EPPO

Reporting

Service

Paris, 1996-10-01 **Reporting Service 1996, No. 10**

CONTENTS

96/182 Situation of *Burkholderia (Pseudomonas) solanacearum* in the Netherlands

In 1995, *Burkholderia (Pseudomonas) solanacearum* (EPPO A2 quarantine pest) was reported in the Netherlands (EPPO RS 96/001). From the middle of October 1995, before the beginning of the main potato trade season, all seed potato lots were tested and only lots found free were marketed. The EPPO phytosanitany procedure no. 26 was followed for sampling and testing.
The results of the 1995 survey are the following. Approximately 51,000 samples were collected and tested for *B. solanacearum*. These samples were mainly seed potatoes but also ware potatoes. In total, 94 farms have been found infested, including 54 seed potato-growing farms. Foci are located in almost all potato-growing areas, many of them are connected by the use of a clonal line (cv. Bildstar), which is essentially grown for the Dutch market. Some of the infestations can be related to the use of machinery in common. In November 1995, samples of surface water were taken in a limited number of areas where infestations could not be explained by clonal or machinery relations. In one of these areas, infected surface water was discovered. Measures were taken in infected farms in order to eradicate the disease and prevent any further spread.
In 1996, the present situation is the following. All seed potato lots from a farm have to be tested and found free of *B. solanacearum* before trade is allowed. Sampling and testing started in the middle of August and is expected to finish in the middle of November. The testing capacity has now reached 1000 samples per day. So far, approximately 15,000 samples have been tested. In one case, an infestation was found and measures were immediately taken to prevent any further spread from the farm concerned. In spring 1996, a survey was initiated in all potato-growing areas to establish the extent of the contamination in surface waters and *Solanum dulcamara*. First results have shown that in some places, surface waters and *S. dulcamara* plants were infested. Potato lots from these areas will not be marketed as seed potatoes.

Source: **Plant Protection Service of the Netherlands, 1996-09.**

Additional key words: detailed record **Computer codes:** PSDMSO, NL

96/183 Absence of *Burkholderia* (*Pseudomonas*) *solanacearum* in Belgium

As already reported in January (EPPO RS 96/002) *Burkholderia (Pseudomonas) solanacearum* (EPPO A2 quarantine pest) is no longer present in Belgium. The Plant Protection Service of Belgium has informed the EPPO Secretariat of the final results of the 1995 survey which are presented below.
In 1995, 95 % of the Belgian production of seed potatoes have been tested for *B. solanacearum* and found free. In addition, as a preventive measure no seed potatoes are grown in the northern area of the country where previous outbreaks had been found and successfully eradicated. Concerning ware potatoes, 89 samples have been tested in the laboratory and more than 1000 lots have been visually inspected at packing stations or industrial sites. Samples were constituted of 200 tubers per 25 t which were cut and inspected. No contamination was found. These results confirm the absence of *B. solanacearum* in Belgium. Surveys will continue in 1996.

Source: **Plant Protection Service of Belgium, 1996-07**

Additional key words: eradication **Computer codes:** PSDMSO, BE

96/184 EPPO Distribution List for *Burkholderia solanacearum*

At the beginning of 1996, EPPO has sent out a questionnaire to all its member countries to clarify the situation of *Burkholderia* (*Pseudomonas*) *solanacearum* in Europe. Answers received appear in EPPO RS 96/002, 96/022 and 96/090. As a consequence, its distribution list can be modified as follows.

EPPO Distribution list: *Burkholderia (Pseudomonas) solanacearum*

B. solanacearum is widespread in tropical, subtropical and warm temperate areas throughout the world. For the EPPO region, it is mainly race 3 which is of importance, since this so-called low-temperature strain is adapted to cooler climates in the highlands of the tropics and in the Mediterranean area. Its occurrence has now also been reported from temperate zones, and in particular race 3 has reported from a number of European countries in the 1990s. The distribution is given below separately for *B. solanacearum* as a whole (except race 3), for confirmed or possible records of race 3, and for records of race 2 (causing Moko disease).

B. solanacearum **(except race 3)**

EPPO region: Denmark (found but not established in ornamental *Musa*), Netherlands (race 1 found incidentally in ornamental turmeric (*Curcuma*) in the glasshouse, imported from Thailand), Germany (intercepted only), Russia (reported on various crops, e.g. soybean, other than the hosts of race 3; status doubtful).

Asia: Armenia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China (widespread), Georgia, Hong Kong, India (widespread), Indonesia (widespread), Iran, Japan, Korea Democratic People's Republic, Korea Republic, Malaysia (widespread), Myanmar, Nepal, Pakistan, Philippines, Russia (Far East), Singapore, Sri Lanka, Taiwan, Thailand, Viet Nam.

