



ORGANISATION EUROPÉENNE ET MÉDITERRANÉENNE POUR LA PROTECTION DES PLANTES
EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION

EPPO

Reporting Service

Paris, 1994-05-01

Reporting Service 1994, No. 5

CONTENTS

- | | |
|---------------------------|---|
| 94/081...EPPO | - New Information Officer |
| 94/082...COSAVE | - Change of address for COSAVE |
| 94/083...TMSWXX/NO | - Tomato spotted wilt tospovirus is not present in Norway |
| 94/084...TMSWXX | - EPPO Distribution List for tomato spotted wilt tospovirus |
| 94/085...FRANOC | - Inability of <i>Frankliniella occidentalis</i> to overwinter in southern Canada |
| 94/086...FRANOC | - Effect of plastic mulch colour on infestation by <i>Frankliniella occidentalis</i> and other thrips |
| 94/087...SCIRAC/FR | - <i>Mycosphaerella dearnessii</i> (syn. <i>Scirrhia acicola</i>) found in the EU (France) |
| 94/088...SCIRAC | - EPPO Distribution List for <i>Mycosphaerella dearnessii</i> |
| 94/089...AMAZMA/LIRIHU/GP | - <i>Amauromyza maculosa</i> and <i>Liriomyza huidobrensis</i> present in Guadeloupe |
| 94/090...AMAZMA | - EPPO Distribution List for <i>Amauromyza maculosa</i> |
| 94/091...LIRIHU/CY | - <i>Liriomyza huidobrensis</i> present in Cyprus |
| 94/092...LIRIHU/RE | - <i>Liriomyza huidobrensis</i> present in Réunion |
| 94/093...LIRIHU/MU | - <i>Liriomyza huidobrensis</i> present in Mauritius |
| 94/094...LIRIHU | - EPPO Distribution List for <i>Liriomyza huidobrensis</i> |
| 94/095...LIRISA/OM | - <i>Liriomyza sativae</i> found in Oman |
| 94/096...LIRISA | - EPPO Distribution List for <i>Liriomyza sativae</i> |
| 94/097...LIRITR/TR | - Update concerning <i>Liriomyza trifolii</i> in Turkey |
| 94/098...LIRITR | - <i>Liriomyza trifolii</i> vector of <i>Pseudomonas cichorii</i> |
| 94/099...BEMITA/DITYDI | - New distribution records for EPPO Quarantine pests |
| 94/100...DITYDI | - EPPO Distribution List for <i>Ditylenchus dipsaci</i> |
| 94/101...BEMITA/UZ | - <i>Bemisia tabaci</i> in Uzbekistan |
| 94/102...BEMITA/GR | - <i>Bemisia tabaci</i> is present in Crete |
| 94/103...BEMITA | - EPPO Distribution List for <i>Bemisia tabaci</i> |
| 94/104...BEMITA | - Economic losses due to <i>Bemisia tabaci</i> infestation in California |
| 94/105...BEMITA | - Monitoring <i>Bemisia tabaci</i> with sticky traps |





EPPO *Reporting Service*

94/081

EPPO...New Information Officer

From 1994-05-01 on EPPO will have a new Information Officer. Mrs Anne-Sophie Roy has been appointed and will take over the responsibilities for producing the EPPO Reporting Service and OEPP/EPPO News. Mrs Roy has worked since 1989 at the EPPO Secretariat as the Technical Documentalist and Translator.

Ralf Lopian, previous information officer at EPPO has followed a call from Finland and will be starting as a Senior Officer for Phytosanitary Affairs at the Ministry of Agriculture in Helsinki from 1994-05-01 onwards.

