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2001/188 News from the Diagnostic Centre of the Dutch NPPO

The EPPO Secretariat has extracted the following points from the 1999 and 2000 Annual Reports of the Diagnostic Centre of the Dutch NPPO.

Surveys for *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) were carried out as part of an EU-wide programme. They were mainly done in locations showing poorly growing- or recently dead pine trees, and near places where frequently imported packing material from areas where the nematode occurs is stored. In 2000, 60 sites were surveyed and 108 wood samples were tested. *B. xylophilus* was not found.

Surveys for *Diabrotica virgifera* (Coleoptera: Chrysomelidae - EPPO A2 quarantine pest) continued in 2000. Pheromone traps were installed in maize fields which were considered at risk (in the vicinity of military airbase receiving material from the former Yugoslavia, near major harbours, in intensive maize-growing areas). No *D. virgifera* were caught in 2000.

In 1999, *Ditylenchus dipsaci* (EPPO A2 quarantine pest) was observed for the first time on bulbs of *Eremurus*.

Studies on the taxonomy and diagnosis of *Guignardia citricarpa* (EPPO A1 quarantine pest) were carried out. Phytosanitary regulations are restricted to citrus-pathogenic strains of *G. citricarpa*, but pathogenic strains cannot be distinguished morphologically from non-pathogenic strains. Genetic studies revealed, among *G. citricarpa* strains, two distinct and homogeneous clades. Clade 1 contained strains isolated from citrus fruits showing classical black spot lesions (1-10 mm) often containing pycnidia. Clade 2 contained endophytic strains from outside the citrus family, as well as strains from asymptomatic citrus fruits or fruits showing minute spots without pycnidia. On specific growing media, clade 1 strains were slow-growing compared to clade 2 strains. Clade 1 strains produced yellow pigment on oatmeal agar, whereas clade 2 strains did not produce any. Some morphological differences could be observed on conidia between clade 1 and 2 strains, but not on pycnidia. The fast-growing non-pathogenic strains of *G. citricarpa* will be proposed as a new species. PCR primers have been developed and can distinguish between the two *Guignardia* species.

Impatiens necrotic spot tospovirus (EPPO A2 quarantine pest) was found in 1999, 34 times, in 20 different plant species from the Netherlands and from other countries. It was found for the first time on *Fatsyhedera japonica*, *Freesia*, *Helianthus annuus*, *Hoya carnososa*, *Kalanchoe nitrififormis*, *K. thyrsiflora*, *Peperomia rotundifolia*, *Trachelium*. In 2000, it was found 31 times, in 21 different plant species from the Netherlands and from other countries. It was found for the first time on *Ageratum houstonianum*, *Echeveria*, *Streptocarpus*, *Zantedeschia odorata*.



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In 1989, *Meloidogyne chitwoodi* (EPPO A2 quarantine pest) was found on *Potentilla* and *Dicentra spectabilis*.

In 2000, 22,000 samples were tested by the Dutch NPPO and 38,000 by NAK for the presence of *Clavibacter michiganensis* subsp. *sepedonicus* and *Ralstonia solanacearum* (both EPPO A2 quarantine pests). The 2000 situation for *C. michiganensis* subsp. *sepedonicus* has already been presented in EPPO RS 2000/165. For *R. solanacearum*, in 2000: 29 places of production were found infected (in 1999, 43 had been found infected). The number of findings is decreasing (now less than 0.05% of the total number of tested samples were found positive). As in previous years, some of these infections could be explained by clonal relationships between potato lots, whereas others could be explained by use of contaminated surface water or machinery. In 2000, 8,198 duplicate samples and 133 samples of *Solanum dulcamara* were tested. Water samples were taken from areas already known to be infected. Bacteria were detected in 10.5% of water samples and in 9.3% of weed samples. As a result, 32 areas were defined as 'risk areas' in which the use of surface water has been prohibited. Work is also continuing on the development of diagnostic methods for both potato bacteria. In 2000, *Ralstonia solanacearum* race 1 biovar 3 (EPPO A2 quarantine pest) was detected for the first time on *Curcuma alismatifolia* imported from South Africa

Stephanitis takeyai (Heteroptera: Tingidae – EPPO Alert List) was reported from a single *Pieris japonica* plant in a private garden in Boskoop, Province of Zuid-Holland in 1994. The population was eradicated with the destruction of the infested plant. However in 1999, two samples with high numbers of nymphs and adults of *S. takeyai* were collected from *Pieris japonica* in another private garden in Boskoop. A limited survey in private gardens in this area showed that the vast majority of *P. japonica* plants were infested, but the insect was not found on other plant species. Some *P. japonica* plants were heavily damaged due to the sap-feeding activities of large populations. This suggests that the pest has already been present for a number of years in the area of Boskoop.