Africa: Angola, Burkina Faso, Burundi, Congo, Ethiopia, Gabon, Gambia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Nigeria, Reunion, Rwanda, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Swaziland, Tanzania, Tunisia, Uganda, Zaire, Zambia, Zimbabwe.

North America: Canada (found but not established on tomato and pelargonium in Ontario only), Mexico, USA (Arkansas, Florida, Georgia, Hawaii, North Carolina).

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

South America: Argentina, Belize, Brazil (widespread), Chile, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela.

Oceania: American Samoa, Australia (widespread), Cook Islands, Fiji, French Polynesia, Guam, Micronesia, New Caledonia, New Zealand, Papua New Guinea, Samoa, Tonga, Vanuatu.

Race 3 of *B. solanacearum* (records of unspecified races on potato in the EPPO region are treated as probable records of race 3). The bacterium is under eradication wherever it has occurred in the EU, and in most EPPO countries.

EPPO region: Algeria (probable), Austria (probable, isolated incidents in 1995), Belarus (unconfirmed), Belgium (single outbreak in 1992; not found since 1994), Bulgaria (probable, found in the 1940/50s but not established), Cyprus (found in the 1950s but not established), Egypt, Finland (intercepted only), France (isolated incidents in 1995), Greece (including Crete), Israel (found at one site in 1970s but eradicated), Italy (found in the 1950s; isolated incidents in 1995), Latvia (old unconfirmed records; now absent), Lebanon (probable), Libya (probable), Moldova (probable), Morocco (old unconfirmed records, never found on potato; now absent), Netherlands (isolated incidents in early 1990s, several outbreaks in 1995), Poland (old unconfirmed reports from 1940s; now absent), Portugal (isolated incidents on mainland in 1995; old unconfirmed report in Madeira, now absent), Romania (reported from symptoms only in 1950s; now absent), Spain (probable, found in 1981 but not established, in Canary Islands only; never found on mainland, the report in the 1st edition of Quarantine Pests for Europe of an earlier, now eradicated, presence was erroneous), Sweden (probable, found on *S. dulcamara* in the 1970s and eradicated), Tunisia (old unconfirmed records; not found in recent surveys), Turkey, UK (single outbreak in potato in England in 1993; not since reported in potato, but still found in *S. dulcamara*), Ukraine (old unconfirmed records; now absent) and Yugoslavia (probable).

Asia: China (recorded on potato in Fujian, Guangdong, Guangxi, Hebei, Jiangsu and Zhejiang), Cyprus (see above), India, Indonesia (Java), Iran, Israel (see above), Japan, Nepal, Philippines (probable), Turkey.

Africa: Algeria (probable), Burundi, Egypt, Kenya, Libya (probable), Morocco (see above), South Africa, Tunisia (see above) Zambia.

North America: Mexico.

Central America and Caribbean: Costa Rica**.**

South America: Argentina, Brazil, Chile, Peru, Uruguay.

Oceania: Australia.

Race 2 of *B. solanacearum* (causing Moko disease of bananas)

EPPO region: Libya.

Asia: India (West Bengal), Indonesia, Malaysia, Philippines, Sri Lanka, Thailand, Viet Nam.

Africa: Ethiopia, Libya, Malawi, Nigeria, Senegal, Sierra Leone, Somalia.

North America: Mexico, USA (Florida).

Central America and Caribbean: Belize, Costa Rica, Cuba, Dominican Republic (unconfirmed), El Salvador, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Panama, Trinidad and Tobago.

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

These distribution lists replace all previous published EPPO Distribution Lists on *Burkholderia (Pseudomonas) solanacearum*!

Source: **EPPO Secretariat, 1996-10.**

96/185 Situation of *Clavibacter michiganensis* subsp. *sepedonicus* in Spain

The EPPO Secretariat has recently been informed by the Plant Protection Service of Spain that *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 quarantine pest) has been found for the first time in Spain in two provinces (Comunidades Autómas). The disease was found in seed and ware potatoes in Castilla-Léon and in ware potatoes in Pais Vasco during the 1995 growing season. Eradication measures were immediately applied against the disease.

Source: Plant Protection Service of Spain, 1996-08.

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

96/186 Situation of *Clavibacter michiganensis* subsp. *sepedonicus* in Czech Republic

The EPPO Secretariat has recently been informed by the Plant Protection Service of Czech Republic that *Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 quarantine pest) is present locally in the country. During surveys, 400 samples were collected from different areas and tested by immunofluorescence staining or ELISA, followed by a biological test (egg plant test), and 12 positive results were obtained (May-June 1996). Eradication measures have immediately been applied and intensive surveys will continue in Czech Republic. This is the first confirmed record of *Clavibacter michiganensis* subsp. *sepedonicus* in Czech Republic (there was previously an old and unconfirmed record referring to a manual on crop diseases from a Czech author which was most probably misinterpreted as a record for the country).

