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1, rue Le Nôtre
75016 Paris

Tel. : 33 1 45 20 77 94
Fax : 33 1 42 24 89 43

E-mail : hq@eppo.fr
Web : www.eppo.org

EPPO *Reporting Service*

2002/001 Situation of *Diabrotica virgifera virgifera* in the EPPO region

The situation of *Diabrotica virgifera virgifera* (Coleoptera: Chrysomelidae) in Europe was reviewed during the 6th Meeting of the EPPO *ad hoc* Panel on *D. virgifera* held jointly with the 8th International IWGO Workshop on *D. virgifera* in Venezia, IT, 2000-10-29/30. In summary, *D. virgifera* has continued to spread in 2001 (see figure 1) but at a slower pace in some countries in Central Europe, due to the very hot and dry climatic conditions. In 2001, it has been found for the first time in Ukraine, in the Zakarpatya region (part of the country lying west of the Carpathians, near the Romanian and Hungarian borders). The situation in Italy and Switzerland in 2001 has changed considerably. Although eradication is continuing in the Veneto region, it appears that the findings made in 2000 at Lugano/Agno airport (Ticino, Italy) and near Malpensa airport (Lombardia, Italy), which were previously considered as spot introductions, are in fact parts of a rather large outbreak corresponding to an established population. Eradication of this outbreak in Ticino and Lombardia/Piemonte is not considered feasible due to both extent and level of population.

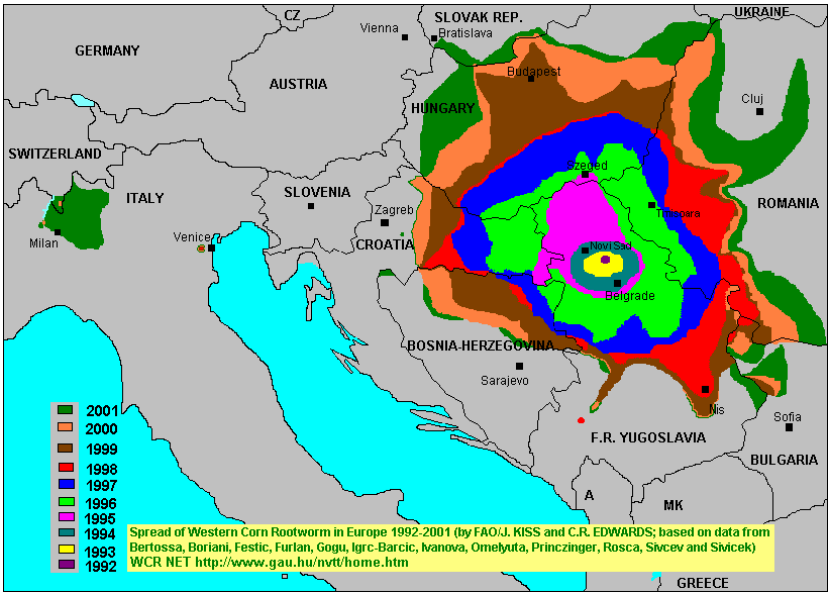

Figure 1. Spread of *D. virgifera* in Europe from 1992 to 2001
Prepared by FAO Network / J. KISS and C.R. EDWARDS, based on data provided by Bertossa, Boriani, Festic, Furlan, Gogu, Igrc-Barcic, Ivanova, Omelyuta; Princzinger, Rosca, Sivcev and Sivicek.

Albania
In 2001 the monitoring of *D. virgifera* continued near the airport and in several districts. No *D. virgifera* was caught.

Austria
In 2001, monitoring of *D. virgifera* continued in Austria. Pheromone traps and yellow sticky traps were placed along the borders with Hungary and Slovakia, along the main roads and the Danube, and in Tyrol. In 2001, no *D. virgifera* was caught.

Bosnia & Herzegovina
In 2001, the insect spread 30 to 35 km towards the west and south. No damage was observed in 2001.

Bulgaria
D. virgifera was found for the first time in 1998 in Bulgaria and it then spread towards the northwest near the Serbian and Hungarian borders. In 2001, the pest continued to spread towards the south and east. It was first found near the cities of Kneja and Stara Planina (near Godetch). So far, no larval damage was seen. However, silk clipping was observed near Prevala. Surprisingly, in the area where the pest had first been observed (region of Lom) no adults were caught in 2001.