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/082 **COSAVE...Change of address for COSAVE**

For the years 1994-95, the direction for the Comité de Sanidad Vegetal del Cono Sur (COSAVE), a regional plant protection organization for South America, rotates from Uruguay to Brazil. The new address for the direction is:

Presidencia del COSAVE
Ministerio da Agricultura, Abastecimento e
Reforma Agraria
Esplanada dos Ministerios
Anexo-Bloco-B - Sala 305
Brasília, DF-Brasil

Tel.: (55-61) 218-2675
Fax.: (55-61) 224-3874

The Secretariat of the organization temporarily stays in Uruguay with the address:

Casilla: 1217
Montevideo, Uruguay
Tel.: (598-2) 92 04 24
Fax.: (598-2) 92 13 18

Source: **EPPO Secretariat, Paris (1994-02)**



EPPO *Reporting Service*

94/083

TMSWXX/NO...Tomato spotted wilt tospovirus is not present
in Norway

The Norwegian Plant Protection Institute has informed EPPO that tomato spotted wilt tospovirus (potential EPPO A2 quarantine pest) is not present in the country. This is the result of a survey on ornamentals in Norway. Imported dahlia tubers from the Netherlands were also tested for the virus: 37%, 13% and 5% of the dahlia tubers tested in 1991, 1992 and 1993, respectively, were found to be infected by tomato spotted wilt tospovirus and subsequently returned to the Netherlands. Imported tomato fruits from Spain which showed severe symptoms were also tested positively, but the Norwegian authorities consider that the risk of virus spread from tomato fruits, imported during winter, is extremely low.

Source: Plant Protection Institute, As, (1994-03)



EPPO *Reporting Service*

94/084

TMSWXX...EPPO Distribution List for tomato spotted wilt tospovirus

Due to the statement made by the Norwegian Plant Protection Institute stating that tomato spotted wilt tospovirus (potential EPPO A2 quarantine pest) does not occur in Norway, the distribution of this pest has to be modified.

EPPO Distribution List: Tomato spotted wilt tospovirus

EPPO region: Algeria (potential EPPO country), Austria, Belgium, Bulgaria (Kovaceski, 1967), Cyprus, Czech Republic, Egypt (potential EPPO country), France, Germany, Greece, Ireland, Israel, Italy, Libya (potential EPPO country), Morocco, Netherlands, Poland (Zawirska *et al.*, 1983), Portugal, Romania, Russia, Spain (Rodriguez, 1990 for mainland; Peña, 1990 for Canary Islands), Sweden, Switzerland, Tunisia (unconfirmed), Turkey, UK, Yugoslavia. The pest has been eradicated from Denmark and Finland and was intercepted only in Norway.

Asia: Afghanistan, China, Cyprus, India, Israel, Japan, Nepal (Jayaswal *et al.*, 1988), Russia, Taiwan, Turkey.

Africa: Algeria, Cote d'Ivoire, Egypt, Libya, Madagascar, Mauritius, Morocco, Nigeria, Réunion, Senegal (Dollet *et al.*, 1987), South Africa, Tanzania, Tunisia (unconfirmed), Uganda, Zaire, Zimbabwe.

North America: Canada, Mexico, USA (including Hawaii).

Central America and Caribbean: Haiti, Jamaica, Martinique, Puerto Rico.

South America: Argentina, Bolivia, Brazil, Chile, Guyana, Paraguay, Suriname, Uruguay.

Oceania: Australia, New Zealand, Papua New Guinea.

This distribution list replaces all previous published EPPO Distribution Lists on Tomato spotted wilt tospovirus !

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/085 FRANOC...Inability of *Frankliniella occidentalis* to overwinter in southern Canada

Experiments in southern Ontario, CA, dealt with the capability of *Frankliniella occidentalis* (EPPO A2 quarantine pest) to overwinter in the region. It was found that neither laboratory-reared nor field-collected populations of the pest were able to overwinter on garden chrysanthemums in two locations. The latest collection of live thrips occurred at the beginning of January. It was also found that introduced wild populations of *F. occidentalis* heavily infesting a tomato field did not survive the winter.

Source: Broadbent, A.B.; Hunt, D.W.A. (1991) Inability of western flower thrips, *Frankliniella occidentalis*, to overwinter in southern Ontario. *Proceedings of the Entomological Society of Ontario* 122, 47-49.