Source: Plant Protection Service of Czech Republic, 1996-08.

Additional key words: new record **Computer codes:** CORBSE, CZ

96/187 Situation of *Globodera pallida* and *G. rostochiensis* in the former German Democratic Republic

A historical review of the situation of potato cyst nematodes in the former German Democratic Republic is presented by Grosse (see also EPPO RS 509/02, 1991). It is acknowledged that *Globodera rostochiensis* (pathotype Ro1) could not be prevented from spreading through the former German Democratic Republic. In 1965, 4 % of the arable land was infected, and this reached 19 % in 1985. The main areas concerned were the present new Bundesländer, Brandenburg and Mecklenburg-Vorpommen. However, in the 1980s, as up to 35 % of all cultivated potatoes were nematode-resistant, a significant decrease of potato cyst nematode populations was observed. From 1978 to 1988 *Globodera rostochiensis* (pathotype Ro1) and *Globodera pallida* were only found on 800 ha maximum, with usually minor level of infection.

Source: Grosse, E. (1996) [Legal regulations and practical conditions for the control of potato cyst nematodes *Globodera pallida* and *G. rostochiensis* in the former DDR.]
Mitteilungen aus der Biologischen Bundesanstalt für Land-und Forstwirtschaft, Berlin-Dahlem, 317, 209-218.

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

96/188 Identification of potato cyst nematodes by using PCR

A PCR method has been developed in United Kingdom to identify *Globodera pallida* and *Globodera rostochiensis* (EPPO A2 quarantine pests). Primers have been designed to amplify a region between the 5S rRNA and spliced leader RNA genes, in both nematode species. The method was tested against a wide range of potato cyst nematode isolates from South America, Europe and other parts of the world. Results showed that isolates of *G. rostochiensis* consistently amplified a single 914 bp product and were distinguishable from *G. pallida* which amplified 914 and 853 bp products or, in the case of most *G. pallida* Pa1 populations, a single 853 bp product. The method can be applied on single cysts, juveniles and eggs. The authors felt that this PCR method is a useful tool for identification of potato cyst nematodes in imported plant products, in crop management and statutory certification schemes.

Source: Shields, R.; Fleming, C.C.; Stratford, R. (1996) Identification of potato cyst nematodes using the polymerase chain reaction.
Fundamental and Applied Nematology, 19(2), 167-173.

Additional key words: new detection method **Computer codes:** HETDRO, HETDPA

96/189 New sampling method to detect low populations of *Globodera rostochiensis* and *G. pallida*

A new sampling method to detect low populations densities of *Globodera rostochiensis* and *G. pallida* (EPPO A2 quarantine pests) has been developed in the Netherlands. With this method it is possible to detect small infestations with a predefined probability, and therefore to take better decisions on the nature and extent of control measures, as the final aim is to reduce the use of nematicides.
Analysis of intensive sampling data from 40 patchy infestations representing all growing areas in the Netherlands provided a model of distribution (simple exponential model) describing expected cyst numbers within infestations. The authors then defined a standard focus with a central population density of 50 cysts/kg of soil which should be detected with a probability of 90 %, and used a special computer programme to simulate sampling procedures in order to define an optimal sampling grid. As a result, grid dimensions near
5 x 5 m with a core size of 52 g (sample size 6.9 kg/0.33 ha) were recommended as being the best compromise between the two following conflicting aims: to minimize sample size and variance of detection probability, and to minimize time needed to collect and process the samples. When compared with the statutory soil sampling procedure still used in the Netherlands of 7.5 x 7.5 m grid and core size of 3.3 g (sample size of 200 g/0.33 ha), and with an average detection probability of 90 %, the new sampling method detects foci with central densities a hundred times smaller, and costs only 3-4 times as much to perform. The new method can detect foci with a central density of 150 cysts/kg soil. The authors noted that practical problems created by a more intensive sampling procedure can be solved by using automated sampling devices mounted on a jeep and elutriators for the extraction of cysts from soil samples of up to 3 kg.
The authors concluded that with this new sampling procedure, it has been possible to reduce very significantly (80 to 90 %) the use of soil fumigants in seed and ware potato-growing areas in the Netherlands.

Source: Been, T.H.; Schomaker, C.H. (1996) A new sampling method for the detection of low population densities of potato cyst nematodes (*Globodera pallida* and *G. rostochiensis*).
Crop Protection, 15(4), 375-382.