Tomato spotted wilt tospovirus (EPPO A2 quarantine pest) was found in 1999, 38 times in 14 different plant species from the Netherlands and from other countries. It was detected for the first time in *Micronetta*. In 2000, it was found 25 times in 13 different plant species from the Netherlands and from other countries. It was detected for the first time in *Ajania pacificum* and *Clematis*.



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In 2000, *Xanthomonas axonopodis* pv. *dieffenbachiae* (EPPO A1 quarantine pest) was detected for the first time in 2 plants of *Aglaonema* imported from Puerto Rico.

Source: Annual Report 1999, Diagnostic Centre, Plant Protection Service, 119 pp.
Annual Report 2000, Diagnostic Centre, Plant Protection Service, 132 pp.

Additional key words: detailed records, new host plants

Computer codes: BURSXY, CORBSE, DIABVI, DITYDI, GUIGCI, INSV00, MELGCH, PSDSMO, STEPTA, TSWV00, XANTDE, NL

2001/189 Surveys on *Clavibacter michiganensis* subsp. *sepedonicus* and *Ralstonia solanacearum* in Germany: 2000 potato harvest

The NPPO of Germany has recently informed the EPPO Secretariat about the results of national surveys on potato bacteria for the 2000 harvest.

***Clavibacter michiganensis* subsp. *sepedonicus* (EPPO A2 quarantine pest)**

In total, 18,101 potato samples were tested. 12,102 were drawn from seed potato production, 167 from gene banks and propagation material, 571 from trade and 5,261 from ware potatoes. In addition, tubers were cut for visual inspection. Thorough analyses were carried out to trace back the origins of infections and resulted in 22 cases in seed potatoes and 49 cases in ware potatoes. Strict control measures were taken in accordance with Council Directive 93/85 EEC in all cases.

***Ralstonia solanacearum* (EPPO A2 quarantine pest)**

A total of 16,968 potato samples were subjected to laboratory tests for *Ralstonia solanacearum*. 11,816 samples were taken from seed potato production, and 5,152 from ware potato production. Infection was NOT found. Only one sample from surface water and two samples of *Solanum dulcamara* were found positive. Investigation will be continued in these cases. Therefore, German potato production is considered to be free from *Ralstonia solanacearum*.

Surveys for the 2001 harvest for both bacteria have not yet been finalized. They will be of similar extent to those made in 2000.

Source: **NPPO of Germany, 2002-01**

Additional key words: detailed record

Computer codes: CORBSE, PSDSMO; DE



EPPO *Reporting Service*

2001/190 First report of *Globodera rostochiensis* in Croatia

The NPPO of Croatia recently informed the EPPO Secretariat that *Globodera rostochiensis* (EPPO A2 quarantine pest) has been found for the first time in Croatia during the 2001 growing-season. The nematode cysts were found in a soil sample taken from a private potato plot at Belica (northwest part of Croatia) in July 2001. The identity of the nematode was confirmed by the Institute for Agricultural Zoology of the Faculty of Agronomy in Zagreb. Following this first finding, a survey was carried out in the northwest part of Croatia, in two counties: Međimurska županija and Varaždinska županija. In September and October, 200 soil samples were collected (over an area of 58 ha) and tested. The presence of potato cyst nematodes was confirmed in 110 samples. A systematic survey for the whole territory of Croatia has been prepared and eradication measures are being taken in the infested area, in accordance with the provisions of the EU Directive (69/465/EEC) on control of Potato Cyst Eelworm. The situation of *G. rostochiensis* in Croatia can be described as follows: **Present, only in the northwest region, under eradication.**

Source: NPPO of Croatia, 2001-12.