Croatia
D. virgifera was first observed in 1995. In 2000, it infested an area of 14,000 km^2. In 2001, pheromone and yellow stick traps were placed on 145 sites. It was observed that the front line of the infestation did not move (only 1 new place was found infested). It is estimated that 15,000 ha were infested in 2001. However, population levels increased (approximately 1.4 increase compared to 2000). Plant lodging and root damage were observed in the eastern part of Croatia.

France
After the Conference, the EPPO Secretariat received the results of the 2001 monitoring done by the French NPPO. Maize is a very important crop in France. In 2000, 1,790,618 ha was cultivated for grain production and 43,033 ha for seed production, and it is expected that maize production will increase. In 2001, pheromone traps were located at 31 different sites, in maize fields or areas considered at risk (e.g. public and military airports). In 2001, no *D. virgifera* was caught in France. Considering the presence of the pest in Piemonte in Italy, the survey will be intensified in 2002.

Germany
Baden-Württemberg is an important maize-growing area in Germany and is therefore considered at risk. In addition, maize monoculture is increasing. In this Land, monitoring started in 1997. Pheromone traps were placed near airports, motorways, railways, warehouses, custom stations, seed-breeding farms and maize fields. In 2001, no *D. virgifera* was caught. On the whole territory of Germany, 283 pheromone traps were placed on 147 monitoring sites (covering 9 Länder) and no *D. virgifera* was caught in 2001.

Hungary
The first adults of *D. virgifera* were caught in 1995 in Csongrád county, and the pest rapidly spread over the country. In 2001, adults were caught in all Hungarian counties, and it was found for the first time in Vas, Győr-Moson-Sopron and Szabolcs-Szatmár-Bereg. On average, more catches were made in 2001 compared to the previous year. Larval damage was observed in 10311 ha in several counties (Baranya, Bács-Kiskun, Békés, Csongrád and Tolna), but economic damage was seen only in Baranya, Bács-Kiskun, and Tolna (covering 3058 ha).

Italy
Veneto region
D. virgifera was first caught in 1998 near Marco Polo International airport near Venezia. The containment and eradication programme continued in 2001, as required by an Italian Ministerial decree of compulsory control against *D. virgifera*. As in the previous year, an outbreak area of 1200 ha with a surrounding buffer zone of 35,000 ha was monitored. In this area: 1) 159 pheromone traps were monitored, 2) maize cultivation was totally prohibited on 37 ha and maize monoculture was prohibited in the rest of the zone, 3) chemical treatments against the adults were applied twice in July and August in all maize fields; 4) it was prohibited to move fresh maize out of this zone and to harvest maize before the 1st of October. In the buffer zone: 1) 207 pheromone traps (1 x 1 km grid) and later 430 traps (at increasing distance from the focus area) were placed mainly in monoculture maize fields, 2)

chemical treatments were applied twice in July and August in maize fields and their surroundings where *D. virgifera* were caught. In addition, for research purposes, 132 traps of various types were added in both outbreak area and buffer zone. The 2001 results were the following: In the outbreak area: 3 small maize fields in monoculture were discovered (0.4 ha) and according to the prohibition, they were destroyed. 6 adults were caught and all captures were made at the border of the outbreak area, near monoculture maize fields of the buffer zone. In the buffer zone: 108 and later 49 adults were caught in a monoculture maize field (300 m away from the border of the outbreak area), which was then treated. However, new findings were made outside the buffer zone and therefore two new outbreak areas had to be defined (250 ha close to the initial outbreak area, and 27 ha 3 km away from it). Total costs of this programme in 2001 were evaluated at approximately 83,400 euros. Conclusion was that the interruption of maize monoculture is the key element in the programme and that chemical treatments are effective. Eradication is considered still possible and will be continued on a larger area in 2002.

Lombardia and Piemonte

Extensive monitoring of *D. virgifera* was conducted in different regions of Northern Italy (Friuli-Venezia Giulia, Veneto, Emilia Romagna, Lombardia and Piemonte). Pheromone traps were placed in monoculture maize fields and near potential entry points such as airports, custom stations, etc. During the last 3 years, no *D. virgifera* were caught in Friuli-Venezia Giulia and Emilia Romagna. In Veneto, the situation has already been presented above. In Lombardia, 3 adults were caught in 2000 in a few traps placed near Malpensa airport (Milano). In 2001, more than 300 traps were placed in Lombardia. As a result numerous specimens were caught in an area of more than 100.000 ha (including the provinces of Varese, Como, Lecco, Bergamo, Sondrio, Milano, Lodi and Cremona). In Piemonte, several specimens were caught in an area covering 17.800 ha in the province of Novara which borders the infested area in Lombardia. Considering the extent of the infestation in Lombardia and Piemonte, eradication is not considered feasible in these regions. Considering levels of populations, it is no longer considered that the airport of Malpensa was the original point of entry of this large focus (but some place near the Italian/Swiss border). However, in order to limit the spread of *D. virgifera*, maize monoculture will be prohibited in an area of 5 km wide along the border of the infested area. Information on *D. virgifera* will be provided to growers and the importance of crop rotation will be emphasized.

