EPPO

Reporting

Service

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EPPO *Reporting Service*

99/134 EPPO Alert List

This special issue of the EPPO Reporting Service contains the new EPPO Alert List, as agreed by the EPPO Working Party on Phytosanitary Regulations. As explained below, it is intended to draw the attention of EPPO member countries to possible phytosanitary risks. Its main purpose is to achieve early warning. It will be constantly updated on the EPPO Web site, and new information will also be reported in the EPPO Reporting Service.

Nature

The EPPO Alert List provides brief information on a series of pests possibly presenting a risk to EPPO member countries. It resides on the EPPO Web site (www.eppo.org), where it is regularly updated.

Purpose

The purpose of the Alert List is to draw the attention of EPPO member countries to certain pests possibly presenting a risk to them and achieve early warning. It is not a quarantine list, and does not constitute a recommendation for phytosanitary action.

Inclusion of pests

The pests are selected by the EPPO Secretariat, mainly from the literature but also from suggestions of member countries. Their addition to the list is marked by an article in the EPPO Reporting Service. The reason for inclusion on the Alert List can be of various nature: pests which are new to science, new outbreaks, reports of spread, etc; in the end, they are selected because they may present a phytosanitary risk for the EPPO region.

Information

Short paragraphs are included for each pest to explain why it was selected, to summarize geographical distribution, hosts, damage, pathway and to assess possible risks in Europe. A list of sources from which information has been compiled is also included. More detail can be found in the relevant issues of the Reporting Service.

Risk analysis

It must be stressed that the section 'possible risk' is not the result of a full PRA according to EPPO Standard PM 5/3(1) but is a preliminary attempt by the EPPO Secretariat to identify the main elements of risk. Some of the pests may later be selected by relevant EPPO Panels and submitted to a full PRA. As a result, they may be added to the lists of quarantine pests or, if the PRA shows the risk to be low, removed from the Alert List.

Maintenance

- To achieve early warning, the EPPO Secretariat will make additions to the Alert List as soon as new potential phytosanitary problems are identified.
- The EPPO Secretariat will, as appropriate, search for additional information on the pests of the Alert List and update the text accordingly.
- Since the Alert List resides on the EPPO Web site, constantly updated information can be provided. EPPO member countries can also interact and provide information to be added.
- The Alert List, including the text on each pest, will be reviewed critically every year by the Panel on Phytosanitary Regulations. This 'consolidated' version will be addressed to the Working Party for information.
- To keep the Alert List reasonably short, entries will not be kept for more than 3 years, if no new information is found.

EPPO *Reporting Service*

EPPO Alert List - 1999-08

Insects
Anoplophora glabripennis
Callidiellum rufipenne
Callopistria floridensis
Cameraria ohridella
Dasineura oxycoccana
Echinothrips americanus
Heteronychus arator
Lecanoideus floccissimus
Lygus lineolaris
Maconellicoccus hirsutus
Microcephalothrips abdominalis
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Platynota flavedana
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P. idaeusalis
Rhizoecus americanus
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Rhynchophorus ferrugineus
Rhynchophorus palmatum
Rhynchophorus phoenicis
Rhynchophorus vulneratus
Stephanitis pyrioides
Stephanitis takeyai
Trialeurodes abutilonea

Fungi
Alternaria alternata pv. *citri*
Claviceps africana
Fungal oak disease
Fusarium circinatum
Monosporascus cannonballus
Phytophthora boehmeriae
Phytophthora cambivora
Puccinia distincta
Puccinia psidii

Bacteria and phytoplasmas
Chestnut yellows
Cucurbit yellow vine disease bacterium
Erwinia pyrifoliae
Oak shoot blight
Olive phytoplasma diseases
Pseudomonas syringae on broccoli raab
Pseudomonas syringae pv. *syringae* on mango
Strawberry lethal yellows phytoplasma

Viruses
Abutilon yellows closterovirus
Citrus seed-borne virus
Cherry chlorotic rusty spot 'virus'
Chrysanthemum stem necrosis tospovirus
Cucurbit yellows stunting closterovirus
Iris yellow spot tospovirus
Lettuce chlorosis closterovirus
Lettuce necrotic spot nepovirus
Maize Mal de Río Cuarto fijivirus
Rice stripe necrosis furovirus
Potato latent carlavirus
Soybean severe stunt virus
Squash yellow leaf curl virus
Stocky prune nepovirus
Taino tomato mottle geminivirus and Havana tomato geminivirus
Tomato chlorosis virus
Tomato infectious chlorosis virus
Wheat China mosaic furovirus
Wheat high plains virus

Insects

Anoplophora glabripennis (Coleoptera: Cerambycidae) -Asian longhorned beetle

Why	Following the recent introduction and outbreak of this pest in USA, it is now proposed by the Panel on Phytosanitary Regulations to consider it as an A1 quarantine pest.
Where	China (in many Provinces), Japan, Korea Democratic People's Republic, Korea Republic, Taiwan. Introduced in 1996 in USA, in New York city (Brooklyn, Amytiville), found in 1998 in Chicago (Illinois).
On which plants	Many hardwood species, e.g.: *Acer* (*A. negundo, A. platanoides, A. pseudoplatanus, A. saccharinum, A. saccharum, A. truncatum*), *Aesculus hipposcastanum, Alnus, Malus, Morus alba, Prunus, Populus, Pyrus, Robinia pseudoacacia, Salix babylonica, S. matsudana, Ulmus parvifolia*.
Damage	Larvae feed on wood making galleries, adults then emerge through holes (diameter of approximately 10 mm or more). Heavy sap flow occurs from these large wounds. Infested trees are weakened and therefore more susceptible to secondary attacks by other diseases or insects. Infested branches may fall, trees may be killed, wood looses value, serious damage on ornamental and fruiting species.
Pathway	Wood and wood products (in particular dunnage and packing material) from Asia.
Possible risks	Serious losses are reported from Asia, considered as a major pest in China. It has been introduced into USA (suspected to have been introduced from Asia on dunnage) and is able to survive in New York and Chicago. It has been intercepted in international trade, particularly on dunnage from Asia. Chemical control is difficult.

EPPO RS 96/204, 98/200, 98/202

Source(s)

USDA-APHIS Web site
http://aphis.usda.gov/ao/pubs/fsal.html (Plant protection and quarantine, 1998-09)
http://aphis.usda.gov/ao/alb/albmap.html (map - introductions and interceptions)
NAPIS Web site
http://www.ceris.purdue.edu/napis/pests/alb/mgif/alball.gif (US map)
http://www.ceris.purdue.edu/napis/pests/alb/mgif/albne.gif (details in New York state and surrounding states)
http://www.ceris.purdue.edu/napis/states/il/news98/sr980701.txt (first finding in Chicago, 1998-07-17)
http://www.ceris.purdue.edu/napis/states/il/news98/sr980403.ny (situation in New York state)
Illinois Department of Agriculture Web site
http://www.agri.state.il.us/beetle.html (situation in Chicago)
University of Illinois Web site
http://www.aces.uiuc.edu/longhorned_beetle/ (pictures)
Canadian Forest Service Web site
http://www.pfc.cfs.nrcan.gc.ca/health/exotics.htm (Allen, E.A. (1998) Exotic insect interceptions from wooden dunnage and packing material)
http://www.pfc.cfs.nrcan.gc.ca/biodiversity/exotics/ (Humble, L.M.; Allen, E.A.; Bell, J.D. (1998) Exotic wood-boring beetles in British Columbia: interceptions and establishments)

Panel review date 1999-01 Entry date 1996-11

Callidiellum rufipenne (Coleoptera: Cerambycidae) - Cedar longhorned beetle

Why	This Asian species was introduced into USA in 1997 where eradication measures are being taken.
Where	China, Japan, Korea Republic, Korea Democratic People's Republic, Taiwan. USA (North Carolina, Connecticut). There is one report in Italy (found in 1988 on *Juniperus communis* near Ravenna, no more information since then), and an unconfirmed record for Spain.
On which plants	*Chamaecyparis*, *Cryptomeria*, *Cupressus*, *Juniperus*, *Thuja*.
Damage	Adults emerge from dead trees in spring and mate on the surface of the trunk of weakened or dead trees (however, it is noted that live insects were found in Connecticut on healthy *Thuja*). Eggs are laid in bark crevices. Larvae hatch, enter the bark and feed on phloem and cambium, making galleries. Mature larvae enter xylem in late summer, pupate within cells in the autumn, and overwinter as adults. The larval galleries are sinuous, increase in width from beginning to end, and sometimes girdle a branch.
Pathway	Plants for planting, cut branches, wood, dunnage.
Possible risks	This pest can obviously be moved in trade. More data is needed on the severity of damage it causes, as it is generally considered as a pest of weakened trees. It could present a risk for amenity and forest trees in the EPPO region.

EPPO RS 99/080

Source(s) Anonymous (1999) Cedar longhorned beetle search continues. NAPPO Newsletter, 19(2), p 8.
Campadelli, G.; Sama, G. (1989) [First report in Italy of a Japanese cerambycid: *Callidiellum rufipenne* Motschulsky]. Bollettino dell' Istituto di Entomologia 'Guido Grandi' dell' Universita degli Studi di Bologna, 43, 69-73.
INTERNET
A new exotic Cerambycid beetle (*Callidiellum rufipenne*), found in North Carolina, USA (submitted by Rob Favrin, CFIA-PHSU). Plant Health Early Warning System (CFIA, Canada) http://cfia-acia.agr.ca/english/ppc/science/pps/phnews/phwhp.html
Asian Beetle News Release, 1999-01-08. http://www.state.ct.us/caes/newsbeetl.htm
Pellizzari, G.; Dalla Montà, L. (1997) [Insect pests introduced to Italy from 1945 to 1995] http://www.greentarget.com/dif3/insetti_fitofagi.html (also published in Informatore Fitopatologico, no.10, 4-12)

Panel review date - Entry date 1999-05

Callopistria floridensis (Lepidoptera: Noctuidae) - Florida fern caterpillar

Why *C. floridensis* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.

Where Canada, Colombia, Puerto Rico, USA (Florida, New York, New Jersey) and tropical America. One report of a finding (in 1988) in India (Bangalore, Karnataka) on ornamental ferns in a hotel.

On which plants Ornamental ferns and foliage plants (*Adiantum*, *Asparagus sprengeri*, *Blechnum*, *Cyrtomium*, *Nephrolepis*, *Polypodium*, *Pteris*).

Damage Caterpillars are active feeders which can severely defoliate the plants.

Pathway Fern plants for planting from the infested countries in the Americas.

Possible risks Limited host range but ferns are widely grown as ornamental foliage plants.

EPPO RS 98/180

Source(s) Bin-Cheng Zhang (1994) Index of economically important Lepidoptera, CABI, Wallingford, UK, 599 pp.
Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Cameraria ohridella (Lepidoptera: Lithocolletidae) - horse chestnut leafminer

Why *C. ohridella* came to our attention because of its current spread in European countries.

Where First described as a new species in the Republic of Macedonia in 1985, it then spread to Italy (north, 1982), Austria (1989), Germany (south, 1994), Hungary (1994), Croatia (1995), Slovenia (1995), Slovakia (1996), Czechia (1997).

On which plants horse chestnut (*Aesculus hippocastanum*)

Damage Mines in the leaves. Heavy infestations lead to brown discoloration and death of the leaves, and finally defoliation of the tree.

Note Passive spread on vehicles is reported to be the most efficient mode of dissemination of the pest over long distances.

Pathway Plants for planting (cut branches?) of *A. hippocastanum*.

Possible risks Horse chestnut is an important amenity tree throughout Europe. *Cameraria ohridella* has obviously a great potential for spread but the insect does not usually cause tree mortality. Possibilities for control appear limited.

EPPO RS 96/211, 97/125, 98/144, 99/122

Source(s) Butin, H.; Führer, E. (1994) [The horse-chestnut miner (*Cameraria ohridella* Deschka & Dimic), a new parasite of *Aesculus hippocastanum*.] Nachrichtenblatt des Deutschen Pflanzenschutzdienstes, 46(5), 89-91.
Czencz, C.; Bürgés, G. (1996) [The horse-chestnut leaf miner (*Cameraria ohridella* Deschka et Dimic, 1986, Lep.; Lithocolletidae)] Növényvédelem, 32(9), 437-444.
Deschka, G.; Dimic, N. (1986) [*Cameraria ohridella* sp. n. (Lep., Lithocolletidae) from Macedonia, Yugoslavia.] Acta Entomologica Jugoslavica, 22(1-2), 11-23.
Krehan, H. (1995) [Horse chesnut leafmining moth Cameraria ohridella, incidence of attack in Austria.] Forstschutz-Aktuell, 16, 8-11.
Milevoj, L.; Macek, J. (1997) Roßkastanien-Miniermotte (*Cameraria ohridella*) in Slowenien. Nachrichtenblatt des Deutschen Pflanzenschutzdienstes, 49(1), 14-15.
Pavan, F.; Zandigiacomo, P. (1998) [Distribution of *Cameraria ohridella* Deschka and Dimi≠ (Lepidoptera Gracillariidae) in Italy and infestation levels on horse chestnut] Informatore Fitopatologico, no. 11, 57-60.
Szaboky, C. (1994) [The occurrence of *Cameraria ohridella* in Hungary.] Növényvédelem, 30(11), 529-530.

