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2004/114 Desert locust outbreak

The North African EPPO countries are threatened by serious desert locust infestation (*Schistocerca gregaria* - Orthoptera: Acrididae) in the coming year. This serious desert locust outbreak started in 2003, and is probably caused by the abundant rains which fell in summer 2003 throughout much of West Africa. The observation network of the Desert Locust Control Committee has shown over 2 million ha of infested areas in Saharan countries, of which 1.6 million ha in Mauritania. The locusts can be expected to multiply, swarm and invade North Africa in spring 2005. In August 2004, FAO indicated that the situation deteriorated further in the Sahel in West Africa, as swarms continued to arrive from North West Africa and laid eggs in Mauritania, Senegal, Mali, Niger, Burkina Faso and probably Chad. Hatching occurred and numerous hopper bands formed during August. Significant crop damage was reported in many countries. Insecticide treatments of these areas are being applied now, and for this summer have so far concerned approximately 100,000 ha in Algeria, Burkina Faso, Mali, Mauritania, Morocco, Niger, and Senegal. Treatment teams from Algeria, Morocco and Tunisia are taking part in the campaign further south. In all, nearly 6.5 million ha have been treated since the beginning of the outbreak in October 2003. Funding is actively being sought to complete the required treatments, only about one third (i.e. 37 million) of the total 100 million USD is currently available. Even more significant is the availability of equipment which can be mobilized immediately. Current capacity is only a third of what is needed and FAO stressed that international assistance was desperately required to prevent the situation from deteriorating further. It is particularly important to disrupt the next locust breeding cycle in October.

Source: Personal communication with M. Moumen (Chairman of the Control Committee), NPPO of Algeria, 2004-09.

FAO, web site. Desert Locust Information Service.
<http://www.fao.org/news/global/locusts/locuhome.htm>

Additional key words: outbreak

Computer codes: SHICGR



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2004/115 *Diabrotica virgifera* detected in Ile de France (FR)

In France, within the framework of the national survey programme initiated in 1999, 67 adult specimens of *Diabrotica virgifera* (Coleoptera: Chrysomelidae – EPPO A2 list) were caught at Pierrelay (department Val d'Oise, region Ile de France) during summer 2004. Their identity was confirmed by the National Laboratory of Entomology. Pierrelay is located within the buffer zone of the 2002 focus which was found near Roissy (see EPPO RS 2002/139). Phytosanitary measures are being implemented according to French phytosanitary regulations (national decree of compulsory control of 2002-08-22 modified in 2004-07-13 and internal instructions given by the French NPPO). A focus zone of 5 km radius, surrounded by a security zone and a buffer zone of 10 km and 40 km radius, respectively, will be delimited. Chemical treatments will also be applied. It is noted that parts of the security zone of the 2002 focus around Roissy are parts of the new security zone, and that the new buffer zone is at the border of 3 French administrative regions: Ile de France, Haute Normandie and Picardie.

Source: **NPPO of France, 2004-08.**

Additional key words: detailed record

Computer codes: DIABVI, FR

2004/116 Current situation of *Diabrotica virgifera* in United Kingdom

The NPPO of United Kingdom informed the EPPO Secretariat of new findings of *Diabrotica virgifera* (Coleoptera: Chrysomelidae – EPPO A2 list) during summer 2004. Beetles have been trapped within all 3 focus zones (of 1 km radius) established after the findings made in 2003 (see EPPO RS 2003/115 and 2004/058). The focus zones are near Slough and Windsor in Berkshire, and near Gatwick in West Sussex. In 2004, the first finding was made near Windsor on the 25th of August. The traps set up within these areas are being subject to close monitoring. In the wide national survey, traps are due to be inspected from early September onwards.

Source: **NPPO of United Kingdom, 2004-09.**

Additional key words: detailed record

Computer codes: DIABVI, GB



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2004/117 Eradication of *Spodoptera litura* in Germany

In 2002, the presence of *Spodoptera litura* (Lepidoptera: Noctuidae – EPPO A1 list) was detected in a glasshouse of a company producing aquarium plants in Baden-Württemberg (see EPPO RS 2003/025). The German NPPO now informs the EPPO Secretariat that the pest has been eradicated. No other occurrence has been detected since, neither in Baden-Württemberg nor in other regions.

The pest status for *Spodoptera litura* is declared by Germany as follows: **Absent, eradicated.**

Source: **NPPO of Germany, 2004-08.**

Additional key words: eradication

Computer codes: PRODLI, DE

2004/118 New data on quarantine pests and pests of the EPPO Alert List

By browsing through the CABI Abstracts, the EPPO Secretariat has extracted the following new data concerning quarantine pests and pests included on the EPPO Alert List. The situation of the pest concerned is indicated in bold, using the terms of ISPM no. 8.

- **New records**

Beet necrotic yellow vein benyvirus (EPPO A2 list) occurs in Ukraine (Nurmukhammedov & Vasil'eva, 2003). **Present, no details.**

In Moldova, the first outbreaks of *Erwinia amylovora* (EPPO A2 list) were recorded in 1996 and 1997. Severe outbreaks were observed throughout the country and led to destruction of apple and pear orchards. Despite strict phytosanitary measures, local outbreaks of the disease have been reported consistently from numerous fruit-growing areas (Nicolaev *et al.*, 2002). **Present, no details.**

Iris yellow spot virus (EPPO Alert List) was detected for the first time in Australia, infecting onions and leeks (Coutts *et al.*, 2003). **Present, no details.**

Phytophthora fragariae (EPPO A2 list) was found for the first time in India, in October 2000 on strawberry plants growing in the region of Solan, Himachal Pradesh (Bhardwaj & Gupta, 2002). **Present, found in 2000 in Himachal Pradesh.**



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In Belarus, strawberry mother plants grown at a research institute were tested by ELISA for the presence of viruses. The following viruses were detected: *Arabis mosaic nepovirus* (EU Annexes), *Raspberry ringspot nepovirus* (EPPO A2 list), *Tomato black ring nepovirus* (EU Annexes), *Tomato ringspot nepovirus* (EPPO A2 list) and *Strawberry latent ringspot virus* (EU Annexes). The EPPO Secretariat had previously no data on the occurrence of these viruses in Belarus (Semanas, 2002).

Stenocarpella macrospora (EPPO A2 list) occurs in maize crops in Uganda (Bigirwa *et al.*, 2002). **Present, no details.**

Tomato yellow leaf curl begomovirus (EPPO A2 list) occurs in Nepal (Malla *et al.*, 2002). **Present, no details.**

- **Detailed records**

In Mexico, *Claviceps africana* (EPPO Alert List) is spreading. It is now present in Coahuila, Colima, Nayarit, Nuevo Leon, Morelos and Sonora states (Velásquez-Valle *et al.*, 2001).

In 2003, *Erwinia amylovora* (EPPO A2 list) was reported for the first time in Piemonte, Italy, on *Cotoneaster* (Gianetti *et al.*, 2004).

Ralstonia solanacearum race 3 / biovar 2 (EPPO A2 list) was observed, in April 2002, in a commercial plantation of *Pelargonium zonale* in the state of Sao Paulo, Brazil (Almeida *et al.*, 2003).

Tomato yellow leaf curl begomovirus (TYLCV - EPPO A2 list) occurs in Kyushu, Japan. The virus found showed 98 % similarity with TYLCV-Is (Onuki *et al.*, 2004).

Xanthomonas vesicatoria (EPPO A2 list) is considered as one of the limiting factors for tomato and capsicum production in Sinaloa, Mexico (Carrillo-Fasio *et al.*, 2001).

Xanthomonas vesicatoria (EPPO A2 list) occurs in Himachal Pradesh, India (Shukla *et al.*, 2003).

- **New host plants**

During a study on viruses of forest trees done in Argentina, *Tobacco ringspot nepovirus* and *Tomato ringspot nepovirus* (both EPPO A2 list) were detected on *Fraxinus americana* (Dal Bó *et al.*, 2003).

Source: Almeida, I.M.G.; Destéfano, S.A.; Rodrigues Neto, J.; Malavolta Júnior, V.A. (2003) Southern bacterial wilt of geranium caused by *Ralstonia solanacearum* biovar2/race 3 in Brazil. Revista de Agricultura (Piracicaba), 78(1), 49-56. In Review of Plant Pathology, 82(12) December 2003, abst. 9965, p 1571.
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Additional key words: new records, detailed records,
new host plants

Computer codes: ARMV00, BNYVV0, CLAVAF,
DIPDMC, ERWIAM, IYSV00, PHYTFR, PSDMSO,
RPRSV0, SLRSV0, TBRV00, TORSV0, TRSV00,
TRSV00, TYLCV0, XANTVE, AR, AU, BR, BY, IN,
IT, MD, MX, UA, UG



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2004/119 Invasive plants: addition of *Senecio inaequidens* and two *Ludwigia* species to the EPPO Alert List

During its studies, the EPPO Panel on Invasive Alien Species decided that *Ludwigia peploides*, *L. uruguayensis* and *Senecio inaequidens* should be added to the EPPO Alert List, as they have already shown a high potential of invasiveness.