94/086 FRANOC...Effect of plastic mulch colour on infestation by *Frankliniella occidentalis* and other thrips

Experiments were carried out in Alabama, US, to determine the effect of different colours of plastic mulch on the infestation of tomato plants by *Frankliniella occidentalis* (EPPO A2 quarantine pest) and other thrips. It was found that the average number of thrips in blooms of tomatoes was greater when white plastic mulch was used instead of black plastic mulch, aluminium-coloured plastic mulch or bare soil. The advantages of darker plastic mulches diminished, however, later in the season when plants grew taller and shaded larger portions of the mulch.

Source: Brown, S.L.; Brown; J.E. (1992) Effect of plastic mulch color and insecticides on trips populations and damage to tomato. *HortTechnology* 2, 208-210.



EPPO Reporting Service

94/087 SCIRAC/FR...*Mycosphaerella dearnessii* (syn. *Scirrhia acicola*) found in the EU (France)

The French Plant Protection Service has informed EPPO that *Mycosphaerella dearnessii* (syn. *Scirrhia acicola*, EPPO A2 quarantine pest) has been found in France. Rapet and Chauvel (1994) reported that the disease has been observed in the South-West of France (Aquitaine and Midi-Pyrénées) infecting young plantations of *Pinus* species (mostly the hybrid *Pinus attenuata* x *radiata*, and to a lesser extent *P. attenuata* and *P. radiata*). French authorities have designed and are currently carrying out adequate eradication measures.

Sources: **French Plant Protection Service, Paris**
Rapet, S.; Chauvel, G. (1994) Cultures ornementales - La situation phytosanitaire en 1993.
Phytoma - La Défense des Végétaux, n°459, 46-48.

94/088 SCIRAC...EPPO Distribution List for *Mycosphaerella dearnessii*

Due to the new record of *Mycosphaerella dearnessii* (EPPO A2 quarantine pest) in France the distribution of this pest has to be modified.

EPPO Distribution List: *Mycosphaerella dearnessii*

The fungus appears to be of American origin and has spread to other continents. Its first report in the EPPO region was in 1978 but some forest pathologists have claimed that it was already present in a number of EPPO countries, for example Austria. These suggestions now appear to be false.

EPPO region: France (under eradication), Greece (unconfirmed), Yugoslavia (confirmed by Evans, 1984, on *P. halepensis*).

Africa: South Africa.

Asia: China (Gong & Liang, 1988).

North America: Canada, Mexico, USA (particularly in the southern coastal states) (Skilling & Nicholls, 1974).

Central America and Caribbean: Belize, Costa Rica, Guatemala, Honduras, Nicaragua (Evans, 1984).

South America: Colombia.

This distribution list replaces all previous published EPPO Distribution Lists on *Mycosphaerella dearnessii*!

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/089

AMAZMA/LIRIHU/GP...*Amauromyza maculosa* and
Liriomyza huidobrensis present in Guadeloupe

A list of 70 Agromyzidae which occur in Guadeloupe has been published. The authors attributed to ten of these species a potential for economic importance. The ten species are: *Melanagromyza caerulea*, *Ophiomya phaseoloides*, *Agromyza parvicornis*, *Japanagromyza phaseoli*, *Amauromyza maculosa*, *Cerodontha denticornis*, *Liriomyza marginalis*, *L. huidobrensis*, *L. sativae* and *L. trifolii*. The records of *L. huidobrensis* (EPPO A2 quarantine pest) and *Amauromyza maculosa* (EPPO A1 quarantine pest) are the first for Guadeloupe.

Source: Spencer, K.A.; Martinez, M.; Etienne, J. (1992) Les Agromyzidae de Guadeloupe.
Annales de la Société Entomologique de France, 28, 251-302.



EPPO *Reporting Service*

94/090 AMAZMA...EPPO Distribution List for *Amauromyza maculosa*

Due to the new record of *Amauromyza maculosa* (EPPO A1 quarantine pest) in Guadeloupe, the distribution list has to be modified.