Skuhravy, V. (1998) [On the leaf mining moth *Cameraria ohridella* Desch. & Dim. (Lep., Lithocolletidae) attacking *Aesculus hippocastanum* L. in the Czech Republic.] Anzeiger für Schädlingskunde Pfanzenschutz Umweltschutz, 71(5), 81-84.
(1998) Bilancio fitosanitario. Informatore Fitopatologico, no. 3 & 4, 4-38 & 8-41.

Panel review date 1999-01 Entry date 1996-11

<u>*Dasineura oxycoccana*</u> <u>(Diptera, Cecidomyiidae) - cranberry midge introduced into Italy</u>

Why	*Dasineura oxycoccana* came to our attention as it has recently been introduced from North America into Europe (in Italy).
Where	USA. Introduced into Italy in 1996.
On which plants	North American *Vaccinium* spp. and hybrids (e.g. *V. ashei*, *V. corymbosum*, *V. macrocarpon*).
Damage	Larvae feed inside vegetative meristems and cause leaf distortion, blackening and death of young buds. Attacks of vegetative parts can affect the next season harvest. In Florida another type of damage is observed: larvae can attack flowering buds (20 to 80 % buds can be destroyed). This type of damage has not been observed in Italy.
Dissemination	As larvae pupate in the soil, soil can be a means of transporting the insect over long distances in addition to infested plants.
Pathway	*Vaccinium* plants for planting (fruits?), soil from USA and Italy.
Possible risks	North American *Vaccinium* are cultivated in Europe on small areas but these are valuable crops. For example, *V. corymbosum* is reported to be essentially cultivated in Germany, France, Italy, Netherlands, Poland and Romania. No data is given on the possible host status of *V. myrtillus*. As larvae live inside the plants and pupate in the soil, this could render detection difficult. Chemical control appears to be difficult, as several generations overlap during the year.

EPPO RS 99/045

Source(s) Bosio, G.; Bogetti, C.; Brussino, G.; Gremo, F.; Scarpelli, F. (1998) [*Dasineura oxycoccana*, a new pest of blueberry (*Vaccinium corymbosum*) in Italy.] Informatore Fitopatologico, no.11, 36-41.

Panel review date - Entry date 1999-03

<u>*Echinothrips americanus*</u> <u>(Thysanoptera, Thripidae)</u>

Why	*E. americanus* came to our attention because it was introduced into Europe in 1993. In many cases, measures (eradication and surveys have been taken).
Where	Found in the Netherlands in 1993 on ornamentals under glasshouse. Observed in Germany on *Syngonium* in 1995. Intercepted by UK on ornamentals from Netherlands in 1995/96. Found in France in 1996. Found in Italy (autumn 1998, in a glasshouse in Piemonte on imported plants (according to the EPPO Panel on Phytosanitary Regulations) - in spring 1999, in glasshouses in Emilia-Romagna), in UK, in Czech Republic (in February 1998, in South Bohemia (according to the EPPO Panel on Phytosanitary Regulations)). Considered as a pest in North America. It occurs in Bermuda, Canada (south), Mexico, USA (most of the eastern states).
On which plants	Many ornamentals: *Dieffenbachia*, *Ficus*, *Hibiscus*, *Impatiens*, *Homalomena*, *Philodendron*, *Syngonium*, etc. Araceae and Balsaminaceae are particularly attractive.
Damage	It feeds on leaf tissue and damage is very similar to that caused by mites, with light spots on the leaves. It can feed on flower parts.
Pathway	Glasshouse ornamentals plants for planting (cut flowers?) (in particular Araceae and Balsaminaceae) from infested countries in America and Europe.
Possible risks	Polyphagous species, likely to be easily spread (unnoticed) with plants. As other thrips, probably difficult to control in practice. A definite risk to glasshouse ornamentals.

EPPO RS 95/093, 95/175, 96/060, 98/143, 98/180, 99/120

Source(s) NPPO of Netherlands (1993), NPPO of UK (1995, 1996).
Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. Edited by Baker, J.R. (1994) North Carolina cooperative Extension Service, US, 106 pp.
Marullo, R.; Pollini, A. (1999) *Echinothrips americanus*, a new pest of the Italian greenhouses. Informatore fitopatologico, no. 6, 61-64.
Reynaud, P. (1998) *Echinothrips americanus*. Un nouveau thrips des serres importé en France. Phytoma - La Défense des Végétaux, no. 507, 36-38.

Panel review date 1999-01 Entry date 1995-05

Heteronychus arator (Coleoptera: Scarabaeidae) - Black maize beetle

Why	This pest was proposed by the UK NPPO, after a commodity risk assessment of strawberries from South Africa and potatoes from New Zealand. The Panel on Phytosanitary Regulations has examined a full PRA and is now proposing to add it to the A1 list.
Where	Australia, Ethiopia, Kenya, Madagascar, Mozambique, New Zealand, South Africa, Tanzania, Zimbabwe, Zambia. It has recently spread to New Guinea, Central and South America.
On which plants	Polyphagous species attacking grapevine, maize, many vegetables and ornamental crops, e.g.: *Begonia* spp., *Brassicas*, *Calendula* spp., *Curcurbita* spp., D*aucus carota*, *Fragaria ananassa*, *Lactuca sativa*, *Lycopersicon esculentum*, *Petunia* spp., *Phlox* spp., *Pisum sativum*, *Rheum rhabarbarum*, *Solanum tuberosum*, *Vitis vinifera*, *Zea mays*, many grasses and weeds.
Damage	On potatoes, adults burrow into the tubers. On maize: Adults feed into the stems of maize plants, attacked plants wilt, collapse and subsequently die. In pasture, larvae can cause severe damage by feeding on roots.
Pathway	Potatoes, strawberry plants for planting and plants for planting of other hosts from infested countries.
Possible risks	Polyphagous pest which could threaten many outdoor crops. Difficult to detect as all insect stages are found in the soil (although adults can fly). Yield reductions are observed.

EPPO RS 99/081
Source(s) PRA from the UK NPPO, 1999-01.
Panel review date 1999-01 Entry date 1999-05

Lecanoideus floccissimus (Homoptera, Aleyrodidae) - a new whitefly pest in Tenerife (Spain)

Why	*L. floccissimus* came to our attention because it was reported as a new whitefly pest in 1991, in Tenerife (ES).
Where	Tenerife (Canary Islands, Spain).
On which plants	Polyphagous: Arecaceae (including coconut) and Musaceae (including banana, *Strelitzia*), and also various other plants such as: papaya (*Carica papaya*), sour orange (*Citrus aurantium*), *Euphorbia pulcherrima*, *Ficus* spp., *Hibiscus rosa-sinensis*, mango (*Mangifera indica*), guava (*Psidium guajava*), oleander (*Nerium oleander*).
Damage	Direct feeding damage to the plants and production of large amounts of white waxy secretions and honeydew, on which sooty moulds can develop.
Note	The authors felt that this pest may have come from Central or South America, as the species was also described on unidentified plant material from Ecuador, in addition to material from Tenerife.
Pathway	Host plants for planting (cut flowers? fruits?) from Tenerife.
Possible risks	Polyphagous pest which may cause problems particularly under glass. Data is missing on the origin of this pest (does it exist elsewhere, in particular in the Americas?).

EPPO RS 98/013
Source(s) Hernández-Suarez, E.; Carnero, A.; Hernández, M.; Beitia, F.; Alsonso, C. (1997) *Lecanoideus floccissimus* (Homoptera, Aleyrodidae) Nueva plaga en las Islas Canarias. Phytoma-España, no. 91, 35-48.
Panel review date 1999-01 Entry date 1998-01

Lygus lineolaris (Hemiptera: Miridae) - Tarnished plant bug

Why	*L. lineolaris* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.
Where	Canada, Mexico, USA (widespread, prefers warm, humid to dry climates in the South, Southeast and Southwest) (see CABI map no. 38, 1954).
On which plants	Polyphagous species (fruits, vegetables, ornamentals, field and forage crops, weeds). Glasshouse hosts include *Aster*, chrysanthemums, *Dahlia*, *Impatiens* and *Tagetes*.
Damage	By feeding, adults and nymphs cause yellowing, distortion of terminal growth and reduced plant growth. Flowers from damaged buds sometimes fail to develop on one side or the whole bud aborts.
Pathway	Glasshouse ornamental plants for planting (cut flowers?) from North America.
Possible risks	Polyphagous species which may attack many crops grown in Europe. Ornamentals under glass might be more at risk.

EPPO RS 98/180

Source(s) Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Maconellicoccus hirsutus (Hemiptera, Pseudococcidae) - pink or hibiscus mealybug

Why	*M. hirsutus* came to our attention because of its current spread in the Caribbean.
Where	Originally present in Africa, Asia and Oceania. It was introduced in 1994 in Grenada, it then spread in Trinidad (1995), St Kitts & Nevis (1995), Netherlands Antilles (Sint Maartin, 1996), British Virgin islands (1997), Guyana (1997), Netherlands Antilles (Curaçao, Sint Eustatius; 1997), United States Virgin islands (St Thomas, 1997), St Vincent and the Grenadines (1997), Anguilla (unconfirmed), Guadeloupe (1998), United States Virgin islands (St Croix, St John; 1998), Puerto Rico (1998). It is also reported in British Virgin islands (Tortolla), Monserrat and Netherlands Antilles (Aruba). Intercepted in USA on consignments from several central American and Caribbean countries.
On which plants	Polyphagous: ornamentals, vegetables, forest and fruit trees.
Damage	It feeds on sap. Dense colonies of woolly aspect are visible on attacked plants which rapidly decline and show spectacular deformations (probably due to a toxin in the mealybug saliva).
Pathway	Ornamental plants for planting (cut flowers? fruits?) from infested countries.
Possible risks	Polyphagous pest, spreading very rapidly in the Caribbean. Tropical species, the risk is probably limited to glasshouse crops.

EPPO RS 95/235, 96/028, 96/207, 97/164, 98/129

Source(s)
Anonymous (1995) Pink mealybug threatens Grenadas's crops. CAB International News September 1995, p 5.
Anonymous (1996) New pest outbreaks - The pink mealybug *Maconellicoccus hirsutus* Green. NAPPO Newsletter 16(4), p 3.
Etienne, J. Matile-Ferrero, D.; Leblanc, F.; Marival, D. (1998) Premier signalement de *Maconellicoccus hirsutus* (Green) à la Guadeloupe (Hemiptera, Pseudococcidae). Bulletin de la Société entomologique de France, 103(2), 173-174.
Matile-Ferrero, D.; Etienne, J. (1996) Présence de la cochenille de l'hibiscus, *Maconellicoccus hirsutus* à Saint-Martin (Hemiptera, Pseudococcidae). Revue française d'entomologie, 18(1), p 38.
Pollard, G.V. (1995) Update on new pests introductions - Pink mealybug, *Maconellicoccus hirsutus* (Green). FAO Circular letter no. 3/95, FAO Regional Office for Latin America and the Caribbean.
Pollard, G.V. (1995) Update on new pests introductions - continuing spread of pink mealybug, *Maconellicoccus hirsutus*. FAO Circular letter no. 4/95, FAO Regional Office for Latin America and the Caribbean.
Pollard, G.V. (1997) Pink mealybug, *Maconellicoccus hirsutus*. CPPC Circular letter no. 1/97, 1st June 1997, FAO Sub Regional Office for the Caribbean, Barbados.
Pollard, G.V. (1998) Pink mealybug, *Maconellicoccus hirsutus*. CPPC Circular letter no. 2/98, 1st June 1998, FAO Sub Regional Office for the Caribbean, Barbados.

Panel review date 1999-01 Entry date 1995-11

Microcephalothrips abdominalis (Thysanoptera: Thripidae) - Composite thrips

Why	*M. abdominalis* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.
Where	Tropics, and subtropics. Australia, India, Japan, Korea Republic, Peru, Taiwan, Thailand, USA.
On which plants	Many ornamental species of family Asteraceae (e.g. *Bidens formosa* (cosmos), chrysanthemum, *Helianthus*, *Pyrethrum*, *Tagetes*, *Zinnia*). In Asia, its presence is reported on Orchidaceae, and also on tea and rice crops.
Damage	Heavy infestations cause damage to the corolla, stamens, and developing seeds of plants in the Asteraceae. Petals lose pigmentation, senesce early and drop prematurely.
Pathway	Asteraceae and Orchidaceae plants for planting and cut flowers from infested countries.
Possible risks	Attacks many ornamental Asteraceous plants. Tropical species which could be a risk for ornamentals grown under glass. Control may be difficult.