Ludwigia peploides and *L. uruguayensis* (= *L. grandiflora*) (Onagraceae – water primroses)

Why	During its studies, the EPPO Panel on Invasive Alien Species decided that <i>Ludwigia peploides</i> and <i>L. uruguayensis</i> should be added to the EPPO Alert List. In particular, their invasiveness has clearly been demonstrated in France during the last 20-30 years.
Description	Perennial aquatic plants which form very dense (almost impenetrable) mats. <i>L. peploides</i> and <i>L. uruguayensis</i> are morphologically very similar and are difficult to differentiate in the absence of flowers. Stems are glabrous to sparsely pubescent. They grow horizontally on water (or mud) and can emerge over the water surface. Leaves are alternate and polymorphic. Early growth consists of rosette-like clusters of rounded leaves on the water surface. At flowering, leaves lengthen to a lanceolate or elliptic shape. Two types of roots are observed: roots which adsorb nutrients and attach the plant to the soil, and adventitious roots located along the stems which ensure oxygen uptake and favour rooting of plant fragments (cuttings). Both species have bright yellow flowers (2-5 cm diameter) with 5 petals, growing from the leaf axils (in France, flowering occurs from June to September). Fruit is a cylindrical capsule of 13-25 mm long and 3-4 mm wide with 5 loculi containing numerous seeds of 1.5 mm. <i>Ludwigia</i> spp. can grow up to 3 m deep in water, and up to 80 cm above water level. These plants have also shown a rather good resistance to frost in Europe. Pictures can be viewed on Internet: http://www.corela.org/documents/2004-09jussies.pdf http://isaisons.free.fr/jussie.htm
Where	<i>L. peploides</i> and <i>L. uruguayensis</i> originate from South America, and they can now be found in North America, Africa, Australia and Europe. Data on their geographical distribution is lacking and complicated by the fact that the genus <i>Ludwigia</i> is under revision. As a consequence, the following distribution is only preliminary. EPPO region: Belgium (few sites), Italy, France (introduced in the 1820-1830s, they remained for a long time within the southern part of France from Camargue to Aquitaine, but they are now spreading towards the north), Netherlands (few sites), Spain (<i>L. grandiflora</i> is mentioned in Flora Iberica), Switzerland (<i>L. grandiflora</i> was observed for the first time in canton of Geneva in summer 2002), United Kingdom (recorded as present but apparently not as an invasive). Both species of <i>Ludwigia</i> are regulated in Portugal (Ministry of Agriculture). North America: USA (both species are present in many states, see USDA Plant profiles for more details). South America and Caribbean: Argentina (<i>L. peploides</i>), Cuba (both species). Oceania: Australia (<i>L. peploides</i>), Chile (<i>L. peploides</i>).
Habitat	Slow-flowing waterways, lakes, ponds, ditches. <i>Ludwigia</i> spp. are also able to colonize river banks and humid pastures (probably due to their high content of saponins and calcium oxalate they are poorly consumed by herbivorous animals).
Damage	The rapid and extensive development of plant populations can block waterways (and thus disturb many human activities such as navigation, hunting, fishing, irrigation and drainage), reduce biodiversity and degrade water quality. Studies done in France have shown that <i>Ludwigia</i> species were able to produce rapidly a high biomass (up to 2 kg of dry matter per m ²). Biomass could double in 15 to 20 days in slow-flowing waters, and in 70 days in rivers. As an example, populations of <i>Ludwigia</i> spp. in Marais d'Orx (FR) occupied a few m ² in 1993 and



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	reached 130 ha in 1998. In France, these species are considered as dangerous invaders in aquatic or humid environments.
Dispersal	Fragmentation of stems is the main mode of dispersal of <i>Ludwigia</i> spp. The role of seeds remains to be studied further (viable seeds were able to germinate in laboratory conditions but no data has yet been obtained in outdoor conditions). It is suspected that humans and birds are responsible for plant dissemination between waterways. Over long distances, trade for ornamental purposes (aquarium and ponds) can obviously ensure their dissemination.
Pathway	Plants for planting of <i>L. peploides</i> and <i>L. uruguayensis</i> (soil/water containing viable plant fragments or seeds?).
Possible risks	Control is very difficult (mechanical control is possible but care should be taken not to produce more fragments which may disseminate the plants further, herbicides are available but their use in the natural environment is difficult). At least in France, <i>L. peploides</i> and <i>L. uruguayensis</i> have shown a high potential for invasiveness. Further spread of these two species should be avoided.
Source(s)	Cordo, H.A.; DeLoach, C.J. (1982) The flea beetle, <i>Lysathia flavipes</i> , that attacks <i>Ludwigia</i> (water primrose) and <i>Myriophyllum</i> (parrotfeather) in Argentina. <i>Coleopterists Bulletin</i> , 36(2), 298-301 (abst.) Ramirez, C.; San Martin, J.; San Martin, C.; Contreras, D. (1991) The chemical composition and energetic content of the biomass of weeds in rice fields in central Chile. <i>Turrialba</i> , 41(4), 551-563. Rostanski, K. (1993) The occurrence of the species of the genus <i>Ludwigia</i> in Cuba. 36th geobotanical seminar on Polish geobotanical investigations abroad, Warsaw, PL, 1991-03-15/16. <i>Wiadomosci Botaniczne</i> , 37, 3-4 (abst.). Vauthey, M.D.; Jeanmonod, D.; Charlier, P. (2003) La jussie – <i>Ludwigia grandiflora</i> (Michx.) Greuter & Burdet – Une nouvelle espèce pour la Suisse et un nouvel envahisseur. <i>Saussurea</i> , 33, 109-117 (abst.). INTERNET Agence Méditerranéenne de l'Environnement – Fiche no. 11. <i>Ludwigia</i> spp. http://www.ame-lr.org/plantesenvahissantes/ Belgian portal site for information exchange in the field of biological diversity. Invasive species. http://www.biodiversity.be/bbpf/forum/invasion/invspecies.html Cemagref (FR) web site. Les jussies. http://www.cemagref.fr/Informations/Ex-rechr/systemes-aqua/Jussies/Jussies-chapo.htm Conservatoire et jardin botanique de la ville de Genève (CH). Jussie à grande fleurs. http://www.cjb.unige.ch/conservation/jussie.html Conservatoire régional des rives de la Loire et de ses affluents – juin 2004-09-08. Fiche technique. Les jussies. http://www.corela.org/documents/2004-09jussies.pdf Home Page of the Washington State Noxious Weed Control Board (US) – Water primrose. http://www.nwcb.wa.gov/weed_info/primrose.html International Commission on irrigation and drainage – Aquatic weeds and their management by Lancar & Krake, March 2002. http://www.icid.org/weed_report.pdf Ministry of Agriculture, PT. Decreto-Lei n.º 565/99. DR 295/99 SÉRIE I-A de 1999-12-21. Ministério do Ambiente Regula a introdução na natureza de espécies não indígenas da flora e da fauna. http://www.idrha.min-agricultura.pt/ruris/legislacao/dl_565_99.htm Flora Iberica. http://www.rjb.csic.es/floraiberica/ Rothamsted Research Station (UK) Annual report 2001 of the Centre for Aquatic Plant Management. http://www.rothamsted.bbsrc.ac.uk/pie/JonathanGrp/Annual_Report_2001.pdf USDA Natural Resources Conservation Service. Plant Profiles. <i>Ludwigia peploides</i> , <i>L. uruguayensis</i> . http://plants.usda.gov

EPPO RS 2004/119

Panel review date

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Entry date 2004-08

Senecio inaequidens (Asteraceae – narrow-leaved ragwort or South African ragwort)

Why	During its studies, the EPPO Panel on Invasive Alien Species decided that <i>Senecio inaequidens</i> should be added to the EPPO Alert List, as this species is still spreading at a rapid pace within Europe.
Description	Perennial plant 40 to 110 cm high, woody at the base. Leaves are alternate, narrow and linear (3 to 14 cm long) and irregularly toothed. Flowers are bright yellow (capitula of 18 to 25 mm diameter with 12 to 14 ligules and numerous disc florets). Achenes of 2 mm with a white pappus are produced in large numbers. <i>S. inaequidens</i> has a high reproductive potential. It is estimated that more than 10,000 seeds are produced per plant and per year, and that seeds may remain viable in the soil for 30-40 years. Germination is rapid and massive, and can take place during most of the year. Germination is also favoured by compacted soils.



