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EPPO

Reporting

Service

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EPPO *Reporting Service*

95/176 Tomato yellow leaf curl geminivirus is present in Burkina Faso

Studies have recently been carried out in Burkina Faso on the occurrence of whitefly-transmitted geminiviruses, as no data was previously available. The crops studied were cassava (*Manihot esculenta*), cotton (*Gossypium hirsutum*), okra (*Abelmoschus esculentus*), tobacco (*Nicotiana tabacum*) and tomato (*Lycopersicon esculentum*). The results of this study provided the first evidence for the occurrence of geminiviruses in Burkina Faso. Four geminiviruses have been identified by using TAS-ELISA and monoclonal antibodies: African cassava mosaic, okra leaf curl, tobacco leaf curl and tomato yellow leaf curl geminiviruses. Tomato yellow leaf curl (EPPO A2 quarantine pest) has been found in many parts of the country and its incidence varied greatly from year to year and from one season to another. Within the dry season (main period for tomato production), the incidence of the disease was high in many tomato crops (in March) and could rise to 60 %, following a peak population of its vector *Bemisia tabaci* (EPPO A2 quarantine pest). The authors noted that in Burkina Faso, tomato yellow leaf curl is an economically serious disease.
Okra leaf curl geminivirus was also considered as a problem in the small area of okra grown in the dry season but not important during the main production period of okra (rainy season). The virus was also found in wild hosts, e.g. *Sida acuta*, which are suspected to play an important role in the epidemiology of the disease as reservoirs for the virus. African cassava mosaic geminivirus is widely distributed in Burkina Faso. However, the authors considered that as cassava is not a key crop, it does not present a such a serious problem. Tobacco leaf curl has only been reported in a few places and is not considered as a serious disease.

Source: Konaté, G.; Barro, N.; Fargette, D.; Swanson, M.M.; Harrison, B.D. (1995) Occurrence of whitefly-transmitted geminiviruses in crops in Burkina Faso, and their serological detection and differentiation.
Annals of applied Biology, 126(1), 121-129.

Additional key words: new record.

95/177 Tomato yellow leaf curl geminivirus is present in Oman

From 1991-10 to 1993-01, studies have been carried out in Oman on the rate of infection by tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest). In addition, populations of *Bemisia tabaci* (EPPO A2 quarantine pest) have been monitored. The results showed that infection could be reduced by sowing in August and planting in September, or by sowing in December and planting in January, and by establishing nurseries under insect-proof conditions. The EPPO Secretariat had previously no information on the occurrence of this disease in Oman.

Source: Zouba, A.; Azam, K.M.; Razvi, S.A.; Ai-Wahaibi, A.K. (1993) Temporal increase of tomato leaf curl virus on staggered plantings of tomato in the Sultanate of Oman.
South Indian Horticulture, 41(1), 32.

Additional key words: new record.

EPPO *Reporting Service*

95/178 Transmission of tomato leaf curl geminiviruses by *Bemisia tabaci*

Studies have been carried out in order to determine the frequency of transmission from tomato to tomato by 3 biotypes of *Bemisia tabaci* (EPPO A2 quarantine pest) of 3 serologically distinguishable geminivirus isolates that cause leaf curl diseases in different countries. The three biotypes of *B. tabaci* were from: Côte d'Ivoire, Pakistan and USA (B biotype, also called *B. argentifolii*). The three tomato geminivirus isolates were: Indian tomato leaf curl geminivirus from India, tomato yellow leaf curl geminivirus (TYLCV - EPPO A2 quarantine pest) from Nigeria and from Senegal. The results showed a wide range of transmission frequencies depending on whitefly biotype, virus isolate and also other factors not yet defined (e.g. feeding behaviour, virus content, etc.). It was found that *B. tabaci* biotype B (USA) and *B. tabaci* (Côte d'Ivoire) transmitted TYLCV (Senegal) more frequently than Indian tomato leaf curl. *B. tabaci* (Pakistan) transmitted Indian tomato leaf curl more frequently than TYLCV (Senegal). In general, *B. tabaci* biotype B (USA) was the most efficient vector, as it transmitted Indian tomato leaf curl and TYLCV (Senegal) 4 to 9 times more frequently than *B. tabaci* (Côte d'Ivoire). TYLCV (Nigeria) was rarely transmitted by *B. tabaci* biotype B (USA) and not at all by *B. tabaci* (Côte d'Ivoire).

