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EPPO *Reporting Service*

94/041 EPPO/EE...Estonia new EPPO Member Country

The Republic of Estonia is from 1994-01 onwards a new EPPO Member. EPPO now has 35 Member Governments. The official delegate of Estonia to EPPO will be:

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Source: EPPO Secretariat, Paris (1994-02)



EPPO Reporting Service

94/042

NEW PEST...Geminiviruses of tomatoes in Martinique and Guadeloupe (EU)

A new geminivirus of *Solanaceae* has been reported from Martinique (EU). In Martinique the disease was found for the first time in August 1992 in the main tomato producing area of the island. Yield losses were estimated worth 2.9 million FRF. Symptoms on tomato were distinguishable from other geminiviruses and consisted of stunting of tomato plants as well as leaf curling and yellowing. Associated yield losses were important. The authors assume that the virus is vectored by *B. tabaci* (EPPO A2 quarantine pest). First suggestions on the identity of this geminivirus in Martinique assume that it is related or identical with tomato mottle geminivirus or chino del tomate geminivirus from Florida (US) and Mexico, respectively.

In June 1993 a geminivirus was also found on tomato crops on the island of Guadeloupe (EU).

Source: Hostachy, B.; Alex, D. (1993) Un Gémivirus de la tomate transmis par *Bemisia tabaci*.
Phytoma No. 456, 1993 (12), 24-28.

94/043

NEW PEST/EU...Severe blight of grapevine found in the EU (IT)

A new severe disease of grapevine has been found in Sicily (EU). The disease called grapevine blight is caused by *Natrassia toruloidea* (synonym: *Hendersonula*). Symptoms appear on grapevine leaves in form of scattered chlorotic spots which later necrotize. Removal of bark near wounds reveal dark alterations of the cambium. It was observed that infected vines defoliated and that the shoots dried from the apex. A rapid evolution of the disease has been observed which leads to death of the entire grapevine within a period of 2-3 years.

Source: Granata, G.; Sidoti, A. (1993) Nuova grave malattia della vite causata da *Natrassia toruloidea*.
Informatore Fitopatologico, 44, 4-6.

94/044 NEW PEST...New geminivirus of tomatoes found in Mexico

A new geminivirus of *Solanaceae* has been reported from Mexico. Since 1989 the new virus appeared on tomato and pepper crops in the region of Sinaloa in west coastal Mexico and is now widespread throughout the region. Symptoms on tomato plants are foliar curling, chlorosis, purpling and shorter internodes whereas the symptoms on pepper are expressed on the leaves as large irregular light green blotches. Experiments on transmission showed that the virus can be vectored by *B. tabaci* (EPPO A2 quarantine pest) and that a mechanical transmission from tomato to tobacco is possible. DNA hybridization experiments showed that the virus is genetically similar to other viruses so far described in the region, but not to Old World geminiviruses. Due to its host range which includes tomato, pepper, aubergine and tobacco as well as its unique symptoms in tomato the authors distinguished it from other geminiviruses occurring in the region and named it Sinaloa tomato leaf curl geminivirus. The genetically relatedness of the virus with New World whitefly-transmitted geminiviruses let the authors assume that the virus is indigenous to the region.

Source: Brown, J.K.; Idris, A.M.; Fletcher, D.C. (1993) Sinaloa tomato leaf curl virus, a newly described geminivirus of tomato and pepper in West Coastal Mexico.
 Plant Disease 77, 1262.

94/045 NEW PEST/US...Tomato mottle geminivirus infecting tomato in Florida (US)

Since 1989 a new virus disease of tomato has increasingly been observed in Florida, (US). Incidences as high as 95% have been reported in some tomato crops and conservative estimates have rated the losses due to the virus infection at 125 million USD during the 90-91 growing season. The virus was named tomato mottle geminivirus and is transmitted by *Bemisia tabaci* (EPPO A2 quarantine pest) biotype B (the new dangerous one). First incidences of the virus in Florida were correlated with the arrival of the *B. tabaci* B biotype in this US State. Investigations on the host range of the virus showed that it resembles other tomato geminiviruses from the Western Hemisphere in having a rather narrow host range with a preference for *Solanaceae*, but with different symptoms. It was found that four genera can be infected: *Lycopersicon*, *Nicotiana*, *Physalis* and *Phaseolus*.