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	<p>Pictures can be viewed on Internet http://www.univ-lehavre.fr/cybernat/pages/seneineq.htm</p>
Where	<p><i>S. inaequidens</i> originates from South Africa, and was introduced into Europe with imports of wool. Its presence was first recorded in 1889 in Germany, 1922 in Belgium, 1928 in Scotland, 1935 in France and 1947 in Italy. From these foci, <i>S. inaequidens</i> started to spread to other European countries in the 1970s.</p> <p>EPPO region: Andorra, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, United Kingdom (including Northern Ireland).</p> <p>Africa: Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland.</p> <p>South America: Argentina, Colombia (unconfirmed), Mexico (probably a recent introduction).</p>
Habitat	<p><i>S. inaequidens</i> has a wide range of habitats but it prefers well-drained and disturbed soils. It can be found from coastal to mountain areas (up to 1900 m altitude). It grows along roads and railways, river banks, wastelands. It is also found in forests (in open places after logging or a fire), in crops (particularly grapevine), fallows, pastures. It can survive in most soils (even salty), it can stand hot and dry summers and overwinter in areas where temperatures reach -15°C.</p>
Damage	<p><i>S. inaequidens</i> is considered as an invasive species. Its dense populations may reduce biodiversity. However, the impact on biodiversity would need further studies, as <i>S. inaequidens</i> often colonizes ruderal habitats as a 'pioneer' plant. In addition, it has been reported as a weed in vineyards and pastures (as it contains toxic alkaloids, it is not eaten by animals).</p>
Dispersal	<p>Dispersal is ensured by achenes which are produced in large numbers. Achenes are mainly transported by wind, but also by water, animals and human activities (especially railways). In addition, vegetative propagation can occur by rooting of stems that touch the ground.</p>
Pathway	<p>Soil containing viable seeds of <i>S. inaequidens</i>. It seems that <i>S. inaequidens</i> is a successful hitch-hiker which can be transported by various 'hosts' (containers, vehicles, agricultural machinery, wool, animals...)</p>
Possible risks	<p>In Europe, <i>S. inaequidens</i> has shown its ability to spread and develop large populations in many different habitats. Control measures are available (mechanical or chemical control, studies are needed to assess the efficacy of the aphid <i>Aphis jacobaeae</i> against <i>S. inaequidens</i> as a biocontrol agent) but may not be easy to apply in practice. It is considered as a weed in vineyards and pastures. Further studies are needed on its impact on biodiversity.</p>
Source(s)	<p>CABI Crop Protection Compendium, 2004. Rzedowski, J.; Vibrans, H. Calderon de Rzedowski, G.; (2003) <i>Senecio inaequidens</i> D.C. (Compositae, Senecioneae), a harmful weed introduced into Mexico. Acta Botanica Mexicana, no. 63, 83-96 (abst.). Villaseñor, J.L.; Espinosa-Garcia, F.J. (2004) The alien flowering plants of Mexico. Diversity and Distributions, 10, 113-123. INTERNET Agence Méditerranéenne de l'Environnement – Fiche no. 15. <i>Senecio inaequidens</i>. http://www.ame-lr.org/plantesenvahissantes/ Conservatoire et jardin botanique de la ville de Genève (CH). Sénéçon du Cap. http://www.cjb.unige.ch/conservation/senecio.html Flora of Northern Ireland. http://www.habitas.org.uk/flora/species.asp?item=4377</p>

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2004/120 Details on the situation of *Citrus tristeza closterovirus* and its vector *Toxoptera citricida* in Belize

Citrus tristeza closterovirus (CTV - EPPO A2 list) was discovered in Belize in 1984, on 74 sites in the Stann Creek Valley. Several surveys have been carried out since then. In 1993, a survey showed that 14.9% of samples were positive for CTV mild strains and 4 % for the severe strains. Since the discovery of CTV, growers have been advised to use CTV-tolerant rootstocks. In 1994, a certification programme was initiated. In 1996, the presence of *Toxoptera citricida* (Homoptera: Aphididae - EPPO A1 list), which is an efficient vector, was noticed on Belize. This introduction initiated further studies on the situation of CTV, in particular in orchards of citrus grafted on sour orange rootstocks (*Citrus aurantium*). Four plots of Valencia orange grafted on sour orange rootstocks were selected on the basis for their high and low CTV infection levels. Observations and tests were done during a six-year period (1997 to 2003). Results showed fluctuations in infection levels but no decline symptoms were observed in the tested plots. It is noted that the impact of CTV spread by *T. citricida* has varied among Caribbean countries. In Jamaica, a widespread decline of trees grafted on sour orange was observed soon after the introduction of the aphid. In Dominican Republic, only mild strains were detected after the introduction of *T. citricida*. However, in 1996 severe strains started to be detected and decline symptoms were observed in 1998, which may indicate that the severe strains were introduced after the vector.

Source: Manzanero Majil, V. (2004) *Citrus tristeza virus* (CTV): its development in Belize.
Caraphin News, no. 24, June 2004, 1-4.

Additional key words: detailed record

Computer codes: CTV000, BZ



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2004/121 Tomato fruits may be a pathway for *Tomato yellow leaf curl begomovirus*

Tomato yellow leaf curl begomovirus (TYLCV – EPPO A2 list) was initially found in eastern Mediterranean areas and it then spread to many different parts of the world. At present, in Europe, phytosanitary measures designed to prevent its further spread are focused on vegetative plant parts and more particularly on imported tomato seedlings produced in nurseries in countries where TYLCV occurs. No measures are required for imports of tomato fruits. However, a survey conducted by the French NPPO in 2000 showed that 50% of tomato fruits imported into France from Mediterranean countries were infected by TYLCV. Studies were done on Réunion to verify whether tomato fruits could act as a reservoir of TYLCV from which *Bemisia tabaci* would be able to acquire and spread the virus. In 2002, the presence of TYLCV in tomato fruits imported into Réunion from infested Mediterranean countries was tested (using DNA dot-blot analysis) and transmission studies with *B. tabaci* were made in the laboratory. Results showed that TYLCV was present in 57% of imported tomato fruits, and that it was present with a high titre. Transmission studies showed that *B. tabaci* could survive more than 12 h on the fruits (but 100 % mortality was reached after 48 h) and that it could acquire and transmit TYLCV to healthy tomato plants. Although these studies remain preliminary, they showed that tomato fruits may be a pathway for spreading TYLCV. This potential risk needs to be further assessed, but in the meantime it could be recommended to avoid dumping unmarketable infected fruits near tomato crops.

Source: Delatte, H.; Dalmon, A.; Rist, D.; Soustrade, I.; Wuster, G.; Lett, J.M.; Goldbach, R.W.; Peterschmitt, M.; Reynaud, B. (2003) *Tomato yellow leaf curl virus* can be acquired and transmitted by *Bemisia tabaci* (Gennadius) from tomato fruit.
Plant Disease, 87(11), 1297-1300.

Additional key words: epidemiology

Computer codes: TYLCV0, BEMITA



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2004/122 A virus has been found in association with strawberry pallidosis disease

The etiology of pallidosis, a latent disease of strawberry identified more than 45 years ago remains unknown. Pallidosis was first reported in California (US) and Australia in 1957. Since then, it has been found in eastern Canada, Arkansas and Maryland (US). Recent studies in USA, have revealed the presence of a crinivirus associated with the disease. This virus is tentatively called Strawberry pallidosis associated virus (SpaV). In addition, an RT-PCR test has been developed to detect it specifically in strawberry material.

EPPO note: Pallidosis has never been reported from Europe. Its agent is graft-transmissible and in the EPPO certification scheme for strawberry (PM 4/11(1)), when starting with imported material, it was recommended to verify its absence using *Fragaria virginiana* indicators (UC-10 and UC-11).

Source: Tzanetakis, I.E.; Halgren, A.B.; Keller, K.E.; Hokanson, K.C.; McCarthy, P.L.; Martin, R.R. (2004) Identification and detection of a virus associated with strawberry pallidosis disease.
Plant Disease, 88(4), 383-390.

Additional key words: etiology, certification scheme

2004/123 *Cylindrocladium buxicola* is a new disease of *Buxus*: addition to the EPPO Alert List

As reported in EPPO RS 2003/041, a blight disease of *Buxus* caused by a newly described fungus, *Cylindrocladium buxicola*, has been observed in United Kingdom and New Zealand. As this fungus is being reported from other European countries, it was felt useful to add it to the EPPO Alert List.