EPPO RS 98/180

Source(s) Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Phenacoccus gossypii (Hemiptera: Homoptera: Pseudococcidae) - Mexican mealybug

Why	*P. gossypii* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.
Where	Bahamas, Cuba, Mexico, Puerto Rico, USA (many southern states, Hawaii).
On which plants	Many ornamental plants (e.g. *Althea rosea*, *Aralia*, chrysanthemum, *Euphorbia pulcherrima*, *Gynura*, *Hedera helix*, *Ixia*, *Lantana*). It attacks cotton, and is reported as a minor pest of lima beans (*Phaseolus lunatus*) in the warmer parts of USA.
Damage	Wilting and stunting of attacked plants. Plants are disfigured due to the presence of mealybugs.
Pathway	Ornamental plants for planting (cut flowers?) from infested countries.
Possible risks	Attacks many ornamentals plants. Tropical species which could be a risk for ornamentals grown under glass. Control may be difficult.

EPPO RS 98/180

Source(s) Ben-Dov, Y. (1994) A systematic catalogue of the mealybugs of the world (Insecta: Homoptera: Coccoidea: Pseudococcidae and Putoidae) with data on geographical distribution, host plants, biology and economic importance. Intercept Limited, Andover, UK, 686 pp.

Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Platynota species (Lepidoptera: Tortricidae)

Why *Platynota* species came to our attention because they are considered as pests of ornamentals in south-eastern USA.

P. flavedana -variegated leafroller

Where	Jamaica, USA (from Maine to Florida and west to Kansas and Texas).
On which plants	Polyphagous (e.g: apple, clover, cotton, citrus, *Euphorbia pulcherrima*, *Hypericum*, maple, peach, *Rosa*, sassafras, strawberry).

P. stultana - omnivorous leafroller

Where	Mexico, USA (California, Maryland, Pennsylvania, Virginia).
On which plants	Polyphagous (e.g: capsicum, citrus, cotton, celery, grapes, lucerne, *Rosa*, stone fruits, tomatoes)

P. idaeusalis - tufted apple bud moth

Where	Canada (British Columbia), USA (Michigan, North Carolina, Pennsylvania, Virginia).
On which plants	Polyphagous (e.g: *Acer*, apple, cherries, clover, *Euphorbia pulcherrima*, *Solanum*, *Solidago*, walnut, willow).
Damage	Feeding on the leaves. Leaves are rolled and tied by silk, as larvae construct their nests.
Pathway	Ornamental plants for planting, cut flowers? (e.g. *Rosa*), strawberry plants for planting?, woody hosts plants for planting? from North America

Possible risks — Polyphagous species which can attack some important crops, but more data on economic damage is needed.

EPPO RS 98/180

Source(s) — Bin-Cheng Zhang (1994) Index of economically important Lepidoptera, CABI, Wallingford, UK, 599 pp.
Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Rhizoecus americanus (Hemiptera: Homoptera: Pseudococcidae) - Root mealybug

Why — *R. americanus* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.

Where — Colombia, Costa Rica, Cuba, Ecuador, Honduras, Jamaica, Martinique, Mexico, Panama, Puerto Rico, Trinidad, USA (Florida), Virgin Islands (US). Found in Italy for the first time in 1992 on Saintpaulia (in glasshouses in Pieve san Paolo) and on *Phoenix roebelenii* (in the field in Catania).

On which plants — Many ornamentals (e.g. *Aralia*, *Asparagus*, chrysanthemum, *Dieffenbachia*, *Ficus*, *Gardenia*, *Hibiscus*, *Kentia*, *Lantana*, *Phoenix*, *Saintpaulia*, *Strelitzia*, etc.) (see Ben-Dov for a more complete list).

Damage — All stages can be found on the roots of the plants and growing medium. As they attack roots, plant growth is reduced, foliage is deteriorated and plants may finally die. Considered as a serious pest in Florida nurseries (Ben-Dov, 1994).

Pathway — Ornamental plants for planting and soil from infested countries.

Possible risks — Considered as a serious pest in Florida nurseries. It can damage (and apparently kill in some cases) many ornamental species. The pest can be introduced with the plants but also the growing medium attached to them. It has been found in Italy in 1992, but since then, no further information has been given (?). Another root mealybug, *Rhizoecus hibisci*, is already listed as a quarantine pest by the European Union.

EPPO RS 98/180

Source(s) — Ben-Dov, Y. (1994) A systematic catalogue of the mealybugs of the world (Insecta: Homoptera: Coccoidea: Pseudococcidae and Putoidae) with data on geographical distribution, host plants, biology and economic importance. Intercept Limited, Andover, UK, 686 pp.
Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date 1999-01 Entry date 1998-10

Rhynchophorus ferrugineus (Coleoptera: Curculionidae) - red palm weevil

Why — *R. ferrugineus* came to our attention because it was recently introduced into Spain (damage first seen in 1993). It has also been introduced during the last decade in the Near East region.

Where — EPPO region: Egypt, Israel (found in 1999), Jordan (found in 1999), Spain. Esteban-Durán *et al*. suggested that it is probably present in Algeria, Morocco and other countries in North Africa but this has not been confirmed by the official authorities. Asia (Bangladesh, Cambodia, China, India, Indonesia, Irak, Iran, Japon, Laos, Malaysia, Myanmar, Pakistan, Philippines, Qatar, Saudia Arabia, Sri Lanka, Taiwan, Thailand, United Arab Emirates, Vietnam). Oceania (Australia (doubtful), Papua New Guinea, Solomon Islands).

On which plants — Many palm tree species (*Areca catechu*, *Arenga pinnata*, *Borassus flabellifer*, *Caryota maxima*, *C. cumingii*, *Cocos nucifera*, *Corypha gebanga*, *C. elata*, *Elaeis guineensis*, *Metroxylon sagu*, *Oreodoxa regia*, *Phoenix canariensis*, *P. dactylifera*, *P. sylvestris*, *Sabal umbraculifera*, *Washingtonia* sp. etc.). It can also attack *Agave americana*, *Saccharum officinarum*.

Damage	Severely attacked palm trees show a total loss of the palms and rotting of the trunk which lead to the death of the tree. Adult females lay eggs in the crown of palm trees, larvae then penetrate the crown and later to most parts of the upper trunk, making tunnels of up to 1 m long. Pupation takes place in a cocoon under the bark.
Pathway	Plants for planting of Palmae (including date palm, ornamental palms) from infested countries.
Possible risks	Date palms is an important crop in north African countries and ornamental palms are widely planted as amenity trees in the whole Mediterranean area.

EPPO RS 96/096, 97/010, 99/012, 99/078, 99/079, 99/119

Source(s)
Abdou, R.M. (1996) Data palm trees damaged by some insects in the State of Qatar. Abstract of a paper presented at the XX International Congress of Entomology, Firenze (IT), 1996-08-25/31 (Abst. 17-048, p 545).
Barranco, P.; de la Peña, J.; Martín, M.M.; Cabello, T. (1998) Eficacia del control químico de la nueva plaga de las palmeras *Rhynchophorus ferrugineus* (Olivier, 1790) (Col.: Curculionidae). Boletín de Sanidad Vegetal, Plagas, 24(1), 23-40
Barranco, P.; de la Peña, J.; Cabello, T. (1996) El picudo rojo de las palmeras, *Rhynchophorus ferrugineus* (Olivier), nueva plaga en Europa. Phytoma-España, no.67, 36-40.
Cox, M.L. (1993) Red palm weevil, *Rhynchophorus ferrugineus* in Egypt. FAO Plant Protection Bulletin, 41(1), 30-31.
Esteban-Durán, J.; Yela, J.L.; Beitia-Crespo, F.; Jiménez-Alvarez, A. (1998) Curculiónidos exóticos susceptibles de ser introducidos en España y otros países de la Unión Europa a través de vegetales importados (Coleoptera: Curculionidae: Rhynchophorinae). Boletín de Sanidad Vegetal, Plagas, 24(1), 23-40
Esteban-Durán, J.; Yela, J.L.; Beitia-Crespo, F.; Jiménez-Álvarez, A. (1998) Biología del curculiónido ferruginoso de las palmeras *Rhynchophorus ferrugineus* (Olivier) en laboratorio y campo: ciclo en cautividad, peculiaridades biológicas en su zona de introducción en España y métodos biológicos de detección y posible control (Coleoptera: Curculionidae: Rhynchophorinae). Boletín de Sanidad Vegetal - Plagas, 24(4), 737-748.
NPPO of Spain, 1996-11.
NPPO of Jordan, 1999-05
NPPO of Israel, 1999-07

Panel review date 1999-01 Entry date 1996-05

<u>*Rhynchophorus* species (Coleoptera: Curculionidae) - palm weevils</u>

Why	Following the introduction of *Rhynchophorus ferrugineus* in Spain, an assessment of the risks presented by other exotic palm weevils for southern countries has been made by Spanish scientists. Their conclusion was that *R. ferrugineus* and *R. palmatum* were the most threatening species. Other species like *Dynamis borassi*, *R. quadrangulus* and *Matemasius cinnamominus* were considered of little importance. *R. bilineatus*, *R. phoenicis* and *R. vulneratus* were considered of intermediate importance.
Damage	Severely attacked palm trees show a total loss of the palms and rotting of the trunk which lead to the death of the tree. Larvae bore tunnels in the trunk.

Rhynchophorus bilineatus

Where	Asia: Indonesia (Buru, Sulawesi, Maluku). Oceania: Papua New Guinea, Solomon islands.
On which plants	*Cocos nucifera, Metroxylon sagu, M. solomonense.*

Rhynchophorus palmatum

Where	North America: Mexico. South America: Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Surinam, Uruguay, Venezuela. Caribbean and Central America: Belize, Costa Rica, Cuba, Dominica, El Salvador, Grenada, Guadeloupe, Guatemala, Honduras, Martinique, Nicaragua, Panama, Puerto Rico, St Vincent, Trinidad and Tobago.
On which plants	*Acrocomia aculeata*, *A. lasiophata*, *A. sclerocarpa*, *Attalea coheme*, *Bactris major*, *Chrysalidocarpus lustescens*, *Cocos nucifera*, *C. coronata*, *C. fusiformis*, *C. romanzofiana*, *C. schizophylla*, *C. vagans*, *Desmoncus major*, *Elaeis guineensis*, *Euterpe braodwayana*, *Guilielma* spp., *Manicaria saccifera*, *Maximiliana caribaea*, *Metroxylon*, *sagu*, *Oreodoxa oleracea*, *Phoenix* spp., *Sabal* spp., *Washingtonia* spp. It can also attack *Gynerium saccharoides*, *S. officinarum*, *Carica papaya*, *Jaracatia dodecaphylla*, *Ananas sativa*, *Musa* spp. and *Ricinus* spp.
Note	*R. palmatum* is the vector of the nematode *Rhadinaphelenchus cocophilus*, causal agent of the red ring disease which has a very serious economic impact on cultivated palm trees in South and Central America.

Rhynchophorus phoenicis

Where — Tropical and equatorial Africa (from Senegal to Ethiopia, and to South Africa). Introduction into South America is speculated but has not been verified.

On which plants — *Borassus* spp., *Elaeis guineensis*, *Hyphaene* spp., *Phoenix* spp. (including *P. dactylifera*).

Rhynchophorus vulneratus

Where — Asia: Indonesia (Borneo, Java, Sumatra and other islands), Japan (south), Malaysia, Philippines, Thailand. Oceania: Papua New Guinea.

On which plants — *Areca catechu*, *Arenga saccharifera*, *Cocos nucifera*, *Corypha gebanga*, *Elaeis guineensis*, *Livistona chinensis*, *Metroxylon sagu*, *Oncosperma tigillaria*, *O. horrida*, *Oreodoxa regia*.

Pathway — Palmae plants for planting (including date palms and ornamental palms) from infested countries.

Possible risks — Date palms are important crops in northern African countries, and ornamental palms are widely planted in the Mediterranean area. These insects are difficult to detect by simple visual inspections (larvae live inside the plants), and young plants can be infested by eggs or larvae which are also difficult to see.

EPPO RS 99/012

Source(s) — Barranco, P.; de la Peña, J.; Martín, M.M.; Cabello, T. (1998) Eficacia del control químico de la nueva plaga de las palmeras *Rhynchophorus ferrugineus* (Olivier, 1790) (Col.: Curculionidae). Boletín de Sanidad Vegetal, Plagas, 24(1), 23-40

CABI maps no. 258 & 259.

Esteban-Durán, J.; Yela, J.L.; Beitia-Crespo, F.; Jiménez-Alvarez, A. (1998) Curculiónidos exóticos susceptibles de ser introducidos en España y otros países de la Unión Europa a través de vegetales importados (Coleoptera: Curculionidae: Rhynchophorinae). Boletín de Sanidad Vegetal, Plagas, 24(1), 23-40.

Panel review date — - — Entry date 1999-01

<u>*Stephanitis pyrioides* (Hemiptera: Tingidae) - Azalea lace bug</u>

Why — *S. pyrioides* came to our attention because it is considered as a pest of ornamentals in south-eastern USA, and another species (*S. takeyai*) has recently been found in UK (see below).