Romania

D. virgifera was first reported in Romania in 1996 at Nadlac (Arad county), near the Hungarian border. In the following years, the pest has spread towards the north-east and the population levels have increased especially in Caras-Severin, Timis, Arad and Mehedinti counties. *D. virgifera* has continued to spread towards the east and compared to 2000, three more counties are now infested (Sibiu, Mures and Bistrita Nasaud counties). *D. virgifera* is now present in 15 out of 22 counties, covering nearly half of the Romanian territory (approximately 1.000.000 ha). However, as 2000 and 2001 have been very hot years, populations remained approximately at the same levels. In 2001, larval damage has been observed in Arad, Caras-Severin and Timis counties but it did not reach economic level.

Slovakia

D. virgifera was found for the first time in Slovakia in 2000 in the south of the country. Monitoring continued in 2001 and showed that the pest has spread towards the north and a little towards the west (approaching Austria). The area infested was respectively, 500 ha in 2000 and 6,300 ha in 2001.

Slovenia
In 2001, 56 trapping points located near the Croatian, Italian and Hungarian borders and in Ljubljana were observed. As *D. virgifera* is approaching, the number of pheromone traps has increased. *D. virgifera* was not caught in Slovenia in 2001, but it is feared that it may appear next year.

Switzerland
Four specimens of *D. virgifera* were caught for the first time in 2000, near the Lugano-Agno airport. As a result, measures were taken to eradicate the infestation and monitoring was intensified. In 2001, a total of 74 traps were placed in 37 sites: 10 in the German-speaking part, 13 in the French-speaking part and 14 in Ticino (including the Lugano-Agno airport). Traps were primarily located along the main transportation routes in the main maize-growing regions. The topography of Ticino shows three different maize-growing regions, each separated by mountains and lakes. In this programme, these topographic zones were called: zone A (border region near Chiasso), zone B (central region including Lugano), zone C (Magadino plain, more to the north). The trapping results were the following. In zone A, a total of 1710 insects were caught (75% of them were caught in a single field which is located near an important railway and road transhipment area). In zone B, a total of 462 insects were caught, equally distributed among the trapping sites. In zone C, only 2 beetles per week were trapped over the monitoring period. In all other regions of Switzerland, no *D. virgifera* was caught. The numbers of insects caught in 2001 in Ticino indicated that a population is now established near the border area of Chiasso. As the numbers of insects caught near Lugano are less important, it is no longer believed that the airport was the initial focus. The Swiss authorities will prohibit maize monoculture in zone A and B. Transport of silage from zones A and B to C will also be prohibited. Considering the population levels observed in the nearby northwestern Italy, eradication is not considered feasible.

Ukraine
Maize is one of the major crops, covering 1,700,000 ha. During the last few years, a monitoring programme was set up in Ukraine. In 2001, 1200 pheromone and yellow sticky traps were placed over an area of 500,000 ha in 25 geographical regions and 106 administrative units. More attention was given to the regions of Zakarpatya, Chernivtsi and Odessa, which are near Hungary and Romania. In August 2001, *D. virgifera* was caught for the first time in Zakarpatya region, west of the Carpathians near the Hungarian and Romanian borders (districts of Vynogradiv and Beregove). In total, 50 specimens were caught in 7 locations. Research is being carried out on pheromones and on resistant maize cultivars. An analysis of the geographic and agroclimatic characteristics of Ukraine to predict the spread of *D. virgifera* in the country was made. Considering the biology of *D. virgifera,* it is likely to survive on the whole territory of Ukraine. However, maize is usually not grown in monoculture and is not grown everywhere. It was felt that in 2002-2005, *D. virgifera* will spread actively in the lowland part of the Zakarpatya region and hope that Carpathian mountains will act as a barrier to slow down its spread towards the south (although it is likely that the Danube valley will allow its penetration in this southern region, but hopefully at a later stage). Finally, the risk of spot introduction via road or air transportation to other places in Ukraine has to be considered.