Cylindrocladium buxicola (a new leaf and twig blight of *Buxus*)

Why	A new blight disease of <i>Buxus</i> species was observed in the 1990s in UK and in New Zealand. The causal agent was identified as a new fungal species <i>Cylindrocladium buxicola</i> . More recently, this disease has been found in other European countries.
Where	In UK, the disease was discovered in a nursery in Hampshire in late 1994. No new records were reported until 1997 when a sudden outbreak of the disease was noticed. Today, the disease is considered as widespread in UK. In New Zealand, the disease was first reported in 1998. Isolates collected from UK and New Zealand were compared, and it was found that they belonged to the same species (<i>C. buxicola</i>) and showed very little variation (suggesting that these derived from one clone). The origin of this new fungus remains unknown, but it is hypothesized that it has been introduced recently to Europe (and then to New Zealand). In autumn 2000, a similar disease of <i>Buxus</i> was observed in private gardens in Belgium, and <i>C.</i>



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	<p><i>buxicola</i> was identified as the causal agent. Since then, more samples were received from other Belgian sites, nurseries and garden centres, indicating that the disease is spreading.</p> <p>EPPO region: Belgium (first found in 2000), France (according to Crepel & Inghelbrecht, a similar disease is observed in France), UK (widespread throughout the country with an increasing incidence).</p> <p>Oceania: New Zealand.</p>
On which plants	<i>Buxus sempervirens</i> (especially cv. Suffruticosa), <i>B. microphylla</i> and <i>B. sinica</i> .
Damage	Symptoms of the disease are dark brown spots on the leaves which eventually coalesce to cover the whole leaf, black streaks on the stems and severe defoliation. Black streaks on the stems appear to progress from the bottom to the top of the plants. Apparently, no plant death has been recorded so far. <i>C. buxicola</i> is often found with a second pathogen <i>Pseudonectria rousseliana</i> anamorph <i>Volutella buxi</i>) causing dieback, but the two diseases also occur independently.
Dissemination	More data is needed on the biology of the fungus. However, if it is similar to other <i>Cylindrocladium</i> species, it may produce resting spores and survive in fallen leaves. These resting spores could be spread by soil, water splashes, animals and gardeners.
Pathway	Plants for planting of <i>Buxus</i> , soil?
Possible risks	<i>Buxus</i> are commonly planted in European gardens (parterres, hedges, topiary work). Data is lacking on possible control methods. Pruning of infected twigs, and destruction of fallen leaves could help to reduce the inoculum. Apparently, no tree death is reported but the disease seriously affects the appearance of <i>Buxus</i> , a plant which is essentially used for ornamental purposes. The introduction of such a new disease could represent a threat to nurseries, parks and gardens.
Source(s)	Crepel, C.; Inghelbrecht, S. (2003) First report of blight on <i>Buxus</i> spp. caused by <i>Cylindrocladium buxicola</i> in Belgium. <i>Plant disease</i> , 87(12), p 1539. Henricot, B.; Culham, A. (2002) <i>Cylindrocladium buxicola</i> , a new species affecting <i>Buxus</i> spp., and its phylogenetic status. <i>Mycologia</i> , 94(6), 980-997. Henricot, B.; Pérez Sierra, A.; Prior, C. (2000) A new blight disease on <i>Buxus</i> in the UK caused by the fungus <i>Cylindrocladium buxicola</i> . <i>Plant Pathology</i> , 49, p 805. INTERNET Henricot, B. (2003) <i>Cylindrocladium buxicola</i> , a new fungal species causing blight on <i>Buxus</i> spp. and its phylogenetic status. Poster presented at the 8th International Congress of Plant Pathology, 2003-02-02/07, Christchurch, New Zealand. http://www.forestresearch.co.nz/topic.asp?docid=1494&title=ICPP%20Poster%20Index&contenttype=summary&topic=ICPP%20Poster%20Index Royal Horticultural Society (UK). Research projects: plant pests and diseases. http://www.rhs.org.uk/research/project_pandd.asp

EPPO RS 2004/123
Panel review date -

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2004/124 Geminiviridae taxonomy

A paper written by Fauquet & Stanley (2003) provides a recent update on geminivirus taxonomy and classification. Virus taxonomy has become progressively more complex, and this is particularly true for geminiviruses. Traditionally host plant names and symptoms were used to name viruses, but due to the exponentially growing number of newly described geminiviruses on the basis of their complete genomic sequences, possibilities for naming them are rapidly running out. For example, many viruses have been referred to generically as tomato yellow leaf curl and tomato leaf curl although they are known to be quite distinct entities. Therefore a new nomenclature has been proposed. Species names are written in italic (with a capital) and English vernacular names are used. To provide additional names it was agreed to add the location from where the virus was isolated. If needed, descriptors can also be added to the virus name to provide more information concerning the exact origin of a specific isolate or its particular symptom phenotype (e.g. mild or severe). Tentative species are not italicized.

So far, the Geminiviridae family includes the following genera (accepted by ICTV):

Genus	Number of species	Characteristics	Type species
<i>Mastrevirus</i>	12 species + 2 tentative species	Single genomic component encoding 4 proteins, infect monocotyledonous plants (with 2 exceptions), transmitted by leafhoppers	<i>Maize streak virus</i>
<i>Curtovirus</i>	3 species + 1 tentative species	Single genomic component encoding 7 proteins, infect dicotyledonous plants, transmitted by leafhoppers	<i>Beet curly top virus</i>
<i>Begomovirus</i>	76 species + 8 tentative species	Either one genomic component encoding 6 proteins, or two genomic components encoding 5-6 (DNA A) and 2 (DNA B) proteins, infect dicotyledonous plants, transmitted by whiteflies	<i>Bean golden mosaic virus</i> from Puerto Rico
<i>Topocuvirus</i>	1 species	Single genomic component encoding 6 proteins, infect dicotyledonous, transmitted by treehoppers	<i>Tomato pseudo curly-top virus</i>

The problems of species demarcation criteria, inter-species recombination, classification and phylogeny of geminiviruses are also discussed in this paper. An updated list of species and tentative species in the family Geminiviridae (agreed by the ICTV Geminiviridae Study Group) is included in this paper. The EPPO Secretariat has extracted from it, the begomoviruses causing leaf curl diseases of tomatoes. Tomato yellow leaf curl virus was added to the EPPO A2 list some years ago. As many new virus species have been described causing similar symptoms, it may be necessary at some point to decide whether the whole group of viruses causing leaf curl diseases of tomatoes should be regulated or whether only some species among this group should be selected for regulations.



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Tomato leaf curl Bangalore virus
Tomato leaf curl Bangladesh virus
Tomato leaf curl Gujarat virus
Tomato leaf curl Karnataka virus
Tomato leaf curl Laos virus
Tomato leaf curl Malaysia virus
Tomato leaf curl New Delhi virus
Tomato leaf curl Philippines virus
Tomato leaf curl Sri Lanka virus
Tomato leaf curl Sudan virus
Tomato leaf curl Taiwan virus
Tomato leaf curl Vietnam virus
Tomato leaf curl virus
Tomato severe leaf curl virus
Tomato leaf curl India virus
Tomato leaf curl Indonesia virus
Tomato leaf curl Nicaragua virus
Tomato leaf curl Senegal virus
Tomato leaf curl Sinaloa virus
Tomato leaf curl Tanzania virus

Tomato yellow leaf curl China virus
Tomato yellow leaf curl Malaga virus
Tomato yellow leaf curl Sardinia virus
Tomato yellow leaf curl Thailand virus
Tomato yellow leaf curl virus
Tomato yellow leaf curl Nigeria virus
Tomato yellow leaf curl Kuwait virus
Tomato yellow leaf curl Saudi Arabia virus
Tomato yellow leaf curl Tanzania virus
Tomato yellow leaf curl Yemen virus

Source: Fauquet, C.M.; Stanley, J. (2003) Geminivirus classification and nomenclature: progress and problems.
Annals of applied Biology, 142(2), 165-189.

Additional key words: taxonomy, nomenclature

Computer codes: TYLCV0



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2004/125 Emerging diseases caused by *Geminiviridae*

A review paper written by Varma & Malati (2003) provides a recent update on the diseases which are caused by *Geminiviridae*. During the last two decades, these viruses have emerged as devastating pathogens, particularly in the tropics and subtropics, causing huge economic losses and threatening crop production. Among *Geminiviridae*, begomoviruses are causing the most serious problems in a variety of crops. The emergence of new begomoviruses and their spread has been favoured by the appearance of *Bemisia tabaci* biotype B, the increase of its populations, and the evolution of virus variants. Variability arose through mutations, recombination and pseudorecombination, not only among variants but also among species and even genus. Human activities have also played an important role in disseminating viruses (movements of infected planting material) or creating more favourable conditions for them (e.g. changes in cropping systems, introduction of new crops). The most important diseases caused by *Geminiviridae* are reviewed.