Additional key words: new sampling method **Computer codes:** HETDPA, HETDRO

96/190 Spatial distribution of *Synchytrium endobioticum* in the soil

Studies were carried out in Newfoundland, Canada, on the spatial distribution of resting spores of *Synchytrium endobioticum* (EPPO A2 quarantine pest) in naturally infested soils. Common observation usually shows that the disease is discontinuous in infested soils but very few studies have been done on this subject. Three experiments were done in two fields. Soil samples were taken according to a defined grid and the spore population was estimated. Results showed that no particular pattern of aggregation emerged. The aggregates appear to follow a random pattern of distribution. The authors reviewed the possible means of dispersal of the disease (biological, edaphic and cultural) and they concluded that this apparently random pattern of distribution was most likely explained by gall production and release of spores from these galls.

Source: Hampson, M.C.; Coombes, J.W. (1996) Spatial distribution of *Synchytrium endobioticum*, the cause of potato wart disease, in field soil. **Plant Disease, 80(9), 1006-1010.**

Additional key words: epidemiology **Computer codes:** SYNCEN

96/191 Wind dispersal of resting spores of *Synchytrium endobioticum*

In Canada, *Synchytrium endobioticum* (EPPO A2 quarantine pest) is present in Newfoundland only in home gardens, and is submitted to plant quarantine. So far, wind has not been considered as a means of dispersal of the disease. However, resting spores were found adhering to windows on a building downwind of a heavily contaminated plot, situated in Avondale, Newfoundland. This potato plot has been a monoculture since 1954, and samples taken from the top 5 cm of soil displayed an average of more than 100 spores/g soil. Studies were carried out to check whether wind could carry spores. Simple impaction devices were placed in this field and were examined throughout the potato-growing season (June to October). Spores were recovered on the surface of these impaction devices in quite large numbers. Although it was recognized that wind is always blowing in Newfoundland and that the plot studied was heavily infested, the author considers that these preliminary studies have shown that wind dispersal of resting spores of *S. endobioticum* is possible.

Source: Hampson, M.C. (1996) A qualitative assessment of wind dispersal of resting spores of *Synchytrium endobioticum*, the causal agent of wart disease of potato. **Plant Disease, 80(7), 779-782.**

Additional key words: epidemiology **Computer codes:** SYNCEN

96/192 *Synchytrium endobioticum* spores transported by car

Spores of *Synchytrium endobioticum* (EPPO A2 quarantine pest) were detected in 8 % of soil samples from passenger compartment floors of vehicles leaving Newfoundland, Canada by ferry. This was reported by by Hampson and associates in Newfoundland.

Source: Hampson, M.C; Wood, S.L.; Coombes, J.W. (1996) The recovery of resting spores of *Synchytrium endobioticum* from soil in vehicle cabs at Port-aux-Basques, Newfoundland.
Canadian Journal of Plant Pathology, 18, 59-63.

Additional key words: epidemiology **Computer codes:** SYNCEN

96/193 Eradication of further outbreaks of *Thrips palmi* in the Netherlands

The Plant Protection Service of the Netherlands has recently informed the EPPO Secretariat that two infestations of *Thrips palmi* (EPPO A1 quarantine pest) were found on *Ficus benjamina* during regular inspections. As in previous outbreaks (EPPO RS 93/079, 95/048, 95/156), the chemical eradication programme has been applied and completed.

Source: **Plant Protection Service of the Netherlands, 1996-09**.

Additional key words: eradication **Computer codes:** THRIPL, NL

96/194 Recent findings of *Clavibacter michiganensis* subsp. *michiganensis*, plum pox potyvirus and *Xanthomonas fragariae* in the Netherlands

The Plant Protection Service of the Netherlands has recently informed the EPPO Secretariat that the following quarantine pests have been found in the Netherlands recently.

- *Clavibacter michiganensis* subsp. *michiganensis* (EPPO A2 quarantine pest) was found on tomato plants in twelve glasshouses which had received young seedlings produced from the same seed lot. All the plants were destroyed and the disease has been eradicated.

- Plum pox potyvirus (EPPO A2 quarantine pest) was found on plum trees (cv. Jubileum) used for fruit production. Measures have been taken to eradicate the disease, including destruction of infested trees and supervision of the infested plots by the Plant Protection Service.

- *Xanthomonas fragariae* (EPPO A2 quarantine pest) was detected in strawberry plants. The infestation was eradicated by a combination of measures to prevent further spread of the pathogen. These measures include destruction of the infested lot of strawberries and supervision by the Plant Protection Service.

Source: **Plant Protection Service of the Netherlands, 1996-09**.