Yugoslavia
D. virgifera was first found in Europe near Belgrade airport in 1992. Monitoring continued in Serbia. As 2001 was a very hot and dry year, little movement was observed towards the south or west and a decrease in population levels was observed. In 2001, damage was observed on less than 1.000 ha (compared to 50.000 ha in 2000). It was felt that when climatic conditions return to normal, populations might increase again. It was stressed that small farmers in Yugoslavia when faced with the damage caused by *D. virgifera* have abandoned monoculture and started crop rotation, as a consequence a 30 % reduction of maize cultivation in the last few years was observed. The importance

of training farmers on how to assess population levels in their fields and better estimate the need for crop rotation or chemical treatments was emphasized.

Source: Papers presented at the 6th Meeting of the EPPO ad hoc Panel on *D. virgifera* held jointly with the 8th International IWGO Workshop on *D. virgifera* in Venezia, IT, 2000-10-29/30.
NPPO of France, 2001-12.

Additional key words: new records, detailed records **Computer codes:** DIABVI, AL, AT, BA, BG, CH, DE, FR, HR, HU, IT, RO, SI, SK, UA, YU

2002/002 Resistance to carbaryl in *Diabrotica virgifera*

In order to reduce the use of soil insecticides against larvae of *Diabrotica virgifera* (EPPO A2 quarantine pest), area wide management programmes against adult populations of the pest have been developed in USA. In these foliar treatments, an insecticide (carbaryl) and an attractant (cucurbitacin) are used over wide areas of maize fields (commercial product is called Slam). Studies were done in Kansas to assess the possible development of insecticide resistance in insect populations. Susceptibility of adult populations to carbaryl was determined in 1996 before the implementation of the area wide management programme applied in north central Kansas. Adult susceptibility was then monitored from 1997 to 2000, both in non treated and treated areas. Results showed that in the treated areas, adult susceptibility to carbaryl decreased rapidly. In 1999, adults were 9 to 20-fold less susceptible to carbaryl at the LC_{50} and LC_{90} levels, respectively, than adults evaluated in 1996. The authors stressed the necessity to develop resistance management programmes at early stages. The efficacy of other active substances with different chemical nature or mode of action associated with baits should be studied.

Source: Zhu, K.Y.; Wilde, G.E.; Higgins, R.A.; Sloderbeck, P.E.; Buschman, L.L.; Shufran, R.A.; Whitworth, R.J.; Starkey, S.R.; He, F. (2001) Evidence of evolving carbaryl resistance in Western corn rootworm (Coleoptera: Chrysomelidae) in areawide-managed cornfields in North Central Kansas.
Journal of Economic Entomology, 94(4), 929-934.

Additional key words: resistance **Computer codes:** DIABVI, US

2002/003 First report of *Monilinia fructicola* in France

Monilinia fructicola (EPPO A1 quarantine pest) has been reported for the first time in France. A survey carried out in autumn 2001 revealed the presence of the fungus in peach orchards which are located in the Rhône valley (from south of Lyon up to Gard département). The phytosanitary measures which will be applied in 2002 are under study. The situation of

Monilinia fructicola in France can be described as follows: **Present, found in peach orchards in the Rhône valley (from south of Lyon up to Gard département), under official control.**

Source: **NPPO of France, 2002-02**

Additional key words: new record **Computer codes:** MONIFC, FR

2002/004 Details on the situation of several quarantine pests in Slovakia

The NPPO of Slovakia recently informed the EPPO Secretariat on the current situation of several quarantine pests:

Clavibacter michiganensis subsp *sepedonicus* (EPPO A2 quarantine pest): **Absent, intercepted only**.

Clavibacter michiganensis subsp *insidiosus* (EPPO A2 quarantine pest): **Absent, reported but not confirmed**. The report of this bacterium in Slovakia came from a pilot survey carried out in 1976 in western Slovakia by the Plant Production Research Institute for breeding purposes. The results of this survey have never been confirmed by any phytosanitary authority.