- Mastreviruses: Maize streak virus, Bean yellow dwarf virus, Chickpea chlorotic dwarf virus
- Curtoviruses: Beet curly top virus
- Begomoviruses: Cassava viruses, Cotton leaf curl viruses, Cucurbit viruses, Legume viruses (bean golden mosaic disease, cowpea golden mosaic disease, yellow mosaic disease), begomoviruses of potato, sweet potato, tomato (with a useful list of virus species found on this crop).

Source: Varma, A.; Malathi, V.G. (2003) Emerging geminivirus problems: a serious threat to crop production.

Annals of applied Biology, 142(2), 145-164.

Additional key words: publication



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2004/126 Membership status of the IPPC

The list below gives the countries which are contracting parties to the IPPC. In bold, it indicates the countries which have now accepted the revised text of the IPPC (with dates). It may be noted that the following EPPO member countries have not yet become contracting parties to IPPC despite the repeated recommendations of EPPO Council: Belarus, Kazakhstan, former Yugoslav Republic of Macedonia and Ukraine. So far, the following 23 EPPO member countries have accepted the revised text of the IPPC: Albania, Algeria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Hungary, Jordan, Kyrgyzstan, Latvia, Lithuania, Morocco, Netherlands, Norway, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Tunisia, United Kingdom. Also the following 5 potential member countries: Azerbaijan, Bosnia & Herzegovina, Lebanon, Moldova, Syria. Therefore, the following 16 EPPO member countries are again invited to accept the revised text of the IPPC: Austria, Belgium, Bulgaria, Finland, France, Germany, Greece, Ireland, Israel, Italy, Luxembourg, Malta, Poland, Portugal, Switzerland and Turkey.

Albania (1999-07-29)	Grenada	Oman (2000-01-28)
Algeria (2003-03-10)	Guatemala	Pakistan (2003-09-01)
Argentina (2000-04-05)	Guinea	Panama
Australia (2000-06-13)	Guyana	Papua New Guinea (1999-01-15)
Austria	Haiti	Paraguay
Azerbaijan (2000-08-18)	Honduras (2003-07-30)	Peru (2000-03-22)
Bahamas	Hungary (2001-06-28)	Philippines
Bahrain	India	Poland
Bangladesh (1998-11-24)	Indonesia	Portugal
Barbados (1998-08-10)	Iran (Islamic Republic of)	Romania (1999-01-21)
Belgium	Iraq	Russian Federation (2002-01-16)
Belize	Ireland	Saudi Arabia (2000-08-07)
Bhutan	Israel	Senegal (2002-01-04)
Bolivia	Italy	Serbia and Montenegro
Bosnia & Herzegovina (2003-07-30)	Jamaica	Seychelles
Brazil	Japan	Sierra Leone (2002-04-15)
Bulgaria	Jordan (2002-03-13)	Slovakia (2004-04)
Burkina Faso	Kenya (2003-09-10)	Slovenia (2000-11-16)
Cambodia	Korea, DPR (2003-08-25)	Solomon Islands
Canada (2001-10-22)	Korea, Republic of (2000-11-09)	South Africa
Cape Verde	Kyrgyzstan (2003-12-11)	Spain (2000-06-05)
Chad (2004-03-15)	Laos	Sri Lanka
Chile	Latvia (2003-11-05)	St. Kitts & Nevis
Colombia	Lebanon (2002-03-27)	St. Lucia
Costa Rica (1999-08-23)	Liberia	St. Vincent & Grenadines (2001-11-15)
Croatia (1999-05-14)	Libyan Arab Jamahiriya	Sudan
Cuba (2002-02-18)	Lithuania (2000-12-01)	Suriname
Cyprus (1999-02-11)	Luxembourg	Sweden (1999-06-07)
Czech Republic (2001-04-04)	Malawi (2004-06-14)	Switzerland
Denmark (2002-07-08)	Malaysia	Syria (2003-11-05)
Dominican Republic	Mali	Thailand
Ecuador	Malta	Togo
Egypt	Mauritania (2002-04-29)	Trinidad & Tobago
El Salvador	Mauritius (2000-12-13)	Tunisia (1999-02-08)
Equatorial Guinea	Mexico (2000-06-28)	Turkey
Eritrea (2001-04-06)	Moldova (2001-01-25)	United Arab Emirates
Estonia (2000-12-07)	Morocco (2000-02-08)	United Kingdom (2004-03-18)
Ethiopia	Netherlands (2001-08-27)	USA (2001-10-02)
Finland	New Zealand (1999-06-22)	Uruguay (2001-07-12)
France	Nicaragua	Venezuela
Germany	Niger (2003-11-18)	Yemen
Ghana	Nigeria (2003-09-02)	Zambia
Greece	Norway (2000-02-29)	

Source: **FAO web site - <http://www.fao.org> - NPPO of Slovakia, 2004-05.**



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2004/127 EPPO report on notifications of non-compliance (detection of regulated pests)

The EPPO Secretariat has gathered the notifications of non-compliance for 2004 received since the previous report (EPPO RS 2004/081) from the following countries: Algeria, Austria, Belgium, Cyprus, Czech Republic, Denmark, France, Finland, Germany, Guernsey, Hungary, Ireland, Israel, Italy, Lithuania, Malta, Netherlands, Portugal, Slovenia, Spain, Sweden, Switzerland, Tunisia, United Kingdom. When a consignment has been re-exported and the country of origin is unknown, the re-exporting country is indicated in brackets. When the occurrence of a pest in a given country is not known to the EPPO Secretariat, this is indicated by an asterisk (*).

The EPPO Secretariat has selected notifications of non-compliance made because of the detection of regulated pests. Other notifications of non-compliance due to prohibited commodities, missing or invalid certificates are not indicated. It must be pointed out that the report is only partial, as many EPPO countries have not yet sent their notifications.

Note: In EPPO RS 2004/084, a report was made by the NPPO of France about a finding of imported *Pelargonium* plants infected by *Ralstonia solanacearum*, causing an outbreak which was later eradicated. Investigations done to trace back the origin of the material had shown that plants might have come from different origins. Among these, Israel was mentioned as possible one. The NPPO of Israel stressed that *R. solanacearum* is a regulated quarantine pest which is totally absent from its territory, and denied the fact that plants could have been produced in Israel.

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Agromyzidae</i>	<i>Gypsophila</i>	Cut flowers	South Africa	France	2
	<i>Ocimum basilicum</i>	Vegetables	Morocco	France	4
	<i>Ocimum basilicum</i>	Vegetables	Senegal	France	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	France	2
	<i>Ocimum basilicum</i>	Vegetables	Vietnam	France	1
	<i>Ocimum sanctum</i>	Vegetables	Thailand	France	2
	Unspecified	Cut branches	Bangladesh	France	2
<i>Aleuroclava nitida</i> , <i>Aleurotrachelus</i> , <i>Bemisia tabaci</i>	<i>Michelia champaca</i>	Plants for planting	Thailand	United Kingdom	1
<i>Aleyrodidae</i>	<i>Eryngium foetidum</i>	Vegetables	Thailand	France	2
<i>Alternaria</i>	<i>Impatiens</i>	Plants for planting	Netherlands	United Kingdom	1
<i>Amaranthus</i>	<i>Origanum majorana</i>	Seeds	Denmark	Israel	1
<i>Ambrosia</i>	<i>Glycine max</i>	Stored products	USA	Israel	2