Additional key words: eradication **Computer codes:** CORBMI, PLPXXX, XANTFR, NL

96/195 New and detailed records for Brazil

At the 29th Brazilian Phytopathological Congress (1996-08-11/16, Campo Grande, BR) many scientific papers were presented and the EPPO Secretariat has extracted those which give new details on the distribution of some quarantine pests in Brazil. Although, there was nothing fundamentally new to report concerning *Heterodera glycines* (EPPO A1 quarantine pest), it can be stressed that this nematode raises serious concern since its recent introduction into Brazil (see EPPO RS 93/131).

Bean golden mosaic geminivirus (EPPO A1 quarantine pest) causes an economically important disease in the regions of Triângulo Mineiro and Alto Paranaiba, in the Minas Gerais State* (Rodrigues *et al*., 1996).

Burkholderia (*Pseudomonas*) *solanacearum* (EPPO A2 quarantine pest) is recorded as a limiting factor of tomato production in the Pernambuco State* (Gomes, A.M.A. *et al*., 1996).

Colletotrichum acutatum (EU annex II/A2) and *Xanthomonas fragariae* (EPPO A2 quarantine pest) are present on strawberries in Distrito Federal* (Café Filho *et al*., 1996)

Curtobacterium flaccumfaciens pv. *flaccumfaciens* (EPPO A2 quarantine pest) was reported for the first time in Brazil. Symptoms of the disease were observed on beans in 1995, in Itaporanga, São Paulo State (Maringoni & Rosa, 1996).

Guignardia citricarpa (EPPO A1 quarantine pest) occurs in São Paulo State. Since 1993, symptoms of the disease have been observed and it severely affected lime and sweet orange (Lucon & Aguilar-Vildoso, 1996). In November 1995, on citrus and orange leaves collected near Mogi-Guaçu, São Paulo State, the perfect stage (perithecia containing asci and ascospores) of *Guignardia citricarpa* has been observed for the first time (de Goes, 1996). This confirms previous records.

Melampsora medusae (EPPO A2 quarantine pest) is present in the State of Paraná* (Ruaro & May, 1996).

Tomato spotted wilt tospovirus (potential EPPO A2 quarantine pest) is present on tomatoes in Distrito Federal* (Fajardo *et al*., 1996).

Xanthomonas vesicatoria (*X. campestris* pv. *vesicatoria* - EPPO A2 quarantine pest) presented a serious outbreak in 1993 in tomato fields in Itapaci, Goias State* (Quezado-Soares *et al*., 1996).

---

* New detailed record.

Source: **Fitopatologia Brazileira, 21 (suplemento), 448 pp.**
Abstracts of papers presented at the XXIX Congresso Brasileiro de Fitologia, Campo Grande, MS, 1996-08-11/16

Café Filho, A.C.; Tomita, C.K.; Cavalcanti, M.H. (1996) [Strawberry diseases in Distrito Federal, Brazil.], p 399.

de Goes, A. (1996) [Occurrence of perfect stage of *Guignardia citricarpa* in citrus groves in São Paulo State.], p 361.

Fajardo, T.V.M.; Lopes, C.A.; Silva, W.L.C.; de Avila, A.C. (1996) Dispersal of tomato spotted wilt virus (TSWV) in processing tomato field in the Federal District, Brazil, p 424.

Gomes, A.M.A.; Mariano, R.L.R.; Michereff, S.J.; de França, J.G.E. (1996) [Screening tomato material for resistance to *Pseudomonas solanacearum* in the field.], p 335.

Lucon, C.M.M.; Aguilar-Vildoso, C.A. [*Guignardia citricarpa* mycelial growth at different temperatures and culture media.], p 390.

Maringoni, A.C.; Rosa, E.F. (1996) [Occurrence of *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* on dry bean in the State of São Paulo, Brazil.] p 336

Quezado-Soares, A.M.; Giordano, L.B.; Lopes, C.A. (1996) [Screening of F4 tomato lines for resistance to *Xanthomonas campestris* pv. *vesicatoria*.], p 339

Rodrigues, F.A.; Borges, A.C.F.; Santos, M.R.; Fernandes, J.J.; Junior, A.F. (1996) [Epidemiology of bean golden mosaic virus associated with whitefly population fluctuation.], p 428.

Ruaro, L.; May, L.L. (1996) [Chemical control of rust (*Melampsora medusae*) in Poplars (*Populus* spp.)], p 381.

