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Reporting

Service

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CONTENTS

97/067 *Liriomyza huidobrensis* eradicated from Norway

During summer 1995, *Liriomyza huidobrensis* (EPPO A2 quarantine pest) was found in three glasshouses on different localities on the south-western coastal part of Norway, at Jæren, near Stavanger, in Rogaland county. For the first grower, the pest was found on *Gypsophila* imported from the Netherlands. For the second grower, *L. huidobrensis* was found on *Verbena* and *Diascia*. The origin of the plants remains unclear, but they could have been bought from a third grower, who had an infestation on *Gypsophila* imported from Israel. Immediate action was taken by the Norwegian authorities. The infested plants were destroyed and the glasshouses disinfected. Surveys were carried by placing yellow sticky traps in these glasshouses (1 trap per 100 m^2), and no further infestation of leafminers was observed in 1995 or in 1996.

In addition, an outdoor survey on 40 fields situated in the coastal area of Oslo-Stavanger was carried out in September 1996. On each locality, cultivated host plants and weeds were observed for symptoms of leaf miners, and sweep net samples were taken. In October 1996, another survey was done in Norwegian glasshouses by using yellow sticky traps (1 trap per 200 m^2). It included 104 firms in 14 of the 18 counties of Norway, which represents 8.2 % of the total number of glasshouse firms and 9.3 % of the total area of glasshouses in Norway. During these two surveys, no specimen of *L. huidobrensis*, *L. sativae* (EPPO A1 quarantine pest), *L. trifolii* (EPPO A2 quarantine pest) or *Amauromyza maculosa* (EPPO A1 quarantine pest) was found. It was concluded that, after the limited outbreak of 1995, the pest has been eradicated from Norway.

Source: **Plant Protection Service of Norway, 1997-04**.

Additional key words: eradication **Computer codes:** LIRIHU, NO

97/068 *Hyphantria cunea* found but not established in Denmark

In the EPPO RS 97/028, the finding of *Hyphantria cunea* (EPPO A2 quarantine pest) in Denmark was reported. The Danish Plant Directorate has informed the EPPO Secretariat that a single specimen of *Hyphantria cunea* was caught in a trap placed in the south of Falster island in 1986. It is presumed that it was transported by the wind from Poland. No other specimen of *H. cunea* has been found in Denmark since then, and therefore the pest should be considered as not established in the country.

Source: **Plant Protection Service of Denmark, 1997-02.**

Additional key words: denied record **Computer codes:** HYPHCU, DK

97/069 First report of *Plasmopara halstedii* in South Africa

During the 1993-94 maize growing season, *Plasmopara halstedii* (EU Annex II/A2) has been found for the first time in South Africa in a commercial field near Standerton and in a seed production field near Kroostad. In 1995-96, the disease was found in experimental hybrids near Heilbron, and in commercial fields near Marikana, Heilbron and Potchefstroom. Disease incidence was low, with less than 1 % of plants affected by the disease. The authors noted that as these findings concern several geographic areas within South Africa, the fungus may be already well established in the country.

Source: Viljoen, A.; wan Wyk, P.S.; Nowell, D.C.; Gulya, T.J. (1997) Occurrence of downy mildew on sunflower in South Africa. **Plant Disease, 81(1), p111.**

Additional key words: new record **Computer codes:** PLASHA, ZA

97/070 A new disease of maize and wheat in USA

In USA, a new disease of unknown etiology has been observed on wheat and maize in the High Plains, since 1993. This disease has tentatively been called the high plains disease. Since mid-June 1993, maize plants showing severe symptoms (including stunting, chlorosis with flecking or streaking, reddening of leaf margins) were found in Colorado, Idaho, Kansas, Nebraska, Texas and Utah. In severe cases plants died. Since September 1993, wheat crops also showed severe symptoms (small chlorotic spots which rapidly expand into a mosaic and general yellowing of the plant) in the same areas that had diseased maize crops. By 1995, the high plains disease was observed in samples of maize and wheat from an area extending from the Texas panhandle to eastern Nebraska, to central South Dakota, to western Idaho and back through Colorado to eastern New Mexico and Texas. It appears also that the high plains disease can be found on barley and oat. Serological testing of diseased maize plants only identified wheat streak mosaic rymovirus (WSMV), but as symptoms were so severe and differed from those caused by WSMV, the presence of another virus was suspected. Pathogen nucleoproteins from infected tissues were concentrated and analyzed by electrophoresis, and revealed the presence of the coat protein of WSMV and a unique 32 kD protein. Electron microscopy of leaf-dip or semi-purified preparations did not give definite results, but in some cases many spherical or ovoid bodies with a double membrane were observed, in addition to the filamentous virus particules and pin-wheel cytoplasmic inclusions characteristic of WSMV. Preliminary studies have also shown that the high plains disease could be

transmitted by the wheat curl eriophyid mite (*Aceria tosichella*). Further work is continuing on this disease to clarify its etiology, host range, vector transmission and interactions with WSMV.