Where — Japan, USA (from New York to Massachusetts southward to Florida and west to Texas).

On which plants — Azalea (evergreen cultivars are preferred hosts, but also attacks deciduous cultivars), mountain laurel (*Kalmia latifolia*) and rhododendron.

Damage — Caused by adults and nymphs by feeding on leaves. Reported to be the most serious pest of azalea since its introduction from Japan in the 1920s.

Note — Another species, the andromeda lace bug, *Stephanitis takeyai*, also occurs in USA (introduced from Japan). It is a pest of *Pieris japonica* (andromeda) and Rhododendron. This species has recently been found outdoors in a very limited outbreak in UK (see above). A third species, *Stephanitis rhododendri* already occurs in Europe but has probably been introduced from North America. It causes damage locally on azalea and rhododendron.

Pathway — Azalea, rhododendron, *Kalmia* plants for planting from Japan and USA.

Possible risks — Limited host range, but Ericaceae are important ornamentals. Originates from Japan, introduced with *S. takeyai* into North America where they are both reported as serious pests of Ericaceae and difficult to control (sheltered way of life). *S. rhododendri* already occurs in Europe (probably introduced from North America).

EPPO RS 98/180

Source(s) — Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.

Panel review date — 1999-01 — Entry date 1998-10

Stephanitis takeyai (Hemiptera: Tingidae) - Andromeda lace bug

Why	*Stephanitis takeyai* came to our attention because a limited outbreak has been reported in UK, in 1998. Measures (eradication and surveys) have been taken but the risk of spread from the particular site is very limited (no plant propagation).
Where	Japan, USA, United Kingdom (Surrey, in a garden open to the public).
On which plants	*Pieris japonica* and *Rhododendron*. It can also attack: azalea, *Pieris floribunda*, *P. floribunda* x *P. japonica*.
Damage	Caused by adults and nymphs by feeding on leaves.
Pathway	*Pieris*, rhododendron and azalea plants for planting from Japan and USA.
Possible risks	Limited host range, but Ericaceae are important ornamentals. Originates from Japan, introduced with *S. pyrioides* into North America where they are both reported as serious pests of Ericaceae and difficult to control (sheltered way of life). *S. rhododendri* already occurs in Europe (probably introduced from North America).

EPPO RS 98/061
Source(s) NPPO of United Kingdom, 1998-03
Panel review date 1999-01 Entry date 1998-04

Trialeurodes abutilonea (Hemiptera: Homoptera: Aleyrodidae) - banded-winged whitefly

Why	*T. abutilonea* came to our attention because it is considered as a pest of ornamentals in south-eastern USA.
Where	Cuba, USA (Arizona, California, Colorado, District of Columbia, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Mexico, New York, North Carolina, Pennsylvania, South Carolina, Texas, Utah, Virginia).
On which plants	Originally described on *Abutilon theophrasti* but is now considered as a polyphagous species (e.g. *Euphorbia pulcherrima*, *Geranium*, *Hibiscus*, *Petunia*, many weeds). It is reported as an occasional economic pest of ornamentals. It also occurs on cotton and vegetable crops.
Damage	Direct feeding damage and presence of honeydew and sooty mould which alter the appearance of the ornamentals. If not controlled, it can be a very damaging pest. It is reported as being able to transmit viruses (e.g. abutilon yellows ?closterovirus, diodia vein chlorosis ?closterovirus, tomato chlorosis ?closterovirus), but not as efficiently as *Bemisia tabaci*.
Pathway	Ornamental plants for planting (cut flowers? vegetables?) from Cuba and USA.
Possible risks	Polyphagous but it is reported as an occasional pest. The main concern is virus transmission. Although it is not as efficient as *B. tabaci*, closer attention should perhaps be paid to this species.

EPPO RS 98/180
Source(s) Insect and related pests of flowers and foliage plants. Some important, common and potential pests in the southeastern United States. edited by Baker, J.R. (1994) North Carolina Cooperative Extension Service, US, 106 pp.
Panel review date 1999-01 Entry date 1998-10

Fungi

Alternaria alternata pv. *citri* (brown spot of Minneola tangelos)

Why	*Alternaria alternata* pv. *citri* came to our attention because it was described in 1989 in Israel, as an unusual disease of citrus.
Where	Australia (first report in 1966), Israel (in 1989), South Africa (at least since the early 1980s) Turkey (in 1995), USA (Florida, in 1976).
On which plants	Minneola tangelos (*Citrus reticulata* cv. Dancy x *C. paradisi* cv. Duncan). Dancy and Ellendale mandarins, Murcott tangor (mandarin x sweet orange), Nova and Idith mandarin hybrids, Calamondin (mandarin x kumquat (*Fortunella*)), and Sunrise and Redblush grapefruits.
Damage	Infected fruit show sunken, dark brown spots (quality is reduced) and many of them drop prematurely. Leaves present brown necrotic areas, and in severe cases apices of young shoots can be completely defoliated.

Possible identity — *Alternaria alternata* pv. *citri.* This disease observed in Israel was thought to be similar to 'brown spot of Emperor mandarins' which was first reported in Australia in 1966 (Pegg, 1966) and to 'Alternaria brown spot' of Dancy tangerines, and of Minneola and Orlando tangelos which was then reported in Florida (US) in 1976 (Whiteside, 1976). It is now considered that Alternaria brown spot is caused by *Alternaria alternata* pv. *citri*, although there is discussion on the validity of pathovars for *Alternaria alternata*. In the literature, the disease has sometimes been attributed to *Alternaria citri*, but the latter causes quite other symptoms and has a different host range.

Pathway — Citrus host plants for planting (fruits with leaves?, fruits?) from countries where it occurs.

Possible risks — Disease of citrus (although it does not attack all citrus) which can affect yield and quality. Already present in Israel and recently found in Turkey. Control reported as difficult (some fungicide resistance is reported). The fungus can overwinter in lesions on leaves and stems, so it is likely to be transmitted by propagating material.

EPPO RS 98/179

Source(s)

Canihos, Y.; Erkilic, A.; Timmer, L.W. (1997) First report of Alternaria brown spot of Minneola tangelo in Turkey. Plant Disease, 81(10), p 1214.

Pegg, K.G. (1966) Studies of a strain of *Alternaria citri* Pierce, the causal organism of brown spot of Emperor mandarin. Queensland Journal of Agriculture and Animal Science, 23(1), 15-28.

Solel, Z. (1991) Alternaria brown spot on Minneola tangelos in Israel. Plant Pathology, 40, 145- 147.

Solel, Z.; Kimchi, M. (1997) Susceptibility and resistance of citrus genotypes to *Alternaria alternata* pv. *citri*. Journal of Phytopathology, 145(8-9), 389-391.

Solel, Z.; Oren, Y.; Kimchi, M. (1997) Control of Alternaria brown spot of Minneola tangelo with fungicides. Crop Protection, 16(7), 659-664.

Solel, Z; Timmer, L.W.; Kimchi, M. (1996) Iprodione resistance of *Alternaria alternata* pv. *citri* from Minneola Tangelo in Israel and Florida. Plant Disease, 80(3), 291-293.

Swart, S.H.; Wingfield, M.J.; Swart, W.J.; Schutte, G.C. (1998) Chemical control of Alternaria brown spot of Minneola tangelo in South Africa. Annals of applied Biology, 133(1), 17-30).

Whiteside, J.O. (1976) A newly recorded Alternaria-induced brown spot disease on Dancy tangerines in Florida. Plant Disease Reporter, 60(4), 326-329.

Whiteside, J.O. (1988) Alternaria leaf spot of rough lemon. In: Compendium of citrus diseases (Ed. by Whiteside, J.O.; Garnsey, S.M.; Timmer, L.W.), p 8. APS, St. Paul, USA.

Panel review date — 1999-01 — Entry date 1998-10

<u>*Claviceps africana* (sugary disease or ergot of sorghum)</u>

Why — *C. africana* came to our attention because of introduction into new continents and its extremely rapid spread.

Where — Originally present in Asia and Africa. Recently discovered in India but was probably present there for a long time.

Introduced in 1995 into Brazil and rapid spread through the central and southern part of the country.

By 1996 found in Argentina, Bolivia, Colombia, Paraguay, Venezuela. In April 1996 in Australia (southern Queensland) where it spread over 60,000 km^2 in 3 weeks.

By February 1997, found in Honduras, Dominican Republic, Haiti, Jamaica, Puerto Rico and Mexico.

By March 1997, found for the first time in Texas, USA, and later in Kansas, Georgia, Nebraska.

On which plants — Cultivated and wild sorghum species. It can probably attack some other grasses; found on pearl millet (*Pennisetum glaucum*)

Damage — Estimated losses of 3 million USD for the seed industry in 1995 in Brazil.

Dissemination — By sorghum seeds contaminated with sclerotia or encrusted by dried honeydew that contain viable macroconida.

Pathway — Sorghum seeds (plants for planting?) from infested countries.

Possible risks — Sorghum is cultivated to a limited but significant extent in Mediterranean and Central European countries. The disease has shown recently a very high potential for spread. Seed transmitted. Losses are reported particularly in the production of hybrids.

EPPO RS 97/031; 97/073; 97/119; 98/114, 99/097

Source(s)

Anonymous (1997) Rapid spread of ergot of sorghum monitored in several fronts. Phytopathology News, 31(4), p 59.

Bogo, A.; Mantle, P.G. (1999) *Claviceps africana* discovered in India. Plant Disease, 83(1), p 79.

Odvody, G. (1997) Ergot of sorghum reported in U.S. Phytopathology News, 31(5), p 75.

Reis, E.M.; Mantle, P.G.; Hassan, H.A.G. (1996) First report in the Americas of Sorghum ergot disease, caused by a pathogen diagnosed as *Claviceps africana*. Plant Disease, 80(4), 463.
Sorghum ergot - Brazil, Argentina, Bolivia, Colombia, Australia. ICRISAT (icrisat@cgnet.com) E-mail message of 1997-02 from PROMED (promed-plant@usa.healthnet.org)
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Panel review date 1999-01 Entry date 1997-02

Fungal oak disease in Japan

Why	This 'disease' came to our attention as high mortality of *Quercus* has been reported in Japan.
Where	Japan.
On which plants	*Q. acutissima* (= *Q. serrata*) and *Q. crispula.*
Damage	Mortality during summer months. Prior to wilting, massive attacks by *Platypus quercivorus* and xylem discoloration are observed. An unidentified fungus has been detected on the beetle and also in wilting oak xylem. Healthy oaks were killed when inoculated with this unknown fungus.
Possible identity	Unknown fungus.
Pathway	Unknown (plants for planting? wood?).
Possible risks	Oaks are important forest and amenity trees in the EPPO region. Data is lacking on the etiology of this disease (as it appears that several factors may be included, climatic factors, insects, fungus).

EPPO RS 99/027

Source(s) Kuroda, K. (1998) Determinant factor of oak mortality in Japan: xylem discoloration and dysfunction associated with beetle invasion and fungal infection. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 3.7.16).

Panel review date - Entry date 1999-02

Fusarium circinatum (*F. subglutinans* f.sp. *pini*) - pitch canker disease

Why	Pitch canker disease came to our attention because of the serious problems it causes in USA (particularly in California on natural stands and plantations of *Pinus*), and because of its introduction into South Africa in 1994.
Where	Haiti, Mexico, Japan, South Africa, USA (Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia). Unconfirmed reports from Italy and Spain.
On which plants	Many *Pinus* species (*P. canariensis, P. elliottii, P. echinata, P. halepensis, P. rigida, P. palustris, P. ponderosa, P. pungens, P. strobus, P. taeda*), as well as Douglas fir (*Pseudotsuga menziesii*).
Damage	Resinous exudation on the surface of shoots, branches, exposed roots and boles. Needles turn yellow to red and fall. The top of the tree and ultimately the entire tree may die. In South Africa, the fungus causes a severe root disease on *P. patula* seedlings in forest nurseries.
Dissemination	The disease can be transmitted by infected wood. Seed transmission has recently been demonstrated in *Pinus radiata*. The pathogen is associated with numerous insects. *Ips paraconfusus, I. mexicanus, Conophthorus radiata, Ernobius punctulatus* are vectors. Species like *Pityophthorus nitidulus, P. setosus, P. carmeli, Ips plastographus* are suspected to be vectors.
Note	The taxonomy of this fungi has recently been revised. It was previously named *Fusarium subglutinans* f.sp. *pini*, but is now called *Fusarium circinatum* with a teleomorph: *Gibberella circinata*.
Pathway	*Pinus* and *Pseudotsuga menziesii* wood, seeds, (cut trees, e.g. Christmas trees?, plants for planting?) from infested countries.
Possible risks	In the EPPO region, *Pinus* and Douglas fir are important forest and amenity trees. Serious losses are reported and no effective control measures are available.