The authors noted that in previous studies there had been some indirect evidence that the coat protein of geminiviruses determined their vector specificity. It had also been noted that whitefly-transmitted geminiviruses from different hosts in the same major geographical area tend to be more antigenically similar to one another than they are to geminiviruses causing the same diseases in the same hosts in other geographical regions. In fact, results of this study supports the idea that the coat protein of each virus could be specifically adapted for transmissibility by the *B. tabaci* biotypes present in its area of occurrence.

The authors pointed out that the high frequency with which *B. tabaci* biotype B (USA) transmit geminiviruses is indeed a worrying fact, as this biotype has recently become established in European glasshouses and in fields in Italy and Spain, and its spread in southern USA and Central America has led to an increase of the incidence of geminiviruses. However, other studies carried out in California (US) have shown that lettuce infectious yellows closterovirus (EU Annex I/A1) is more often transmitted by the A biotype than the B biotype.

Source: McGrath, P.F.; Harrison, B.D. (1995) Transmission of tomato leaf curl geminiviruses by *Bemisia tabaci*: effects of virus isolate and vector biotype.
Annals of Applied Biology, 126(2), 307-316.

Additional key words: epidemiology.

95/179 Use of non-radioactive probes to detect viruses transmitted by insects

1) A dot blot hybridization system using digoxigenin-labelled probes and colorimetric visualization has been developed in USA for the detection of several viruses transmitted by insects. The following viruses could be detected with this method: squash leaf curl geminivirus (EU Annex I/A1), beet curly top geminivirus (EPPO A2 quarantine pest), zucchini yellow mosaic potyvirus, lettuce infectious yellows closterovirus (EU Annex I/A1) and beet yellows closterovirus. Although this method is less sensitive than radioactive dot blot hybridization, the authors felt that it could be used for routine testing in small diagnostic laboratories.

2) In Lebanon, a non-radioactive DNA probe (digoxigenin-labelled) has been developed for the detection of tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest). This method is sensitive and reliable and can be used either in dot blots or tissue blots.

Sources:

Harper, K.; Creamer, R. (1995) Hybridization detection of insect-transmitted plant viruses with digoxigenin-labelled probes.
Plant Disease, 79(6), 563-567.

Abou Jawdah, Y.; Shebaro W.A.; Soubra, K.H. (1995) Detection of tomato yellow leaf curl geminivirus (TYLCV) by a digoxigenin-labelled DNA probe.
Phytopathologia mediterranea, 34(1), 52-57.

Additional key words: diagnostic procedures.

95/180 First report of plum pox potyvirus in India

In India (Himachal Pradesh), during a survey carried out in stone fruit orchards in 1991, some plum trees (*Prunus domestica*) showed severe chlorosis and vein banding on the leaves associated with a severe reduction in size. These leaves clustered together to form a rosette, especially in yellow plum, and dieback of the plants led to severe decline. No typical symptoms of plum pox potyvirus appeared on the fruits. Peach (*P. persica*) and almond (*P. dulcis*) showed only an overall decline in vigour. The causal agent was identified by using ELISA and ISEM tests (with an antiserum of plum pox potyvirus from East Malling, UK), as being plum pox potyvirus (EPPO A2 quarantine pest). This is the first report of plum pox potyvirus in India.

Source: Thakur, P.D.; Bhardwaj, S.V.; Garg, I.D.; Kishore, K.; Sharma, D.R. (1994) Plum pox virus on stone fruits from India - a new record. **Plant Disease Research, 9(1), 100-102.**

Additional key words: new record.

95/181 *Toxoptera citricida* is the correct scientific name for the brown citrus aphid

The scientific name for the brown citrus aphid should correctly be given as *Toxoptera citricida* (EPPO A1 quarantine pest) and not *T. citricidus* as currently used by EPPO.

Source: Stoetzel, M.B. (1994) The correct spelling of the scientific name for the brown citrus aphid. **Proceedings of the Entomological Society of Washington, 96(1), p 179.**

Additional key words: taxonomy.

95/182 *Toxoptera citricida* is present in Antigua and Barbuda

In citrus orchards of Antigua and Barbuda, a survey has been carried out in June 1993 to look for symptoms of citrus tristeza closterovirus (EPPO A2 quarantine pest) and the possible presence of its vector, *Toxoptera citricida* (EPPO A1 quarantine pest). *T. citricida* has been found in two locations and in an abandoned field at Dunbars. Analysis of samples for citrus tristeza are being carried out. This is the first report of *T. citricida* in Antigua and Barbuda.