Additional key words: new records, detailed record

Computer codes: BR, BNGMXX, CORBFL, COLLAC, GUIGCI, MELMME, PSDMSO, TMSWXX, XANTFR, XANTVE,

96/196 Situation of *Xylella fastidiosa* in Brazil

Xylella fastidiosa (EPPO A1 quarantine pest) is present in Brazil where it causes plum leaf scald and citrus variegated chlorosis, and more recently it has been found on coffee (see EPPO RS 96/169). So far, Pierce disease of grapevine has not been observed in Brazil. In South America, *X. fastidiosa* is present in Argentina, Brazil and Paraguay (new record according to the EPPO Secretariat - Leite Jr, 1996). Plum leaf scald was observed at the beginning of the 1970s in the southern States of Brazil (Minas Gerais, Paraná, Rio Grande do Sul, São Paulo, Santa Catarina). Citrus variegated chlorosis was observed in 1987 in the north-east of São Paulo State and in the region of triângulo Mineiro (Minas Gerais State) (Carvalho, M.L.V, 1996). The disease then spread to practically all citrus-growing areas in the country (Goiás, Rio de Janeiro, Paraná, Sergipe) and was observed very recently in Santa Catarina State (Leite, Jr *et al*., 1996). Studies on the transmission of *X. fastidiosa* by leafhoppers in citrus orchards have been carried out. The bacterium is transmitted in a persistant, non-circulative way by Cicadellidae and Cercopidae. In citrus orchards, it was observed that several insects i.e. *Dilobopterus costalimai*, *Acrogonia terminalis* and *Oncometopia* sp. are able to transmit the disease (Lopes, *et al*., 1996).
The bacterium has been observed on coffee near Campinas (São Paulo, Minas Gerais). Preliminary studies (Ueno & Leite Jr, 1996), have shown that the isolates from coffee and citrus seem to be slightly different.

EPPO note: The EPPO record for *X. fastidiosa* in South America should now read:
South America: Argentina, Brazil (Goiás, Minas Gerais, Paraná, Rio do Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo, Sergipe), Paraguay, Venezuela.

Source: **Fitopatologia Brazileira, 21 (suplemento), 448 pp.**
Abstracts of papers presented at the XXIX Congresso Brasileiro de Fitologia, Campo Grande, MS, 1996-08-11/16

Carvalho, M.L.V. (1996) [Present situation of citrus variegated chlorosis and control strategies]. p 328.

Leite Jr, R.P. (1996) [Plum leaf scald: the disease and its causal agent *Xylella fastidiosa*.], 327-328.

Leite Jr, R.P.; Huang, G.F.; Ueno, B. (1996) [Occurrence of citrus variegated chlorosis caused by *Xylella fastidiosa* in the State of Santa Catarina, Brazil.], 335-336.

Lopes, J.R.S.; Beretta,; M.J.G.; Harakava, R.; Almeida, R.P.P.; Krügner, R.; Garcia Jr, A. (1996) [Confirmation of leafhopper transmission of *Xylella fastidiosa*, the causal agent of citrus variegated chlorosis.], p 343.

Ueno, B.; Leite Jr, R.P. (1996) [Studies on the variablility of *Xylella fastidiosa* strains established from coffee and citrus based on the analysis of whole-cell proteins.], p 341.

Additional key words: new record, detailed records

Computer codes: XYLEFA, BR

96/197 Occurrence of *Heterodera glycines* in the State of São Paulo (BR)

Heterodera glycines (EPPO A1 quarantine pest) is reported on soybean in the State of São Paulo, Brazil. It can be recalled that this nematode was detected for the first time in 1991-1992, in the following States: Goiás, Minas Gerais, Mato Grosso do Sul and Mato Grosso (see EPPO RS 93/131).

Source: Rossi, C.E.; Monteiro, A.R.; Ramiro, Z.A. (1995) [Occurrence of the cyst nematode, *Heterodera glycines* Ichinohe, 1952, in soya crop in the State of São Paulo.]
Revista de Agricultura (Piracicaba), 70(1), 37-40.

Additional key words: detailed record **Computer codes:** HETDGL, BR

96/198 Tospoviruses and thrips

In their paper, Mumford *et al*. (1996) present the current knowledge on the biology of the tospoviruses: host range and symptomatology, molecular biology, classification, vector relations, control of disease, and detection and diagnosis. Some of these aspects are briefly summarized below. For several years, tomato spotted wilt tospovirus (potential EPPO quarantine pest) has been considered as the only member of the genus tospovirus. Now, several distinct species have been described and separated into 4 serogroups:

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

Among serogroup IV, it appears that groundnut bud necrosis and watermelon silver mottle tospoviruses may be closely related. Additional tospoviruses recently characterized in Brazil are Chry-1, BR-09 (zucchini) and BR-11 (tomato). Chry-1 causes necrotic lesions surrounded by yellow areas followed by stem necrosis on chrysanthemum plants (see EPPO RS 96/082), and because its biological and molecular properties are quite distinct, Bezerra *et al*. (1996) have proposed to

consider it as a new species named chrysanthemum stem necrosis tospovirus (CSNV). Similarly for BR-09 which causes chlorosis and death of zucchini plants, Pozzer *et al*. (1996) have proposed to consider it as a new species called zucchini lethal chlorotic tospovirus (ZLCV).
Other viruses for which there is currently insufficient data to allow designation as distinct tospoviruses include: groundnut yellow spot virus, BR-10 (onion), Tospo-PD2, TSWV-W (watermelon), TSWV-O (onion) and peanut chlorotic fan virus.