Source: Jensen, S.G.; Seifers, D.L. (1996) A new disease of maize and wheat in the High Plains.
Plant Disease, 80(12), 1387-1390.

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

97/071 Introduction of sugarcane smut caused by *Ustilago scitaminea* in Morocco

Sugarcane smut caused by *Ustilago scitaminea* has been introduced into Morocco in 1993 and is now present in all the major sugarcane cultivars which are grown in the Gharb and Loukkous regions. Only the Moulouya region has remained free from sugarcane smut. Surveys have shown that the disease is now widespread in these regions and that its incidence has increased. To control sugarcane smut the following sanitation methods are applied: avoidance of susceptible cultivars, roguing of infected plants, reduction of physiological stress and monitoring of nurseries producing disease-free plants. Important work is also carried out on the development of resistant cultivars. *Ustilago scitaminea* is a rather widespread fungus and is present in many countries where sugarcane is grown. In the Euro-mediterranean region, the CABI map (CABI, 1991) indicates its occurrence in Portugal and Egypt.

Source: Akalach, M.; Touil, B. (1996) Occurrence and spread of sugarcane smut caused by *Ustilago scitaminea* in Morocco.
Plant Disease, 80(12), 1363-1366.

CABI map No. 79, 6th edition (1991), CAB International, Wallingford, UK

Additional key words: new record **Computer codes:** USTISC, MO

97/072 First report of *Erwinia chrysanthemi* in Syria

In Syria, in 1993, a serious disease of *Dieffenbachia maculata* was observed in several greenhouses in Al Bab, in the province of Aleppo. Affected plants showed typical soft rot symptoms at the crown and/or cutting wound level, and rapidly wilted. The causal agent of the disease has been identified as *Erwinia chrysanthemi* (EPPO A2 quarantine pest). This the first report of this bacterium in Syria.

Source: Balestra, G.M.; Impiglia, A. (1996) Occurrence of *Erwinia chrysanthemi* on *Dieffenbachia maculata* in Syria.
Phytopathologia Mediterranea, 35(2), 127-128.

Additional key words: new record **Computer codes:** ERWICH, SY

97/073 Further spread of ergot disease of sorghum

The introduction into Brazil of *Claviceps africana*, causing the sugary disease or ergot of sorghum, was reported in mid-1995 (see EPPO RS 97/031). Ergot is a serious disease which was initially restricted to Asia and Africa. The Indian pathogen is *C. sorghi*, and the African pathogen is *C. africana*. The anamorph of both fungi is *Sphacelia sorghi*. The disease reduces seed yield and quality in hybrid seed production fields, particularly if seed set is delayed in male-sterile lines. In Brazil, estimated losses of 3 million USD for the seed industry were given in 1995. By 1996, the disease was also found in Argentina, Bolivia and Colombia. In April 1996, it was reported in Australia (southern Queensland) where it spread over 60,000 km^2 in 3 weeks.

Source: Sorghum ergot - Brazil, Argentina, Bolivia, Colombia, Australia.
ICRISAT (icrisat@cgnet.com)
E-mail message of 1997-02 from PROMED
(promed-plant@usa.healthnet.org)

Additional key words: new records **Computer codes:** SPHLSO, AR, AU, BR, CO

97/074 Further studies on the sour cherry strain of plum pox potyvirus

A sour cherry strain of plum pox potyvirus (PPV - EPPO A2 quarantine pest) has recently been characterized on plant material from Moldova (EPPO RS 94/143 and 96/149). Preliminary studies had suggested that the sour cherry isolate could represent a new subgroup of PPV strains. Further molecular and serological studies have confirmed that PPV-sour cherry is a prototype of a new subgroup called PPV-C which differs significantly from the D or M subgroups. In addition, aphid transmission (with *Myzus persicae*) of the PPV-sour cherry strain has been confirmed experimentally. Preliminary studies using molecular and serological methods have shown that the Italian sweet cherry isolate of PPV (EPPO RS 94/144) is indeed a member of the PPV-C subgroup.

Source: Nemchinov, L.; Hadidi, A.; Maiss, E.; Cambra, M.; Candresse, T.; Damsteegt, V. (1996) Sour cherry strain of plum pox potyvirus (PPV): molecular and serological evidence for a new subgroup of PPV strains.
Phytopathology, 86(11), 1215-1221.