Source: Polston, J.E.; Hiebert, E.; McGovern, R.J.; Stansly, P.A.; Schuster, D.J. (1993) Host range of tomato mottle virus, a new geminivirus infecting tomato in Florida.
 Plant Disease 77; 1181-1184.



EPPO Reporting Service

94/046

ERWIAM...Update on the occurrence of *Erwinia amylovora* from the Czech Republic

In the Czech Republic, *Erwinia amylovora* (EPPO A2 quarantine pest) isolates were collected from Bohemia and comparatively tested for serological and biochemical identity with strains from Germany, the UK, Switzerland and Greece. Additionally an antiserum was produced and tested against 101 Bohemian isolates and 30 isolates from other European countries. All isolates from Bohemia and Europe reacted positively with the produced antiserum. There were no considerable differences between the Bohemian and European isolates studied according to the results of a numerical analysis.

Source:

Mraz, I.; Jehlickova, E.; Kudela, V. (1993) Comparison of serological and biochemical properties of *Erwinia amylovora* isolates originated from Bohemia, western and southern Europe.
Ochrana Rostlin 29, 23-30.

94/047

ERWIAM...New host for *Erwinia amylovora* found in the USA

During recent years *Crataegus aestivalis*, a small native tree to southern USA, has increasingly been found to develop blighting symptoms in Georgia (US). The trees which produce edible fruits and which are potentially useful for landscaping were showing symptoms which resembled those of fireblight in other *Rosaceae*. Investigations on the causal organism showed that the disease was indeed caused by *Erwinia amylovora* (EPPO A2 quarantine pest). This is the first record of *Crataegus aestivalis* as a host for *E. amylovora*. The author believes that, due to the more intense cultivation of the trees, fireblight might become a serious disease of *C. aestivalis*.

Source:

Carter, S.M. (1993) Fire blight caused by *Erwinia amylovora* on mayhaw in Georgia.
Plant Disease 77, 1262.

94/048

ERWIAM...EPPO Distribution List of *Erwinia amylovora*

The transformation of the national structures in Central and Eastern Europe in relation to the emergence of new independent States has to be reflected in the distribution list for *Erwinia amylovora* (EPPO A2 quarantine organism), especially since several countries have now declared its eradication. Note also that the record given for Haiti (EPPO Reporting Service 524/10) has been proven erroneous. The distribution list for fireblight is, at current knowledge of the EPPO secretariat as follows:

EPPO Distribution List: *Erwinia amylovora*

EPPO region: Belgium, Cyprus (EPPO Reporting Service 457), Czech Republic (EPPO Reporting Service 94/046), Denmark, Egypt (new outbreaks from 1983, following a much earlier outbreak in 1964 - EPPO Reporting Service 467), France (except south-east) (Larue & Vincent, 1990), Germany, Greece (Psallidas, 1990), Ireland (EPPO Reporting Service 472), Israel (EPPO Reporting Service 459), Italy (Puglia, Sicily - EPPO Reporting Service 511), Lebanon (EPPO Reporting Service 498), Luxembourg, Netherlands, Norway (EPPO Reporting Service 471; Sletten, 1990), Poland, Romania, Sweden (EPPO Reporting Service 477), Turkey (Oktem & Benlioglu, 1988), UK (EPPO Reporting Service 484; England), Ukraine, Yugoslavia (EPPO Reporting Service 509/14). The disease has been officially declared as eradicated from Bulgaria, UK (Northern Ireland) and Switzerland.