Source: Anonymous (1994) Antigua and Barbuda - Presence of *Toxoptera citricidus* ascertained.
FAO Plant Protection Bulletin, 42(3), p 149.

Additional key words: new record.

95/183 Situation of *Thrips palmi* and *Bemisia tabaci* in Dominica

During the 10th session of the Caribbean Plant Protection Commission (CPPC) held in December 1993, the following situation in Dominica concerning *Thrips palmi* (EPPO A1 quarantine pest) and *Bemisia tabaci* (EPPO A2 quarantine pest) was reported. Small outbreaks of *T. palmi* and *B. tabaci* have been observed on some vegetables. At that time, this was the first report of these two pests in Dominica (the EPPO Secretariat was informed of the record for *T. palmi* but not for *B. tabaci*). The two pests have also been found on crotons and poinsettia and their infestations are more extensive on these ornamentals than on vegetables.

Source: Anonymous (1994) Dominica - New pest and outbreak problems.
FAO Plant Protection Bulletin, 42(3), p 151.

Additional key words: detailed record, new record.

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95/184 First report of *Ditylenchus dipsaci* in Oman

Recently in Oman, garlic (*Allium sativum*) which is an important commercial crop, was found to be suffering from an unidentified disease. Diseased plants showed twisted and malformed leaves. In advanced stages, they showed chlorosis, premature wilting and drying and then die. In cases of severe infection, up to 75 % of the plants died within 3 months after planting. Surveys were carried out from December 1993 to April 1994, at Wadi Mistal (1200 m altitude) in the Batinah region and on the Bahla plains and Jabal Akhdar mountain (1800 m altitude). *Ditylenchus dipsaci* (EPPO A2 quarantine pest) has been found in infected garlic plants. In Oman, the nematode has been recognized as a major quarantine pest and measures have been taken by the Ministry of Agriculture to prevent further spread in the country. According to the EPPO Secretariat, this is the first report of *D. dipsaci* in Oman.

Source: Al Zidgali, T.; Mani, A.; Al Hinai, M.S. (1994) *Ditylenchus dipsaci*, new nematode pest affecting garlic in Oman.
FAO Plant Protection Bulletin, 42(3), 154-155.

Additional key words: new record.

95/185 *Plasmopara halstedii* reported for the first time from Germany

Plasmopara halstedii (EU Annex II/A2) has been reported for the first time in Germany from commercial fields of sunflower (*Helianthus annuus*). The pathogen was first observed at Tübingen (Württemberg) in 1986 on a small non-commercial plot, which was formerly used to grow garden ornamental plants. Since no sunflower field was in the vicinity of approximately 10 km at that time, it is most likely that the pathogen was introduced by oospore-containing seeds, possibly by birdfood. Later, *P. halstedii* was observed for the first time in agricultural sunflower fields near Rastatt, Baden, in 1992. So far, 8 races of *P. halstedii* have been described in North America. In Tübingen, races 1 and 4 were identified by using a set of differential sunflower lines. In commercial fields near Baden, plants were found infested by race 5 which is found for the first time outside North America. The authors pointed out that most of the cultivars grown in Germany, though resistant to race 1, are not resistant to races 4 and 5. According to the EPPO Secretariat this is the first report of *P. halstedii* in Germany.

Source: Spring, O.; Miltner, F.; Gulya, T.J. (1994) New races of sunflower downy mildew (*Plasmopara halstedii*) in Germany.
Journal of Phytopathology, 142 (3-4), 241-244.

Additional key words: new record.

95/186 First report of potato spindle tuber viroid in avocado

Though avocado (*Persea americana*) is an important crop in tropical areas, little is known about its virus and virus-like diseases. However during recent studies, avocado trees growing at several locations in Peru have been shown to be infected by potato spindle tuber viroid (PSTVd - EPPO A2 quarantine pest), by using nucleic acid spot hybridization assays. PSTVd infections were often latent, but some trees coinfected with avocado sunblotch viroid showed symptoms, characterized by bunchiness of the inflorescence, decreasing both fruit size and number, and eventually decline and death. The authors noted that in Peru, potatoes and avocados are often inter-cropped, and possible means of transfer between the two plants species are discussed (insect-mediated transfer of viruses between genetically incompatible species via virus-infected pollen, although rare is known to occur; transmission by nematodes such as *Meloidogyne incognita* could be a possibility). They stressed that further studies are necessary to investigate the possible role of interactions between PSTVd and avocado sunblotch viroid. This is the first report of PSTVd from a natural host other than potato (*Solanum tuberosum*).