EPPO RS 96/070, 99/067

Source(s) Gordon, T.R.; Wikler, K.R.; Clark, L.; Okamoto, D.; Storer, A.J.; Bonello, P. (1998) Resistance to pitch canker disease, caused by *Fusarium subglutinans* f.sp. *pini*, in Monterey pine (*Pinus radiata*). Plant Pathology, 47(6), 706-711.

Nirenberg, H.; O'Donnell, K. (1998) New *Fusarium* species and combinations within the *Gibberella fujikuroi* species complex. Mycologia, 90(3), 434-458.
Storer, A.J.; Gordon, T.R.; Clark, L. (1998) Association of the pitch canker fungus, *Fusarium subglutinans* f.sp. *pini*, with Monterey pine seeds and seedlings in California. Plant Pathology, 47(5), 649-656.
Viljoen, A.; wingfield, M.J.; Kemp, G.H.J.; Marasas, W.F.O. (1995) Susceptibility of pines in south Africa to the pitch canker fungus *Fusarium subglutinans* f.sp. *pini*. Plant Pathology, 44(5), 877-882.
INTERNET
http://frap.cdf.ca.gov/pitch-canker/position_paper.html (Position paper. Transport, disposal and use of woody material infested with the pine pitch canker fungus)
http://frap.cdf.ca.gov/pitch-canker/pitchan.html (Pitch canker in California)
http://frap.cdf.ca.gov/pitch-canker/treenotes.html (Current status of pitch canker in California)
http://frap.cdf.ca.gov/pitch-canker/grinch_fungus.html ('Grinch' fungus threatens Christmas trees)
http://frap.cdf.ca.gov/pitch-canker/cal_ag.html (Pitch canker kills pines, spreads to new species and regions)
http://128.227.207.24/people/usps/mppdd/Forest/pitchc.htm (Pitch canker - by G.M. Blakeslee, University of Florida)
http://www.up.ac.za/academic/fabi/tpcp/diagnostics/pitchcanker.htm (South African Data Sheet on pitch canker)

Panel review date 1999-01 Entry date 1996-04

<u>*Monosporascus cannonballus*</u> <u>(soil-borne disease of melons and watermelons)</u>

Why	*Monosporascus cannonballus* came to our attention because it causes a severe soil-borne disease of melons and watermelons of increasing incidence in many parts of the world. *Monosporascus eutypoides* is proposed as a synonym of *M. cannonballus*.
Where	It was first described in 1974 in Arizona. It is now reported from different parts of the world. EPPO region: Israel (as *M. eutypoides*, 1983), Italy (Gennari *et al*., 1999), Libya (*as M. eutypoides*, 1978), Spain (Lobo Ruano, 1991), Tunisia (Martyn *et al*., 1994). Asia: India, Iran (as *M. eutypoides*), Japan (Watanabe, 1979), Pakistan (as *M. eutypoides*), Saudi Arabia (Karlatti et al., 1997), Taiwan (Tsay & Borkay, 1995). North America: Mexico (Martyn *et al*., 1996), USA (Arizona, California, Texas). Central America: Guatemala (Bruton & Miller, 1997a), Honduras (Bruton & Miller, 1997b).
On which plants	Melons (*Cucurbita melo*) and watermelons (*Citrullus lanatus*). Other cucurbits are reported as experimental hosts.
Damage	Yellowing, death of the leaves, decline of the plants as they approach maturity. Rapid collapse of the crops just before harvest. Root lesions.
Pathway	Infected soil, plants for planting from infected countries.
Possible risks	The fungus appears to be adapted to hot and semi-arid conditions. The Mediterranean region is especially concerned by this fungus (suitable conditions, cucurbits are widely grown there in the field). Serious losses are reported. Control of the disease appears difficult (soil fumigation).

EPPO RS 99/111

Source(s)

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University of Arizona, Extension Plant Pathology (pictures)
http://ag.arizona.edu/PLP/plpext/diseases/vegetables/melon/melonvd.htm
Texas A & M University, Department of Plant Pathology and Microbiology (pictures)
http://cygnus.tamu.edu/PLPA/projects/1/monosporascus_cannonballus.html
Data sheet on *Monosporascus cannonballus*. http://www.extento.hawaii.edu/kbase/crop/Type/m_cann.htm

Panel review date - Entry date 1999-06

Phytophthora boehmeriae (a new disease of cotton found in Greece)

Why: *P. boehmeriae* came to our attention because it was reported to cause a new disease of cotton in Greece in 1993. This is the first report of this fungus in Europe.

Where: *P. boehmeriae* was first described in 1927 by Sawada as a new species on *Boehmeria nivea* (ramie – a fibre plant), in Formosa (Taiwan). The geographical distribution of the fungus is the following: EPPO region: Greece; Asia: China, Japan, Taiwan; South America: Argentina; Oceania: Australia (Queensland, New South Wales).

On which plants: Cotton (*Gossypium hirsutum*). It may also attack: Citrus (brown rot of fruits reported in Argentina), *Pinus patula* (root rot reported in Australia), *Broussonetia papyrifera* (Paper mulberry - reported as a host in China).

Damage: It causes a severe boll rot.

Pathway: Cotton plants for planting(?), seeds(?), soil from infested countries.

Possible risks: Cotton is an important crop for Mediterranean countries. The disease can be severe (affecting yield and quality). Seed transmission appears possible, and the fungus can overwinter in the soil. Already present in Greece.

EPPO RS 98/033

Source(s):
Phytophthora boehmeriae boll root: A new threat to cotton cultivation in the Mediterranean region. Phytoparasitica, 26(1), 20-26.
Zhang, X.Z.; Ling, P.L.; Ma, P., Chen, X.H. (1995) Studies on cotton seed-borne pathogen of Phytophthora boll rot and its lethal temperature. Acta Phytophylactica Sinica, 22(1), 67-69 (abstract).
Zheng, X.B.; Lu, J.Y.; He, H., Wang, T.L., Wang, H.Y. (1992) Oospores of *Phytophthora boehmeriae* overwintered in soil as an infection source of cotton boll disease. Acta Phytophylactica Sinica, 19(3), 251-256 (abstract).

Panel review date 1999-01 Entry date 1998-02

Phytophthora cambivora (a new root disease of alder)

Why: This came to our attention because a new root disease of alder causing tree mortality was first reported in UK in 1993.

Where: UK, and then in the Netherlands. According to the UK Forestry Commission, the fungus has also been found in Austria, Denmark, France, Germany, Sweden (UK Forestry Commission Web site).

On which plants: Common alder (*Alnus glutinosa*).

Damage: Dead roots, leaf fall, dieback, presence of tarry or rusty spots on the stem base of trees. Tree mortality has been observed. In 1994, it was reported that more than 20,000 alders were affected in southern Britain (UK).

Possible identity: An unusual form of *Phytophthora cambivora*.

Pathway: Alder plants for planting and wood(?) from infested countries.

Possible risks: Alders are important trees in the landscape. Tree mortality is reported. Further work is needed on the identity of the pathogen and possible means of control.

EPPO RS 95/010, 96/041, 98/023, 99/084

Source(s):
Annual Report 1996, Diagnostic Centre, Plant Protection Service, Wageningen, Netherlands, 114 pp.
Brasier, C.M.; Rose, J.; Gibbs, J.N. (1995) An unusual *Phytophthora* associated with widespread alder mortality in Britain. Plant Pathology, 44(6), 999-1007.
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Gibbs, J.N.; Lipscombe, M.A.; Peace, A.J. (1999) The impact of *Phytophthora* disease on riparian populations of common alder (*Alnus glutinosa*) in Southern Britain. European Journal of Forestry, 29(1), 1-88.
Web site of the UK Forestry Commission - http://www.forestry.gov.uk/research/summary.html

Panel review date 1999-01 Entry date 1995-01

Puccinia distincta (a new and severe rust of daisies)

Why	*P. distincta* came to our attention because this new rust on daisies was first reported in UK and France in 1996, and also in Italy.
Where	UK in gardens, France and Italy (in Friuli-Venezia Giulia - described as *P. lagenophorae* but most likely to be *P. distincta*). May also be present in Austria, Germany and Switzerland (but this has not been confirmed).
On which plants	*Bellis perennis*.
Damage	Typical rust symptoms which seriously impairs the growth.
Note	It may have been introduced from Australia, or it may derive from a related fungus *P. obscura* (recorded in Europe and North America).
Pathway	Daisy plants for planting from infested countries.
Possible risks	Cultivated forms of *B. perennis* are widely grown as ornamentals, but the economic impact is small.

EPPO RS 98/131, 99/083

Source(s)

Gullino, M.L.; Bertetti, D.; Luongo, I.; Arbusti, M.; Garibaldi, A. (1999) [Rust on common daisy (*Bellis perennis*): appearance in Italy and chemical control trials.] Informatore fitopatologico no.1/2, 52-55.

Scholler, M. (1997) Rust fungi on *Bellis perennis* in Central Europe: delimitation and distribution. Sydowia, 49, 174-181.

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Weber, R.W.S.; Webster, J.; Wakley, G.E.; Al-Gharabally; D.H. (1998) *Puccinia distincta*, cause of a devastating rust disease of daisies. Mycologist, 12(2), 87-90.

Panel review date 1999-01 Entry date 1998-07

<u>*Puccinia psidii* (eucalyptus rust)</u>

Why	*P. psidii* came to our attention because a recent publication stressed that the quarantine status of this disease may have been overlooked.
Where	Argentina, Brazil, Colombia, Cuba, Dominican Republic, Ecuador, Jamaica, Paraguay, Puerto Rico, Trinidad, Uruguay, USA (south of Florida), Venezuela. Unconfirmed reports in India, South Africa and Taiwan.
On which plants	Myrtaceae and particularly *Eucalyptus* species. Reported on *Callistemon speciosus*, *Eugenia* spp., *Melaleuca leucodendron*, *Pimenta* spp. *Psidium* spp. (including guavas), *Zysygium jambos*, *Myrcia* spp.
Damage	Typical rust symptoms which reduce plant growth.
Pathway	Eucalyptus plants for planting (wood?) from infested countries.
Possible risks	*Eucalyptus* are important trees in Mediterranean countries. Losses are reported in Brazil, particularly in nurseries and young plantations. Trees are rarely killed (unless young, susceptible cultivars are affected), but growth is reduced. Fungicide applications and planting of resistant genotypes are possible control methods.

EPPO RS 98/199

Source(s)

Coutinho, T.A.; Wingfield, M.J.; Alfenas, A.C.; Crous, P.W. (1998) Eucalyptus rust: a disease with the potential for serious international implications. Plant Disease, 82(7), 819-825.

Panel review date 1999-01 Entry date 1998-11

Bacteria and phytoplasmas

<u>Chestnut yellows (a new chestnut disorder in Italy)</u>

Why	This disorder came to our attention as it was reported for the first time in Italy in 1996, damaging or killing chestnut trees.
Where	Italy (Emilia-Romagna, Toscana).
On which plants	Chestnut (*Castanea sativa*).
Damage	Yellowing of the leaves, shortened twigs, fruiting severely impaired. Tree mortality is observed.
Possible identity	Phytoplasma etiology was suspected but attempts to detect phytoplasmas failed.
Transmission	Unknown.
Pathway	Unknown (plants for planting?).

Possible risks	*Castanea sativa* is an important forest tree and is also cultivated for its fruit. This disorder is apparently serious but limited to a small area in Italy. The etiology of this disorder is completely unknown, and so far no pathogen has been detected.

EPPO RS 99/044

Source(s) Mittempergher, L.; Sfalanga, A; (1998) Chestnut yellows: a new disease for Europe. Phytopathologia mediterranea, 37(3), 143-145.

Panel review date - Entry date 1999-03

Cucurbit yellow vine disease bacterium (a new phloem-limited bacterium)

Why	Yellow vine disease of cucurbits came to our attention because it has been reported as a new disease in USA since 1991, and a new phloem-limited bacterium is suspected.
Where	USA (Oklahoma, Texas)
On which plants	Cucurbits (watermelon, melon, courgette, pumpkin).
Damage	Affected plants show leaf yellowing, phloem discoloration and collapse.
Possible identity	Phloem-limited bacterium (closely related to the proteobacterium *Serratia marcescens*).
Pathway	Cucurbit plants for planting (vegetables? seeds? soil?) from USA.
Possible risks	Cucurbits are important crops. Crop losses are observed in USA. Although full data on the identity of the pathogen is still lacking, phloem-limited bacteria can cause damaging diseases. Insect vectors are suspected but not identified.

EPPO RS 98/111, 98/192

Source(s) Bruton, B.D.; Fletcher, J.; Pair, S.D.; Shaw, M.; Sittertz-Bhatkar, H. (1998) Association of a phloem-limited bacterium with yellow vine disease in cucurbits. Plant Disease, 82(5), 512-520.