Additional key words: new host plant **Computer codes:** PLPXXX

97/075 Virus diseases of sweet cherry in China

In recent years, sweet cherry (*Prunus avium*) commercial orchards have become more widespread in China. In Xi'an (Shaanxi), many sweet cherry trees have shown symptoms of shot hole, enation, small reddish and/or yellowing leaves. During spring 1996, nearly
90 % of the trees showed one or several of these symptoms. Leaf samples were collected and tested (ELISA, virus detection kits). The following viruses were found, either alone or in association: prune dwarf ilarvirus, prunus necrotic ringspot ilarvirus, apple mosaic ilarvirus and apple chlorotic leaf spot trichovirus. According to the authors, this is the first report of these viruses in sweet cherry in China.

Source: Zhou, Y.Y.; Ruan, X.F; Wu, C.L.; Zhang, Q.Z. (1996) First report of sweet cherry viruses in China.
Plant Disease, 80(12), p 1429.

Additional key words: new records **Computer codes:** APMXXX, PNDXXX, PNNRSX, APCLSX, CN

97/076 European stone fruit yellows phytoplasma is the cause of several yellows and decline diseases of stone fruits in Southern Italy

Phytoplasmas can induce several diseases of stone fruits in Europe, some of these disorders have been described as: apricot chlorotic leaf roll (EPPO A2 quarantine pest), peach vein clearing, plum leptonecrosis, decline of Japanese plum (*Prunus salicina*), peach yellows, peach decline, peach rosette (disease found in Italy, EPPO RS 95/212, but which may be different from the disease in USA), nectarine chlorotic leaf roll, Molière disease of sweet cherry and European plum, and other diseases affecting almond and flowering cherry (*P. serrulata*). Recently, with DNA-based techniques, it has been possible to detect, differentiate and characterize phytoplasmas associated with diseases. It appears that in Europe, all known phytoplasma diseases of stone fruits are caused by a relatively homogeneous organism which was called European stone fruit yellows (EPPO RS 96/003). This phytoplasma is closely related to apple proliferation, pear decline and a few other phytoplasmas of the apple proliferation group. But it is different from several European stone fruit-derived phytoplasmas which were transmitted to periwinkle, and also different from peach X-disease phytoplasma (EPPO A1 quarantine pest) which is a major pathogen in North America.

PCR and RFLP methods were used to study the etiology of peach, apricot and Japanese plum phytoplasma diseases in Campania, south of Italy. Symptoms observed on apricot and plum resembled those due to apricot chlorotic leaf roll phytoplasma (EPPO A2 quarantine pest) and plum leptonecrosis phytoplasma, whereas symptoms observed on peach were very similar to those of California peach yellow leaf roll, a disease which is absent from Europe. These symptoms include a considerable enlargement of midribs and lateral veins, the presence of light corky tissue along swollen veins which then turns dark brown. Leaf margins are rolled longitudinally upward, whereas leaf tips curl downward. Reddening of the leaves, premature leaf drop and decline of the trees is also observed. The results showed that in the majority of symptomatic trees (peach, apricot and Japanese plum), the European stone fruit yellows phytoplasma was detected. On peach trees, the peach yellow leaf roll phytoplasma was not identified. However, the authors stressed that before final conclusions can be drawn, the result of inoculation experiments of the European stone fruit yellows phytoplasma, particularly on peach, have to be obtained.

Source: Marcone, C.; Ragozzino, A.; Seemüller, E. (1996) European stone fruit yellows as the cause of peach vein enlargement and other yellows and decline diseases of stone fruits in Southern Italy.
Journal of Phytopathology, 144(11-12), 559-564.

Additional key words: etiology, phytoplasmas **Computer codes:** ABCLRX, IT

97/077 Studies on grapevine yellows in Campania (IT)

In Campania, southern Italy, typical symptoms of grapevine yellows e.g. leaf roll, veinal yellowing and necrosis, withering of flower clusters, incomplete lignification of shoots and black pustules along the shoots have been observed. In order to determine the etiology of the disease, affected plants have been tested by using PCR for phytoplasma infection. Phytoplasmas were detected in all tested plants. Further analysis (PCR and RFLP) revealed that the phytoplasmas infecting grapevine in Campania were genetically uniform and similar to the phytoplasma causing Vergilbungskrankheit (VK) in Germany. It can be recalled that VK is thought to be similar or identical to bois noir but distinct from grapevine flavescence dorée phytoplasma (EPPO A2 quarantine pest). Both VK and bois noir are closely related to the stolbur agent. Although, phytoplasmas belonging to the stolbur group have been found on grapevine in other regions of Italy (e.g. in Emilia Romagna), the authors noted that this is the first report of a phytoplasma disease on grapevine in Campania.

Source: Marcone, C.; Ragozzino, A.; Credi, R.; Seemüller, E. (1996) Detection and characterization of phytoplasmas infecting grapevine in southern Italy and their genetic relatedness to other grapevine yellows phytoplasmas.
Phytopathologia Mediterranea, 35(3), 207-213.