EPPO Distribution List: *Amauromyza maculosa*

EPPO region: Absent.

North America: USA (Hawaii; outdoors in the eastern states, under glass in the northern states).

Central America and Caribbean: Bahamas, Barbados, Cayman Islands, Costa Rica, Cuba, Guadeloupe, Trinidad and Tobago.

South America: Argentina, Brazil, Chile (unconfirmed), Peru, Uruguay, Venezuela.

This distribution list replaces all previous published EPPO Distribution Lists on *Amauromyza maculosa* !

Source: EPPO Secretariat, Paris (1994-04)



EPPO Reporting Service

94/091 LIRIHU/CY...*Liriomyza huidobrensis* present in Cyprus

The Ministry of Agriculture of Cyprus has informed the EPPO Secretariat (in 1994-04) that *Liriomyza huidobrensis* (EPPO A2 quarantine pest) has recently been recorded in Cyprus.

Source: Ministry of Agriculture, Natural Resources and Environment,
Nicosia, Cyprus.

94/092 LIRIHU/RE...*Liriomyza huidobrensis* present in Réunion

Liriomyza huidobrensis (EPPO A2 quarantine pest) was introduced into Réunion, in 1990, probably from Europe. Surveys have been carried out in 1990 and 1991. In December 1990, *L. huidobrensis* was found for the first time and was present only in the north of the island, but since mid-1991 it has spread all over the country (coastal regions and up to altitudes of 1300 m). The leafminer damages mainly vegetable crops, such as beet, cabagges, cow pea, lettuce, pea and potato. *L. trifolii* is also present on the island and the authors have observed that *L. huidobrensis* is the dominant species in regions of higher altitude (above 1000 m) and colder temperatures, whereas *L. trifolii* is more abundant near the coast. As potatoes are mostly grown at these higher altitudes, this could also explain why they are seriously attacked by *L. huidobrensis*.

Source: Vercambre, B.; de Crozals, A. (1993) Relation entre *Liriomyza huidobrensis* et *L. trifolii* à l'île de la Réunion.
Paper presented at the Conference "Liriomyza" - Conference on leaf-mining flies in cultivated plants, Montpellier (FR), 1993-03-24/26.

94/093 LIRIHU/MU...*Liriomyza huidobrensis* present in Mauritius

Liriomyza huidobrensis (EPPO A2 quarantine pest) was recorded for the first time into Mauritius in 1992, on Cucurbitaceae (melon, pumpkin, watermelon), Solanaceae (eggplant, pepper, potato, tomato) and Leguminosae (bean, pea). The pest has spread rapidly to the whole island.

Source: Rajabalee, A. (1993) Les mouches mineuses du genre *Liriomyza* (Diptera, Agromyzidae) à Maurice.
Paper presented at the Conference "Liriomyza" - Conference on leaf-mining flies in cultivated plants, Montpellier (FR), 1993-03-24/26.



EPPO *Reporting Service*

94/094 LIRIHU...EPPO Distribution List for *Liriomyza huidobrensis*

Due to the new records of *Liriomyza huidobrensis* (EPPO A2 quarantine pest) in Cyprus, Guadeloupe, Mauritius and Réunion, the distribution list has to be modified.

EPPO Distribution List: *Liriomyza huidobrensis*

EPPO region: It was first detected in the EPPO region in 1987 in the Netherlands where it was found on glasshouse lettuces; it is presumed to have been imported directly from South America. Austria, Belgium, Cyprus, France, Germany, Ireland (intercepted only), Israel, Italy, Malta, Netherlands, Portugal, Spain, Sweden (intercepted only), UK. The pest has been eradicated from Denmark and Finland.

Asia: Cyprus, Israel.

Africa: Mauritius, Réunion.

North America: Mexico (unconfirmed), USA (California, Hawaii and in glasshouses in Florida and Virginia).

Central America and Caribbean: Belize, Costa Rica, Dominican Republic, El Salvador, Guadeloupe, Guatemala, Honduras, Nicaragua, Panama.