Panel review date 1999-01 Entry date 1998-06

Erwinia pyrifoliae (a new bacterial disease of Japanese pear)

Why	*Erwinia pyrifoliae* came to our attention as it was reported in 1998 as a new bacterium of Japanese pear in Korea.
Where	Korea Republic.
On which plants	Japanese pear (*Pyrus pyrifolia*).
Damage	More data are needed.
Pathway	*Pyrus pyrifolia* plants for planting (fruits?) from Korea Republic
Possible risks	*E. pyrifoliae* has been isolated from necrotic Japanese pears, it appears related to *E. amylovora* but distinct. Data is missing on the extent and importance of the disease in the field, and also on its host range (is the bacterium able to attack other *Pyrus* species (e.g. *P. communis*), other fruit trees or ornamental species as *E. amylovora* ?). However, Japanese pears are cultivated to a limited extent in the EPPO region.

EPPO RS 98/204

Source(s) Kim, W.S; Rhim, S.L.; Völksch, B.; Gardan, L.; Paulin, J.P.; Jock, S.; Geider, K. (1998) Characterization of a new *Erwinia* species affecting Asian pear trees. Abstracts of papers presented at the 8th International Workshop on Fire Blight, Kusadasi (TR), 1998-10-12/15.

Panel review date 1999-01 Entry date 1998-11

Oak shoot blight (a new bacterial disease in Japan)

Why	Bacterial shoot blight came to our attention, as it was recently reported as a new disease of oak in Japan.
Where	Japan. Dieback of evergreen oaks was observed in nurseries in Japan in Kagoshima and Miyazaki prefectures, 10 years ago. In recent years, similar diseases occurred in other Japanese oaks (including deciduous oaks) in nurseries, artificial and natural forests.
On which plants	Evergreen and deciduous Japanese oaks (*Quercus* spp.: *Q. acutissima* (= *Q. serrata*), *Q. aliena*, *Q. gilva*, *Q. glauca*, *Q. hondae*?, *Q. myrsinifolia*, *Q. phillyraeoides*, *Q. stenophyla* (= *Q. salicina*), *Q. sessilifolia*? *(= Q. petraea*?))
Damage	Brown to black necrotic lesions on young shoots and petioles which may develop into cankers. At the beginning of the disease, discoloration or bacterial ooze often appear on the young shoot.
Possible identity	The causal agent was identified as a *Xanthomonas campestris*, and the disease has been called bacterial shoot blight.
Pathway	Unknown (plants for planting? wood?).
Possible risks	Oak is a important forest and ornamental tree in the EPPO region. Data is lacking on the causal agent, susceptibility of European oaks, severity and extent of the disease in Japan.

EPPO RS 99/027

Source(s) Ishihara, M.; Kawabe, Y.; Akiba, M. (1998) New disease: bacterial shoot blight on Japanese oaks (*Quercus* spp.) caused by *Xanthomonas campestris*. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 3.7.77).

Panel review date - Entry date 1999-02

Olive phytoplasma diseases

Why	These phytoplasma diseases of olive came to our attention because two 'similar' reports were made approximately at the same time from Italy and Spain. Symptoms appear very similar, but it cannot be said whether these diseases are caused by the same or related phytoplasmas.
Where	A phytoplasma disease has been reported in 1996 from many olive orchards of central Italy. In Spain, it is reported in 1998 that a new disease has been observed since 1993 in several olive orchards near Badajóz (Extremadura).
On which plants	Olive trees (*Olea europaea*).
Damage	In Spain: affected trees showed abnormal shoots, shortened internodes and proliferation (witches' broom). In Italy: diseased plants showed dwarfed branches with shortened internodes, leaf deformation and chlorosis, proliferation of axillary buds with witches' broom.
Possible identity	In both cases, PCR analysis revealed the presence of phytoplasmas in diseased olive trees. In Spain, it is noted that it belongs to the stolbur group. In Italy, the name: olive witches' broom disease has been given.
Transmission	It is suspected that the cicadellid *Hyalesthes obsoletus* can transmit the phytoplasma in the field.
Pathway	Plants for planting (fruits?) of olive from Italy and Spain.
Possible risks	Olive is a significant crop for the whole Mediterranean area. In Italy, severe economic problems are reported.

EPPO RS 99/008, 97/195

Source(s) Del Serrone, P.; Barba, M. (1997) Olive witches' broom: a new olive disorder associated with phytoplasmas. Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 119.

Font, I.; Abad, P.; Dally, E.L.; Davis, R.E.; Jordá, C. (1998) Nueva enfermedad en el olivar español. Phytoma España, no. 102, 211-212.

Panel review date - Entry date 1999-01

EPPO *Reporting Service*

Pseudomonas syringae on broccoli raab (a new bacterial disease in California, US)

Why	This bacterial disease of broccoli raab came to our attention as it has recently been found in commercial crops in USA.
Where	Observed in commercial crops in the Salinas Valley, California (US).
On which plants	Broccoli raab (*Brassica rapa* subsp. *rapa*), a leafy vegetable which is cultivated for its tender leaves and immature inflorescence. Other Cruciferaceae showed leaf spots symptoms when artificially inoculated (e.g. broccoli, cabbages, cauliflower, mustards, rocket).
Damage	Diseased plants show small, angular, water soaked flecks on lower leaves which expand and become surrounded by bright yellow borders. These flecks coalesce and result in large, irregular necrotic areas, leaf yellowing and eventually leaf death. If symptoms develop on the upper leaves attached to the inflorescence, shoots lose their market quality and are not harvested.
Possible identity	*Pseudomonas syringae* was consistently isolated from symptomatic plants and the isolated strains caused similar symptoms when inoculated onto broccoli raab plants. Possibly a new pathovar of *Pseudomonas syringae.*
Transmission	Field observations tend to suggest that it could be seed-borne but this has not been demonstrated.
Pathway	Plants for planting (vegetables? seeds?) of broccoli raab from USA.
Possible risks	Broccoli raab is grown in Europe (e.g. in Italy). More data is needed on the etiology of the disease, the susceptibility of other Crucifereaceae (which are important vegetable crops in Europe), and the possibility of seed-transmission (which could ensure long distance dissemination).

EPPO RS 99/030

Source(s) Koike, S.T.; Henderson, D.M.; Azad, H.R.; Cooksey, D.A.; Little, E.L. (1998) Bacterial blight of broccoli raab: a new disease caused by a pathovar of *Pseudomonas syringae*. Plant Disease, 82(7), 727-731.

Panel review date - Entry date 1999-02

Pseudomonas syringae pv. *syringae* on mango (a new bacterial disease of mango)

Why	This disease came to our attention, as it has recently been reported as a new bacterial disease of mangoes in Southern Europe.
Where	Southern Europe (no details given - Spain?).
On which plants	Mangoes (*Mangifera indica*).
Damage	Necrosis of buds, leaves and stems, with a high incidence during winter dormancy.
Identity	The causal agent of this bacterial apical necrosis of mango has been identified as *Pseudomonas syringae* pv. *syringae.*
Pathway	Unknown (plants for planting?).
Possible risks	Mangoes are grown to a limited extent in southern Europe. Data is lacking on the disease itself, its geographical distribution and the damage it causes.

EPPO RS 99/027

Source(s) Cazorla, F.M.; Duran, V.E.; Arrebola, E.; Hermoso, J.M.; Tores, J.A.; de Vincente, D.E (1998) Bacterial apical necrosis of mango: a new disease caused by *Pseudomonas syringae* pv. *syringae* on mango trees in southern Europe. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 3.7.58).

Panel review date - Entry date 1999-02

Strawberry lethal yellows phytoplasma

Why	Strawberry lethal yellows disease came to our attention because it appeared to us as a 'new' disease of strawberry.
Where	New Zealand (in propagation beds in Kitikati district, Bay of Plenty).
On which plants	Strawberry (*Fragaria ananassa*).
Possible identity	Phytoplasma closely related to, or identical with, the phytoplasmas associated with phormium yellow leaf disease, Australian grapevine yellows (proposed name Candidatus Phytoplasma australiense) and papaya die-back.
Damage	Severe decline, in field conditions plants may die and in glasshouse conditions they rapidly die.
Pathway	Strawberry plants for planting from New Zealand.

Possible risks	Lethal disease occurring in propagation material. However, it is probably of a limited extent (apparently restricted in one region). It is suspected that some leafhoppers occurring in strawberry fields can be vectors. In North America, another(?) phytoplasma disease called strawberry lethal decline was reported first in the north western US and then in British Columbia (CA). The pathogen can be transmitted by the leafhopper *Aphrodes bicincta*. Experimental transmission of western X-disease to strawberry produced symptoms similar to those of lethal decline. Reported to be of minor importance. The only reported control measure is to rogue infected plants.

EPPO RS 98/171

Source(s) Andersen, M.T.; Longmore, J.; Liefting, L.W.; Wood, G.A.; Sutherland, P.W.; Beck, D.L.; Forster, R.L.S. (1998) Phormium yellow leaf phytoplasma is associated with strawberry lethal yellows disease in New Zealand. Plant Disease, 82(6), 606-609.

Panel review date 1999-01 Entry date 1998-09

Viruses

Abutilon yellows closterovirus (a new closterovirus transmitted by *Trialeurodes abutilonea*)

Why	This virus came to our attention because it has recently been characterized as a new whitefly-transmitted closterovirus.
Where	Abutilon yellows virus had been found for the first time in *Abutilon theophrasti* (weed) in Illinois (US) in 1977 and has recently been characterized as a closterovirus.
On which plants	It has apparently a narrow host range (*Abutilon theophrasti*).
Damage	No indication is given on the damage this virus may cause.
Transmission	This virus is transmitted by *Trialeurodes abutilonea* in a semi-persistent manner and is retained by the vector for 4 days.
Pathway	Unknown (plants for planting?).
Possible risks	The host range is apparently very narrow (weed). Ornamentals Abutilon are grown in the EPPO region, but no data is available on their host status. The vector is not present in the EPPO region.

EPPO RS 99/027

Source(s) Liu, H.Y.; Wisler, G.C.; Duffus, J.E. (1998) Abutilon yellow virus - a new closterovirus transmitted by banded-wing whitefly (*Trialeurodes abutilonea*). Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 1.11.8).

Panel review date - Entry date 1999-02

Cherry chlorotic rusty spot 'virus' (a new virus-like disease of cherry in Italy)

Why	Cherry chlorotic rusty spot 'virus' came to our attention because it was recently reported as a new virus-like disease of cherry in Italy.
Where	Campania, in southern Italy.
On which plants	Cherry (*Prunus avium*).
Possible identity	It seems that the disease is induced by a virus- or viroid-like agent, as 12 dsRNAs and one or two small, circular RNAs have been consistently isolated from symptomatic cherry plants.
Damage	Symptoms are characterized by chlorotic spots which later develop a rusty appearance, small and deformed fruits with colour alterations, and tree decline. The disease is spreading naturally in infected areas, although no vector could be identified for the moment.
Pathway	Unknown.
Possible risks	Cherry is an important fruit crop in Europe. However, more data on the identity, transmission, geographical distribution, extent and severity of the disease is needed.

EPPO RS 97/053

Source(s) Di Serio, F.; Flores, R.; Ragozzino (1996) Cherry chlorotic rusty spot: description of a new virus-like disease from cherry and studies on its etiologic agent. Plant Disease, 80(10), 1203-1206.

Panel review date 1999-01 Entry date 1997-03

Chrysanthemum stem necrosis tospovirus (a new tospovirus in chrysanthemum)

Why	Chrysanthemum stem necrosis tospovirus (also referred to as Ch-1) came to our attention because it was reported as a new tospovirus in chrysanthemum in 1995.

Where	Brazil and then in the Netherlands.
On which plants	Chrysanthemum, tomato.
Possible identity	New tospovirus.
Damage	Necrotic lesions surrounded by yellow areas on leaves. Lesions are followed by necrosis on stems, peduncles and floral receptacles.
Pathway	Chrysanthemum plants for planting (cut flowers?) from Brazil and Netherlands.
Possible risks	Chrysanthemum is an important ornamental crop. In Brazil it was found in several commercial crops. In the Netherlands, symptoms are reported to be more severe than TSWV. However, more data on the extent of the disease and its transmission is needed. Tomato has recently been reported as a host in Brazil and is widely cultivated in the EPPO region.

EPPO RS 96/082, 96/198, 98/130, 99/094

Source(s)

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.

Duarte, L.M.L.; Rivas, E.B.; Alexandre, M.A.V; de Avila, A.C.; Nagata, T.; Chagas, C.M. (1995) Chrysanthemum stem necrosis caused by a possible novel tospovirus. Journal of Phytopathology 143(9), 569-571.

Verhoeven, J.T.J.; Roenhorst, J.W.; Cortes, I.; Peters, D. (1996) Detection of a novel tospovirus in chrysanthemum. Acta Horticulturae, no. 432, 44-51

Review of Plant Pathology, 78(4), p 368 (abstract 2778).