Africa: Egypt

Asia: Armenia (EPPO Reporting Service 506/08), China (unconfirmed), Israel (EPPO country), Jordan, Lebanon (potential EPPO country), Korea Republic (unconfirmed), Saudi Arabia (unconfirmed), Turkey (EPPO country), Vietnam (unconfirmed), India (Papdiwal & Deshpande, 1978; on rose and therefore dubious). The record in Japan cited in the first edition of the EPPO data sheet (OEPP/EPPO, 1983) is an error.

North America: Bermuda, Canada, Mexico, USA.

Central America and Caribbean: Guatemala (unconfirmed).

South America: Colombia (unconfirmed). The record in Chile cited in the first edition of the EPPO data sheet (OEPP/EPPO, 1983) is an error.

Oceania: New Zealand.

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

Source: EPPO Secretariat, Paris (1994-03)



EPPO Reporting Service

94/049 XYLLFA...*Xylella fastidiosa* present in Taiwan

A survey carried out in Taiwan (TW) revealed that 12 - 20% of all pear trees in the low-altitude areas of central Taiwan showed typical symptoms of pear leaf scorch disease. Further investigations were carried out to identify the causal organism of this disease. Microscopic observations, pathogenicity tests and serological tests showed that the causal organism was indeed *Xylella fastidiosa* (EPPO A1 quarantine pest). This represents the first well documented record of this disease in Asia.

Source: Leu, L.S.; Su, C.C; (1993) Isolation, cultivation and pathogenicity of *Xylella fastidiosa*, the causal bacterium of pear leaf scorch disease in Taiwan.
Plant Disease 77, 642-646.

94/050 XYLLFA...EPPO Distribution List for *Xylella fastidiosa*

Due to the record of *Xylella fastidiosa* (EPPO A1 quarantine pest) from Taiwan the distribution of this organism is as follows:

EPPO Distribution List: *Xylella fastidiosa*

The distribution given is for the grapevine and peach pathogens. As far as is known, *X. fastidiosa* sensu lato is similarly restricted to the warmer parts of America.

EPPO region: Absent. Unconfirmed interceptions on grapevine material imported from the USA (EPPO Reporting Service 500/02 505/13).

Asia: India (on almonds; Jindal & Sharma, 1987; this isolated record was the first from the Old World and is based on a test described in the 1970s; it requires confirmation by more modern methods), Taiwan (pear leaf scorch).

North America: Mexico, USA (Alabama, California, Florida, Georgia, Mississippi, Missouri, North and South Carolina, Texas).

Central America and Caribbean: Costa Rica, probably most countries in Central America.

South America: Argentina, Venezuela (Jimenez, 1985). "Plum leaf scald" recorded in most areas where *Prunus salicina* is grown in South America (EPPO Reporting Service, 503/08). However, the grapevine disease is not known in South America.