South America: Argentina, Brazil, Chile, Colombia, Peru, Venezuela.

Oceania: Australia (intercepted only)

This distribution list replaces all previous published EPPO Distribution Lists on *Liriomyza huidobrensis* !

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/095 LIRISA/OM...*Liriomyza sativae* found in Oman

Liriomyza sativae (EPPO A1 quarantine pest) has been collected from lucerne in Oman on 1990-10-26. The species was subsequently shown, according to the author, to be established in the southern Arabian peninsula. This record presents the first report of *L. sativae* in Asia.

Source: Deeming, J.C. (1992) *Liriomyza sativae* established in the Old World. *Tropical Pest Management* 38, 218-219.

94/096 LIRISA...EPPO Distribution List for *Liriomyza sativae*

Due to the new record of *Liriomyza sativae* (EPPO A1 quarantine pest) from Oman the distribution of the pest has to be modified.

EPPO Distribution List: *Liriomyza sativae*

EPPO region: Absent. Finland (intercepted only), UK (intercepted only)

Africa: Zimbabwe.

Asia: Oman, Yemen.

North America: Canada (under glass in Ontario), Mexico (unconfirmed), USA (Hawaii; outside in southern and western states; in glasshouses in Ohio, Maryland and Pennsylvania).

Central America and Caribbean: Antigua and Barbuda, Bahamas, Barbados, Costa Rica, Cuba, Dominica, Dominican Republic, Guadeloupe, Jamaica, Martinique, Montserrat, Panama, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent and Grenadines, Trinidad and Tobago.

South America: Argentina, Brazil, Chile, Colombia, French Guiana, Peru, Venezuela.

Oceania: American Samoa, Cook Islands, French Polynesia, Guam, Micronesia, New Caledonia, Northern Mariana Islands, Samoa, Vanuatu.

This distribution list replaces all previous published EPPO Distribution Lists on *Liriomyza sativae* !

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/097 LIRITR/TR...Update concerning *Liriomyza trifolii* in Turkey

An update on the occurrence of *Liriomyza trifolii* (EPPO A2 quarantine pest) has been given for Izmir in Turkey. In surveys it was found that the leafminer infested carnation crops in Balcova and Urla at rates of 37% and 58%, respectively. Chrysanthemum crops grown in the field were infested by 30% while those grown in greenhouses were not infested.

Source: Akbulut, N.; Zümreoglu, S. (1992) Investigations on the distribution, infestation rate and the population density of the leafminer (*Liriomyza trifolii*) harmful in carnation and chrysanthemum greenhouses in Izmir and its province.
Proceedings of the Second Turkish National Congress of Entomology Izmir, Turkey, 549-557.

94/098 LIRITR...*Liriomyza trifolii* vector of *Pseudomonas cichorii*

Investigations in Canada revealed that adults of *Liriomyza trifolii* (EPPO A2 quarantine pest) are able to acquire and transmit *Pseudomonas cichorii* both *in vitro* from cultures of the bacteria and *in situ* from infected to non-infected chrysanthemums. 43% of the adult leafminers acquired the bacterium when exposed to it in culture jars. A mean of 7.9 bacterial leaf spots/plant was observed after an 48 h-exposure of healthy chrysanthemums to 10 adults of the leafminers which have previously been kept for 24 h on infected chrysanthemums. Larvae of *L. trifolii* acquired and transmitted *P. cichorii* as did adults when confined to culture jars.

Source: Broadbent, A.B.; Matteoni, J.A. (1991) Acquisition and transmission of *Pseudomonas cichorii* by *Liriomyza trifolii*.
Proceedings of the Entomological Society of Ontario 122, 51.



EPPO *Reporting Service*

94/099

BEMITA/DITYDI...New distribution records for EPPO
Quarantine pests

Several new distribution records for several EPPO quarantine pests were discovered by browsing through the literature:

Bemisia tabaci (EPPO A2 quarantine pest) has been recorded from the United Arab Emirates - Review of Agricultural Entomology 81, 301 (2726).