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Ambrosia, Polygonum convolvulus, Datura stramonium</i>	<i>Panicum</i>	Stored products	Ukraine	Israel	1
<i>Aphididae</i>	<i>Dendranthema</i>	Cut flowers	South Africa	France	1
<i>Arctium minus, Reseda lutea</i>	<i>Petroselinum crispum</i>	Seeds	Netherlands	Israel	1
<i>Atriplex, Medicago</i>	<i>Petroselinum crispum</i>	Seeds	France	Israel	1
<i>Bemisia tabaci</i>	<i>Ajuga</i>	Plants for planting	Israel	United Kingdom	1
	<i>Ajuga reptans</i>	Cuttings	Israel	United Kingdom	2
	<i>Annona squamosa</i>	Fruits	Thailand	Czech Republic	2
	<i>Antigonon leptopus</i>	Plants for planting	Australia	United Kingdom	1
	<i>Aphelandra</i>	Cuttings	Brazil	Netherlands	1
	<i>Barleria</i>	Plants for planting	Israel	Netherlands	1
	<i>Barleria, Hypericum</i>	Plants for planting	Israel	Netherlands	1
	<i>Corchorus</i>	Vegetables	Jordan	Ireland	1
	<i>Corchorus olitorius</i>	Vegetables	Sierra Leone	United Kingdom	1
	<i>Dipladenia</i>	Plants for planting	Israel	Netherlands	1
	<i>Eryngium foetidum</i>	Vegetables	Thailand	Denmark	1
	<i>Eryngium foetidum</i>	Vegetables	Thailand	France	1
	<i>Eryngium foetidum</i>	Vegetables	Thailand	Ireland	1
	<i>Euphorbia pulcherrima</i>	Cuttings	Germany	United Kingdom	2
	<i>Euphorbia pulcherrima</i>	Cuttings	Italy	United Kingdom	1
	<i>Euphorbia pulcherrima</i>	Plants for planting	Netherlands	United Kingdom	1
	<i>Euphorbia pulcherrima</i>	Cuttings	Netherlands	United Kingdom	1
	<i>Euphorbia pulcherrima</i>	Pot plants	Netherlands	United Kingdom	1
	<i>Euphorbia pulcherrima</i>	Cuttings	Netherlands	United Kingdom	1
	<i>Euphorbia pulcherrima</i>	Cuttings	Spain (Canary isl.)	United Kingdom	3
	<i>Euphorbia trigona</i>	Plants for planting	Dominican Rep.	Netherlands	1
	<i>Helianthemum</i>	Pot plants	Israel	United Kingdom	1
	<i>Hibiscus</i>	Pot plants	Belgium	United Kingdom	1
	<i>Hibiscus</i>	Pot plants	Italy	United Kingdom	1
	<i>Hibiscus</i>	Plants for planting	Netherlands	Guernsey	1
	<i>Hibiscus</i>	Pot plants	Netherlands	Guernsey	2
	<i>Hibiscus</i>	Pot plants	Netherlands	United Kingdom	2
	<i>Hibiscus rosa-sinensis, Thunbergia alata</i>	Plants for planting	Morocco	France	1
	<i>Hypericum</i>	Cut flowers	Israel	France	1
	<i>Mentha</i>	Vegetables	Morocco	France	1
	<i>Mentha piperita</i>	Vegetables	Thailand	Ireland	1
	<i>Ocimum basilicum</i>	Vegetables	Israel	Netherlands	9
	<i>Ocimum basilicum</i>	Vegetables	Thailand	Netherlands	1
<i>Piper sarmentosum</i>	Vegetables	Thailand	Ireland	4	
<i>Solidago</i>	Cut flowers	Israel	Cyprus	1	
<i>Solidago</i>	Cut flowers	Israel	Netherlands	2	
<i>Solidago</i>	Cut flowers	Israel	United Kingdom	2	
<i>Solidago</i>	Plants for planting	Israel	United Kingdom	1	
<i>Solidago</i>	Cut flowers	Zimbabwe	Netherlands	3	
<i>Trachelium</i>	Cut flowers	Israel	United Kingdom	1	
<i>Bemisia tabaci, Aleurodicus dispersus, Neooxyzenus</i>	<i>Vernonia amygdalina</i>	Vegetables	Sierra Leone	United Kingdom	1



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Bemisia tabaci</i> , <i>Coccidae</i> , <i>Lepidosaphes</i>	<i>Corchorus olitorius</i>	Vegetables	Sierra Leone	United Kingdom	1
<i>Bemisia tabaci</i> , <i>Oligonychus</i> <i>gossypii</i>	<i>Manihot esculenta</i>	Vegetables	Sierra Leone	United Kingdom	1
<i>Bephratelloides cubensis</i>	<i>Annona cherimola</i>	Fruits	Jamaica	United Kingdom	1
<i>Botrytis</i>	<i>Prunus avium</i>	Fruits	Bulgaria	Italy	2
<i>Carnation mottle carmovirus</i>	<i>Dianthus caryophyllus</i>	Plants for planting	Spain	Israel	1
<i>Coleosporium plumeriae</i>	<i>Plumeria</i>	Pot plants	USA	United Kingdom	1
<i>Chenopodium simplex</i> , <i>Setaria viridis</i>	<i>Petroselinum crispum</i>	Seeds	Denmark	Israel	1
<i>Ciborinia camelliae</i>	<i>Camelia japonica</i>	Plants for planting	Italy	Switzerland	1
<i>Cicadellidae</i>	<i>Dracaena marginata</i>	Plants for planting	Costa Rica	Netherlands	2
<i>Clavibacter michiganensis</i> <i>subsp. michiganensis</i>	<i>Lycopersicon esculentum</i>	Seeds	India	France	1
	<i>Solanum tuberosum</i>	Ware potatoes	Germany	Lithuania	2
	<i>Solanum tuberosum</i>	Ware potatoes	Poland	Lithuania	1
<i>Clover yellow mosaic</i> <i>potexvirus</i>	<i>Verbena</i>	Plants for planting	USA	United Kingdom	1
<i>Coleoptera</i>	<i>Capsicum frutescens</i>	Stored products	Madagascar	France	1
<i>Contarinia maculipennis</i>	<i>Dendrobium</i>	Cut flowers	Thailand	Netherlands	4
<i>Cuscuta</i>	<i>Ocimum basilicum</i>	Seeds	Italy	Israel	1
	<i>Coriandrum sativum</i>	Seeds	Italy	Israel	1
<i>Ditylenchus dipsaci</i>	<i>Hyacinthus</i>	Bulbs	France	Netherlands	2
	<i>Narcissus</i>	Bulbs	France	Netherlands	1
	<i>Narcissus</i>	Bulbs	United Kingdom	Netherlands	1
	<i>Sternbergia lutea</i>	Bulbs	Turkey	Netherlands	3
<i>Elsinoe</i>	<i>Citrus clementina</i>	Fruits	Argentina	Spain	1
<i>Ferrisia virgata</i>	<i>Corchorus olitorius</i>	Vegetables	Sierra Leone	United Kingdom	1
<i>Fusarium</i>	<i>Lycopersicon esculentum</i>	Seeds	Thailand	Israel	1
<i>Geranium molle</i> , <i>G.</i> <i>pusillum</i> , <i>Chenopodium</i> , <i>Silene</i>	<i>Melissa officinalis</i>	Seeds	United Kingdom	Israel	1
<i>Globodera</i>	<i>Solanum tuberosum</i>	Ware potatoes	Italy	Ireland	2
	<i>Solanum tuberosum</i>	Seed potatoes	Netherlands	Germany	2
<i>Globodera rostochiensis</i>	<i>Solanum tuberosum</i>	Ware potatoes	Italy	Ireland	4



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Grapevine flavescence dorée phytoplasma</i>	<i>Vitis vinifera</i>	Plants for planting	France	Germany	1
<i>Guignardia citricarpa</i>	<i>Citrus limon</i>	Fruits	Argentina	Spain	1
	<i>Citrus sinensis</i>	Fruits	Argentina	Netherlands	1
	<i>Citrus sinensis</i>	Fruits	Argentina	Spain	3
	<i>Citrus sinensis</i>	Fruits	South Africa	Netherlands	3
<i>Helicotylenchus dihystra</i> , <i>Helicotylenchus digitiformis</i> , <i>Scutellonema</i>	<i>Chamaerops humilis</i>	Pot plants	Morocco	United Kingdom	1
<i>Helicoverpa armigera</i>	<i>Antirrhinum</i>	Cut flowers	Israel	Netherlands	1
	<i>Asparagus officinalis</i>	Vegetables	Thailand	Netherlands	1
	<i>Dianthus</i>	Cut flowers	Israel	Belgium	2
	<i>Dianthus</i>	Cut flowers	Kenya	Netherlands	1
	<i>Dianthus</i>	Plants for planting	Kenya	United Kingdom	1
	<i>Eustoma</i>	Cut flowers	Israel	Netherlands	1
	<i>Ocimum basilicum</i>	Vegetables	Israel	Netherlands	1
	<i>Phaseolus vulgaris</i>	Vegetables	Egypt	Netherlands	2
	<i>Phaseolus vulgaris</i>	Vegetables	Kenya	Netherlands	1
	<i>Pisum sativum</i>	Vegetables	Egypt	Netherlands	2
	<i>Pisum sativum</i>	Vegetables	Kenya	Netherlands	11
	<i>Pisum sativum</i>	Vegetables	Zambia	Netherlands	1
	<i>Pisum sativum</i>	Vegetables	Zimbabwe	Netherlands	1
	<i>Pisum sativum</i>	Vegetables	Zimbabwe	United Kingdom	1
<i>Rosa</i>	Cut flowers	Kenya	Netherlands	1	
<i>Helicotylenchus exallus</i> , <i>Cacopsylla tetrapanaxae</i>	<i>Tetrapanax papyrifer</i>	Pot plants	China	United Kingdom	1
<i>Hirschmanniella</i>	<i>Hygrophila</i>	Aquarium plants	Malaysia	Belgium	1
	<i>Hygrophila</i>	Aquarium plants	Singapore	Belgium	1
	<i>Hygrophila</i>	Aquarium plants	Thailand	Belgium	1
	<i>Unspecified</i>	Aquarium plants	Thailand	Belgium	1
	<i>Vallisneria</i>	Aquarium plants	Singapore	France	3
	<i>Vallisneria gigantea</i>	Aquarium plants	Singapore	France	2
<i>Lepidoptera</i>	<i>Begonia</i>	Plants for planting	Israel	Cyprus	1
	<i>Zea mays</i>	Seeds	Chile	France	1
<i>Leptinotarsa decemlineata</i>	<i>Brassica oleracea</i>	Vegetables	Germany	United Kingdom	1
	<i>Daucus carota</i>	Vegetables	Spain	United Kingdom	1
	<i>Eruca</i>	Vegetables	Germany	Sweden	1
	<i>Lactuca</i>	Vegetables	France	United Kingdom	1
	<i>Petroselinum</i>	Vegetables	Italy	United Kingdom	2
	<i>Petroselinum crispum</i>	Vegetables	Italy	United Kingdom	1
<i>Liriomyza</i>	<i>Brassica oleracea</i>	Vegetables	Thailand	Denmark	1
	<i>Momordica</i> , <i>Ocimum</i>	Vegetables	Thailand	Denmark	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	Denmark	8
	<i>Ocimum basilicum</i>	Vegetables	Thailand	France	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	Germany	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	Ireland	1
	<i>Ocimum sanctum</i>	Vegetables	Thailand	France	1