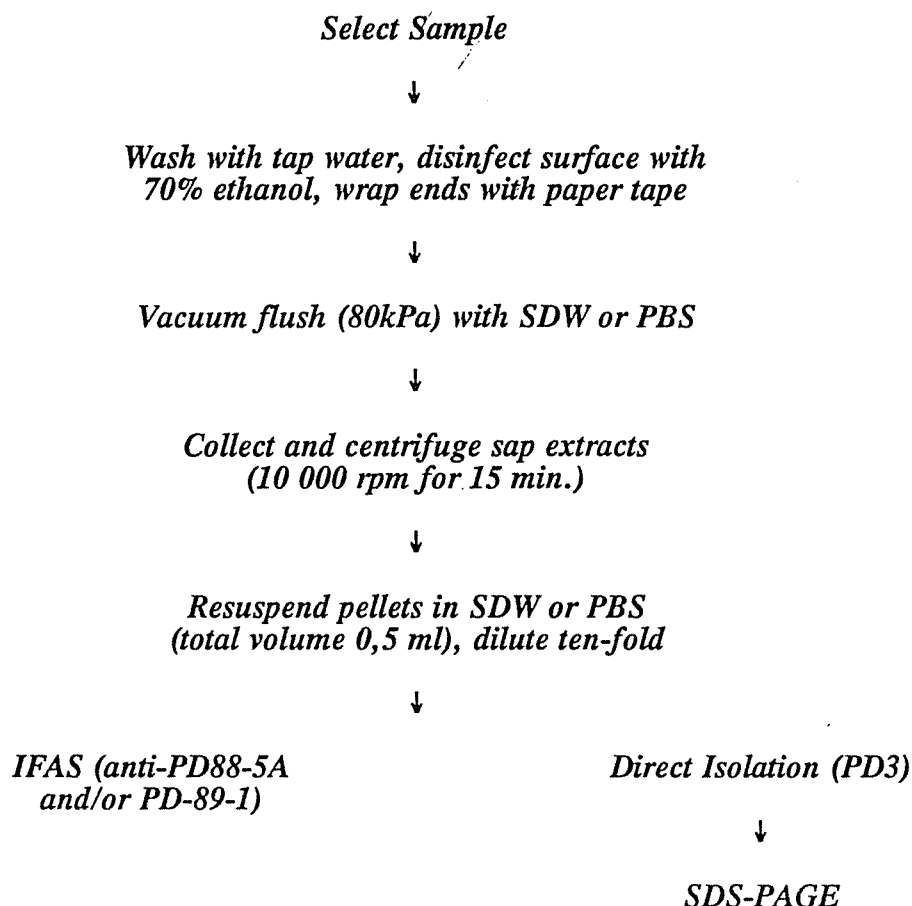
This distribution list replaces all previous published EPPO Distribution Lists on X. fastidiosa !

Source: EPPO Secretariat, Paris (1994-02)

94/051

XYLLFA...Detection of *Xylella fastidiosa* in grapevine cuttings

The development of a detection method for *Xylella fastidiosa* (EPPO A1 quarantine pest) in asymptomatic grapevine propagation material was the objective of a Italian-French research project. The result of the investigations is a scheme for testing woody grapevine material and one year old cuttings is based essentially on the extraction of the bacteria from the xylem by vacuum washing, their concentration through centrifugation and their identification by immunofluorescence staining and/or ELISA using polyclonal antibodies. A final confirmation of positive results might be obtained through using gel electrophoresis (SDS-PAGE) of bacterial cells which are directly isolated from the infected tissue and cultured on a suitable medium (e.g. PD3). The scheme as proposed by the authors is as follows:



PD88-5A
PD-89-1 } Polyclonal antisera produced in Italy

Source: Zaccardelli, M.; Bazzi, C.; Chauveau, J.F.; Paillard, S. (1993) Serodiagnosis of *Xylella fastidiosa* in grapevine xylem extracts. *Phytopathologia Mediterranea* 32, 174-181.



EPPO *Reporting Service*

94/052 **POSTXX...Yield losses of potatoes due to potato spindle tuber viroid in China (CN)**

According to a report in *Acta Phytophylactica Sinica* potato spindle tuber viroid (EPPO A2 quarantine pest) is widespread in table-stock potato fields in the Heilongjiang Province (most northern province bordering Vladivostok) of China (CN). Yield losses of potatoes in this province reach an average of 20-30%.

Source: Cui, R.C.; Li, Z.F.; Li, X.L.; Wang, G.X. (1992) Identification of potato spindle tuber viroid (PSTVd) and its control. *Acta Phytophylactica Sinica* 19, 263-269.