97/078 New detection method for phytoplasmas

A new universal PCR detection method has been developed in Maryland (US) to detect phytoplasmas. Two pairs of universal primers can specifically initiate amplification of 16S rRNA sequences of 19 phytoplasma (representing all known 16S rRNA groups). No amplification was obtained with 48 related mollicutes (except an *Acholeplasma* sp. but this type of organism has never been found in living plant tissues) and some plant pathogenic bacteria and other prokaryotes. Compared to

direct PCR assay, the nested-PCR was more sensitive and phytoplasmas could be detected from all woody hosts and insects tested. In addition, the RFLP analysis of the PCR products obtained can allow the specific identification of the phytoplasmas present in plant tissues. The authors felt that this method is particularly useful for etiological studies of unknown diseases which are suspected to be associated with phytoplasmas and also for testing plant material in certification programmes.

Source: Gundersen, D.E.; Lee, I.M. (1996) Ultrasensitive detection of phytoplasmas by nested-PCR assays using two universal primer pairs.
Phytopathologia Mediterranea, 35(3), 144-151.

Additional key words: new detection and identification method

97/079 EPPO Distribution List of *Erwinia amylovora*

The second edition of 'Quarantine Pests for Europe' mentions erroneously the occurrence of *Erwinia amylovora* (EPPO A2 quarantine organism) in Slovakia. This record came from the IMI map no.2 (1993) which refered to a Czech paper (Kudela, V. (1988) [*Erwinia amylovora* - causal agent of fireblight on rosaceous plants in Czechoslovakia] Ochrana Rostlin, 24(3), 173-182.). But when examining this paper, it only mentions the first outbreak of fireblight in Czecoslavakia, in Prague (now Czech Republic). This would mean that the record on in IMI map is erroneous. The Plant Protection Service of Slovakia has very recently confirmed that fireblight has never been found in Slovakia (see also EPPO RS 97/009). The distribution list is, at current knowledge of the EPPO secretariat as follows:

EPPO Distribution List: *Erwinia amylovora*

EPPO region: Albania (RS 96/074), Austria (few reports under eradication, RS 94/172), Bosnia & Herzegovina, Belgium, Bulgaria, Croatia, Cyprus (RS 457), Czech Republic (RS 94/046), Denmark, Egypt (new outbreaks from 1983, following a much earlier outbreak in 1964 - RS 467), France (except south-east), Germany, Greece (including Crete), Hungary (few reports, under eradication), Ireland (RS 472), Israel (RS 459), Italy (Emilia-Romagna (RS 95/114), Puglia, Sicilia - RS 511), Lebanon (RS 498), Luxembourg, Macedonia, Netherlands, Norway (RS 471), Poland, Romania, Spain (one focus, under eradication), Sweden (RS 477), Switzerland (few reports, under eradication), Turkey, UK (RS 484; England), Yugoslavia (Serbia only). The disease has been officially declared as eradicated in Northern Ireland (UK). In the EPPO RS 95/055, Ukraine states that *E. amylovora* is not present, and denies previous unconfirmed reports.

Africa: Egypt.

Asia: Armenia (RS 506/08), China (unconfirmed), Cyprus, India (on rose and therefore dubious), Iran, Israel, Jordan, Lebanon, Korea Republic (unconfirmed), Saudi Arabia (unconfirmed), Turkey, Vietnam (unconfirmed). The situation in Japan needs clarification, but there is some indication that the disease may be present (RS 96/108).

North America: Bermuda, Canada, Mexico, USA.

Central America and Caribbean: Guatemala (unconfirmed).

South America: Colombia (unconfirmed). The record in Chile cited in the first edition of the EPPO data sheet is an error.

Oceania: New Zealand.

This distribution list replaces all previously published EPPO distribution lists for *E. amylovora*.

Source: **EPPO Secretariat, 1997-04.**

97/080 *Aleurothrixus floccosus* found for the first time in Cyprus

The Plant Protection Service of Cyprus has recently informed the EPPO Secretariat that *Aleurothrixus floccosus* has been found for the first time in January 1997 on Cyprus. It was observed on citrus in the city of Limassol. A survey was conducted in all citrus areas of Cyprus, but the insect was found to be restricted to Limassol. A chemical control programme has immediately been applied, and it is planned to rear and release the parasitoid *Cales noacki* to control the pest.

In the Mediterranean region, Onillon (1990) recalled that *Aleurothrixus floccosus* was introduced into the Canary Islands in 1959, then in Spain and in France (1969), before invading mainland Italy in 1970, Morocco in 1972, Sicily in 1980 and Algeria in 1982. It is also present in Portugal (since 1977; Magalhaes, 1980), Israel (since 1991; Argov, 1994), Tunisia (apparently, recently introduced; Chermiti *et al*. 1993). Even in United Kingdom (Malumphy, 1995), several outbreaks on ornamental *Citrus* spp. grown in glasshouses have been reported.

