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

EPPO

Reporting

Service

Paris, 1995-06-01 **Reporting Service 1995, No. 6**

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95/115 **SI...Quarantine list of Slovenia**

These are the A1 and A2 quarantine lists for Slovenia.

A1 list (quarantine pests which are not present in Slovenia)

Prokaryotes
Apricot chlorotic leafroll MLO
Citrus greening bacterium
Clavibacter michiganensis ssp. *insidiosus*
Curtobacterium flaccumfaciens pv. *flaccumfaciens*
Elm phloem necrosis MLO
Erwinia chrysanthemi
Erwinia stewartii
Palm lethal yellowing MLO
Peach rosette MLO
Peach X disease MLO
Peach yellows MLO
Potato purple-top wilt MLO
Potato stolbur MLO
Pseudomonas caryophylli
Pseudomonas solanacearum
Pseudomonas syringae var. *persicae*
Pseudomonas syringae var. *pisi*
Strawberry witches broom MLO
Xanthomonas campestris pv. *citri*
Xanthomonas fragariae
Xanthomonas oryzae pv. *oryzae*
Xanthomonas oryzae pv. *oryzicola*
Xanthomonas populi
Xylella fastidiosa

Fungi
Apiosporina morbosa
Atropellis pinicola
Atropellis piniphila
Botryosphaeria laricina
Ceratocystis fagacearum
Ceratocystis fimbriata f. sp. *platani*
Chrysomyxa arctostaphyli
Cronartium coleosporioides
Cronartium comandrae
Cronartium comptoniae
Cronartium fusiforme
Cronartium himalayense
Cronartium kamtschaticum
Cronartium quercuum
Didymella ligulicola
Endocronartium harknessii
Gymnosporangium asiaticum
Gymnosporangium clavipes
Gymnosporangium globosum
Gymnosporangium juniperi-virginianae
Gymnosporangium shiraianum
Gymnosporangium yamadae
Hamaspora longissima
Inonotus weirii
Melampsora farlowii
Melampsora medusae
Monilinia fructicola
Mycosphaerella dearnessi
Mycosphaerella gibsonii
Mycosphaerella laricis-leptolepidis
Mycosphaerella populorum
Ophiostoma wageneri
Phialophora gregata
Phoma andina
Phyllosticta solitaria
Phymatotrichopsis omnivora
Puccinia pitteriana
Septoria lycopersici
Stenocarpella macrospora
Stenocarpella maydis
Thecaphora solani
Tilletia indica
Uromyces transversalis

Insects
Acleris gloverana
Acleris variana
Aleurocanthus woglumi
Amauromyza maculosa
Anastrepha fraterculus
Anastrepha ludens
Anastrepha obliqua
Anastrepha suspensa
Anthonomus grandis
Anthonomus signatus
Bactrocera cucurbitae
Bactrocera dorsalis

Fungi (continued)
Bactrocera minax
Bactrocera tryoni
Bactrocera tsuneonis
Bactrocera zonata
Bemisia tabaci
Blitopertha orientalis
Cacoecimorpha pronubana
Carposina niponensis
Ceratitis cosyra
Ceratitis rosa
Conotrachelus nenuphar
Cydia prunivora
Dacus ciliatus
Dendroctonus adjunctus
Dendroctonus brevicomis
Dendroctonus frontalis
Dendroctonus ponderosae
Dendroctonus pseudotsugae
Dendroctonus rufipennis
Diaphorina citri
Dryocoetes confusus
Epichoristodes acerbella
Epitrix cucumeris
Epitrix tuberis
Epochra canadensis
Euphranta japonica
Gnathotrichus sulcatus
Helicoverpa armigera
Ips calligraphus
Ips confusus
Ips grandicollis
Ips lecontei
Ips pini
Ips plastographus
Liriomyza huidobrensis
Liriomyza sativae
Listronotus bonariensis
Monochamus alternatus
Monochamus carolinensis
Parabemisia myricae
Pissodes nemorensis
Pissodes strobi
Pissodes terminalis
Popillia japonica
Premnotrypes latithorax
Premnotrypes sanfordi
Premnotrypes solani
Premnotrypes suturicallus
Premnotrypes vorax
Pseudopityophthorus minutissimus
Pseudopityophthorus pruinosus
Rhagoletis cingulata
Rhagoletis completa
Rhagoletis fausta
Rhagoletis indifferens
Rhagoletis mendax
Rhagoletis pomonella
Rhagoletis ribicola
Spodoptera litura
Thrips palmi
Toxoptera citricidus
Trioza erytreae
Trogoderma granarium
Unaspis yanonensis

Nematodes
Aphelenchoides besseyi
Bursaphelenchus xylophilus
Globodera pallida
Globodera rostochiensis
Heterodera glycines
Nacobbus aberrans
Radopholus citrophilus
Xiphinema brevicolle
Xiphinema californicum
Xiphinema pachtaicum
Xiphinema rivesi

Parasitic plants
Arceuthobium abietinum var. *magnificae*
Arceuthobium americanum
Arceuthobium aureum
Arceuthobium campylopodum
Arceuthobium cyanocarpum
Arceuthobium douglasii
Arceuthobium laricis
Arceuthobium microcarpum
Arceuthobium pini
Arceuthobium pusillum
Arceuthobium vaginatum

Virus and virus-like diseases
American plum line pattern ilarvirus
Andean potato latent tymovirus
Andean potato mottle comovirus
Apple mosaic ilarvirus in Rubus
Arracacha B virus
Cherry leaf roll nepovirus in Rubus
Cherry necrotic rusty mottle disease
Cherry rasp leaf nepovirus

Viruses and virus-like diseases (continued)
Chrysanthemum stunt viroid
Peach latent mosaic viroid
Potato deforming mosaic disease
Potato spindle tuber viroid
Potato T capillovirus
Potato yellow dwarf rhabdovirus
Potato yellow vein disease
Raspberry leaf curl virus
Strawberry latent C disease
Tobacco ringspot nepovirus
Tobacco streak ilarvirus