Source: Querci, M.; Owens, R.A.; Vargas, C. Salazar, L.F. (1995) Detection of potato spindle tuber viroid in avocado growing in Peru.
Plant Disease, 79(2), 196-202.

Additional key words: new host plant.

95/187 Andean potato mottle comovirus found on *Solanum melongena* in Brazil

In Brazil, a strain of Andean potato mottle comovirus (EPPO A1 quarantine pest), naturally infecting aubergine (*Solanum melongena*) in Campo Grande, Rio de Janeiro, has been identified, purified and characterized according to its biology, cytopathology, serology and molecular properties. These studies have shown that it only infects Solanaceae species and is similar to the C strain described in Peru.

Source: Brioso, P.S.T.; Pimentel, J.P.; Louro, R.P.; Kitajima, E.W.; Oliveira, D.E. (1993) [Andean potato mottle virus - characterization of a strain naturally infecting eggplant (*Solanum melongena*).]
Fitopatologia Brasileira, 18(4), 526-533.

Additional key words: detailed record.

95/188 *Synchytrium endobioticum* eradicated from Maryland (US)

In USA, *Synchytrium endobioticum* (EPPO A2 quarantine pest) was present in limited areas of Pennsylvania, Maryland and West Virginia in 1918-1920 and was thought to have been eradicated by 1974. However, in late 1987, a survey of the original quarantine area in Maryland identified one garden (in Allegany County) suspected of still harbouring the pathogen (EPPO RS 500/13, 1989). A subsequent survey was then conducted in and around the old quarantine area. None of the soil samples from 176 home gardens surveyed were positive for *S. endobioticum* resting spores. Bioassays with susceptible potato cultivars were conducted for 5 consecutive years at the site from which spores had been recovered and no symptoms were obtained. It is declared that the spores found on this site are non viable and that Maryland is considered to be free from potato wart disease.

Source: Putnam, M.L.; Sindermann, A.B. (1994) Eradication of potato wart disease from Maryland.
American Potato Journal, 71(11), 743-747.

95/189 Diseases of common bean in Eastern and Southern Africa

A booklet prepared by Dr D.J. Allen on diseases of common bean (*Phaseolus vulgaris*) in Eastern and Southern Africa has recently been published by CABI. It gives useful information on the occurrence and prevalence of these diseases and pathogens in 20 countries, and includes a comprehensive bibliography. The EPPO Secretariat has extracted data concerning quarantine diseases of common bean, which are new or detailed records.

- *Burkholderia* (*Pseudomonas*) *solanacearum* (EPPO A2 quarantine pest):

Recorded in: Madagascar (widely distributed and damaging, 20-50 % incidence), Mauritius (Beau Bassin), Swaziland*.

- Cowpea mild mottle 'carlavirus':

Reported in: Malawi* (Bunda near Lilongwe), Mozambique*, Sudan* (this virus disease is regarded as the most important disease of beans in Sudan especially when populations of *B. tabaci* are dense; widespread in the north of the country; recently found strongly associated with cowpea mild mottle 'carlavirus' but field symptoms could not be reproduced under glasshouse conditions), Tanzania (Morogoro, Lushoto, Tanga), Uganda* (Kabanyolo, Kampala).

• *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* (EPPO A2 quarantine pest)
Reported in: Mauritius* (first record in Beau Bassin & Black River in 1963, then in Mapou, Local Red). In Kenya, few isolated records had been reported from the period 1968-1973, but the disease is now presumed eradicated in this country.

• *Phaeoisariopsis griseola* (EPPO A2 quarantine pest)
Recorded in: Burundi*, Ethiopia (Awasa, Eritrea, Didesa, Kaffa, Shewa), Madagascar (found around Antananarivo, Bealanana and Lac Alaotra - common but regarded of minor importance), Rwanda*, South Africa (Natal, Transvaal), Sudan (occasional in Equatoria but rarely severe), Swaziland* (minor importance), Zaire (Bas Zaire, Loutu, Mulungu, Ndihira, South Kivu, North Kivu), Zambia (Central & Eastern Provinces).