Source: **Plant Protection Service of Cyprus, 1997-04.**

Argov, Y. (1994) The woolly whitefly, a new pest in Israel.
Alon Hanotea. 1994, 48(6), 290-292.

Chermiti, B.; Onillon, J.C.; Dali, M.; Messelmani, H. (1993) Control of the woolly whitefly, *Aleurothrixus floccosus* (Hom., Aleurodidae) by the parasitoid, *Cales*

noacki (Hymenopt., Aphelinidae).
Bulletin OILB-SROP, 16(7), 86-98.

Magalhaes, G.S. (1980) Note on the introduction of *Aleurothrixus floccosus* (Mask.) (Homoptera, Aleurodidae) in south Portugal and its control by *Cales noacki* How. (Hymenoptera, Aphelinidae).
Proceedings of the International symposium of IOBC/WPRS on integrated control in agriculture.Vienna, 1979-10-/12.

Malumphy, C. (1995) Woolly whitefly, *Aleurothrixus floccosus* (Maskell) (Homoptera: Aleyrodidae), a pest of ornamental Citrus, new to Britain.
Entomologist's Gazette, 46(3), 217-220.

Onillon, J.C. (1990) The use of natural enemies for the biological control of whiteflies. In: Whiteflies: their bionomics, pest status and management (Ed. by Gerling, D.). Intercept, Andover, UK, 287-313.

Additional key words: new record **Computer codes:** ALTHFL, CY

97/081 Virus diseases of vegetable crops in Murcia (ES)

In the region of Murcia (south east of Spain), the main virus diseases of vegetables crops are due to tomato spotted wilt tospovirus (potential EPPO A2 quarantine pest), tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest - new detailed record) and to a lesser extent cucumber mosaic cucumovirus. Tomato yellow leaf curl geminivirus was found for the first time in 1992 but serious problems on tomatoes were seen in 1993. Tomato spotted wilt tospovirus has been observed since 1989 on many horticultural and ornamental crops. During the last 2-3 years, its incidence has generally declined though this virus still can cause serious problems especially on capsicum, tomatoes and lettuce.

Source: Monserrat Delgado, A. (1996) Virosis en cultivos hortícolas de la Regíon de Murcia: medidas para su control.
Phytoma España, no. 84, 44-51.

Additional key words: new detailed record **Computer codes:** TMYLCX, TMSWXX, ES

97/082 Peanut yellow spot virus is a distinct tospovirus species

As summarized in the EPPO RS 96/198, several distinct species of tospoviruses have been described and separated into 4 serogroups:

- serogroup I: tomato spotted wilt tospovirus (TSWV - EPPO A2 quarantine pest)
- serogroup II: tomato chlorotic spot tospovirus (TCSV)
  groundnut ringspot tospovirus (GRSV)
- serogroup III: impatiens necrotic spot tospovirus (INSV)
- serogroup IV: watermelon silver mottle tospovirus (WSMV)
  groundnut (peanut) bud necrosis tospovirus (GBNV)
  melon spotted wilt tospovirus (MSWV)

So far, other viruses for which there was currently insufficient data to allow designation as distinct tospoviruses included for example peanut (groundnut) yellow spot virus. But recently, serological and molecular studies carried out in India have shown that peanut yellow spot virus is indeed a distinct tospovirus which should be included into a new serogroup (serogroup V). This virus causes yellow spot on the peanut leaves, which later coalesce and become necrotic. Its incidence in the field can reach up to 90 %, although yield losses have not been determined. Peanut yellow spot tospovirus is present in India but also in Thailand. A similar virus has been reported from Taiwan. Preliminary studies have shown that peanut yellow spot tospovirus may be transmitted by *Scirtothrips dorsalis* (EPPO A1 pest).

Source: Satyanarayana, T.; Lakshminarayana Reddy, K; Ratna, A.S.; Deom, C.M.; Gowda, S.; Reddy, D.V.R. (1996) Peanut yellow spot virus: a distinct tospovirus species based on serology and nucleic acid hybridisation.
Annals of applied Biology, 129(2), 237-245.

Additional key words: new pest

97/083 Detailed situation of *Popillia japonica* in USA

The paper from Alm *et al*. (1996) mainly presents studies on the efficacy of pheromone traps for *Popillia japonica* (EPPO A1 quarantine pest), but also gives detailed information on the situation of this pest in USA. The beetle is now established in most states situated east of the Mississippi river, but not in Mississippi and Florida (Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia). Isolated infestations have been reported in Alabama*, Maine, Michigan, Nebraska*, Kansas*, Minnesota*, Wisconsin*. Localized populations have been eradicated in the past in California, Oregon and Nevada.