A2 List (quarantine pests which are present (restricted distribution in Slovenia)

Prokaryotes
Apple proliferation MLO
Clavibacter michiganensis spp. *michiganensis*
Clavibacter michiganensis spp. *sepedonicus*
Erwinia amylovora
Grapevine flavescence dorée MLO
Pear decline MLO
Xanthomonas campestris pv. *corylina*
Xanthomonas campestris pv. *phaseoli*
Xanthomonas campestris pv. *pruni*
Xanthomonas campestris pv. *vesicatoria*
Xylophilus ampelinus

Fungi
Cryphonectria parasitica
Phaeoisariopsis griseola
Phialophora cinerescens
Phoma exigua var. *foveata*
Phytophthora fragariae var. *fragariae*
Phytophthora fragariae var. *rubi*
Phytophthora megasperma f.sp. *glycinea*
Puccinia horiana
Puccinia pelargonii-zonalis
Synchytrium endobioticum
Tilletia controversa
Verticillium albo-atrum
Verticillium dahliae

Insects
Ceratitis capitata
Frankliniella occidentalis
Gonipterus scutellatus
Hyphantria cunea
Ips amitinus
Liriomyza trifolii
Quadraspidiotus perniciosus
Viteus vitifoliae

Nematodes
Xiphinema americanum

Virus and virus-like diseases
Barley stripe mosaic hordeivirus
Beet leaf curl rhabdovirus
Beet necrotic yellow vein furovirus
Plum pox potyvirus
Raspberry ringspot nepovirus
Strawberry vein banding caulimovirus
Tomato ringspot nepovirus

Source: **EPPO Secretariat, 1994.**

95/116 **DIABVI...Situation of *Diabrotica virgifera* in Serbia (YU)**

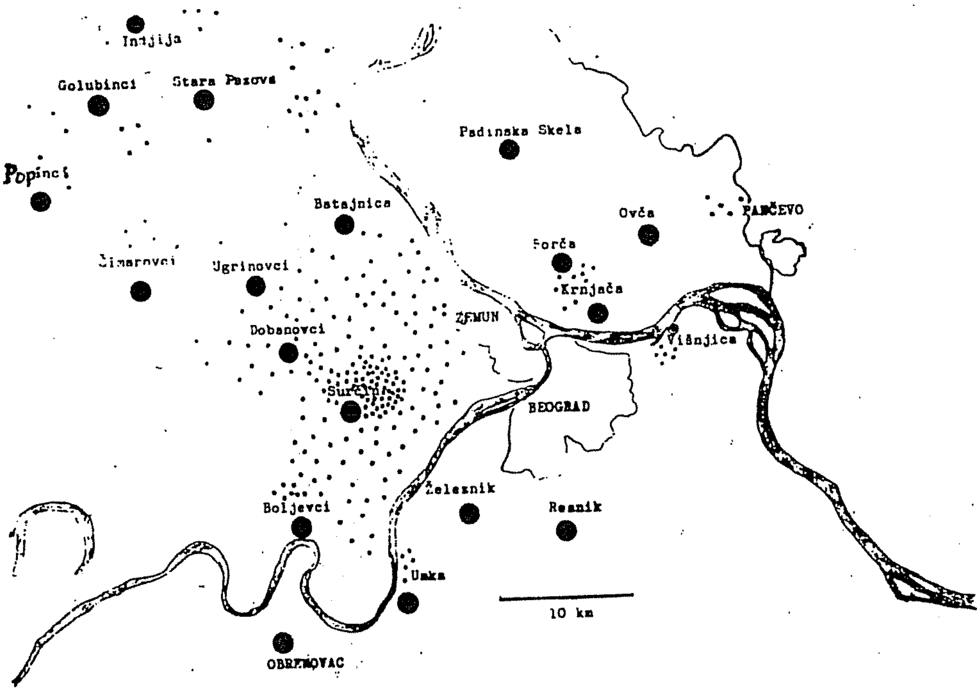
The International Working Group on Maize Pests (IWGO) of IOBC has recently organized a Workshop on *Diabrotica virgifera* (EPPO A2 pest) in Graz (AT), on 1995-03-20/21. During this Workshop, the present situation of the pest in Serbia has been presented. In mid-July 1992, unusual symptoms of maize destruction were observed in the vicinity of Surcin airport, near Belgrade, on a small plot (0,5 ha). The pest was identified as *Diabrotica virgifera* by a US expert. In 1993, maize fields were infested, on the territory of Srem, in the zone of Boljevci-Popinci-Golubinci-Indija to the confluence of the river Sava with the Danube, then south of the Danube at Visnijicka Banja and east of the Danube at Borca. Highest population levels were recorded in the immediate vicinity of Surcin airport. In some fields, losses were extremely severe (up to 80 % plant mortality): these maize fields had been infested in 1992, and maize was cultivated again in 1993. The numbers of adults observed were considerably less in the localities in the direction of Boljevci, Dobanovci, Ugrinovci, Batajnica and Zemun. During this period, the spread of the pest was 40-70 km to the north, 40 km to the east, 40 km to the south. The main direction of the spread is towards the north-west (in general, the main movement of the populations follows the prevailing winds). On the basis of three years of observations it was found that adults quickly covered huge distances. Respectively, 110.000 ha of maize were found infested in 1993, and 200.000 ha in 1994. Up till now, the pest has crossed the rivers Sava in Sumadija, Danube and Tamis in Banat, but has not reached Backa yet. The air distances to the Romanian and Hungarian borders are respectively 50 km and 100 km. It is thought that the pest was introduced in 1990, by air transport, from North America.