• *Xanthomonas campestris* pv. *phaseoli* (EPPO A2 quarantine pest)
Reported in: Angola* (Huambo, Chiange), Burundi*, Kenya (very common), Lesotho* (widespread), Madacasgar (found near Lac Itasy in 1932), Malawi (widespread), Mauritius* (first recorded in 1981), Rwanda*, Swaziland*, Zaire* (Bas Zaire, North Kivu).

• A whitefly-transmitted geminivirus causing golden mosaic symptoms has recently been reported from Uganda (Kabanyolo). EPPO note: for the moment, bean golden mosaic geminivirus is not specifically known to be present in Africa, however lima bean golden mosaic has been reported from Nigeria (relationships between this virus and bean golden mosaic geminivirus have not yet been fully worked out).

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* new records according to the EPPO Secretariat.

Source: Allen, D.J. (1995) An annotated list of diseases, pathogens and associated fungi of the common bean (*Phaseolus vulgaris*) in Eastern and Southern Africa.
CABI, Phytopathological Papers, No. 34, 42 p.

Additional key words: new records, detailed records.

95/190 EPPO Distribution List for *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*

Due to the new record in Mauritius and to the modifications made by several countries during the validation of geographical data for quarantine pests, the geographical distribution of *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* can be modified as follows.

EPPO Distribution List: *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*

EPPO region: Many records in the EPPO region are doubtful and have not been recently confirmed. Albania, Belgium (reported but unconfirmed), France (reported but unconfirmed), Germany (reported but unconfirmed), Greece (found but not established), Hungary (found but not established), Poland (reported but unconfirmed), Romania (locally), Russia (Amur and Krasnodar only, on soybeans), Switzerland (reported but unconfirmed), Tunisia (locally), Turkey (reported but unconfirmed), Ukraine, Yugoslavia (locally).

Asia: Russia (locally), Turkey (reported but unconfirmed).

Africa: Mauritius, Tunisia (locally).

North America: Canada (Ontario), Mexico (unconfirmed), USA (first reported in 1920, especially in irrigated high plains and Midwest, but not reported since early 1970s except in Iowa on soybeans).

South America: Colombia, Venezuela.

Oceania: Australia (southern parts, Queensland).

This distribution list replaces all previous published EPPO Distribution Lists on *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*!

Source: **EPPO Secretariat, 1995-08.**

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95/191 EPPO Distribution List for *Phaeoisariopsis griseola*

Due to the new records in Burundi, Rwanda, Swaziland (EPPO RS 95/189) and detailed information provided by several countries during the validation of geographical data for quarantine pests, the geographical distribution of *Phaeoisariopsis griseola* can be modified as follows.

EPPO Distribution List: *Phaeoisariopsis griseola*

Angular leaf spot is primarily a disease of the tropics and subtropics, where it is widespread in *Phaseolus* bean-producing areas. The CMI distribution map (1986) gives many European countries where the pathogen has been reported. However, according to EPPO's direct information from the countries concerned, the pathogen does not now occur in most of these countries, never having become established.

EPPO region: Austria (few reports), Bulgaria (locally), France (locally), Greece, Hungary (few reports), Poland (unconfirmed), Romania, Russia (locally), Turkey (few reports) and Yugoslavia (locally). Found in the past but not established in Ireland, Israel, Italy, Netherlands, Portugal, Spain and Switzerland.

Asia: Armenia, Bhutan, China, Georgia, India (unconfirmed), Indonesia, Iran, Israel (found but did not establish), Japan, Korea Democratic People's Republic, Korea Republic, Laos, Malaysia (few reports), Nepal, Philippines, Taiwan (few reports), Thailand, Turkey (few reports).

Africa: Angola, Burundi, Congo, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Nigeria, Réunion, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, St. Helena, Sudan, Swaziland, Tanzania, Uganda, Zaire, Zambia, Zimbabwe.

North America: Mexico (unconfirmed), USA (locally).

Central America and Caribbean: Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Jamaica, Nicaragua, Panama, Puerto Rico, Trinidad and Tobago.

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

Oceania: Australia (New South Wales, Queensland, Victoria, Norfolk Island), Fiji, New Caledonia, New Zealand (few reports), Papua New Guinea, Solomon Islands.

This distribution list replaces all previous published EPPO Distribution Lists on *Phaeoisariopsis griseola*!