Additional key words: new record

Computer codes: HETDRO, HR

2001/191 The presence of *Globodera pallida* is suspected in Finland

In southern Finland, the presence of *Globodera pallida* (EPPO A2 quarantine pest) is suspected in four small farms. All farms are located in the same community. Cysts were used for the morphological identification of the nematode but, as they did not contain living larvae, new samples will have to be taken in spring. The possible origin of this infestation is unknown. Further studies will be made to confirm the presence of *G. pallida* in Finland and determine its extent. The situation of *G. pallida* in Finland can be described as follows: **Probably present, cysts were found in a very limited area in southern Finland, situation needs confirmation.**

Source: NPPO of Finland, 2002-01.

Additional key words: new record

Computer codes: HETDPA, FI



EPPO *Reporting Service*

2001/192 Surveys on potato cyst nematodes in Slovakia

In Slovakia, surveys on potato cyst nematodes (*Globodera rostochiensis* and *G. pallida*, both EPPO A2 quarantine pest) have been carried out since 1993. Over the period 1993 to 2001, 16,375 soil samples have been collected, and the identity of the nematode was established using morphological characters and ELISA test. Results showed that *G. rostochiensis* was found in 1928 samples taken from small plots (<1 ha) and in 37 samples taken from large-scale production fields (>1 ha). In all cases, only *G. rostochiensis* was found, *G. pallida* was never identified. In all plots where *G. rostochiensis* was found, phytosanitary measures were taken to prevent any further spread and eliminate the nematode populations. The situation of *G. rostochiensis* in Slovakia can be described as follows: **Present, only in some areas, subject to official control**. The situation of *G. pallida* in Slovakia can be described as follows: **Absent, confirmed by surveys**.

Source: **NPPO of Slovakia, 2002-01.**

Additional key words: detailed record, absence

Computer codes: HETDRO, HETDPA, SK

2001/193 First report of *Meloidogyne fallax* in Australia

Meloidogyne fallax (EPPO A2 quarantine pest) has been reported for the first time in Australia. It was found on potato tuber and soil samples collected in the south east region of South Australia. The identity of the pest was determined by morphological observations and DNA sequencing. The situation of *M. fallax* in Australia can be described as follows: **Present, found on potato crops in South Australia**.

Source: ProMED posting of 2001-12-27. *Meloidogyne fallax*, potato, first record – Australia. <http://www.promedmail.org>

Additional key words: new record

Computer codes: MELGFA, AU



EPPO *Reporting Service*

2001/194 First report of *Tomato chlorosis crinivirus* in Italy

In Italy, during winter 2000/2001, symptoms resembling those of *Tomato chlorosis crinivirus* (EPPO Alert List) were observed on glasshouse tomatoes in Sardegna, Sicilia and Puglia. Affected plants were chlorotic and stunted, leaves showed interveinal yellowing, and later developed interveinal reddish-bronze necrosis and downward rolling. Molecular tests confirmed the presence of *Tomato chlorosis crinivirus*. The authors noted that infestations of *Trialeurodes vaporariorum* and *Bemisia tabaci* (EPPO A2 quarantine pest), which are vectors of the virus, had been reported in the previous autumn in the affected regions. This is the first report of *Tomato chlorosis crinivirus* in Italy. The situation of *Tomato chlorosis crinivirus* in Italy can be described as follows: **Present, found in 2000 in tomato crops in Sardegna, Sicilia and Puglia.**

Source: Acotto, G.P.; Vaira, A.M.; Vecchiati, M.; Finetti Sialer, M.M.; Gallitelli, D.; Davino, M. (2001) First report of *Tomato chlorosis virus* in Italy.
Plant Disease, 85(11), p 1208.