The pest life cycle observed in Serbia is similar to that in USA. The pest has one generation per year and overwinters in soil (diapausing eggs). In Serbia, hatching takes place from mid-May to the end of June, and three larval stages are observed before pupation. Beetles have been observed from June 24 to October 15, with a maximum number per plant during maize flowering from July 28 to August 10 in 1993 (July 15 to July 20 in 1994).The peak of oviposition has been recorded in August.

The main damage is caused by larvae which bore and feed on the roots. Attacked plants then usually show stem deformation, bent stems ("goose necking") and may lodge. Adults feed on leaves, pollen and later on silk. However, when populations of adults are high (over 30 imagoes have been found on severely damaged ears), feeding damage on maize leaves and especially on corn silk (leading to reduction of kernel numbers) has been observed. In 1994, damage was in general less serious than in 1993 which was a dry year. In 1994, large amounts of rainfall in the first half of the growing season resulted in a better recovery of attacked plants which were able to produce new roots. It has been noted that wide areas of maize, high plant density, high amount of rainfall, maize irrigation, continuous cropping of maize are factors favourable to the multiplication of *D. virgifera*.

The main method of control against this pest is crop rotation (in Serbia: maize/wheat). Trials have been set up to evaluate the efficacy of several chemical compounds, in 1994, in the vicinity of Surcin. The first results indicate that the best control of larvae was achieved by applying terbufos, chlormefos and phorate as a soil treatment at sowing.

Distribution of *Diabrotica virgifera* in Serbia
(map published by Sivcev, I.; Manojlovic, Krnjajic, S.; Dimic, N.; Draganic, M.; Baca, F.; Kaitovic, Z.; Sekulic, R.; Keresi, T. (1994) [Distribution and harmful effect of *Diabrotica virgifera* Leconte (Coleoptera, Chrysomelidae), a new maize pest in Yugoslavia]. Zastita bilja, 45(1), 207, 19-26.)



Source: IWGO International Workshop on Diabrotica, Graz, AT, 1995-03-20/21.

95/117 **THRIPL/VE...*Thrips palmi* is present in Venezuela**

Thrips palmi (EPPO A1 quarantine pest) is present in Venezuela. This report describes the situation of *T. palmi* since 1990 in the country. The most important crops attacked by the pest are: potatoes, aubergines (*Solanum melongena*), pepper (*Capsicum* spp.), melon and beans. The highest populations and damage have been observed during the dry season (December-May) in the central zone of the country. *T. palmi* is a limiting factor of potato production in two states (Aragua and Carabobo), with a 90% reduction in planting from 1990 to 1992. The pest has also been recorded on tomatoes but does not cause economic damage. The authors pointed out that no effective control has been achieved for the moment. This is the first report of *T. palmi* in Venezuela.

Source: Cermeli, M.; Montagne, A. (1993) [Present situation of *Thrips palmi* Karny (Thysanoptera: Thripidae) in Venezuela].
Manejo Integrado de Plagas, no. 29, 23-23.

Additional key words: new record.

95/118 **THRIPL...EPPO Distribution List for *Thrips palmi***

T. palmi was described in 1925 from Sumatra and Java (Indonesia) (Karny, 1925). A few years later this species was discovered as far west as Sudan, and as far north as Taiwan. Since 1978, extensive outbreaks are reported yearly from southern Japan (Sakimura et al., 1986). Since 1985 it has been spreading in the Caribbean region. For Central America, the last record is from Venezuela (EPPO RS 95/117). It has been introduced into the Netherlands on Ficus plants imported from Guatemala but has been recently eradicated (EPPO RS 95/048). However, its presence in Guatemala has been denied by the official authorities (EPPO RS 94/015).

EPPO Distribution List: *Thrips palmi*

EPPO region: Absent.

Asia: Bangladesh (unconfirmed), Brunei Darussalam, China, Hong Kong, India, Indonesia, Japan, Korea Democratic People's Republic, Korea Republic, Malaysia (unconfirmed), Myanmar, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan and Thailand. It is likely that the organism is present in many other countries within south and south-eastern Asia.

Africa: Mauritius, Nigeria, Réunion, Sudan.

North America: USA (reported only from Hawaii, and in 1991 from Florida).

South America: Guyana, Venezuela.

Central America and Caribbean: Antigua and Barbuda, Barbados, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Martinique, Puerto Rico, St. Kitts and Nevis, St. Lucia, Trinidad and Tobago.

Oceania: Australia (Queensland, Northern Territory), Guam, New Caledonia, Samoa, Wallis and Futuna Islands.

This distribution list replaces all previous published EPPO Distribution Lists on *Thrips palmi*!

Source: **EPPO Secretariat, 1995-05.**

95/119 TOXOCI/CSTXXX...Survey on *Toxoptera citricidus* and citrus tristeza in Central America and Caribbean

In order to evaluate the threat presented by *Toxoptera citricidus* (EPPO A1 quarantine pest) and citrus tristeza closterovirus (EPPO A2 quarantine pest), an extensive survey has been conducted from 1991 to 1993 in the citrus-producing regions of Central America, Mexico and Caribbean Basin. Commercial orchards, nurseries and dooryard citrus have been inspected and samples have been tested (ELISA) to detect citrus tristeza. This survey has showed that *T. citricidus* is well established in Costa Rica, Nicaragua, Panama and has recently spread throughout most of the Caribbean basin. However, during this survey, the pest has not been found in Belize, El Salvador, Guatemala, Honduras, Mexico, Bahamas, and Bermuda. [In this paper, a map also illustrates the spread of *T. citricidus* and shows in particular that it is present in Colombia and was there before 1980 (the EPPO Secretariat had previously no information on the situation in this country)]. The situation of *T. citricidus* in the countries studied is presented below.

- **Central America**

Costa Rica: *T. citricidus* is widespread in small plantings and dooryards near the east coast and central regions, and in commercial plantings in the north-west. It was first observed in 1989.
Nicaragua*: It was first found in 1991, as one population in a nursery (in the south near Costa Rica). But within a year, the pest spread throughout southern and central Nicaragua.
Panama*: *T. citricidus* was sporadic in 1991 but widespread in 1992. It was first found in 1989.