Tospoviruses are transmitted by at least 8 different thrips species, in a persistent way. Taking the example of tomato spotted wilt tospovirus, only larvae can acquire the virus, which will then multiply inside the vector. Adults transmit the virus and remain viruliferous throughout their life. The main thrips species which can transmit tospoviruses are the following:

- *Frankliniella fusca*	TSWV, INSV
- *F. intonsa*	TSWV, TCSV
- *F. occidentalis* (EPPO A2 quarantine pest)	TSWV, INSV, GRSV, TCSV
- *F. schultzei*	TSWV, TCSV, GRSV
- *Scirtothrips dorsalis* (EPPO A1)	GBNV
- *Thrips palmi* (EPPO A1)	WSMV, GBNV, MSWV
- *T. setosus* & *T. tabaci*	TSWV

Source: Mumford, R.A.; Barker, I.; Wood, K.R. (1996) The biology of the Tospoviruses.
Annals of Applied Biology, 128(1), 159-183.

Bezerra, M.I.; Pozzer, L.; Nagata, T.; Lima, M.I.; Kitajima, E.W.; de Avila, A.C.; Resende, R. de O. (1996) Chrysanthemum stem necrosis (CSNV), a proposed new species in the Tospovirus genus.
Fitopatologia Brazileira, 21 (suplemento), p 430.
Abstract of a paper presented at the XXIX Congresso Brasileiro de Fitologia, Campo Grande, MS, 1996-08-11/16.

Pozzer, L.; Resende, R. de O., Bezerra, M.I.; Nagata, T.; Lima, M.I.; Kitajima, E.W.; de Avila, A.C.; (1996) Zucchini lethal chlorotic viurs (ZLCV), a proposed new species in the Tospovirus genus.
Fitopatologia Brazileira, 21 (suplemento), p 432.
Abstract of a paper presented at the XXIX Congresso Brasileiro de Fitologia, Campo Grande, MS, 1996-08-11/16.

Additional key words: biology **Computer codes:** FRANOC, THRIPL, TMSWXX, SCITDO,

96/199 Transmissibility of *Bursaphelenchus xylophilus* from wood chips to *Pinus* seedlings and stumps

Studies were carried out in Germany on the transmissibility of *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) from wood chips to *Pinus* seedlings and stumps. Pine wood chips experimentally contaminated with *B. xylophilus* were brought into contact with unwounded seedlings of 4-year old *Pinus sylvestris*, and with stumps either freshly cut or cut two months before the trial. These were left in quarantine boxes for two months under field conditions. Results showed that the nematode could only be extracted from stumps, and only if fresh wounds were present. Nematodes were not found on intact seedlings or on stumps cut two months before the trial. The author concluded that in principle *B. xylophilus* can be transmitted from contaminated wood chips to freshly wounded stumps.

Source: Braasch, H. (1996) [Studies on the transmissibility of the pine wood nematode (*Bursaphelenchus xylophilus*) from wood chips to *Pinus* seedlings and stumps.[
Nachrichtenblatt des Deutchen Pflanzenschutzdienstes, 18(8-9), 173-175.

Additional key words: epidemiology **Computer codes:** BURSXY

<u>96/200</u> <u>Occurrence of palm lethal yellowing phytoplasma in Honduras</u>

In Honduras, coconut palms (*<u>Cocos nucifera</u>*) in the vicinity of Gibson Point and Flower's Bay on the island of Roatán, have shown symptoms of palm lethal yellowing disease since mid-1994. Affected palms showed premature nut-fall followed by necrosis of immature inflorescence, progressive yellowing of fronds and eventual death of the tree. A visual survey carried out in December 1995, in the affected area on 440 coconut trees, showed that 92 % of the susceptible Atlantic Tall population had apparently died from the disease, or were presenting symptoms. Samples were taken from three symptomatic Atlantic Tall coconut trees and were tested for the DNA of the palm lethal yellowing phytoplasma by PCR. All samples gave positive results. This report confirms earlier records of palm lethal yellowing phytoplasma (EPPO A1 quarantine pest) in Honduras. The authors pointed out that the disease has moved approximately 800 km along the Caribbean coast of Central America since it was first reported in northern Yucatán Peninsula (Mexico) in 1982. They stressed that the movement of palm lethal yellowing into Belize in 1992, and now into Honduras, suggests that the disease may quickly disseminate throughout the rest of the region and therefore presents a serious threat to the coconut production and rich palm flora.