Source: **EPPO Secretariat, 1995-08.**

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95/192 EPPO Distribution List for *Xanthomonas campestris* pv. *phaseoli*

Due to new records in Angola, Burundi, Lesotho, Mauritius, Rwanda, Swaziland, Zaire, the geographical distribution of *Xanthomonas campestris* pv. *phaseoli* can be modified as follows.

EPPO Distribution List: *Xanthomonas campestris* pv. *phaseoli*

EPPO region: Bulgaria (widespread), Cyprus (locally), Czech Republic (reported but not established), Egypt (widespread - potential EPPO country), Finland (unconfirmed), France (locally), Germany (locally), Greece (locally), Hungary (widespread), Israel (found but not established), Italy (locally), Lebanon (widespread - potential EPPO country), Lithuania, Moldova (potential EPPO country), Morocco (unconfirmed), Netherlands (few reports), Norway, Poland (unconfirmed), Portugal (Madeira only), Romania (locally), Russia (Black Sea, Krasnodar), Spain (widespread), Sweden (unconfirmed), Switzerland (locally), Tunisia (locally), Turkey (locally), Yugoslavia (locally).

Asia: Bangladesh, Brunei Darussalam, China, Cyprus, Georgia, Hong Kong, India (unconfirmed), Indonesia, Israel (found but not established), Japan, Kampuchea, Korea Democratic People's Republic, Korea Republic, Lebanon, Malaysia, Myanmar (Burma), Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Turkey (locally), Vietnam, Yemen (few reports).

Africa: Angola, Burundi, Central African Republic, Egypt, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Morocco (unconfirmed), Mozambique, Nigeria, Rwanda, Somalia, South Africa, Sudan, Swaziland, Tanzania, Tunisia (locally), Uganda, Zaire, Zambia, Zimbabwe.

North America: Bermuda, Canada, Mexico, USA (more prevalent east of the Rocky Mountains).

Central America and Caribbean: Barbados, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Martinique, Nicaragua, Panama, Puerto Rico, St. Vincent and Grenadines, Trinidad and Tobago.

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

Oceania: Australia, New Zealand (few reports), Samoa.

This distribution list replaces all previous published EPPO Distribution Lists on *Xanthomonas campestris* pv. *phaseoli*!

Source: **EPPO Secretariat, 1994-07.**

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95/193 New pathogen of sunflower in Italy

In central Italy near Perugia, a wilt disease has been observed in a sunflower (*Helianthus annuus*) field during summer 1993. The disease is characterized by a yellowing of the leaves as plants approached flowering. Large areas of the leaves turned light green, usually beginning at the apex and margins and extending inward. Subsequently, leaf margins turned necrotic and diseased plants were stunted with smaller heads. The disease was confined to a small area of a field, and observations carried out showed that plants were moderately or severely infected. The causal agent has been identified as *Phialophora asteris* f. sp. *helianthi*. The disease has once been reported from Manitoba (CA) in 1968 (Hoes, 1972) and this is the first report of *Phialophora asteris* f. sp. *helianthi* in Italy and Europe.

Source: Tosi, L.; Zazzerini, A. (1995) *Phialophora asteris* f. sp. *helianthi*, a new pathogen of sunflower in Italy.
Plant Disease; 79(5), 534-537.

Hoes, J.A. (1972) Sunflower yellows, a new disease caused by *Phialophora* sp.
Phytopathology, 62(9), 1088-1092.

Additional key words: new pest.

95/194 Update on the situation of *Helicoverpa armigera* in Hungary

In Hungary, *Helicoverpa armigera* (EPPO A2 quarantine pest) is a migratory species which occasionally invades the country from the south and southeast. Damage was recorded in 1951, 1986 and more recently in 1993, mainly on maize and tobacco (see EPPO RS 94/216). Damage was even more serious in 1994, as *H. armigera* has been found also on ornamentals, vegetables (paprika, tomato, bean, pea, celery, broccoli, leek), alfalfa, sunflower, sugar beet and even young apple trees. In addition, as recent winters were mild, pupae were often able to overwinter in the upper layer of the soil.

Studies on adult populations have also been carried out using 25 light traps placed in Hungarian forests from 1993 to 1994. A higher level of adult population has been found in 1994 compared to 1993. In both years, the main flight period occurred in August/September. Adult moths were most abundant in the warmer central and southern parts of the country. As trapped insects were intact, it is suggested that they belong to a generation which had developed in Hungary. Climatic studies on a longer period showed that *H. armigera* outbreaks are observed in Hungary during years with warm and dry summers.