- **Caribbean**

Cuba: found in April 1993, in Guantanamo Bay.
Dominica*: First found in November 1991.
Dominican Republic: It was first found in January 1992 and large numbers were observed in citrus groves during 1992.
Guadeloupe: It was first detected in November 1991, and large numbers were found in citrus groves during 1992.
Haiti: found in December 1992.
Jamaica: found in July 1993.
Martinique: It was first detected in November 1991, and large numbers were found in citrus groves during 1992.
Puerto Rico: first detected in April 1992 and was already widespread.
St Lucia: First found in November 1991.
Trinidad and Tobago: widespread since 1985.
US Virgin Islands: *T. citricidus* was found in St Thomas and St Croix in April 1992.

In the same region, the incidence of citrus tristeza closterovirus is low (<15 %) and in certain areas it was not detected. CTV has been detected in Bahamas♦, Belize, Bermuda, Costa Rica, Dominican Republic, El Salvador, Guatemala♦, Honduras♦, Jamaica, Mexico♦, Nicaragua, Panama, Puerto Rico, Trinidad and Tobago. CTV was not detected in Cuba. Most of the isolates can be considered as mild. Severe tristeza symptoms were rare in Mexican lime and sweet orange grafted on sour orange and absent in grapefruit. However, some isolates reacted with the monoclonal antibody used to discriminate the severe strain of CTV, and have been found in Belize, Costa Rica, Panama, Bermuda, Dominican Republic, Jamaica, Puerto Rico and Trinidad.
The authors felt that the incidence of citrus tristeza is still low because most of the planted trees have been propagated from virus-free material. In addition, as the occurrence of its most efficient vector is only recent, the incidence of the disease had no sufficient time to reach detectable and significant levels. However, recent observations showed an increase of the disease in some areas (Costa Rica, Puerto Rico, Dominican Republic and Trinidad). The existence of potentially severe strains in latent conditions presents also a serious risk for this region. The authors concluded that the spread of citrus tristeza and its vector present a serious threat for the important citrus production of Caribbean, Central America, Mexico and United States. Further surveys will be carried out in this region, especially in areas at risk like Florida, Texas and Mexico.

Source: Yokomi, R.K.; Lastra, R.; Stoetzel, M.B.; Damsteegt, V.D.; Lee, R.F.; Garnsey, S.M.; Gottwald, T.R.; Rocha-Peña, M.A.; Niblett, C.L. (1994) Establishment of the brown citrus aphid (Homoptera: Aphididae) in Central America and the Caribbean Basin and transmission of citrus tristeza virus.
Journal of Economic Entomology, 87(4), 1078-1085.

Additional key words: new records.

* New records for *T. citricidus* according to the EPPO Secretariat.
♦ New records for CTV according to the EPPO Secretariat

95/120 CSTXXX...EPPO Distribution List for Citrus tristeza closterovirus

Due to the modifications made by countries during the validation of geographical distribution, and the new records of citrus tristeza closterovirus (EPPO A2 quarantine pest) in Antigua and Barbuda, Belize, Bermuda (EPPO RS 95/021), Georgia (EPPO RS 95/054), Puerto Rico (EPPO RS 95/034), Bahamas, Guatemala, Honduras, Mexico (EPPO RS 95/119), the distribution list can be modified as follows.

EPPO Distribution List: Citrus tristeza closterovirus

CTV is widespread throughout tropical citrus-growing areas. Individual countries where the disease have been found are cited in Bové & Vogel (1981).

EPPO region: Algeria (potential EPPO country - few reports), Cyprus (few reports), Egypt (potential EPPO country - few reports), France (found in the past in Corsica but did not establish), Greece, Israel (locally), Italy (locally), Morocco (few reports), Spain (locally), Tunisia (eradicated), Turkey (locally), Yugoslavia. An unconfirmed report from Libya (potential EPPO country) is probably a confusion with stubborn disease (EPPO Reporting Service 504/02). In Portugal, two foci have been found very recently in Algarve, and one in Madeira, and are currently under eradication (EPPO RS 95/095).

Asia: Brunei Darussalam (locally), China, Cyprus (few reports), Georgia (locally), Indonesia, Israel (locally), India, Iran, Japan, Jordan (unconfirmed), Korea Republic, Malaysia (locally), Nepal, Philippines, Pakistan, Saudi Arabia, Sri Lanka, Thailand, Turkey (locally), Taiwan, Vietnam, Yemen (unconfirmed).

Africa: Widespread in sub-Saharan Africa. Algeria (few reports), Cameroon, Central African Republic, Chad, Egypt (few reports), Ethiopia, Gabon, Ghana, Kenya, Libya (unconfirmed), Mauritius, Morocco (few reports), Mozambique, Nigeria, Réunion, South Africa, Tanzania (locally), Tunisia (eradicated), Uganda, Zaire, Zambia, Zimbabwe (few reports).

North America: Bermuda, Mexico, USA (Arizona, California, Florida, Hawaii and Texas).

Central America and Caribbean: Antigua and Barbuda, Bahamas, Belize, Costa Rica (locally), Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Netherlands Antilles, Nicaragua, Panama, Puerto Rico, Trinidad and Tobago.

South America: Argentina, Bolivia, Brazil, Chile (found in the past but not established), Colombia, Ecuador (locally), Guyana, Paraguay (locally), Peru, Suriname, Uruguay, Venezuela.

Oceania: American Samoa, Australia, Fiji, French Polynesia, New Caledonia, New Zealand, Samoa.

This distribution list replaces all previous published EPPO Distribution Lists on Citrus tristeza closterovirus !