B. tabaci in Burkina Faso - Review of Agricultural Entomology 81, 1359 (12279) .

Ditylenchus dipsaci (EPPO A2 quarantine pest) in Albania (subject to confirmation) - Nematological Abstracts 62, 224 (1683).

D. dipsaci in Armenia (subject to confirmation) - Nematological Abstracts 62, 233 (1746).

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/100 DITYDI...EPPO Distribution List for *Ditylenchus dipsaci*

Due to the new records of *Ditylenchus dipsaci* (EPPO A2 quarantine pest) from Albania and Armenia the distribution of the nematode has to be changed.

EPPO Distribution List: *Ditylenchus dipsaci*

D. dipsaci occurs locally in most temperate areas of the world (Europe and the Mediterranean region, North and South America, northern and southern Africa, Asia and Oceania) but it does not seem able to establish itself in tropical regions except at higher altitudes that have a temperate climate. In most countries regulatory measures (e.g. certification schemes) are applied to minimize further spread of *D. dipsaci*.

EPPO region: Albania (unconfirmed), Algeria (potential EPPO country), Austria, Belgium, Bulgaria, Cyprus, Czechoslovakia, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Malta, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Spain, Sweden, Switzerland, Syria (potential EPPO country), Tunisia, Turkey, UK, Yugoslavia.

Asia: Armenia (unconfirmed), China, Cyprus, India, Iran, Iraq, Israel, Japan, Jordan, Pakistan, Russia, Syria, Turkey, Yemen.

Africa: Algeria, Kenya, Morocco, South Africa, Tunisia.

North America: Canada (AL, BC, ON and Prince Edward Island), Mexico, USA (including Hawaii).

Central America and Caribbean: Dominican Republic, Haiti.

South America: Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela.

Oceania: Australia, New Zealand.

This distribution list replaces all previous published EPPO Distribution Lists on *Ditylenchus dipsaci*!

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/101 BEMITA/UZ...*Bemisia tabaci* in Uzbekistan

The two most important whiteflies in Uzbekistan are *Trialeurodes vaporariorum* and *Bemisia tabaci* (EPPO A2 quarantine pest). While *T. vaporariorum* is a greenhouse pest since the 1970s, *B. tabaci* appeared only in 1989 and attacked cucurbits, other vegetables and cotton in areas bordering Turkmenistan and in Kara-Kalpakia. Possibilities for *B. tabaci* to overwinter outdoors are estimated as low by the author.

Source: Alimukhamedov, S.N. (1991) The system of crop protection against whiteflies.
 Zashchita Rastenii 1991 No. 11, 52-53.

94/102 BEMITA/GR...*Bemisia tabaci* is present in Crete (GR)

Extensive surveys were carried out in Crete (GR) in June and November 1992, and May 1993, and showed that *Bemisia tabaci* (EPPO A2 quarantine pest) is present in Crete in glasshouses and in field conditions. Esterase profile analysis has clearly demonstrated that the populations found on the island do not belong to the "B-biotype". The main hosts plants are vegetable crops (*Cucumis melo*, *Lycopersicon esculentum*, *Solanum melongena*), ornamentals (*Ipomoea* sp., *Lantana camara*) and weeds (*Sonchus* sp). At present, populations of *B. tabaci* are restricted to only small areas in the warmest parts of the island and in protected conditions near Iraklion. The authors thought that this limited distribution could be due to climatic constraints, competition with *Trialeurodes vaporariorum* and the efficacy of natural enemies which are also present on the island (such as the parasitoids, *Encarsia lutea*, *E. inaron* and *Eretmocerus* sp.).

Source: Kirk, A.A.; Lacey, L.A.; Roditakis, N.; Brown, J.K. (1993) The status of *Bemisia tabaci* (Hom.: Aleyrodidae), *Trialeurodes vaporariorum* (Hom.: Aleyrodidae) and their natural enemies in Crete.
 Entomophaga, 38 (3), 405-410.