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* New detailed record

Source: Alm, S.R.; Yeh, T.; Dawson, C.G.; Klein, M.G. (1996) Evaluation of trapped beetle repellency, trap height, and string pheromone dispensers on Japanese beetle captures (Coleoptera: Scarabaeidae).
Environmental Entomology, 25(6), 1274-1278.

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

97/084 Loss estimates on soybean crops due to diseases and nematodes

Loss estimates on soybean crops due to diseases and nematodes are presented for the top ten soybean-producing countries in 1994 (USA, Brazil, China, Argentina, India, Canada, Paraguay, Indonesia, Italy, Bolivia). Total yield losses caused by *Heterodera glycines* (EPPO A1 quarantine pest) are greater than those caused by any other disease. Next in order of importance came *Diaporthe phaseolorum* var. *caulivora*, *Septoria glycines* and *Macrophomina phaseolicola*. For these top ten countries, the total yield loss due to diseases and nematodes is estimated to 14.99 million metric tons, valued at 3.31 billion USD. This paper also gives information on the occurrence of various diseases which are new records for the EPPO Secretariat. *Phialophora gregata* (EPPO A1 quarantine pest) appears as present in Argentina. This fungus is also reported with a restricted distribution in Brazil, in the States of Rio Grande do Sul and Santa Catarina (see also EPPO RS 97/046). *Phytophthora*

megasperma f.sp. *glycinea* (EPPO A2 quarantine pest) occurs in Brazil and in Indonesia (new records according to the EPPO Secretariat).

Source: Wrather, J.A.; Anderson, T.R.; Arsyad, D.M.; Gai, J.; Ploper, L.D.; Porta-Puglia, A.; Ram, H.H.; Yorinori, J.T. (1997) Soybean disease loss estimates for the top 10 soybean producing countries in 1994. **Plant Disease, 81(1), 107-110.**

Additional key words: new records **Computer codes:** AR, BR, ID, PHIAGR, PHYTMS

97/085 Identification of *Heterodera* cysts

A biochemical method for the identification of *Hederodera* species using cysts has been studied. By examining the isoforms of an enzyme (superoxide dismutase) in polyacrylamide gel electrophoresis, different profiles could be obtained for six species *H. avenae*, *H. cruciferae*, *H. glycines* (EPPO A1 quarantine pest), *H. goettingiana*, *H. schachtii*, and *H. trifolii*. Authors felt that studies should be extended to other *Heterodera* species and to intraspecific variation. As this method is rapid, it may have the potential for routine testing in diagnostic laboratories.

Source: Molinari, S.; Evans, K.; Rowe, J.; Russell, M. (1996) Identification of *Heterodera* cysts by SOD isozyme electrophoresis profiles. **Annals of applied Biology, 129(2), 361-368.**

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

97/086 Decline of potato cyst nematodes in Northern Ireland

Potato cyst nematodes (*Globodera pallida* and *G. rostochiensis*, both EPPO A2 quarantine pests) were first recorded in Northern Ireland in 1922. During the 1930s and early 1940s, nematodes were found as pests in gardens and allotments around cities. Intensive cropping with potatoes in fields during the 2nd World War exacerbated the problem which led to the publication of a special Order in 1945 and later amended (Potato root eelworm order). The measures prohibited potato growing in infested land. Land which has been out of potato production ('scheduled') for at least 15 years is eligible for re-sampling, and then the land is re-sampled every five years if necessary. At present in Northern Ireland, approximately 50 % of land has

now been descheduled, although there is still land that has been scheduled for 50 years.
Since 1986, a survey has been carried out in scheduled fields that had been found infested by potato cyst nematodes. Over the years, it was found that nematode populations are declining. This decline is not constant in time, the greatest reduction occurs during the first six years. Population analysis could only be made in certain fields, but it was observed that 81 % of the populations were *G. rostochiensis*, 8 % *G. pallida* and 11 % were a mixture of the two species. Cysts recovered throughout the survey were of variable age, and possibly up to 25 years old. The author concluded that the procedure followed for descheduling (with a re-sampling after 15 years since the first detection) seems adequate, as a decline of populations is obtained. It is also noted that land which has been out of potato production for more than 30 years and where non-viable cysts, or cysts containing poorly discernible juveniles are observed, could also return to potato production as these populations are considered as non-viable.

Source: Turner, S.J. (1996) Population decline of potato cyst nematodes (*Globodera rostochiensis*, *G. pallida*) in field soils in Northern Ireland.
Annals of applied Biology, 129(2), 315-322.

Additional key words: detailed record **Computer codes:** HETDPA, HETDRO, GB

97/087 EPPO report on selected intercepted consignments

The EPPO Secretariat has gathered the intercepted consignment reports received since the publication of the previous report which appeared in January 1997 (EPPO RS 97/023) but still corresponding to the year 1996, from the following countries: Austria, Czech Republic, Finland, France, Germany, Hungary, Netherlands, Norway, Romania, Switzerland, Tunisia, 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 for 1996.