Source: **EPPO Secretariat, 1995-05**

95/121 TOXOCI...EPPO Distribution List of *Toxoptera citricidus*

Due to the new records of *Toxoptera citricidus* (EPPO A1 quarantine pest) in Colombia, Dominica, Nicaragua, Panama (EPPO RS 95/119), in Saint Kitts & Nevis (EPPO RS 95/034), and in Saint Vincent & Grenadines (EPPO RS 95/021), the geographical distribution can be modified as follows.

EPPO Distribution List: *Toxoptera citricidus*

T. citricidus occurs predominantly in humid tropical regions and presumably originated in south-east Asia and spread on citrus plants to other tropical areas. It has also spread to areas of Mediterranean climate (Australia, South Africa, Chile). The pest has been found recently in Madeira (PT) and is under eradication (EPPO RS 95/007).

EPPO region: Absent (supposed records from Cyprus, Italy, Malta and Spain refer to *T. aurantii*).

Asia: Widespread in south-east Asia; China, Indonesia (locally), India, Iran, Japan, Korea Dem. People's Republic, Korea Republic, Laos, Malaysia (locally) Philippines, Sri Lanka, Thailand, Taiwan, Vietnam.

Africa: Widespread south of the Sahara; Congo, Cameroon, Ethiopia, Ghana, Kenya, Malawi, Mauritius, Mozambique, Nigeria, Réunion, Senegal, Sierra Leone, South Africa, St. Helena, Sudan, Swaziland, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe.

North America: USA (Hawaii only).

Central America and Caribbean: Cuba, Costa Rica, Dominica, Dominican Republic, Guadeloupe, Haiti, Jamaica, Martinique, Nicaragua, Panama, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Trinidad and Tobago, US Virgin Islands (Saint Thomas and Sainte Croix).

South America: Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.

Oceania: Australia (New South Wales, South Australia, Queensland, Victoria, Western, Australia, Tasmania), Cook Islands, Fiji, New Zealand (North Island), Papua New Guinea, Samoa.

This distribution list replaces all previous published EPPO Distribution Lists on *Toxoptera citricidus*!

Source: **EPPO Secretariat, 1995-05.**

95/122 PHYNCI/TR...*Phyllocnistis citrella* is present in Turkey

The EPPO Secretariat has recently been informed by the Turkish Plant Protection Service that *Phyllocnistis citrella* (potential EPPO A2 quarantine pest) is present in Turkey without further details.

Source: **Plant Protection Service of Turkey, 1995-05.**

Additional key words: new record.

95/123 PHYNCI/MA...*Phyllocnistis citrella* is present in Morocco

The EPPO Secretariat has recently been informed that *Phyllocnistis citrella* (potential EPPO A2 quarantine pest) was found for the first time in Morocco, at the end of summer/beginning of autumn 1994. The pest has been observed on orange and clementine in the North, East and Gharb regions. Since then, surveys and extension programmes have been set up to eradicate the pest. In regions where the pest is present, various trials have been conducted to evaluate the efficacy of insecticide treatments. Internal quarantine measures, extension programmes, chemical control (especially in nurseries) are being implemented. The Plant Protection Service of Morocco stressed that the main citrus-growing regions: Tadla (near Béni Mellal), Haouz (Marrakech) and Souss (Agadir) are still free from *P. citrella*.

Source: **Plant Protection Service of Morocco, 1995-05.**

Additional key words: new record.

95/124 **PHYNCI/ES...**Situation of *Phyllocnistis citrella* in Spain

A report on the phytosanitary status of the Spanish crops has been published and gives details in particular on the situation of *Phyllocnistis citrella* (EPPO A2 potential quarantine pest) in the different provinces.

Andalucía: *P. citrella* was introduced in summer 1993 in the areas of Cadíz and Malága. In September 1994, the pest has spread to all citrus-growing regions of Andalucía.

Baleares: *P. citrella* has colonized the islands since its introduction in June 1994. Serious damage has only been seen in two foci in young plantations.

Cataluña: In September 1994, the pest was found in the region of Tarragona (near the Comunidad Valenciana) and then spread during the autumn to all citrus-growing regions near Tarragona.

Murcia: *P. citrella* was found at the beginning of August 1994 in citrus groves and isolated trees in private gardens of the coastal region (Mazarró, Aguilas and Campo de Cartagena). At the end of 1994, it was present in the majority of the citrus-growing areas (including Valle del Guadalentín, Huerta de Murcia, regions situated along the rivers Segura and Mula). In Murcia, a parasitoid *Pnigalio* sp. has been found and causes some pest mortality in the orchards.

Comunidad Valenciana: The pest was detected in summer 1994 and spread rapidly in this region. Studies are being carried out on three parasitoids from Australia.

Source: Anonymous (1995) [Phytosanitary status of the Spanish crops in 1994] **Phytoma-España, n° 67, 12-62.**

Additional key words: detailed record.

95/125 PHYNCI/ES...Biology of *Phyllocnistis citrella* in Andalucía (ES)

In Spain, *Phyllocnistis citrella* (potential EPPO A2 quarantine pest) has been introduced into Andalucía (and Cádiz) in summer 1993. In 1994, observations were made in lemon orchards (*Citrus limon* cv Primofiori) located in Estepona (near Málaga). This lemon variety has a continuous growth and can therefore support populations of *P. citrella* throughout the year. In the literature, it can be seen that the life cycle is variable (from 13 to 52 days). In Andalucía, observations made have shown that on the first flush after winter, the life cycle from egg to adult was of 38 days (10 days for the eggs, 12 days for larval stages and 16 days for pupae). On the second flush, the life cycle was shorter (20 days). Concerning natural enemies, two hymenopterous ectoparasites have been found and one has been identified as *Nigalius* sp. The authors also stressed that the control of the pest should take into account cultural methods, natural enemies, efficient chemical insecticides and control of plant material in nurseries.