Diabrotica virgifera (Coleoptera: Chrysomelidae – EPPO A2 quarantine pest): **Present, restricted distribution.**

Stolbur phytoplasma (EPPO A2 quarantine pest): it was found in 2000 at three production sites of ware potatoes. The identity of the pathogen was confirmed by PCR. This is the first confirmed case in the last 50 years. In 2001, *Stolbur phytoplasma* was detected at one place of production, but this was not confirmed by PCR. **Present, found only in three places of production.**

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

Additional key words: new record, detailed records **Computer codes:** CORBSE, CORBIN, DIABVI, PHYP10, SK

2002/005 New data on quarantine pests and pests of the EPPO Alert List

By browsing through the literature, 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 geographical records**

Aleurodicus dispersus (Hemiptera: Aleyrodidae, Alert List) occurs in Madeira, Portugal (Martin *et al*, 2000). **Present, no details.**

Echinothrips americanus (Thysanoptera, Thripidae) is reported for the first time from Sweden on glasshouse ornamentals (Nedstam, 2001). **Present, found only under glasshouses**.

- **Detailed records**

Rhizomania, caused by *Beet necrotic yellow vein benyvirus* (EPPO A2 quarantine pest) was found in October 2000 in sugar beet crops of the Columbia River Basin of Washington and Oregon, US (Gallian *et al*., 2002).

Claviceps africana (EPPO Alert List) is reported for the first time from Florida (US). It has been detected in Manatee and Alachua counties (ProMED-mail, 2001).

Frankliniella occidentalis (EPPO A2 quarantine pest) occurs in Madeira, Portugal. It was first found in 1992 on roses, and is now widespread in Madeira and the island of Porto Santo on ornamental and vegetable crops (particularly beans and cucumber). However, no severe outbreaks have been observed (Fernandes, 2001).

Tomato spotted wilt tospovirus (EPPO A2 quarantine pest) occurs in Madeira, Portugal. It was first found in 1999 on tomato crops in Câmara de Lobos. Surveys carried out in 2000, showed that the virus is only present in that area. It was mainly found on tomato, capsicum and lettuce crops (Fernandes, 2001).

In Iran, *Xanthomonas axonopodis* pv. *citri* (EPPO A1 quarantine pest) was first reported in 1990 on citrus trees in Kanouj region, Kerman province. At present, it is widely distributed across the southern region of Iran (Mohammadi *et al*., 2001).

In Florida (US), *Xanthomonas axonopodis* pv. *citri* (EPPO A1 quarantine pest) has been found in Desoto and Brevard counties, despite the current eradication programme (ProMED-mail, 2002).

- **New host plants**

Impatiens necrotic spot tospovirus (EPPO A2 quarantine pest) has been detected in *Opuntia microdasys*, in United Kingdom. Affected plants showed necrotic spots (Blockley & Mumford, 2001).

Source:

Blockley, A.L.; Mumford, R.A. (2001) Identification and isolation of *Impatiens necrotic spot virus* from prickly pear cactus (*Opuntia microdasys*). **Plant Pathology, 50(6), p 805**.

El-Muadhidi, M.A.; Makkouk, K.M.; Kumari, S.G.; Jerjess, M.; Murad, S.S.; Mustafa, R.R.; Tarik, F. (2001) Survey for legume and cereal viruses in Iraq. **Phytopathologia Mediterranea, 40(3), 224-233.**

Fernandes, A. (2001) El virus del bronceado del tomate (TSWV) en los cultivos hortícolas de la Isla de Madeira. **Phytoma España, no. 126, 29-34.**

Gallian, J. J.; Wintermantel, W. M.; Hamm, P.B. (2002). First report of rhizomania of sugar beet in the Columbia River Basin of Washington and Oregon. **Plant Disease, 86(2), p 72.**

Martin, J.H.; Mifsud, D.; Rapisarda, C. (2000) The whiteflies (Hemiptera: Aleyrodidae) of Europe and the Mediterranean Basin. **Bulletin of Entomological Research, 90, 407-448.**

Mohammadi, M.; Mirzâee, M.R.; Rahimian, H. (2001) Physiological and biochemical characteristics of Iranian strains of *Xanthomonas axonopodis* pv. *citri*, the causal agent of citrus bacterial canker disease. **Journal of Phytopathology, 149(2), 65-75.**

Nedstam, B. (2001) Thrips in interior landscapes. **Växtskyddsnotiser, 65(1), 6-9.**

ProMED-mail of 2001-11-24. Ergot, Sorghum – USA (Florida)
ProMED-mail of 2002-01-29. Citrus canker, Northern spread – USA (Florida)
http://www.promedmail.org