EPPO *Reporting Service*

94/103

BEMITA...EPPO Distribution List for *Bemisia tabaci*

Due to the new records of *Bemisia tabaci* (EPPO A2 quarantine pest) from Burkina Faso, Crete, United Arab Emirates and Uzbekistan, the distribution of this pest has to be changed.

EPPO Distribution List: *Bemisia tabaci*

EPPO region: Present and widespread in Cyprus, Greece (mainland, and limited distribution in Crete), Italy, Lebanon (potential EPPO country), Libya (potential EPPO country), Syria (potential EPPO country) and Turkey; of limited distribution in Austria, Belgium, Czechoslovakia, Denmark, France, Germany, Hungary, Malta, Morocco, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, Tunisia and Ukraine. Reported in Israel and Russia. In Denmark, Germany, Netherlands, eradication programmes are in operation. Outbreaks have also occurred in Ireland, Finland and UK but have been successfully eradicated. Declared absent from Portugal.

Asia: Widely distributed. Afghanistan, Azerbaijan, China, Cyprus, Georgia, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Myanmar, Oman, Pakistan, Philippines, Russia, Saudi Arabia, Sri Lanka, Syria, Taiwan, Thailand, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vietnam, Yemen.

Africa: Widely distributed. Angola, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Cote d'Ivoire, Egypt, Ethiopia, Gambia, Ghana, Equatorial Guinea, Kenya, Libya, Madagascar, Malawi, Mauritius, Morocco, Mozambique, Nigeria, Réunion, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zaire, Zimbabwe.

North America: Bermuda, Mexico, states of USA (Arizona, California, Florida, Georgia, Hawaii, Maryland, Texas).

Central America and Caribbean: Widely distributed. Antigua and Barbuda, Barbados, Belize, Cuba, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Martinique, Netherlands Antilles, Nicaragua, Panama, Paraguay, Puerto Rico, Trinidad and Tobago,

South America: Argentina, Brazil, Colombia, Venezuela.

Oceania: Widely distributed. Australia, Fiji, Micronesia, New Zealand, Northern Mariana Islands, Papua New Guinea, Samoa, Solomon Islands, Tuvalu.

This distribution list replaces all previous published EPPO Distribution Lists on *Bemisia tabaci* !

Source: EPPO Secretariat, Paris (1994-04)



EPPO *Reporting Service*

94/104 **BEMITA...Economic losses due to *Bemisia tabaci* infestation in California**

The new B-biotype of *Bemisia tabaci* (EPPO A2 quarantine pest) had devastating effects on the vegetable production in California, US, from 1990 onwards. The pest caused an estimated 111 million USD worth of damage to melon, cabbage, broccoli and cauliflower crops (including wasted production costs and lost revenue). The unemployment figures for 1990-92 were analysed and it was found that periods of high agricultural unemployment coincided with periods of devastation of crops by the pest.

Source: Gonzales, R.A.; Goldman, G.E.; Natwick, E.T.; Rosenberg, H.R.; Grieshop, J.I.; Sutter, R.S.; Funakoshi, T.; Davila-Garcia, S. (1992) Whitefly invasion in Imperial Valley costs growers millions in losses. *California Agriculture* 46 (5), 7-8.

94/105 **BEMITA...Monitoring *Bemisia tabaci* with sticky traps**

Comparisons of sticky traps of different colours for monitoring *Bemisia tabaci* (EPPO A2 quarantine pest) were carried out in India. Best results were obtained with rectangular yellow traps. Polyisobutane and castor oil were the best sticky substances tested and traps facing the sky either inside or adjacent to the field attracted the most whiteflies. The authors reported that trap catches were positively correlated with the number of eggs found in the fields.

Source: Roa, N.V.; Reddy, A.S.; Rao, K.T. (1991) Monitoring of cotton whitefly *Bemisia tabaci* with sticky traps. *Madras Agricultural Journal* 78, 1-7.