Source: Garijo, C.; García, E.J. (1994) [*Phyllocnistis citrella* (Stainton, 1856) (Insecta: Lepidoptera: Gracillariidae: Phyllocnistidae) in citrus growing areas of Andalucía (South Spain): Biology, ecology, and pest control] **Boletin de Sanidad Vegetal - Plagas, 20 (4), 815-826.**

95/126 **PHYNCI...**Control methods against *Phyllocnistis citrella*

In Spain, a congress on the citrus leaf miner (*Phyllocnistis citrella* - potential EPPO A2 quarantine pest) has been held in Murcia, 1995-03-30/31, and papers concerning possible means of control were presented. In order to establish effective strategies of control, it is important to define which flushes should be protected. Strategies will depend also on the type of crop (young or established plantations) and the intensity of pest attack. Generally, orchards will need protection during spring and autumn flushes, and in some cases during summer. Several specific products can be used: abamectin, diflubenzuron, flufenoxuron and hexaflumuron. Other products like: butocarboxim, carbosulfan, fenitrothion, hexythiazox, lufenuron and pirimifos-methyl can also be used. The same compound should not always be used, to avoid resistance. Cultural methods aiming at a better regulation of the growth of the trees should be applied (e.g. better timing of pruning and harvest, control of unwanted sprouts, use of growth regulators etc.) but are rather difficult to implement. Concerning biological control, some natural enemies have been observed in Spanish orchards. For example, in Murcia, a parasitoid (*Pnigalio* sp.) is able to cause 15-25 % mortality of the pest. Near Málaga, the four following hymnopterous parasitoids have been observed: *Cirrospilus vittatus*, *Cirrospilus pictus*, *Sympiesis saudanis* and *Pnigalio* sp, and a maximum level of 20 % parasitisim has been observed.

Source: Garcia Garcia, E. (1995) [Methodology of control against the citrus leaf miner *Phyllocnistis citrella*, Stainton].
Phytoma-España, n° 68, 13-14.

Lucas Espadas, A. (1995) [The citrus leaf miner *Phyllocnistis citrella*, Stainton - Strategies for an effective control].
Phytoma-España, n° 68, 16-18.

95/127 PHYNCI...EPPO distribution list for *Phyllocnistis citrella*

Phyllocnistis citrella (potential EPPO A2 quarantine pest) originates from South East Asia and is also present in Africa and Oceania. In addition, it has recently been introduced into the Euromediterranean region where it is now spreading rapidly, into North America (Florida then in Louisiana and Texas) and into Central America and Caribbean (e.g. Belize, Cuba), where it raises serious concerns.

EPPO distribution list: *Phyllocnistis citrella*

EPPO region: Algeria (potential EPPO country), Egypt (potential EPPO country), Israel, Italy (Sardegna), Morocco, Portugal, Spain (Andalucía, Cataluña, Murcia, Comunidad Valenciana, Baleares), Syria (potential EPPO country), Turkey.

Asia: Afghanistan, Bangladesh, China, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Kampuchea, Korea Republic, Korea Democratic People's Republic, Laos, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Saudi Arabia, Sri Lanka, Syria, Taiwan, Thailand, Turkey, Vietnam, Yemen.

Africa: Algeria, Egypt, Ethiopia, Morocco, South Africa, Sudan.

North America: Mexico, USA (Florida, Louisiana, Texas).

Central America and Caribbean: Bahamas, Belize, Cayman Islands, Cuba, Costa Rica, Honduras, Jamaica, Nicaragua, Panama, Puerto Rico.

Oceania: Australia (widespread in New South Wales and Queensland; Northern Territory), Guam, Northern Mariana Islands, Palau, Papua New Guinea, Solomon Islands, Samoa.

Source: **EPPO Secretariat, 1995-05.**

95/128 SQLCXX/US...First report of squash leaf curl geminivirus in Texas (US)

Squash leaf curl geminivirus (EU Annex I/A1) has been detected for the first time in Texas (US) in autumn 1993 on watermelon plants (*Citrullus lanatus*). Infected plants showed curled, blistered, yellowed, mottled leaves and small, deformed fruits. Disease incidence ranged from 75 to 100 % and yield losses were 30-100 % in the 24 fields surveyed and located in eight counties of south Texas. The disease was associated with *Bemisia tabaci* biotype B (*B. argentifolii*) infestations. Molecular studies have shown that a DNA fragment (amplified by PCR) from a conserved region of the coat protein gene was respectively 95 and 98 % identical to fragments of two isolates of squash leaf curl geminivirus from California and Arizona. The authors pointed out that this is the first report of a whitefly-transmitted geminivirus infecting cucurbits in Texas. According to the EPPO Secretariat the records of squash leaf curl geminivirus in Arizona and Texas are new.

Source: Isakeit, T.; Robertson, N.L.; Brown, J.K.; Gilbertson, R.L. (1994) First report of squash leaf curl virus on watermelon in Texas. **Plant Disease, 78 (10), p 1010.**

Additional key words: new records.

95/129 LIRISA/VE...Situation of *Liriomyza sativae* in Venezuela

In Venezuela, *Liriomyza sativae* (EPPO A1 quarantine pest) is considered as a secondary pest of tomato. However, during the last 10 years pest populations have increased considerably, leading to problems in the majority of the tomato-growing regions in the country. In order to evaluate the population fluctuations, field studies have been carried out at the 'Estación Experimental Samán Mocho de la Universidad Central' (State of Carabobo) in three different periods of the year: dry season (October-December 1985), end of dry season beginning of rainy season (March-May 1986), and rainy season (July-September 1986). Highest numbers of leaf miners were observed at the end of the dry season. The following parasitoids have been found: *Chrysonotomyia* sp. *Closterocerus* sp., *Diglyphus* sp., *Chrysocaris* sp., *Omphale* sp., *Haltioptera*, *Cothonaspis* sp. and *Opius* sp. and were in highest numbers at the end of the dry season and beginning or the rainy season.

Source: Issa, S.; Marcano, R. (1994) [Population dynamics of *Liriomyza sativae* and its parasitoids on tomato]
Turrialba, 44(1), 24-30.