	Consignment	Type of commodity	Country of Origin	Country of destination	nb
Acanthoscelides obtectus	*Phaseolus vulgaris*	Seeds	Bulgaria	Romania	1
	Phaseolus vulgaris	Seeds	Germany	Hungary	1
Agrobacterium tumefaciens	*Vitis vinifera*	Plants for planting	Bulgaria	Romania	1
***Aphelenchoides* sp.**	*Fragaria ananassa*	Plants for planting	France	Tunisia	1
	Fragaria ananassa	Plants for planting	Spain	Tunisia	1
	Ornamental plants	Bulbs	France	Tunisia	1
Bemisia tabaci	*Aster*	Cut flowers	Israel	United Kingdom	1
	Euphorbia pulcherrima	Plants for planting	Netherlands	United Kingdom	3
	Euphorbia pulcherrima	Pot plants	Netherlands	United Kingdom	1
	Gypsophila	Cut flowers	Israel	United Kingdom	1
	Hypericum	Cut flowers	Netherlands	United Kingdom	1
	Liatris	Cut flowers	Israel	United Kingdom	1
	Solidago	Cut flowers	Israel	United Kingdom	7
	Solidago	Cut flowers	Netherlands	United Kingdom	1
Bruchus pisorum	*Pisum sativum*	Seeds	USA	Hungary	1
***Bruchus* sp.**	*Lens culinaris*	Seeds	Turkey	Romania	1
Calandra oryzae, C. granaria, Rhizopertha dominica	*Hordeum vulgare*	Seeds	Ukraine	Hungary	1
Calandra oryzae	*Triticum aestivum*	Stored products	Yugoslavia	Hungary	2
Ceratitis capitata	*Citrus sinensis*	Fruits	Italy	Romania	1
	Citrus sinensis	Fruits	Turkey	Romania	1
***Cuscuta* sp.**	*Medicago sativa*	Seeds	Italy	Tunisia	1
	Trifolium pratense	Seeds	Egypt	Tunisia	1
	Trifolium pratense	Seeds	Italy	Tunisia	1
Dialeuropa decempuncta	*Piper betle*	Vegetables	Thailand	United Kingdom	1
Ditylenchus dipsaci	*Allium cepa*	Bulbs and tubers	Bulgaria	Romania	2
	Allium sativum	Bulbs and tubers	Bulgaria	Romania	2
***Ditylenchus* sp. + *Helicotylenchus* + *Pratylenchus* + *Xiphinema* sp.**	Unspecified plants	Plants for planting	Malaysia	Germany	1
Ephestia elutella	*Juglans regia*	Stored products	Ukraine	Hungary	1
	Zea mays	Stored products	Yugoslavia	Hungary	1
Frankliniella occidentalis	*Allamanda*	Plants for planting	Denmark	Norway	1
	Campanula	Plants for planting	Denmark	Norway	1
	Dendranthema	Cut flowers	Denmark	Norway	1
	Dendranthema	Cut flowers	Italy	Norway	2
	Dendranthema	Cut flowers	Netherlands	Norway	2
	Dianthus	Cut flowers	Colombia	Norway	1
	Dianthus	Cut flowers	Denmark	Norway	1
	Dianthus	Cut flowers	Netherlands	Norway	2
	Eustoma	Cut flowers	Denmark	Norway	1