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Liriomyza huidobrensis</i>	<i>Aster</i>	Cut flowers	Ecuador	Netherlands	1
	<i>Gypsophila</i>	Cut flowers	Ecuador	Netherlands	1
	<i>Gypsophila</i>	Cut flowers	Netherlands	Ireland	1
	<i>Gypsophila</i>	Cut flowers	Netherlands	United Kingdom	1
	<i>Phaseolus vulgaris</i>	Vegetables	Guatemala	Ireland	1
	<i>Phaseolus vulgaris</i>	Vegetables	Kenya	Ireland	1
	<i>Trachelium</i>	Cut flowers	Ecuador	Netherlands	1
<i>Liriomyza sativae</i>	<i>Ocimum basilicum</i>	Vegetables	Israel	Ireland	3
	<i>Ocimum basilicum</i>	Vegetables	Israel	Netherlands	1
	<i>Ocimum basilicum</i>	Vegetables	Thailand	Ireland	1
<i>Liriomyza trifolii</i>	<i>Aster</i>	Cut flowers	Costa Rica	Netherlands	1
	<i>Gypsophila</i>	Cut flowers	Israel	Netherlands	2
	<i>Gypsophila</i>	Cut flowers	Tanzania	Netherlands	1
<i>Maize dwarf mosaic potyvirus</i>	<i>Zea mays</i>	Seeds	United States	Israel	1
<i>Meloidogyne</i>	<i>Anubias</i>	Aquarium plants	Malaysia	Germany	2
	<i>Anubias</i>	Aquarium plants	Singapore	Germany	1
	<i>Echinodorus</i>	Aquarium plants	Sri Lanka	Germany	1
	<i>Livistona</i>	Plants for planting	Sri Lanka	France	1
	<i>Ophiopogon</i>	Aquarium plants	Sri Lanka	Germany	1
	<i>Solanum tuberosum</i>	Ware potatoes	Israel	United Kingdom	1
	<i>Zingiber officinale</i>	Vegetables	Thailand	Israel	1
<i>Meloidogyne hapla</i>	<i>Potentilla fruticosa</i>	Plants for planting	Japan	France	1
<i>Monilinia fructicola</i>	<i>Prunus domestica</i>	Fruits	Argentina	France	2
	<i>Prunus persica</i>	Fruits	Argentina	France	1
<i>Nematoda</i>	<i>Acorus</i>	Aquarium plants	Singapore	Germany	1
<i>Pepino mosaic potyvirus</i>	<i>Lycopersicon esculentum</i>	Seeds	Chile	France	3
	<i>Lycopersicon esculentum</i>	Vegetables	Netherlands	Sweden	1
	<i>Lycopersicon esculentum</i>	Vegetables	Netherlands	United Kingdom	1
	<i>Lycopersicon esculentum</i>	Vegetables	Spain	United Kingdom	1
	<i>Lycopersicon esculentum</i>	Vegetables	Spain (Canary isl.)	United Kingdom	1
<i>Phenacoccus, Tortricidae, Pyralidae</i>	<i>Lantana camara, Psidium guajava</i>	Pot plants	USA	United Kingdom	1
<i>Phytophthora ramorum</i>	<i>Rhododendron</i>	Pot plants	Belgium	United Kingdom	2
	<i>Rhododendron</i>	Plants for planting	Netherlands	Slovenia	2
	<i>Rhododendron catawbiense</i>	Plants for planting	Germany	Finland	1
	<i>Viburnum tinus</i>	Pot plants	Italy	United Kingdom	1
<i>Plum pox potyvirus</i>	<i>Prunus cerasifera</i>	Cuttings	China	Netherlands	1
	<i>Prunus domestica</i>	Plants for planting	Serbia & Montenegro	Netherlands	1
	<i>Prunus domestica</i>	Cuttings	Serbia & Montenegro	Netherlands	1



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Polygonum convolvulus</i>	<i>Avena sativa</i>	Stored products	Ethiopia	Israel	1
	<i>Hordeum vulgare</i>	Stored products	Russia	Israel	7
	<i>Spinacia oleracea</i>	Seeds	Denmark	Israel	2
	<i>Spinacia oleracea</i>	Seeds	United States	Israel	1
	<i>Triticum aestivum</i>	Stored products	Kazakhstan	Israel	1
	<i>Triticum aestivum</i>	Stored products	United States	Israel	1
<i>Polygonum persicaria</i>	<i>Anethum graveolens</i>	Seeds	Denmark	Israel	1
<i>Pratylenchus</i>	<i>Canna</i>	Bulbs	Netherlands	Tunisia	1
	<i>Rosa</i>	Plants for planting	Belgium	Tunisia	1
	<i>Stewartia monadelphpha</i>	Plants for planting	Japan	France	1
	<i>Vitis vinifera</i>	Plants for planting	South Africa	Tunisia	2
<i>Pyralidae, Eulophidae</i>	Various dried flowers	Stored products	China	Israel	1
<i>Radopholus</i>	<i>Anubias</i>	Aquarium plants	Malaysia	Germany	1
<i>Ralstonia solanacearum</i>	<i>Solanum tuberosum</i>	Ware potatoes	Egypt	Hungary	1
	<i>Solanum tuberosum</i>	Ware potatoes	Egypt	Italy	1
	<i>Solanum tuberosum</i>	Seed potatoes	Netherlands	Italy	1
<i>Scirtothrips dorsalis, Thrips palmi</i>	<i>Solanum melongena</i>	Vegetables	Suriname	Netherlands	1
<i>Sclerotinia sclerotiorum</i>	<i>Anthriscus cerefolium</i>	Seeds	Italy	Israel	1
	<i>Brassica oleracea</i> var. <i>botrytis</i>	Seeds	France	Israel	1
	<i>Foeniculum vulgare</i>	Seeds	France	Israel	1
<i>Scopula ochroleucaria, Tortricidae</i>	<i>Exacum</i>	Pot plants	Netherlands	Israel	1
Snails (Mollusca)	<i>Vriesea</i>	Plants for planting	Netherlands	Israel	1
Snails, slugs (Mollusca)	<i>Dieffenbachia</i> sp.	Pot plants	Netherlands	Israel	2
<i>Spodoptera</i>	<i>Brassica</i>	Vegetables	Thailand	Netherlands	1
	<i>Mangifera indica, Ocimum basilicum</i>	Fruits & Vegetables	Thailand	Netherlands	1
<i>Spodoptera</i>	<i>Momordica charantia</i>	Vegetables	Kenya	Germany	1
<i>Spodoptera frugiperda</i>	<i>Momordica charantia</i>	Vegetables	Suriname	Netherlands	1
<i>Spodoptera littoralis</i>	<i>Rosa</i>	Cut flowers	Kenya	Netherlands	1
	<i>Rosa</i>	Cut flowers	Uganda	Netherlands	1
	<i>Rosa</i>	Cut flowers	Zimbabwe	Netherlands	1
<i>Stephanitis takeyai</i>	<i>Pieris</i>	Pot plants	Italy	United Kingdom	1
<i>Tetranychus</i>	<i>Solidago</i>	Cut flowers	Kenya	France	1
<i>Thripidae</i>	<i>Dendrobium</i>	Cut flowers	Lebanon	Cyprus	1



