Zea mays*	Stored products	Slovakia	Poland	2

EPPO *Reporting Service*

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Aphelenchoides fragariae	*Astilbe*	Plants for planting	Netherlands	Poland	5
Aphis spiraecola	*Euryops pectinatus*	Cuttings	Israel	United Kingdom	1
Bemisia afer	*Laurus nobilis*	Plants for planting	Italy	United Kingdom	2
Bemisia tabaci	*Eryngium*	Cut flowers	Vietnam	France	1
	Eustoma	Cut flowers	Israel	United Kingdom	1
	Hibiscus rosa-sinensis	Plants for planting	Côte d'Ivoire	France	1
	Hygrophila	Aquarium plants	Thailand	France	1
	Hygrophila polysperma	Aquarium plants	Thailand	France	1
	Hygrophila siamensis	Aquarium plants	Singapore	France	1
	Hygrophila stricta	Aquarium plants	Singapore	France	1
	Hypericum androsaemum	Cut flowers	Netherlands	United Kingdom	1
	Limnophila gratissima	Aquarium plants	Vietnam	France	2
	Manihot esculenta	Vegetables	Gambia	United Kingdom	2
	Ocimum basilicum	Vegetables	Thailand	France	1
	Solidaster	Cut flowers	Spain (Canary isl.)	United Kingdom	1
	Trachelium	Cut flowers	Israel	Ireland	1
	Trachelium	Cut flowers	Israel	United Kingdom	2
Bemisia tabaci (biotype B)	*Lantana*	Plants for planting	Israel	Netherlands	1
Clavibacter michiganensis subsp. sepedonicus	*Solanum tuberosum*	Ware potatoes	Germany	Czechia	1
	Solanum tuberosum	Ware potatoes	Germany	Netherlands	3
	Solanum tuberosum	Ware potatoes	Germany	Poland	2
Claviceps purpurea	*Secale cereale*	Stored products	Germany	Poland	1
Coccus viridis	*Polyscias scutellaria*	Plants for planting	Costa Rica	Netherlands	2
Cronartium	*Mahonia ?pomiensis*	Plants for planting (breeding)	Tibet	United Kingdom	1
Diplozythiella (*suspect *bambusina)?	*Phyllostachys ?aureolis, P. nigra*	Plants for planting	China	United Kingdom	1
Ditylenchus dipsaci	*Narcissus*	Bulbs	United Kingdom	Netherlands	1
Ephestia cautella, E. elutella	*Theobroma cacao*	Stored products	Côte d'Ivoire	Poland	1
Frankliniella occidentalis	*Dianthus*	Cut flowers	Spain	Estonia	1
	Ornamentals	Pot plants	Netherlands	Poland	1
Globodera pallida	*Solanum tuberosum*	Ware potatoes	Italy	Slovenia	2
Globodera rostochiensis	*Solanum tuberosum*	Ware potatoes	Belgium	Czechia	3
Helicoverpa armigera	*Dianthus*	Cut flowers	Kenya	Netherlands	3
	Phaseolus vulgaris	Vegetables	Senegal	Netherlands	3
	Pisum sativum	Vegetables	Kenya	Netherlands	2
Helicoverpa armigera, Bemisia tabaci	*Eustoma*	Cut flowers	Zimbabwe	United Kingdom	1
Lampides boeticus, Helicoverpa armigera	*Pisum*	Vegetables	Kenya	United Kingdom	1