Additional key words: detailed record.

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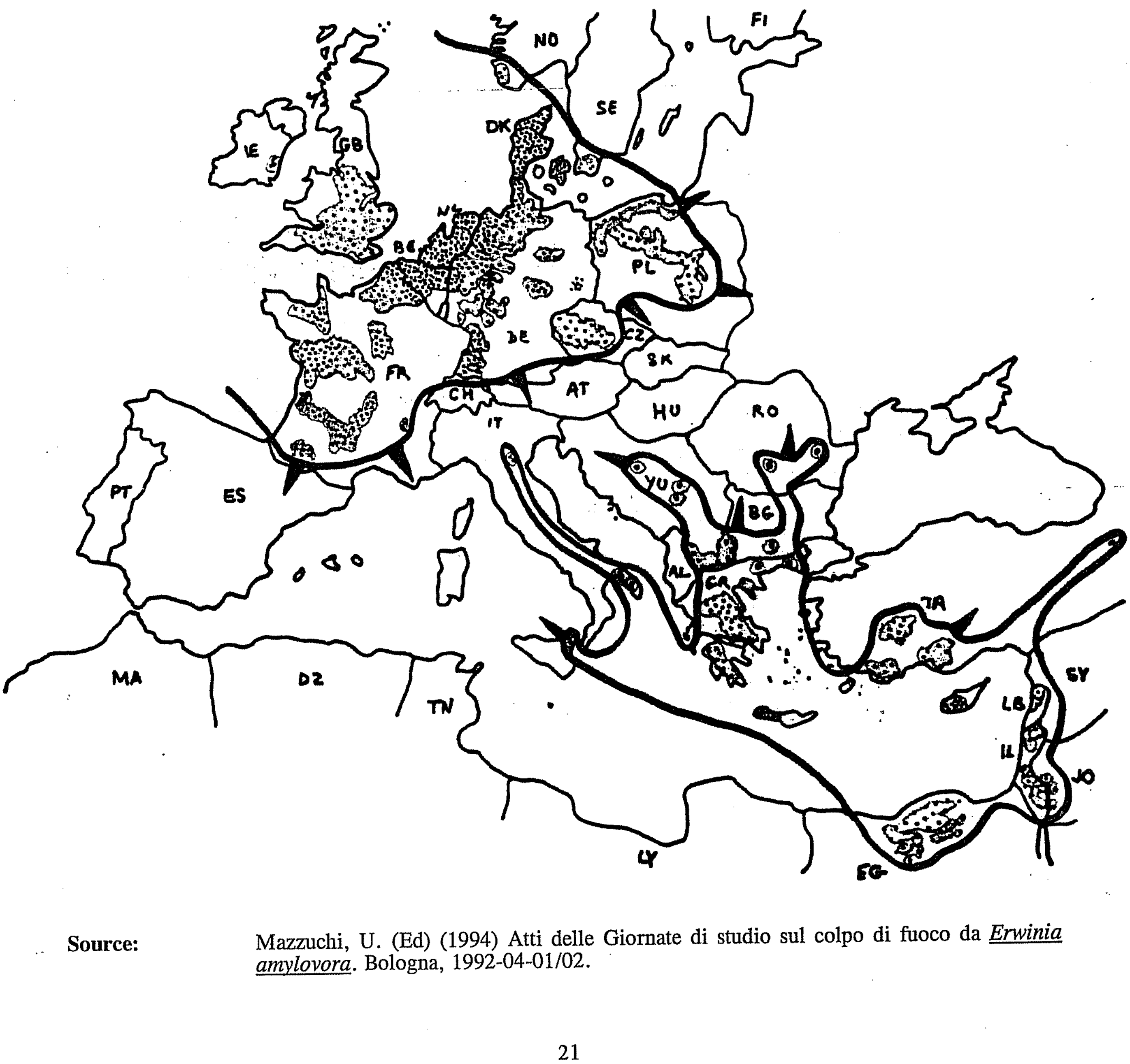
95/130 ERWIAM...Italian publication on *Erwinia amylovora*

The results of two days meeting on *Erwinia amylovora* (EPPO A2 quarantine pest), at the Istituto di Patologia Vegetale in Bologna (IT), have been published. Information is given on the disease in general (symptomatology, epidemiology, control methods, diagnostic) but also on phytosanitary regulations and the monitoring programme implemented in Italy. On the cover of this publication, a coloured map representing the geographical distribution of fireblight in Europe has been drawn by Prof. Carlo Bazzi, who kindly allowed us to reproduce it in the EPPO Reporting Service. The black dots represent nearly the areas/country where fireblight is present (or, at least, has been reported) but single well defined dots (e.g. in Italy, Bulgaria, Romania, France etc.) have a precise "meaning" and indicate the presence of a foci, according to official reports. The EPPO Secretariat has slightly modified the original map by adding two dots in Italy, as two new foci have recently been reported near Bologna (see EPPO RS 94/114).

Fireblight in Europe (Courtesy Prof. Carlo Bazzi, Istituto di Patologia Vegetale, Bologna, (IT))



Source: Mazzuchi, U. (Ed) (1994) Atti delle Giornate di studio sul colpo di fuoco da *Erwinia amylovora*. Bologna, 1992-04-01/02.

95/131 **HETDSP/DITYDI/DITYDE...Situation of nematodes of quarantine importance in the Mediterranean region**

The EPPO/CIHEAM Conference on Plant Nematology in the Mediterranean Region took place in Valenzano (IT), in 1993-03-30/04-01. Many papers were presented and speakers gave interesting and new information, in particular on several nematodes of quarantine importance. These papers have been published in the EPPO Bulletin 24(2), June 1994.