EPPO *Reporting Service*

94/053 **TMYLCX..Molecular characterization of Egyptian isolates of
tomato yellow leaf curl geminivirus**

A joint American-Egyptian research project dealt with the characterization of four isolates of tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest) from Egypt and their comparison with isolates of the virus from Italy, Israel and Thailand. To characterize the strains the polymerase chain reaction (PCR) technique was utilized. It was found that the isolates from four different regions of Egypt were closely related with each other as well as with the Israeli isolate (>96% identity). The isolates from Italy and Thailand did not show a strong relatedness with the Egyptian isolates (<80% identity). The authors assumed that this finding might have important implications on resistance breeding programmes within the Mediterranean region since *Lycopersicon chilense* shows resistance to the Israeli strains of the virus, and it is not known if this applies also to the European strains of tomato yellow leaf curl geminivirus.

Source: Nakhla, M.K.; Mazyad, H.M.; Maxwell, D.P. (1993) Molecular characterization of four tomato yellow leaf curl virus isolates from Egypt and development of diagnostic methods.
Phytopathologia Mediterranea 32, 163-173.



EPPO *Reporting Service*

94/054 TILLCO...*Tilletia controversa* in the Slovak Republic

Experiments were carried out in the Slovak Republic to investigate the resistance level of Slovakian winter wheat cvs. to *Tilletia controversa* (EPPO A2 quarantine pest), *T. tritici* and *T. laevis*. It was found that *T. controversa* caused the greatest damage to the plants. In inoculation experiments it showed that the cvs. Ilona and Vlada had a high resistance. Best seed treatment to control *T. laevis* was with isopamphos.

The presence of *T. controversa* was also confirmed from the western part of the Carpathian mountains in Slovakia where the fungus caused stunting on *Elymus* spp.

Source: Huszar, J. (1993) Wheat reaction to *Tilletia* species and biological efficiency of chemical seed dressing to control *T. laevis* and *Blumeria graminis*.
Ochraba Rostlin 29, 61-68.
Paulech, P. (1992) Characteristic of the fungus *Tilletia controversa* and its new locality on dog's grass (*Elytrigia* Desv.)
Ceska Mykologie 46, 131-137.

94/055 TILLCO...EPPO Distribution List for *Tilletia controversa*

Due to the specification on the presence of *Tilletia controversa* (EPPO A2 quarantine pest) in the Slovak Republic the distribution for this pest looks as follows:

EPPO Distribution List: *Tilletia controversa*

EPPO region: Albania, Austria, Bulgaria, Czechoslovakia (the presence of the disease in the Czech Republic is not known yet), Germany, Greece, Hungary, Italy, Libya (potential EPPO country), Luxembourg, Morocco, Poland, Romania (potential EPPO country), Slovakia, Spain, Sweden, Switzerland, Turkey, USSR and Yugoslavia. It was formerly found in Isère, France (Rapilly *et al.*, 1966), but is now considered as not established.

Africa: Libya, Morocco.

Asia: Afghanistan, Iran, Iraq, Turkey.

North America: Canada (British Columbia, Ontario), USA (Colorado, Idaho, Montana, New York, Utah, Washington, Wyoming). For a summary of information on the distribution in the USA see Farr *et al.* (1989).

South America: Argentina, Uruguay.

Oceania: New Zealand.

*This distribution list replaces all previous published EPPO Distribution Lists on *Tilletia controversa*!*

Source: EPPO Secretariat, Paris (1994-03)



EPPO *Reporting Service*

94/056 **HELIAR...Serious outbreak of *Helicoverpa armigera* in China**

Serious outbreaks of *Helicoverpa armigera* (EPPO A2 quarantine pest) were reported from Hebei Province in China. In 1992 explosions of first and second generations of the cotton bollworm were recorded not only on nearly 800 000 ha cotton fields but also in nearly 600 000 ha of wheat crops. Densities of larvae of the pest reached up to 195 larvae/m². Reasons for this outbreak was thought to be favourable climatic conditions during the preceding winter and spring, satisfactory abundance of food sources and an increased insecticide resistance in *H. armigera* populations.