Additional key words: new record

Computer codes: TOCV00, IT

2001/195 First report of *Impatiens necrotic spot tospovirus* in Slovenia

In Slovenia, in July 2000, lower leaves of sweet pepper plants (*Capsicum annuum* cv. Blondi) grown under glasshouses showed necrotic rings and patterns. Electron microscopy revealed the presence of typical tospovirus particles. Serological tests (DAS-ELISA) confirmed the presence of *Impatiens necrotic spot tospovirus* (INSV - EPPO A2 quarantine pest) in symptomatic tissues. Further investigations on glasshouse crops showed that *Tomato spotted wilt tospovirus* (TSWV - EPPO A2 quarantine pest) occurred in pepper and tomato plants, and several ornamental species: chrysanthemums, *Cyclamen*, *Spathiphyllum*, and *Zantedeschia* (see EPPO RS 2001/084). INSV was also detected in chrysanthemums, and mixed infections were detected in *Zantedeschia*. In the vicinity of affected glasshouses, among tested weeds, TSWV was only detected in *Artemisia vulgaris*. This is the first report of INSV in Slovenia. The situation of INSV in Slovenia can be described as follows: **Present: few reports, found in glasshouse vegetable and ornamental crops.**

Source: Mavrič, I.; Ravnikar, M. (2001) First report of *Tomato spotted wilt virus* and *Impatiens necrotic spot virus* in Slovenia.
Plant Disease, 85(12), p 1288.

Additional key words: new records

Computer codes: INSV00, TSWV00, SI



EPPO *Reporting Service*

2001/196 First report of *Tomato spotted wilt tospovirus* in Kenya

In Kenya, from November 1999 to March 2000, symptoms resembling those of *Tomato spotted wilt tospovirus* (EPPO A2 quarantine pest) were observed in tomato crops in the Subukia, Bahati and Kabazi areas of the Nakuru district. Farmers reported yield losses reaching up to 80 %. Tomato samples were collected and tested (commercial kit and ELISA) and the presence of *Tomato spotted wilt tospovirus* was confirmed. This is the first report of this virus in Kenya. Future surveys will be conducted on other hosts, such as potatoes, capsicum, peanut, beans and a wide variety of ornamental cut flowers. The situation of *Tomato spotted wilt tospovirus* in Kenya can be described as follows: **Present, found on tomato crops in 1999/2000 in the Nakuru district.**

Source: Wangai, A.W.; Mandal, B.; Pappu, H.R.; Kilonzo, S.; (2001) Outbreak of Tomato spotted wilt virus in tomato in Kenya.
Plant Disease, 85(10), p 1123.

Additional key words: new record

Computer codes: TSWV00, KE



EPPO *Reporting Service*

2001/197 Details on quarantine pests in Algeria

The NPPO of Algeria has recently informed the EPPO Secretariat of the present situation of several quarantine pests.

Tomato yellow leaf curl begomovirus (EPPO A2 quarantine pest) has been found in one isolated site, in a tomato nursery at Zeralda, near Algiers, in December 2001. Phytosanitary measures are being taken to eradicate the disease. The situation of TYLCV in Algeria can be described as follows: **Present, found in one tomato nursery at Zeralda near Algiers, under eradication.**

Rhynchophorus ferrugineus (EPPO Alert List) is being surveyed in palm groves and so far, the insect has never been found. The situation of *R. ferrugineus* in Algeria can be described as follows: **Absent, confirmed by surveys.**

In addition, the NPPO of Algeria pointed out that national surveys will be initiated in 2002 to assess the situation of the following pests (all EPPO A2 quarantine pests):

Citrus tristeza closterovirus

Plum pox potyvirus

Clavibacter michiganensis subsp. *michiganensis*

Clavibacter michiganensis subsp. *sepedonicus*

Fusarium oxysporum f.sp. *albedinis*

Tomato yellow leaf curl begomovirus

Source: NPPO of Algeria, 2002-01.

Additional key words: detailed record, absence

Computer codes: RHYCFE, TYLCV0, DZ



EPPO *Reporting Service*

2001/198 First report of *Colletotrichum acutatum* on strawberry in Norway

Colletotrichum acutatum (EU Annexes) was detected on strawberry (*Fragaria ananassa*) in Norway, in 1999. Symptoms were observed in glasshouse-grown strawberries (cv. Korona). Symptoms were typical of strawberry anthracnose: sunken, brown, and firm lesions appearing on maturing fruits. The identity of the pathogen was confirmed by 2 different laboratories and Koch's postulates were fulfilled. This is the first report of *Colletotrichum acutatum* in Norway.

Source: Stensvand, A.; Strømeng, G.M.; Langnes, R.; Hjeljord, L.G.; Tronsmo, A. (2001) First report of *Colletotrichum acutatum* in Norway.
Plant Disease, 85(5), p 558.