	Consignment	Type of commodity	Country of Origin	Country of destination	nb
	Rosa sp.	Cut flowers	Denmark	Norway	1
	Rosa sp.	Cut flowers	Netherlands	Norway	1
Globodera pallida	*Solanum tuberosum*	Ware potatoes	Cyprus	Norway	1
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Globodera rostochiensis	*Quercus petraea*	Plants for planting	Poland	Netherlands	1
	Rosa sp.	Plants for planting	Poland	Netherlands	1
Helicoverpa armigera	*Dianthus*	Cut flowers	Israel	Netherlands	1
	Dianthus	Cut flowers	Kenya	Netherlands	1
	Dianthus	Cut flowers	Turkey	Netherlands	1
	Pelargonium	Cuttings	Spain (Canary isl)	United Kingdom	1
	Pisum sativum	Vegetables	South Africa	United Kingdom	1
	Unspecified plants	Vegetables	Nigeria	United Kingdom	1
Lasioderma serricorne	*Arachis hypogea*	Stored products	(Bulgaria)	Romania	1
Liriomyza huidobrensis	*Aster*	Cut flowers	Kenya	United Kingdom	1
	Dendranthema	Cut flowers	Netherlands	United Kingdom	1
	Dendranthema	Pot plants	Netherlands	United Kingdom	1
	Gypsophila	Cuttings	Israel	Netherlands	1
	Gypsophila	Cut flowers	Netherlands	United Kingdom	1
	Pisum sativum	Vegetable	Guatemala	United Kingdom	1
	Petroselinum	Vegetables	Italy	United Kingdom	1
	Unspecified plants	Vegetables	Cyprus	United Kingdom	1
Liriomyza trifolii	*Apium graveolens*	Vegetables	Spain	United Kingdom	1
	Solidago	Cut flowers	Israel	United Kingdom	1
Liriomyza sativae	*Ocimum basilicum*	Vegetables	Thailand	United Kingdom	1
***Liriomyza* sp.**	*Dendranthema*	Cut flowers	Netherlands	Norway	1
	Gypsophila	Cut flowers	Israel	France	1
	Gypsophila	Cut flowers	Netherlands	Norway	2
	Scaevola sp.	Cuttings	Israel	Germany	1
***Meloidogyne* sp.**	*Fragaria ananassa*	Plants for planting	Egypt	Tunisia	1
	Rosa sp.	Plants for planting	Denmark	Norway	2
	Rosa sp.	Plants for planting	Poland	Norway	1
	Ornamental plants	Bulbs	France	Tunisia	1
	Unspecified plants	Plants for planting	St Lucia	Germany	1
Oryzaephilus surinamensis	*Helianthus annuus*	Seeds	Ukraine	Hungary	2
Phthorimaea operculella	*Solanum tuberosum*	Ware potatoes	Bulgaria	Romania	1
	Solanum tuberosum	Ware potatoes	Cyprus	Norway	2
	Solanum tuberosum	Ware potatoes	Spain	Norway	1
***Pratylenchus* sp.**	Ornamental plants	Bulbs	France	Tunisia	1
	Ornamental plants	Pot plants	Italy	Tunisia	1
	Rosa sp.	Plants for planting	France	Tunisia	1
Quadraspidiotus perniciosus	*Malus pumila*	Fruits	Ukraine	Hungary	1
Radopholus similis	*Heliconia*	Pot plants	Malaysia	Netherlands	1

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	Consignment	Type of commodity	Country of Origin	Country of destination	nb
Ralstonia solanacearum	*Solanum tuberosum*	Ware potatoes	Netherlands	Norway	1
Spodoptera littoralis	*Corchorus*	Vegetables	Nigeria	United Kingdom	3
	Colocasia esculenta	Vegetables	Nigeria	United Kingdom	2
	Dianthus	Cut flowers	Israel	Netherlands	1
	Unspecified plants	Vegetables	Nigeria	United Kingdom	4
Spongospora subterranea	*Solanum tuberosum*	Seed potatoes	Netherlands	Hungary	1
Tenebrioides mauritanicus, Calandra granaria, Tribolium confusum	*Glycine max*	Stored products	Ukraine	Hungary	1
Thrips palmi	*Orchidaceae*	Cut flowers	Thailand	France	1
Tribolium confusum	*Helianthus annuus*	Seeds	Ukraine	Hungary	2
Tribolium confusum, Calandra granaria	*Glycine max*	Stored products	Ukraine	Hungary	1
***Tribolium* sp.**	*Helianthus annuus*	Seeds	Bulgaria	Hungary	2
	Helianthus annuus	Seeds	USA	Hungary	1
Xanthomonas fragariae	*Fragaria ananassa*	Plants for planting	Italy	Tunisia	1

- **Fruit flies intercepted**

	Consignment	Type of commodity	Country of Origin	Country of destination	nb
Non-European Tephritidae	*Mangifera indica*	Fruits	Kenya	France	2
	Psidium guajava	Fruits	Brazil	France	1

- **Wood and wood products intercepted**

	Consignment	Country of Origin	Country of destination	nb
Bursaphelenchus xylophilus	*Coniferae* (Wood chips)	USA	Finland	1
	Pinus sp. (Wood chips)	USA	Finland	1
Ips typographus	Wood	Ukraine	Hungary	1
Ips sexdentatus	Wood	Russian Federation	Hungary	1
Ceratocystis coerulescens	*Acer saccharum* (Wood chips)	USA	Finland	1
***Monochamus* sp.**	Wood	Russian Federation	Hungary	1
	Wood	Ukraine	Hungary	1

- **Bonsai**

6 consignments of various bonsai plants (*Ficus*, *Lagerstroemia*, *Ligustrum*, *Murraya*, *Serissa*, *Ulmus cordata*, *Zelkova*) from China have been intercepted by Germany, Netherlands and United Kingdom. The following nematode species and genus have been found: *Helicotylenchus* sp., *Helicotylenchus dihystera*, *Paratrophus* sp., *Psilenchus*. Aphids of the genus *Tinocallis* have been observed.

Source: EPPO Secretariat 1997-03.