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Leptinotarsa decemlineata	*Cichorium endivia*	Vegetables	France	United Kingdom	2
	Daucus carota	Vegetables	Spain	United Kingdom	1
	Petroselinum crispum	Vegetables	Italy	United Kingdom	1
Liriomyza	*Brassica pekinensis*	Vegetables	Thailand	Denmark	2
	Brassica pekinensis, Ocimum basilicum	Vegetables	Thailand	Denmark	1
	Coriandrum	Vegetables	Vietnam	France	1
	Dendranthema	Cut flowers	Netherlands	United Kingdom	1
	Gypsophila	Cut flowers	Netherlands	Czechia	1
	Gypsophila	Cut flowers	Netherlands	United Kingdom	1
	Ocimum basilicum	Vegetables	Israel	France	1
	Ocimum basilicum	Vegetables	Thailand	Denmark	11
	Phaseolus	Vegetables	Togo	France	1
Liriomyza huidobrensis	*Beta vulgaris* ssp. *vulgaris* var. *cicla*	Vegetables	Italy	Slovenia	1
	Bupleurum	Cut flowers	Israel	Ireland	1
	Coriandrum sativum	Vegetables	Cyprus	United Kingdom	1
	Diascia	Plants for planting	Portugal	United Kingdom	2
	Pisum	Vegetables	Kenya*	United Kingdom	1
Liriomyza (*suspect *huidobrensis)	*Carthamus*	Cut flowers	Israel	United Kingdom	1
Liriomyza sativae	*Ocimum basilicum*	Vegetables	Thailand	France	4
Liriomyza trifolii	*Artemisia dracunculus*	Cut flowers	Morocco	France	1
	Gypsophila	Cut flowers	Turkey	France	1
Liriomyza (*suspect *trifolii)	*Allium fistulosum*	Vegetables	Mexico	United Kingdom	1
Macrophoma	*Podocarpus latifolius*	Plants for planting	South Africa	United Kingdom	1
Meloidogyne	*Rosa*	Cuttings	Netherlands	Poland	1
Penicillium	*Lycopersicon esculentum, Citrus sinensis, C. limon*	Fruits and Vegetables	Spain	Poland	1
Phoma exigua* var. *foveata	*Solanum tuberosum*	Seed potatoes	Netherlands	Estonia	1
Potato rough dwarf carlavirus	*Solanum tuberosum*	Seed potatoes (breeding)	Argentina	United Kingdom	1
Potato S carlavirus	*Solanum tuberosum*	Tissue culture	USA	Netherlands	1
Ralstonia solanacearum	*Solanum tuberosum*	Seed potatoes (breeding)	Indonesia	United Kingdom	1
Ralstonia solanacearum	*Solanum tuberosum*	Ware potatoes	Netherlands	Poland	1
Scirtothrips	*Alstroemeria aurantiaca*	Cut flowers	Kenya	United Kingdom	1
Scirtothrips aurantii	*Eustoma grandiflorum*	Cut flowers	Kenya	United Kingdom	1
Sitophilus oryzae	*Avena sativa*	Stored products	Czechia	Poland	1
	Zea mays	Stored products	Hungary	Poland	1
	Zea mays	Stored products	Slovakia	Poland	2

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Sitophilus oryzae, Tribolium	*Triticum*	Stored products	Czechia	Poland	1
Thrips australis	*Chamaelaucium uncinatum*	Cut flowers	Israel	United Kingdom	1
Thrips palmi	*Dendrobium*	Cut flowers	Thailand	Austria	1
	Dendrobium	Cut flowers	Thailand	Germany	3
	Dendrobium	Cut flowers	Thailand	Netherlands	2
	Orchis	Cut flowers	Thailand	United Kingdom	1
	Solanum melongena	Vegetables	Dominican Rep.	Netherlands	2
	Solanum melongena	Vegetables	Suriname*	Netherlands	1
Thysanoptera	*Dendrobium*	Cut flowers	Thailand	France	1
	Dendrobium	Cut flowers	Thailand	Germany	1
Tobacco ringspot nepovirus	*Bacopa*	Cuttings	Israel	Netherlands	1
Tribolium, Sitophilus	*Hordeum vulgare*	Stored products	Hungary	Slovenia	2
Tylenchorhynchus, Pratylenchus	*Eriobotrya japonica*	Plants for planting	Italy	United Kingdom	1
Tylenchus semipenetrans, Paratrichodorus porosus	*Citrus*	Plants for planting	Italy	United Kingdom	1
Xanthomonas axonopodis **pv. *phaseoli***	*Phaseolus vulgaris*	Seeds	Zimbabwe	France	2

- **Fruit flies**

Pest	Consignment	Country of origin	C. of destination	nb
Bactrocera	*Mangifera indica*	Thailand	France	3
Ceratitis	*Mangifera indica*	Côte d'Ivoire	France	1
Tephritidae	*Mangifera indica*	Mauritius	France	1

- **Wood**

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
Bursaphelenchus xylophilus	Coniferae	Packing material	Canada	Finland	2
	Coniferae	Packing material	Japan	Finland	1
Cerambycidae larvae	Conifer and hardwood	Packing material	China	Ireland	1
Grub holes > 3mm	Conifer and hardwood	Packing material	China	Ireland	1
	Coniferae	Packing material	Canada	Finland	1
	Coniferae	Packing material	China	Finland	2
	Coniferae	Packing material	Japan	Finland	3
	Coniferae	Packing material	Korea, Rep.	Finland	1
	Coniferae	Packing material	Taiwan	Finland	4
	Coniferae	Packing material	USA	Finland	8
	Unspecified wood	Packing material	China	Denmark	3
	Unspecified wood	Packing material	China	France	2
Insects	Unspecified wood	Packing material	Benin	France	1
Monochamus	Coniferae	Packing material	China	Ireland	2
	Coniferae	Packing material	Taiwan	Ireland	1
	Larix sibirica	Wood	Russia	Austria	1

- **Bonsais**

One consignment of bonsai plants of *Pinus* of unknown origin (re-exported by Denmark) was intercepted by United Kingdom because of the presence of *Helicotylenchus dihystera*.

Source: **EPPO Secretariat, 2000-04.**
NPPO of NL, 2000-04
NPPO of BR, 2000-03