Additional key words: new record

Computer codes: COLLAC, NO

2001/199 First report of *Colletotrichum acutatum* on strawberry in Finland

In August 2000, *Colletotrichum acutatum* (EU Annexes) was found for the first time on strawberry (*Fragaria ananassa* cv. Elsanta) in one farm of Eastern Finland. Diseased plants showed typical symptoms of anthracnose. The identity of the pathogen was confirmed by ELISA and Koch's postulates were fulfilled. All strawberry plants growing on the infected plot were destroyed.

Source: Parikka, P.; Kokkola, M. (2001) First report of *Colletotrichum acutatum* in Finland.
Plant Disease, 85(8), p 923.

Additional key words: new record

Computer codes: COLLAC, FI



EPPO *Reporting Service*

2001/200 Presence of *Stephanitis takeyai* in Italy

In October 2000, an inspection was carried out in a nursery which sells plant products from all over the world, in Parabiago, Province of Milano (Lombardia, Italy). During this inspection, it was observed that several plants of *Pieris japonica* showed severe leaf discoloration. The presence of *Stephanitis takeyai* (Heteroptera: Tingidae – EPPO Alert List) was confirmed. The authors noted that *S. takeyai* is reported in Japan on *Cinnamomum camphora* (Lauraceae), *Diospyros kaki* (Ebenaceae), *Illicium religiosum* (Illiciaceae), *Lyonia ovalifolia* (Ericaceae), in addition to *Pieris*. They concluded that the presence of *S. takeyai* in Lombardia could represent a threat to ornamental plants, but also to persimmon which is grown in many private gardens and in a few orchards.

Source: Colombo, M.; Limonta, L. (2001) Record of *Stephanitis takeyai* Drake & Maa (Heteroptera Tingidae) on *Pieris japonica* (Thunb.) D. Don introduced in Italy. **Bolletino di Zoologia Agraria e di Bachicoltura, Serie II, 33(2), 139-142.**

Additional key words: new record

Computer codes: STEPTTA, IT



EPPO *Reporting Service*

2001/201 Pest incursions reported in Finland

During the last few months, the NPPO of Finland has informed the EPPO Secretariat of the following incursions (term approved by the ICPM Glossary working group):

Impatiens necrotic spot tospovirus (EPPO A2 quarantine pest) was found in September 2001 on *Begonia* pot plants at one nursery producing pot plants and cut flowers. The source of infection is unknown. Eradication measures were taken and all infected pot plants of *Begonia* were destroyed.

Leptinotarsa decemlineata (EPPO A2 quarantine pest) was found in July 2001 in potatoes grown in 2 private gardens. It is thought that it came from Russia by natural dispersal or through traffic. Eradication measures were taken and all infested potato plants were destroyed (by burning or chemical treatment).

Puccinia horiana (EPPO A2 quarantine pest) was found on *Dendranthema* pot plants at one nursery producing pot plants and cut flowers. It was also found in another nursery producing *Dendranthema* cut flowers. At these two sites, eradication measures were taken: all infected plants were destroyed, and all other *Dendranthema* plants were treated.

Tomato spotted wilt tospovirus (EPPO A2 quarantine pest) was found in June 2001 in 2 nurseries, respectively on tomatoes grown for fruit production and on pot plants of *Nicotiana*. In September 2001, it was also found on *Aster* plants for cut flower production at one nursery. The source of these infections are unknown. Eradication measures were taken and all infested *Aster*, tomato and *Nicotiana* plants were destroyed.

Source: **NPPO of Finland, 2001-09-13, 2001-09-17, 2001-10-05, 2001-10-17, 2001-10-22.**

Additional key words: incursions (phytosanitary incidents)