Panel review date 1999-01 Entry date 1996-04

Citrus seed-borne virus (a new virus disease in New Zealand)

Why	Citrus seed-borne virus came to our attention as it was reported as a new citrus disease in New Zealand.
Where	In the mid-80s, soon after the establishment of satsumas (*Citrus unshiu*) orchards in New Zealand, symptoms of a virus-like disease were observed.
On which plants	Citrus.
Damage	Affected plants showed boat and spoon-shaped leaves, dwarfing and small fruit size.
Possible identity	Electron microscopy of purified preparations showed the presence of two different types of filamentous particles, one virus was identified as being citrus tristeza closterovirus. The other virus was also found in a range of other citrus species (unspecified), and in citrus seedlings growing in an insect-free glasshouse. It was provisionally called citrus seed-borne virus. So far, citrus seed-borne virus does not appear to be related to citrus tristeza closterovirus, citrus tatter leaf capillovirus, or to US strains of citrus ringspot virus but it is serologically related to an Indian virus isolate also referred to as citrus ringspot virus.
Transmission	Apparently seed-borne.
Pathway	Unknown (plants for planting? seeds?).
Possible risks	Citrus is a very important crop in the Mediterranean area. Data is lacking on the causal agent and particularly in its respective role in symptom expression (as it was found together with CTV). Data is lacking on the impact of this virus on citrus production.

EPPO RS 99/027

Source(s)

Pearson, M.N.; Aftab, M.; Mooney, P. (1998) Properties and incidence of a previously unreported seed-borne filamentous virus infecting citrus in New Zealand. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 3.7.8).

Panel review date - Entry date 1999-02

Cucurbit yellow stunting disorder closterovirus (a new *Bemisia tabaci*-transmitted virus)

Why	Cucurbit yellow stunting disorder closterovirus came to our attention because it has been reported as a new closterovirus of cucurbits transmitted by *B. tabaci* in Spain.
Where	Observed on the south-eastern coast of Spain since 1982, on melon and cucumber grown under plastic greenhouses This disease has also been observed in the Middle East: Jordan, Israel, United Arab Emirates and Turkey.
On which plants	Melon (*Cucumis melo*) and cucumber (*Cucumis sativus*). The experimental host range appears to be restricted to Cucurbitaceae.
Identity	The causal agent of this disease has been identified, characterized and called cucurbit yellow stunting disorder closterovirus (CYSDV). Comparative studies have also been made

between CYSDV and lettuce infectious yellows closterovirus from USA, and showed that these two viruses are related but distinct.

Damage: Interveinal chlorosis (yellowing). Plants are reported to be seriously affected in Spain. Epidemic levels are mentioned in the Middle East since 1985.

Transmission: Transmitted by *B. tabaci* B and non-B biotypes, but not by *Trialeurodes vaporariorum*. The virus can be retained at least for 7 days by the vector.

Pathway: Cucurbit plants for planting (vegetables?) from infested countries.

Possible risks: Melons and cucumbers are widely grown in Europe, and the vector *B. tabaci* is widespread.

EPPO RS97/063

Source(s): Célix, A.; López-Sesé, A.; Almarza, N.; Gómez-Guillamón, M.L.; Rodríguez-Cerezo, E. (1996) Characterization of cucurbit yellow stunting disorder virus, a Bemisia tabaci-transmitted closterovirus. Phytopathology, 86(12), 1370-1376.

Duffus, J.E. (1996) Whitefly-borne viruses. In: Bemisia: 1995 Taxonomy, Biology, Damage, Control and Management (Ed by Gerling, D. & Mayer, R.T.), pp 255-263, Intercept limited, Andover, Hants, UK.

Panel review date: 1999-01 Entry date 1997-03

Iris yellow spot tospovirus (a new closterovirus of iris and onions)

Why: This newly characterized tospovirus came to our attention as it has been reported in the Netherlands, in Israel and Brazil on onion and iris crops.

Where: Brazil, Israel, Netherlands.

On which plants: *Allium cepa* (onion), *Iris hollandica*. Probably also *Allium porrum* (leek) and *Lilium* (lily). The experimental host range is narrow (*Nicotiana tabacum*, *Datura stramonium*).

Damage: On iris, symptoms are characterized by chlorotic spots which later developed into yellow and necrotic spots. Affected onion plants show numerous eyelike spots on the leaves and flower stalks resulting in flower abortion. It is noted that the economic impact of iris yellow spot tospovirus in iris and onion is low in the Netherlands but this is not the case in Brazil on onion, as up to 100% loss has been observed in onion fields.

Transmission: *Thrips tabaci* can transmit the virus (but *Frankliniella schultzei* and *F. occidentalis* are not vectors)

Pathway: Plants for planting, cut flowers ? vegetables?

Possible risks: Iris are grown in many countries and onions are widely grown in the EPPO region. The thrips vector (*Thrips tabaci*) is widespread. More data is needed on the epidemiology of the disease and its host range (can other important monocotyledonous crops be infected?).

EPPO RS 99/128

Source(s): Cortês, I.; Livieratos, I.C.; Derks, A.; Peters, D.; Kormelink, R. (1998) Molecular and serological characterization of iris yellow spot virus, a new and distinct tospovirus species. Phytopathology, 88(12), 1276-1282.

Nagata, T.; Almeida, A.C.L.; Resende, R. de O.; de Avila, A.C.; (1999) The identification of the vector species of iris yellow spot tospovirus occurring on onion in Brazil. Plant Disease, 83(4), p 399.

Pozzer, L.; Bezerra, I.C.; Kormelink, R.; Prins, M.; Peters, D.; Resende, R. de O.; de Avila, A.C. (1999) Characterization of a tospovirus isolate of iris yellow spot virus associated with a disease in onion fields, in Brazil. Plant Disease, 83(4), 345-350.

Panel review date: - Entry date 1999-07

Lettuce chlorosis closterovirus (a new closterovirus transmitted by *Bemisia tabaci*)

Why: Lettuce chlorosis closterovirus came to our attention because it was recently described as a new closterovirus transmitted by *B. tabaci*.

Where: In the Southwest desert regions of USA.

On which plants: Lettuce, sugarbeet, several other crops and weeds (but not on Cucurbitaceae).

Identity: A new closterovirus, different from lettuce infectious yellows closterovirus. The authors noted that since 1990, yellowing symptoms observed on lettuce and sugarbeet have been shown to be induced by a mixture of lettuce infectious yellows and lettuce chlorosis closteroviruses.

Damage: On lettuce and sugarbeet, symptoms are characterized by interveinal yellowing, stunting, rolling and brittleness of affected leaves.

Transmission: It is transmitted by both A and B biotypes of *B. tabaci.*

Pathway: Lettuce plants for planting (vegetables?) from USA.

Possible risks	Lettuce is an important crop in Europe both outdoor and under protection conditions. *B. tabaci*, the vector of the disease is widespread. However, data on the extent and severity of the disease is lacking.

EPPO RS 97/018, 98/085

Source(s)
- Duffus, J.E.; Liu, H.Y.; Wisler, G.C.; Li, R. (1996) Lettuce chlorosis virus - A new whitefly-transmitted closterovirus. European Journal of Plant Pathology, 102(6), 591-596.
- Wisler, G.C.; Duffus, J.E.; Liu, H.-Y.; Li, R.H. (1998) Ecology and epidemiology of whitefly-transmitted closteroviruses. Plant Disease, 82(3), 270-279.

Panel review date 1999-01 Entry date 1997-01

Lettuce necrotic spot nepovirus (a new virus of lettuce)

Why	Lettuce necrotic spot nepovirus came to our attention as it was reported as a new virus of lettuce in Portugal.
Where	In the north of Portugal.
On which plants	Lettuce (*Lactuca sativa*).
Damage	Affected plants showed necrotic spots.
Possible identity	A new virus tentatively called lettuce necrotic spot nepovirus and apparently related to arabis mosaic nepovirus.
Pathway	Unknown (plants for planting?)
Possible risks	Data in general is lacking, and particularly on the severity of the disease.

EPPO RS 99/027

Source(s)
- Cortes, I.; Moura, L.; Peters, D.; Pereira, A.M. (1998) Characterization of a lettuce nepovirus occurring in Portugal. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 1.11.30).

Panel review date - Entry date 1999-02

Maize Mal de Río Cuarto fijivirus (outbreak in Argentina)

Why	Mal de Río Cuarto came to our attention because an outbreak was reported again in Argentina in 1996-1997, after several years of 'absence'.
Where	Argentina (disease also reported to be present in Brazil and Uruguay).
On which plants	Maize. It can also attack: wheat, sorghum, millet, oat, many weeds (Poaceae, Cyperaceae).
Identity	Fijivirus (now considered as distinct from maize rough dwarf fijivirus which occurs in the Mediterranean region).
Damage	Symptoms similar to maize rough dwarf fijivirus. Most important disease of maize in Argentina. 300,000 ha of maize affected, yield losses reached 120 million USD.
Transmission	Insect vector (*Delphacodes kuscheli*, Homoptera: Delphacidae), apparently not transmitted by seeds.
Pathway	Apparently none if it is not seed transmitted.
Possible risks	Included here because of the importance of the crops concerned and the losses reported. However, not seed transmitted. Limited to Río Cuarto in Argentina. Although the disease is reappearing after several years of 'absence', it has apparently not really spread.

EPPO RS 98/109

Source(s)
- Lenardon, S.L.; March, G.J.; Nome, S.F.; Ornaghi, J.A. (1998) Recent outbreak of 'Mal de Rio Cuarto' virus on corn in Argentina. Plant Disease, 82(4), p 448.
- Rodriguez Pardina, P.E.; Giménez Pecci, M.P.; Laguna, I.G.; Truol, G. (1998) Wheat: a new natural host for the Mal de Río Cuarto virus in the endemic disease area, Río Cuarto, Córdoba Province, Argentina. Plant Disease, 82(2), 149-152.

Panel review date 1999-01 Entry date 1998-06

Potato latent carlavirus (a new potato virus)

Why	Potato latent carlavirus came to our attention as it has recently been found on imported *in vitro* potato plants.
Where	Found in asymptomatic potatoes (*Solanum tuberosum* cv. Red La Soda) imported from USA as *in vitro* plants.
On which plants	Potatoes (*Solanum tuberosum).*
Damage	No symptoms, latent.
Possible identity	A new potato virus tentatively called potato latent carlavirus.
Note	Two more carlaviruses have been recently discovered: potato rough dwarf carlavirus from Argentina and potato virus P from Brazil. More studies are needed on the possible relationships between these carlaviruses.
Pathway	Potatoes from USA.
Possible risks	Potatoes are widely grown in the EPPO region. More data is needed on this virus and other new carlaviruses, on their possible impact on the crop and geographical distribution. This may have implications for the production of virus-free seed potatoes.

EPPO RS 99/027

Source(s) Brattey, C.; George, E.; Burns, R.; Goodfellow, H.A.; Jeffries, C.J.; McDonald, J.G.; Badge, J;L.; Foster, G.D. (1998) A newly described carlavirus infecting potato. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 1.11.33).

Panel review date - Entry date 1999-02

Rice stripe necrosis furovirus (a new virus disease of rice in Colombia)

Why	Rice stripe necrosis furovirus came to our attention because it was reported as new virus disease of rice in Colombia causing serious losses.
Where	Since 1991, the disease has been observed in the eastern plains of Colombia. Rice stripe necrosis furovirus was previously reported only from West Africa. It was first found in 1977 in Côte d'Ivoire, and then in Liberia, Nigeria, Sierra Leone. The virus and its putative fungal vector have now been identified in all the major rice-producing regions of Colombia. It is suspected that this new virus disease may have been introduced into Columbia on rice germplasm material from Africa.
On which plants	Rice (*Oryza sativa*).
Identity	Rice stripe necrosis furovirus (RSNV).
Damage	Infected plants showed striking symptoms. Emerging central leaves are highly deformed, showing a 'zigzag' growth (hence the common name 'entorchamiento': crinkling). Affected leaves show chlorotic or yellow stripes and later become necrotic. Plant growth is severely reduced, and when affected at an early stage, seedlings may die. In Colombia, disease incidence increased from an average of 6 % in 1993 to 18 % in 1994, in areas where it first appeared. Yield losses have been estimated at 20-40 %, and some rice fields in the Eastern plains have even been abandoned.
Pathway	Rice seeds? from Colombia and African countries where it occurs.
Transmission	Probably transmitted by a fungus, *Polymyxa graminis.*
Possible risks	Rice is grown in some parts of the EPPO region, severe losses are reported and movement through germplasm (seeds?) is suspected.

EPPO RS 97/019

Source(s) Hibino, H. (1996) Biology and epidemiology of rice viruses. Annual Review of Phytopathology, 34, 249-274.
Morales, F.J. (1996) Rice virus emerges in Latin America. CARAPHIN News, no. 14, p 4 & 8.
Morales, F.J.; Arroyave, J.A.; Velasco, A.C.; Castano, M. (1995) [Partial characterization of crinkling or necrotic stripe virus on rice in Colombia.] Fitopatologia Colombiana, 19(1), 48-54.