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Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Thrips</i>	<i>Dendrobium</i>	Cut flowers	Thailand	Italy	2
	<i>Lisianthus</i>	Cut flowers	Kenya	France	1
	<i>Momordica</i>	Vegetables	Kenya	Germany	1
	<i>Momordica balsamina</i>	Vegetables	Dominican Rep.	Germany	2
	<i>Momordica charantia</i>	Vegetables	Dominican Rep.	Germany	1
	<i>Momordica charantia</i>	Vegetables	India	Germany	1
	<i>Momordica charantia</i>	Vegetables	Kenya	Germany	1
<i>Thrips (suspect T. palmi)</i>	<i>Solanum melongena</i>	Vegetables	Ghana	France	1
<i>Thrips palmi</i>	<i>Dendrobium</i>	Cut flowers	Singapore	Netherlands	2
	<i>Dendrobium</i>	Cut flowers	Thailand	Belgium	2
	<i>Dendrobium</i>	Cut flowers	Thailand	Netherlands	4
	<i>Momordica</i>	Vegetables	Dominican Rep.	Netherlands	1
	<i>Momordica</i>	Vegetables	Dominican Rep.	United Kingdom	1
	<i>Momordica</i>	Vegetables	India	Netherlands	1
	<i>Momordica balsamina</i>	Vegetables	Dominican Rep.	Germany	2
	<i>Momordica balsamina</i>	Vegetables	India	Germany	3
	<i>Momordica charantia</i>	Vegetables	Thailand	Netherlands	1
	<i>Orchidaceae</i>	Cut flowers	Thailand	Belgium	1
	<i>Orchidaceae</i>	Cut flowers	Thailand	Denmark	1
	<i>Solanum melongena</i>	Vegetables	Burkina Faso*	France	1
	<i>Solanum melongena</i>	Vegetables	Ghana*	Netherlands	1
<i>Solanum melongena</i>	Vegetables	Suriname	Netherlands	10	
<i>Thysanoptera</i>	<i>Momordica charantia</i>	Vegetables	Dominican Rep.	France	1
	<i>Momordica charantia</i>	Vegetables	Thailand	France	1
	<i>Solanum aculeatissimum</i>	Vegetables	Thailand	France	3
	<i>Solanum melongena</i>	Vegetables	Ghana	Sweden	1
	<i>Solanum melongena</i>	Vegetables	India	France	2
	<i>Solanum melongena</i>	Vegetables	Thailand	France	1
<i>Tilletia</i>	<i>Triticum durum</i>	Stored products	India	United Kingdom	1
<i>Tipula ?paludosa</i>	<i>Cordyline</i>	Plants for planting	Netherlands	Israel	1
<i>Tomato spotted wilt tospovirus</i>	<i>Mandevilla</i>	Cuttings	Israel	Italy	2
<i>Trialeurodes vaporariorum</i>	<i>Hypericum</i>	Cut flowers	Kenya	France	1
Unknown virus	<i>Petroselinum crispum</i>	Vegetables	Israel	United Kingdom	1
Weed seeds	<i>Cocos nucifera (fibers)</i>	Growing media	Sri Lanka	Israel	12
	<i>Glycine max</i>	Stored products	Spain	Israel	1
<i>Xanthomonas</i>	<i>Citrus clementina</i>	Fruits	Argentina	Spain	3
<i>Xanthomonas campestris</i>	<i>Matthiola</i>	Seeds	USA	Israel	1
<i>Xanthomonas vesicatoria</i>	<i>Capsicum annuum</i>	Seeds	Chile	Italy	1



EPPO *Reporting Service*

• Fruit flies

Pest	Consignment	Country of origin	C. of destination	nb
<i>Bactrocera dorsalis</i>	<i>Annona squamosa</i>	Thailand	Czech Republic	5
<i>Ceratitis</i>	<i>Mangifera indica</i>	Côte d'Ivoire	France	1
	<i>Mangifera indica</i>	Kenya	France	1
<i>Ceratitis anonae</i>	<i>Mangifera indica</i>	Côte d'Ivoire	Netherlands	1
Non-European Tephritidae	<i>Annona squamosa</i>	Thailand	Czech Republic	1
	<i>Capsicum frutescens</i>	Thailand	Czech Republic	3
	<i>Capsicum frutescens</i>	Thailand	France	2
	<i>Capsicum frutescens</i>	Vietnam	France	1
	<i>Citrus paradisi</i>	Argentina	Netherlands	1
	<i>Citrus reticulata</i>	Argentina	Netherlands	1
	<i>Mangifera indica</i>	Burkina Faso	France	1
	<i>Mangifera indica</i>	Cameroon	France	6
	<i>Mangifera indica</i>	Côte d'Ivoire	France	5
	<i>Mangifera indica</i>	Dominican Rep.	France	1
	<i>Mangifera indica</i>	Dominican Rep.	Netherlands	4
	<i>Mangifera indica</i>	Kenya	France	2
	<i>Mangifera indica</i>	Mali	France	4
	<i>Mangifera indica</i>	Pakistan	France	1
	<i>Mangifera indica</i>	Togo	France	1
	<i>Momordica balsamina</i>	Thailand	Germany	1
	<i>Momordica charantia</i>	Thailand	France	1
	<i>Psidium guajava</i>	India	France	3
	<i>Psidium guajava</i>	Pakistan	France	1
	<i>Psidium guajava</i>	Thailand	Netherlands	1
<i>Syzygium jambos</i>	Thailand	France	1	
<i>Syzygium jambos</i>	Thailand	Netherlands	1	
<i>Ziziphus</i>	Thailand	Germany	1	
<i>Udinia cator</i> and non-European Tephritidae	<i>Mangifera indica</i>	Sierra Leone	United Kingdom	1

• Wood

Pest	Consignment	Type of commodity	Country of origin	C. of destination	nb
<i>Anoplophora glabripennis</i>	Hardwood	Packing wood	China	Belgium	1
	<i>Populus</i>	Packing wood	China	United Kingdom	1
<i>Bursaphelenchus xylophilus</i>	Coniferae	Packing wood	USA	Finland	3
<i>Cerambycidae</i>	Hardwood	Packing wood	China	Germany	1
	Hardwood and coniferae	Packing wood	China	Germany	1
	Unspecified	Packing wood	China	Germany	2
Grub holes > 3 mm	<i>Picea</i>	Wood and bark	Russia	Spain	2
	Unspecified	Packing wood	China	Denmark	1
<i>Monochamus</i>	Unspecified	Packing wood	China	Denmark	1
<i>Monochamus alternatus</i>	Unspecified	Packing wood	China	Germany	1



EPPO *Reporting Service*

• Bonsais

Pest	Consignment	Country of origin	Country of destination	nb
<i>Dialeurodes citri</i>	<i>Ligustrum</i>	China	United Kingdom	1
<i>Helicotylenchus</i>	<i>Ficus</i>	China	France	1
<i>Heteroderidae</i>	<i>Pinus pentaphylla</i>	Japan	France	2
<i>Oligonychus perditus</i>	<i>Juniperus</i>	Japan	Germany	1
	<i>Juniperus chinensis</i>	Japan	Netherlands	1
<i>Pratylenchus</i>	<i>Acer palmatum</i>	Japan	France	2
	<i>Buxus</i>	China	France	1
	<i>Juniperus chinensis</i>	Japan	France	2
	<i>Pinus pentaphylla</i>	Japan	France	1
<i>Rhizoecus hibisci</i>	<i>Serissa</i>	China	Netherlands	2
	<i>Serissa</i>	China	United Kingdom	1
<i>Stegophora ulmea</i> , <i>Tinocallis takachihoensis</i> , <i>T. ulmiparvifoliae</i>	<i>Ulmus</i> , <i>Zelkova</i>	China	United Kingdom	1
<i>Tinocallis takachihoensis</i>	<i>Ulmus</i>	China	United Kingdom	1
	<i>Ulmus</i>	Netherlands	United Kingdom	1
	<i>Zelkova</i>	Netherlands	United Kingdom	1
<i>Tinocallis takachihoensis</i> , <i>Bemisia afer</i>	<i>Ulmus</i> , <i>Laurus</i>	Netherlands	United Kingdom	1
<i>Tinocallis ulmiparvifoliae</i>	<i>Ulmus</i>	China	United Kingdom	1
<i>Tylenchorhynchus</i>	<i>Pinus pentaphylla</i>	Japan	France	1

Source: EPPO Secretariat, 2004-09.
NPPO of Israel, 2004-09.