Computer codes: INSV00, LEPTDE, PUCCHN, TSWV00, FI



EPPO *Reporting Service*

2001/202 Further studies on *Iris yellow spot tospovirus*

Studies were done in Israel on the distribution of *Iris yellow spot tospovirus* (IYSV - EPPO Alert List) in its host plants, and on its transmission by thrips vectors. The known host plants of IYSV are *Hippeastrum*, onion (*Allium cepa*) and lisianthus (*Eustoma russellianum*). In Israel, IYSV is associated with a disease of onion called by the growers 'straw bleaching'. The disease incidence can reach 50-60% in certain areas, leading to heavy losses in bulb production. Transmission studies showed that *Frankliniella occidentalis* is not a vector, but that *Thrips tabaci* can transmit IYSV from infected to healthy onion seedlings and leaf pieces. In the field, it was observed that population levels of *T. tabaci* were strongly related to disease incidence. It was also shown that the distribution of the virus within onion plants is uneven. Highest virus titres were found in inner leaves and near the bulb, but IYSV could not be detected in bulbs or roots of infected onions and *Hippeastrum*. In addition, no virus transmission could be obtained in the subsequent generations. Seeds harvested from infected onions did not transmit the virus to progeny plants. It appears that IYSV is not transmitted through seeds or bulbs, but by its thrips vector. The authors stressed that more studies on other natural hosts which could act as plant reservoirs in nature are needed to better understand the epidemiology of the disease.

Source: Kritzman, A.; Lampel, M.; Raccach, B.; Gera, A. (2001) Distribution and transmission of *Iris yellow spot virus*.
Plant Disease, 85(8), 838-842.

Additional key words: epidemiology

Computer codes: IYSV00



EPPO *Reporting Service*

2001/203 Survey on virus diseases of almond in Lebanon

In Lebanon, a survey carried out in 1995 on virus diseases of cultivated almond (*Prunus dulcis*) had showed the presence of *Prunus necrotic ringspot ilarvirus* and *Prune dwarf ilarvirus*. Another survey was recently done on a larger geographical area and included both cultivated and wild almonds (*P. orientalis*, *P. korschinskii*) from all almond-growing regions of Lebanon. In most orchards surveyed, no characteristic symptoms of viral infections were seen. Plant samples (599) were collected and tested by ELISA for the presence of the most important stone fruit viruses. As a result, 10.3% of the samples showed positive results to one or more viruses. The following viruses were detected: *Prunus necrotic ringspot ilarvirus* (average incidence 3.3%), *Apple chlorotic leaf spot trichovirus* (2.7%), *Prune dwarf ilarvirus* (2.5%) and *Apple mosaic ilarvirus* (1.8% - EPPO A2 quarantine pest, on *Rubus*). This survey showed that *Prunus necrotic ringspot ilarvirus* and *Prune dwarf ilarvirus* infections on cultivated almond are present throughout Lebanon but with a low incidence. Neither viruses was detected in wild almonds. The survey also revealed the occurrence of *Apple chlorotic leaf spot trichovirus* on almond (both cultivated and wild), and *Apple mosaic ilarvirus* is reported for the first time in Lebanon. *Tomato ringspot nepovirus* and *Plum pox potyvirus* were not detected during this survey.

Source: Kanaan-Atallah, Z.H.; Abou-Jawdah, Y.; Saad, A. (2000) Virus diseases infecting almond germplasm in Lebanon.
Phytopathologia Mediterranea, 39(3), 417-422.

Additional key words: new record

Computer codes: APMRXX, LB



EPPO *Reporting Service*

2001/204 PCR assay to detect *Phytophthora lateralis*

A rapid and sensitive PCR assay has been developed to detect *Phytophthora lateralis* (EPPO Alert List) in *Chamaecyparis lawsoniana* tissues (stems and roots) and in water. The fungus could also be detected in soil baited with *C. lawsoniana* foliage, but not in unbaited soil. Zoospores could be detected in water after concentration on membrane filters. In addition, it was found that the primers developed for *P. lateralis*, although they gave negative reactions with many other *Phytophthora* species, could also detect *P. ramorum* (a closely related fungus causing sudden oak death in USA – EPPO Alert List). *P. ramorum* could be detected in bark samples taken from lesions of naturally infected tanoaks (*Lithocarpus densiflorus*). It is pointed out that *P. lateralis* and *P. ramorum* have very different hosts. Therefore, provided the host plant is known, this PCR assay could still be used for specific identification of the two pathogens.

Source: Winton, L.M.; Hansen, E.M. (2001) Molecular diagnosis of *Phytophthora lateralis* in trees, water, and foliage baits using multiplex polymerase chain reaction.
Forest Pathology, 31(5), 257-320.

Additional key words: diagnostic methods

Computer codes: PHYTLA