Panel review date 1999-01 Entry date 1997-01

Soybean severe stunt virus (a new and severe disease of soybean)

Why	Soybean severe stunt virus came to our attention because it was reported as a new and severe disease of soybean.
Where	Delaware, USA.
On which plants	Soybean (*Glycine max*).
Damage	Affected plants show shortened internodes resulting in severe stunting, thickened, dark-green mottled leaves and a reduced number of flowers, pods and seeds. Plants may be killed. At present, approximately 60 ha are affected by this disease.
Possible identity	A new soilborne uncharacterized virus, called soybean severe stunt virus.
Transmission	Soybean severe stunt virus is transmitted through soil, and *Xiphinema americanum* is consistently associated with infected plants in the field.
Pathway	Soil. More data needed for soybean (plants for planting? seeds?).
Possible risks	Soybean is an important crop the for EPPO region. Symptoms are severe (yield is most probably affected), but the disease appears for the moment very limited in USA.

EPPO RS 99/027

Source(s) Evans, T.A.; Mulrooney, R.P.; Carroll, R.B. (1998) Characterization and control of soybean severe stunt. A new soilborne virus disease affecting soybean in the USA. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 1.11.37).

Panel review date - Entry date 1999-02

Squash yellow leaf curl virus (new poty-like virus of courgette in Oman)

Why	Squash yellow leaf curl came to our attention because is was reported for the first time in 1998 in Oman as a possibly new poty-like virus of courgette transmitted by *Bemisia tabaci*.
Where	Oman.
On which plants	Courgette. It can also infect: pumpkin, *Luffa aegyptiaca*.
Possible identity	A poty-like virus transmitted by *Bemisia tabaci*.
Damage	Yellow spots, veinal yellowing and leaf curling.
Pathway	Cucurbit plants for planting (vegetables? seeds?) from Oman.
Possible risks	Cucurbits are important crops. Vector is present in the EPPO region. Data is lacking on the severity and extent of the disease in Oman.

EPPO RS 98/107

Source(s) Zouba, A.A.; Lopez, M.V.; Anger, H. (1998) Squash yellow leaf curl virus: a new whitefly-transmitted poty-like virus. Plant Disease, 85(5), 475-478.

Panel review date 1999-01 Entry date 1998-06

Stocky prune nepovirus

Why	Stocky prune nepovirus came to our attention, as it was recently characterized as a new nepovirus affecting plums in France (but the disease has been observed for many years).
Where	In several regions of south-western France.
On which plants	Plums (*Prunus domestica*), particularly Prune d'Ente (used for dried prune production).
Possible identity	A previously unknown virus is associated with the disease, it has been characterized and the name stocky prune nepovirus has tentatively been proposed. Before, it had been diversely named: stocky prune disease, dégénérescence du Prunier d'Ente, maladie du prunier stérile, maladie des pruniers mâles, maladie de Brugères.
Transmission	Epidemiological observations indicates that a soil-borne virus could be responsible of the disease.
Damage	Shortened internodes in spring, chlorotic and rolled leaves, small fruits which drop rapidly.
Pathway	Plum plants for planting and soil from areas in France where it occurs.
Possible risks	Plum is an important fruit crop in Europe. However, this disease has both a limited impact and a limited geographical distribution.

EPPO RS 98/107

Source(s) Candresse, T.; Desvignes, J.C.; Delbos, R.P.; LeGall, O.; Dunez, J. (1997) Characterization of stocky prune virus, a new nepovirus detected in French plums. Abstract of a paper presented at the ISHS XVII International Symposium on virus diseases of fruit trees, Bethesda, US, 1997-06-23/27, p 112-113.

Panel review date 1999-01 Entry date 1998-06

Taino tomato mottle and Havana tomato geminiviruses (new tomato geminiviruses in Cuba)

Why Taino tomato mottle and Havana tomato geminiviruses came to our attention because they were recently reported in Cuba as new tomato geminiviruses (reported in 1995/96 for Taino tomato mottle geminivirus and in 1994 for Havana tomato geminivirus).

- Taino tomato mottle geminivirus

Where Cuba (near Havana)
On which plants Tomato
Possible identity New geminivirus

- Havana tomato geminivirus

Where Cuba (Province of La Habana)
On which plants Tomato
Possible identity New geminivirus
Note They are presented together, because of their similarity. However, nothing can be said now on whether these two new bipartite geminiviruses of tomato are the same or not.
Damage Data is lacking.
Pathway Tomato plants for planting (vegetables?) from infested countries.
Possible risks Tomato is an important crop for the EPPO region. However, data is lacking on the severity and extent of the disease(s), and on transmission (although, it is very probably transmitted by *B. tabaci* - high insect populations in diseased fields). Geminiviruses are reported to cause severe losses on tomatoes in Cuba (but TYLCV occurs there as well). Identity of the pathogen(s) needs to be clarified. [N.B. These viruses are covered by the broad EU category 'viruses transmitted by *Bemisia tabaci'*, but not by EPPO].

EPPO RS 98/011

Source(s) Martinez, Y.; de Blas, C.; Zabalgogeazcoa, I.; Quiñones, M.; Castellanos, E.L.; Peralta, E.L.; Romero; J. (1997) A bipartite geminivirus infecting tomatoes in Cuba. Plant Disease, 81(10), p1215
Ramos; P.L.; Guerra, O.; Peral, R.; Oramas, P.; Guevara, R.G.; Rivera-Bustamante, R. (1997) Taino tomato mottle virus, a new bipartite geminivirus from Cuba. Plant Disease, 81(9), p 1095.

Panel review date 1999-01 Entry date 1998-06

Tomato chlorosis virus (a new tomato virus transmitted by whiteflies)

Why Tomato chlorosis virus came to our attention because it has been reported as a new tomato virus transmitted by whiteflies in USA since 1989.
Where Colorado, Florida, Louisiana (US)
On which plants Glasshouse tomatoes. It can also infect: ornamentals (unspecified).
Damage Irregular chlorotic mottling, interveinal yellow areas on leaves. Similar symptoms as tomato infectious chlorosis virus.
Possible identity Clostero-like virus transmitted by *T. vaporariorum*, *Bemisia tabaci* biotypes A and B, and *T. abutilonea*)
Pathway Tomato plants for planting (vegetables?) from USA.
Possible risks Tomatoes are important for the EPPO region (under glass and outdoors). Insect vectors are present and widespread. [N.B. This virus is covered by the broad EU category 'viruses transmitted by *Bemisia tabaci'*, but not by EPPO].

EPPO RS 98/085, RS 98/210

Source(s) Wisler, G.C.; Duffus, J.E.; Liu, H.-Y.; Li, R.H. (1998) Ecology and epidemiology of whitefly-transmitted closteroviruses. Plant Disease, 82(3), 270-279.
Wisler, G.C.; Li, R.H.; Liu, H.Y.; Lowry, D.S.; Duffus, J.E. (1998) Tomato chlorosis virus: a new whitefly-transmitted, phloem-limited, bipartite closterovirus of tomato. Phytopathology, 88(5), 402-409.

Panel review date 1999-01 Entry date 1998-05

Tomato infectious chlorosis virus (a new tomato virus transmitted by *Trialeurodes vaporariorum)*

Why Tomato infectious chlorosis virus came to our attention because it has been reported as a new tomato virus transmitted by *Trialeurodes vaporariorum* in USA since 1993.
Where several places in California (US), North Carolina (US), Italy (found in one plant in Liguria, observed again in 1995 and 1997 with high populations of *T. vaporariorium*, the virus is found at the end of the season and damage are not very high (details given during the EPPO Panel on Phytosanitary Regulations meeting).
On which plants Tomato (field and glasshouse) (severe yield losses). It can also infect: tomatillo (*Physalis ixocarpa*), potato (*Solanum tuberosum*), artichoke (*Cynara scolymus*), lettuce (*Lactuca sativa*) and petunia (*Petunia* hybrida).

Damage	Affected tomato plants show interveinal yellowing, necrosis, and severe yield losses. 2 million USD losses were reported in tomato fields of Orange county, California, in one season.
Possible identity	Clostero-like virus transmitted by *Trialeurodes vaporariorum* (but not by *Bemisia tabaci*) designated as tomato infectious chlorosis virus
Pathway	Tomato plants for planting (vegetables?) from Italy, USA.
Possible risks	Crops concerned are important for the EPPO region (under glass and outdoors). Insect vector is present and widespread. Severe symptoms and losses are reported. More data are needed on the situation in Italy (samples from Italy were found positive by US researchers). [N.B. Since *Bemisia tabaci* is not a vector, this tomato virus is not covered by the broad EU category 'viruses transmitted by *Bemisia tabaci*].

EPPO RS 97/035, RS 98/085, 98/086

Source(s)

Duffus, J.E.; Liu, H.Y.; Wisler, G.C. (1996) Tomato infectious chlorosis virus - a new clostero-like virus transmitted by *Trialeurodes vaporariorum*. European Journal of Plant Pathology, 102(3), 219-226.

Li, R.H.; Wisler, G.C.; Liu, H.Y.; Duffus, J.E. (1998) Comparison of diagnostic techniques for detecting tomato infectious chlorosis virus. Plant Disease, 82(1), 84-88.

Wisler, G.C.; Duffus, J.E.; Liu, H.-Y.; Li, R.H. (1998) Ecology and epidemiology of whitefly-transmitted closteroviruses. Plant Disease, 82(3), 270-279.

Panel review date 1999-01 Entry date 1997-02

Wheat China mosaic furovirus (a new virus of wheat in China)

Why	This virus came to our attention because it causes a soil-borne disease in Shandong province, China. It has been observed for the last 20 years and causes yield losses (commonly 10-30 % and up to 70% in some cases). It appears to be a new virus (distinct from wheat soil-borne mosaic furovirus) for which the name wheat China mosaic furovirus has been proposed.
Where	China (Shandong province).
On which plants	Wheat.
Damage	The disease is characterized by light chlorotic streaking on the youngest leaves and bright yellow chlorotic streaking on older leaves or purple chlorotic stripes on some local wheat cultivars. Infected plants are severely stunted, wilt and later die.
Transmission	The virus is associated with *Polymyxa graminis* (presumed vector).
Pathway	Infected soil from China, seeds? (no data on seed transmission).
Possible risks	Wheat is an important crop in Europe. More data is needed on the transmission of the disease and its geographical distribution (is it present elsewhere in China? outside China?).

EPPO RS 99/127

Source(s)

Ye, R.; Zheng, T.; Chen, J.; Diao, A.; Adams, M.J.; Yu, S.; Antoniw, J.F. (1999) Characterization and partial sequence of a new furovirus of wheat in China. Plant Pathology, 48(3), 379-387.

Panel review date - Entry date 1999-07

Wheat high plains virus (a new disease of maize and wheat in USA)

Why	The High Plains disease came to our attention because it has been reported as a new disease of maize and wheat in USA since 1993.
Where	High Plains (US) (from the Texas panhandle to eastern Nebraska, to central South Dakota, to western Idaho and back through Colorado to eastern New Mexico and Texas) and in Florida (on sweet corn samples). It has also been found on samples of sweet corn from Brazil and Chile. Preliminary results of tests tend to suggest that the High Plains virus occurs in other countries from other parts of the world, but this awaits confirmation.
On which plants	Maize and wheat (severe symptoms). It can also infect: barley, oat, rye and grasses like *Bromus secalinus*, *Setaria glauca*, *Setaria viridis*.
Damage	Stunting, chlorosis with flecking or streaking, reddening of leaf margins on maize. In severe cases, mortality has been observed. Chlorotic spots, mosaic, general yellowing on wheat.
Possible identity	Thought to be a virus, not yet identified. It is suggested that it could be a member of a possibly new group of pathogens transmitted by eriophyid mites and which produce large double membrane-bound bodies in infected cells. This group of pathogens could include fig mosaic, rose rosette, thistle mosaic, redbud yellow ringspot and wheat spot mosaic virus.

Transmission	May be vectored by the wheat curl eriophyid mite (*Aceria tosichella)*.
Pathway	None if not seed-transmitted.
Possible risks	Cereals are important crops. Symptoms can be severe. Gramineous weeds can carry the pathogen. The vector *Aceria tosichella* occurs in Europe (at least in a few countries: more data needed). Seed transmission?

EPPO RS 97/070, 98/215, 99/026

Source(s)

Jensen, S.G.; Seifers, D.L. (1996) A new disease of maize and wheat in the High Plains. Plant Disease, 80(12), 1387-1390.

Jensen, S.G.; Fithian, W.A.; Berry, J.A.; Ball, E.M.; Hall, J.S. (1998) The high plains virus, representative of a new viral group with possible world wide distribution. Abstracts of papers presented at the 7th International Congress of Plant Pathology, Edinburgh, GB, 1998-08-09/16 (Abst. 6.160).

Seifers, D.L.; Harvey, T.L.; Martin, T.J.; Jensen, S.G. (1998) A partial host range of the High Plains virus of corn and wheat. Plant Disease, 82(8), 875-879.

Panel review date 1999-01 Entry date 1997-04