Ivezic *et al*. presented the situation in Croatia. Investigations have been carried out in Croatia since 1978, on many crops (crops and glasshouse crops, forests) and weeds, and a list of nematode species found during this survey appears in their paper (63 genera and 81 species). In Croatia the main problems are caused by *Pratylenchus* species, in many crops (mostly soybean and maize), *Xiphinema* species in vineyards, and *Heterodera schachtii* in surgar beet. Only a few samples of severe attacks of *Ditylenchus dipsaci* (EPPO A2 quarantine pest) have been found on onion.

Concerning *Ditylenchus dipsaci* on food legumes, Greco and Di Vito noted that this pest is common in the Mediterranean countries. During a survey on food legumes, it has been found that *D. dipsaci* could cause severe decline of broad bean, pea and lentil during wet seasons. This nematode has been found on broad bean in Algeria, Morocco and Tunisia and is also reported in Syria. In Italy, *D. dipsaci* has been observed on this crop but is not associated with decline.

The situation in Albania was presented by Dr Jovani. *Ditylenchus dipsaci* is one of the most serious plant parasitic nematodes, especially in warm regions of Albania. Serious damage has been observed on vegetable crops (onion, garlic, leek). The pest also attacks potatoes, sugar beet and tobacco. In some regions like the Korca district, garlic production has been considerably reduced (5-10 ha, instead of 200 ha a few years ago). But in cold regions (Puka district), it is not widespread. *Ditylenchus destructor* (EU Annex II/A2) is present in both cold and warm regions. Analysis of potato tubers has shown an infestation level of 3.5-12 %. *Globodera rostochiensis* (EPPO A2 quarantine pest) is present in Kroca district (Plase and Lumalas) and Durres district (Rashbull). However, the number of live cysts per 100 g of soil is below one.

In Islas Canarias (ES), Bello and Gonzalez explained that *Globodera rostochiensis* was first found in Tenerife in 1961, though studies of old documents indicated that it was probably already present in the south of Tenerife in 1959. The nematode was later found (in 1968) in four of the seven Islands (El Hierro, La Gomera, Gran Canaria, La Palma) and mixed populations of *Globodera rostochiensis* and *G. pallida* were found in Gran Canaria in 1985. In 1987, *G. pallida* was observed in Tenerife. So far, *Globodera* species have not been found on Fuerteventura and Lanzarote. It must be noted that *Ditylenchus dipsaci, D. destructor*, *Nacobbus aberrans* are not present in Islas Canarias.

Source: Proceedings of the EPPO/CIHEAM Conference on Plant Nematology in the Mediterranean Region (Valenzano, IT, 1993-03-30/04-01).
EPPO Bulletin 24(2), 369-432.

95/132 **PUBLICATION...**Nematodes of quarantine importance

Dr Tacconi and Ambrogioni have recently published a book (in Italian) on nematodes of quarantine importance for the European Union. Data sheets including information on taxonomy, host plants, geographical distribution, economic importance, life cycle, means of introduction, identification and control have been prepared for *Xiphinema americanum* sensu lato, *Longidorus diadecturus*, *Ditylenchus destructor*, *D. dipsaci*, *D. myceliophagus*, *Radopholus similis*, *R. citrophilus*, *Nacobbus aberrans*, *Globodera rostochiensis*, *G. pallida*, *Aphelenchoides besseyi*, *A. composticola* and *Bursaphelenchus xylophilus*. Illustrations of nematodes and damage are also included. Concerning geographical distribution, the EPPO Secretariat has noted the following data which were not included in PQR:

Ditylenchus destructor present in Jersey.

Ditylenchus dipsaci present in Bolivia.

Globodera rostochiensis (EPPO A2 quarantine pest) present in Brazil.

Aphelenchoides besseyi (EPPO A2 quarantine pest) present in Egypt, Mexico. In USA: Arkansas, Texas.

Source: Tacconi, R.; Ambrogioni, L. (1995) Nematodi da Quarantena. 'Lo Scarabeo', Bologna. 191 pp.

Additional key words: new records.

<u>95/133</u> <u>TILLCO...*Tilletia controversa* is not present in California (US)</u>

The report of *Tilletia controversa* (EPPO A2 quarantine pest) in California was based on a specimen collected by H.B. Humphrey on the 30th of June 1917 in Jacksonville, supposedly in California. After some very serious 'detective' work, it was discovered that in summer 1917, H.B. Humphrey was on a trip and that on the 30 th of June 1917, he was in or near Jacksonville, Oregon. The most likely conclusion is that H.B. Humphrey made an error in recording the locality where the specimen was collected and wrote California instead of Oregon.

Source: Rossman, A.Y. (1994) Report of dwarf bunt from California erroneous. **Plant Disease, 78 (7), 755-756.**

Additional key words: denied record.

<u>95/134</u> <u>EPPO...Resistance to anticoagulants in Europe</u>

Commensal rodents are mainly controlled by anticoagulant rodenticides. Resistance to the first successful anticoagulant, warfarin, was detected in the Norway rat (*Rattus norvegicus*) in 1958 and then expanded to other rodent species (*R. rattus*, *Mus musculus*) and the majority of other anticoagulants. The EPPO Panel on Rodent Control felt that it was useful to give an up-to-date picture of the current distribution of anticoagulant resistance in Europe and for this purpose a questionnaire was sent in 1992. 13 countries answered and it appeared that a broad-spectrum resistance to anticoagulants (e.g. warfarin, diphacinone, coumatetralyl, bromadiolone, difenacoum, brodifacoum) occurs at least in all countries which have conducted tests (e.g. Denmark, Finland, France, Germany, United Kingdom). In other countries, documented reports also show the occurrence of anticoagulant resistance. It is felt that true distribution of resistance is probably more extensive than documented by the replies of this questionnaire. In addition, the EPPO Panel on Rodent Control also found that the existing resistance detection protocols were no longer adequate and therefore a new guideline containing new tested methods is now being discussed.

Source: Myllymäki, A. (1995) Anticoagulant resistance in Europe: appraisal of the data from the 1992 EPPO questionnaire. **Pesticide Science, 43(1), 69-72.**