As future outbreaks of *H. armigera* may be expected, studies on sex pheromone traps are being carried out in order to detect this unwanted immigrant as soon as possible. A potent attractant has therefore been developed in Hungary.

Sources: Szeöke, K.; Molnár, F.; Gyulai, P.; Veres, J.; Szilágyi, K. (1995) [Occurrence and damage of cotton bollworm in 1994 in Hungary.]
Növényvédelem, 31(6), 249-259.

Szabóky, C. Szentkirályi, F. (1995) [Seasonality of cotton bollworm (*Helicoverpa armigera* Hbn.) based on catches of forestry light traps in Hungary.]
Növényvédelem, 31(6), 267-274.

Szöcs, G.; Tóth, M.; Ujváry, I.; Szarukán, I. (1995) [Development of a pheromone trap for monitoring the cotton bollworm (*Helicoverpa armigera* Hbn.) an upcoming pest in Hungary.]
Növényvédelem, 31(6), 261-266.

Additional key words: detailed record.

95/195 Situation of *Aonidiella citrina* in Turkey

In the Eastern Black Sea region of Turkey, studies have been carried out in order to determine the species of armoured scale which cause damage to citrus orchards which did not receive chemical treatments (in Rize, Hopa and Sarp). Population fluctuations and natural enemies were also studied, as well as the incidence of insecticidal treatments targeted at other pests. The results showed that the citrus scales present were: *Aonidiella aurantii*, *A. citrina* (EU Annex II/A1) and *Chrysomphalus dictyospermi*. Approximately 90 % of the scale insect population was *A. citrina*. Natural enemies found during this study were the following: *Orius* sp. *Chrysopa* sp., *Cybocephalus* sp. *Scymnus* sp. *Chilocoris bipustulatus*, *Exochomus quadripustulatus* (as predators); *Aspiditiophagus citrinus*, *Prospaltella perniciosi*, *Aphytis* sp (as parasitoids). It was also found that chemical sprays targeted at other pests have adverse effects on scales insects and their natural enemies, especially when organophosphorus compounds were used.

EPPO note: in this study, it appears that *A. citrina* is the dominant species. However, during a visit made in Turkey we heard that *A. citrina* is also present in the region of Adana (East of the Mediterranean region of Turkey) and in the Aegean region. In these regions, the dominant species is *A. aurantii*, as *A. citrina* is better controlled by chemical treatments (due to a less sheltered way of life) and has more effective natural enemies.

Source: Bozan, I.; Yildirim, A.F. (1992) Investigations on the population fluctuations of the species of (*Aonidiella aurantii* Mask., *Aonidiella citrina* Coq. and *Chrysomphalus dictyospermi* Morg.) causing damage to citrus trees in the Eastern Black Sea region of Turkey.
Zirai Mücadele Arastirma Yilligi, no. 22-23 (1987-1988), 66-67.

Additional key words: detailed record.

EPPO *Reporting Service*

95/196 Species diagnosis and phylogeny of the *Ips grandicollis* group

The *Ips grandicollis* species group consists of 7 morphologically similar species: *I. cribricollis*, *I. confusus* (EPPO A1 quarantine pest), *I. grandicollis* (EPPO A1 quarantine pest), *I. hoppingi*, *I. lecontei* (EPPO A1 quarantine pest), *I. montanus*, and *I. paraconfusus*. The validity of these species has been confirmed through mating experiments, and identification can be inferred from geographic range and host plants. However, some of these species are sympatric and their identification can be difficult. In USA, a random amplified polymorphic DNA (RAPD) technique has been developed and gave a diagnostic DNA banding pattern for each species. The authors felt that this diagnostic method could be particularly useful in areas where these *Ips* species are sympatric. In addition, phylogenetic studies have also been carried by using RAPD products and confirmed previous relationships established between these *Ips* species based on allozyme frequencies.

Source: Cognato, A.I.; Rogers, S.O.; Teale, S.A. (1995) Species diagnosis and phylogeny of the *Ips grandicollis* group (Coleoptera: Scolytidae) using Random Amplified Polymorphic DNA.
Annals of the Entomological Society of America, 88(4), 397-405.

Additional key words: diagnostic procedure.