Source: Ashburner, G.R.; Córdova, I.I.; Oropeza, C.M.; Illingworth, R.; Harrison, N.A. (1996) First report of coconut lethal yellowing disease in Honduras.
Plant Disease, 80(8), p 960.

Additional key words: detailed record **Computer codes:** PALYXX, HN

<u>96/201</u> <u>Additions and deletions to the EPPO A1 and A2 quarantine lists</u>

At its 46 th Session (1996-09-17/18), the EPPO Council made the following additions and deletions to the EPPO A1 and A2 quarantine lists:

Additions to the A1 list:	*Alternaria mali*
	Citrus blight disease
	Malacosoma americanum
Addition to the A2 list:	Satsuma dwarf virus
Deletion from the A1 list:	*Rhagoletis completa*
Deletion from the A2 list:	*Ips amitinus*

Source: **EPPO Secretariat, 1996-09.**

Additional key words: quarantine lists

Computer codes: ALTEMA, CSBXXX, CSSDXX, IPSXAM, MALAAM, RHAGCO

<u>96/202</u> <u>EPPO Electronic Documentation Service: REMINDER</u>

As already mentioned in EPPO RS 96/124 (June), many EPPO documents are now available in electronic form. New files since June are indicated below in bold in the current contents. All the files are available by e-mail at the following address:

mail-server@eppo.fr

Current contents

EPPO Reporting Service from January to October 1996 (English and French). File names: rse-9601.doc, rse-9602.doc, rse-9603.doc, rse-9604.doc, rse-9605.doc, rse-9606.doc, **rse-9607.doc**, **rse-9608.doc**, **rse-9609.doc**, **rse-9610.doc**, rsf-9601.doc, rsf-9602.doc, rsf-9603.doc, rsf-9604.doc, rsf-9605.doc, rsf-9606.doc, **rsf-9607.doc**, **rsf-9608.doc**, **rsf-9609.doc**, **rsf-9610.doc**.

- EPPO Summaries of phytosanitary regulations
  - EU Member States (in 3 parts, in English and French). File names: sue-eua.exe, sue-eub.exe, sue-euc.exe, suf-eua.exe, suf-eub.exe, suf-euc.exe
  - Bulgaria (English): File name: sue-bg.exe
  - Cyprus (English). File name; sue-cy.exe
  - Estonia (English). File name: sue-ee.exe
  - Israel (English). File name: sue-il.exe
  - Latvia (English). File name: sue-lv.exe
  - Malta (English). File name: sue-mt.exe

- Russia (English and French). File names: sue-ru.exe, suf-ru.exe
- Ukraine (English). File name: sue-ua.exe
- Turkey (English). File name: sue-tr.exe
- Tunisia (English). File name: sue-tn.exe
- Romania (English). File name: sue-ro.exe

- Texts of phytosanitary regulations
  - EU Member States (in 3 parts, in English and French). File names: pre-eua.exe,
    pre-eub.exe, pre-euc.exe, prf-eua.exe, prf-eub.exe, prf-euc.exe
  - Cyprus (English). File name: pre-cy.exe
  - Estonia (English). File name: pre-ee.exe
  - Israel (English). File name: pre-il.exe
  - Malta (English). File name: pre-mt.exe
  - Russia (English). File name: pre-ru.exe
  - Ukraine (French). File name: prf-ua.exe
  - **Croatia (English). File name: pre-hr.exe**
- EPPO Specific Quarantine Requirements (English and French). File names: sqe-doc.exe, sqf-doc.exe
- Glossary of Phytosanitary Terms (English and French). File names: gle-doc.exe, glf-doc.exe

How to access EPPO Electronic Documentation

To receive full instructions on how to obtain documents from EPPO Electronic Documentation, send an e-mail message to mail-server@eppo.fr with the following contents:

```
BEGIN
SEND instructions
END
```

Case must be respected, i.e. BEGIN, SEND and END must be in upper case, and instructions in lower case. You will then receive a reply by e-mail containing a plain text document with all information required to use the service. As an example, to obtain the Specific Quarantine Requirements and the Glossary of Phytosanitary Terms (both in English), you should ask for the files sqe-doc.exe and gle-doc.exe (see lists above) by sending the following e-mail message to mail-server@eppo.fr:

```
BEGIN
SEND sqe-doc.exe
SEND gle-doc.exe
END
```

To decode the files received from the EPPO mail server, one of our correspondant has kindly informed us that the software Information Transfer Professional version 1.1.1 gave satisfactory results. This software is available from sabasoft@aol.com.

Please let the EPPO Secretariat know about your success and/or difficulties in connecting to the EPPO mail server !

Source: **EPPO Secretariat, 1996-10.**