Source: Wei, C.; Riu, C.; Fan, Z.; Zhao, Y.; Meng, X.; Wei, Y.; Wang, H.; Zhang, G. (1993) Serious explosions of the first and second generations of cotton bollworm in Hebei Province, China in 1992 and the observation of its resistance level.
Resistant Pest Management Vol 5 (2); 14-17.



EPPO *Reporting Service*

94/057 THRIPL...New records on the distribution of *Thrips palmi* in North America

According to a distribution list in the "Boletin Fitosanitario" of the Mexican Plant Protection Service *Thrips palmi* (EPPO A1 quarantine pest) is further distributed in the North American region than assumed. The publication mentions as new records of this pest Bermuda as well as California and Texas in the USA.

The EPPO Secretariat is currently trying to obtain a confirmation for these records.

Source: Anonymous (1993) *Thrips palmi*, una amenaza para la horticultura y fruticultura nacional.
 Boletin Fitosanitario Vol. 2 (2), p 3.



EPPO *Reporting Service*

94/058

TROGGA...*Trogoderma granarium* not present in the Province of Madrid (ES)

A survey has been carried out in the Province of Madrid (EU) to investigate if *Trogoderma granarium* (EPPO A2 quarantine pest) is present. Pheromone traps with different compounds were placed in silos, farms and fields in order to attract males of the storage pest. The only beetles caught in the survey were *Trogoderma inclusum*. The authors assume, therefore, that *T. granarium* is not present in the province of Madrid.

Source: Rebolledo, R.; Arroyo, M. (1993) Prospeccion de *Trogoderma granarium* mediante trampas de feromonas en Madrid. Boletín de Sanidad Vegetal Plagas 19, 361-367.



EPPO Reporting Service

94/059 BURSXY...Reproduction success of *Bursaphelenchus xylophilus*

In Finland experiments were carried out to study the reproduction success of *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) under Finnish climatic conditions and to compare the results with those of *B. mucronatus*. The experiments were conducted under laboratory conditions as well as under natural conditions. *B. xylophilus* nematode isolates from Vermont (US), Missouri (US) and eastern Canada were used as well as a *B. mucronatus* isolate from Finland. It was found that at steady temperatures *B. xylophilus* had a higher reproduction rate than *B. mucronatus*, but that under fluctuating temperatures *B. mucronatus* had more reproductive success than the southern isolate of pine wood nematode. Furthermore the northern isolates of *B. xylophilus* had more reproductive success than the southern isolate when incubated at a constant temperature of 14° C. To complete their life cycle the nematodes needed the following number of days: *B. xylophilus* 5 days and *B. mucronatus* 5-6 days at 23° C, both species 2-3 days at 28° C, *B. mucronatus* 3 days and *B. xylophilus* 3-4 days at 34° C.

Source: Tomminen, J. (1993) Reproductive success of *Bursaphelenchus xylophilus* and *B. mucronatus* at constant and fluctuating temperatures. *European Journal of Forest Pathology*, 23; 342-352.

94/060 BURSXY/DENCFR...Interactions between *Bursaphelenchus xylophilus* and *Dendroctonus frontalis*

Studies were carried out in Louisiana (US) to investigate the influences of *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) infection on the defense response of *Pinus taeda* and subsequent colonization of the weakened trees by *Dendroctonus frontalis* (EPPO A1 quarantine pest). It was found that the oleoresin flow in the pine-wood nematode-inoculated trees was, with seasonal fluctuations, significantly reduced. The authors assumed that the reduction of the oleoresin flow might result in an increased capability of *D. frontalis* to overcome the preformed defenses of loblolly pine and that the *D. frontalis* brood production may be enhanced in trees infected with *B. xylophilus*. The authors stated furthermore that more experiments are necessary to substantiate these assumptions.

Source: Linit, M.J.; Kinn, D.N. (1993) Influence of pinewood nematode (Nematoda: *Aphelenchoididae*) infection on the preformed defense response of loblolly pine. *Environmental Entomology* 22, 1285-1293.