Additional key words: new records, detailed records, new host plants

Computer codes: ALEDDI, BNYVV0, BYDV00, CLAVAF, ECHTAM, FRANOC, INSV00, TSWV00, XANTCI, GB, IQ, IR, PT, SE, US

2002/006 *Rhagoletis cingulata* trapped in Germany

In summer 1999, one specimen of *Rhagoletis cingulata* (Diptera: Tephritidae - EPPO A1 quarantine pest) was caught for the first time in Germany, in a Malaise trap near Dörscheid in Rheinland-Pfalz. However, further studies are needed to assess the situation of *R. cingulata* in Germany and to determine the extent of its presence there. The situation of *R. cingulata* in Germany can be described as follows: **Transient, a single specimen was caught in 1999 in Rheinland-Pfalz.**

Source: Merz, B.; Niehuis, M. (2001) [Remarkable records of fruit flies (Diptera, Tephritidae) from Rhineland-Palatinate (Germany)].
Dipteron, 4(1), 57-64.

Additional key words: new record, incursion **Computer codes:** RHAGCI, DE

2002/007 Eradication of *Bactrocera carambolae* in Guyana

Bactrocera carambolae (EPPO A1 quarantine pest) originates from south-east Asia and has been introduced into French Guiana, Guyana and Suriname probably in the 1970s (see EPPO RS 96/063). In March 1996, *B. carambolae* was found in Brazil, at Oiapoque, near the border with French Guiana. In 1998, 3 outbreaks were detected in the State of Amapá, one of them was found at 600 km south of Oiapoque at Macapá (capital of Amapá State). A few months later these populations were eradicated.
In 1988, a regional programme for the eradication of *B. carambolae* in South America was initiated. This programme included surveys to determine the extent of infestations, and eradication treatments (male annihilation and protein bait techniques). In Guyana, as a result of this eradication programme, no *B. carambolae* has been trapped nor emerged from collected fruits since May 1998. Guyana now considers that eradication has been successful and that its territory is free from *B. carambolae*. The nearest infested area is near Paramaribo in Suriname (250 km way from the border of Guyana). In Guyana, post-eradication activities are taking place. The trapping system which was put in place for the eradication programme continues, inspections of consignments and passengers at the main points of entry are being carried out, and public information about the risks are being made. The situation of *B. carambolae* in Guyana can be described as follows: **Absent, eradicated**.

Source: Status of the Cooperative Republic of Guyana as country free of *Bactrocera carambolae*, Carambola Fruit Fly. Carambola Fruit Fly Programme in Northern of South America, IICA, Georgetown, Guyana, October 2000, 22 pp.

Additional key words: eradication **Compu ter codes:** BCTRCB, GY

EPPO *Reporting Service*

2002/008 Attractants for *Bactrocera latifrons*

The Asian species, *Bactrocera latifrons* (Diptera: Tephritidae) primarily infests fruits of Solanaceae, but has also been found in some Cucurbitaceae. It was introduced in the 1980s into Hawaii (US). Laboratory and field studies on male attractants were done in Hawaii. They showed that a mixture of α-ionol with cade oil (essential oil produced by distillation of *Juniperus oxycedrus* twigs) was effective. The captures of males at traps baited with this mixture were three times greater than at traps baited with α-ionol alone. Further studies will be made to identify the active ingredient present in essential oil which is responsible for this synergism.

Source: McQuate, G.T.; Peck, S.L. (2001) Enhancement of attraction of alpha-ionol to male *Bactrocera latifrons* (Diptera: Tephritidae) by addition of a synergist, cade oil.
Journal of Economic Entomology, 94(1), 39-46.

Additional key words: biology **Computer codes:** DACULA

EPPO *Reporting Service*

2002/009 Survey for *Bemisia tabaci* in France

A survey for *Bemisia tabaci* (EPPO A2 quarantine pest) was carried in France from 1997 to 1999. 400 samples from 65 hosts (30 % *Solanaceae*, mainly tomatoes, and ornamentals: *Fuchsia, Lantana, Verbena*…) were collected in the fields and in glasshouses. Samples were taken from different regions with emphasis on the Centre region. Results showed that the predominant whitefly species is still *Trialeurodes vaporariorum*, as it was found in more than 80% samples. *B. tabaci* was found in 7.3 % of the samples and only in crops grown under heated glasshouses, with a single exception in 1999. That particular year, *B. tabaci* was observed in one tomato field in Camargue (Provence-Alpes-Côte d'Azur region), where *Tomato yellow leaf curl begomovirus* was detected and later eradicated (see EPPO RS 2000/168). This field had been grown with imported tomato plants from Almería, Spain. It is suspected that both *B. tabaci* and the virus came with the imported plants. An additional indication was that, all tested *B. tabaci* populations found in France belonged so far to B biotype, whereas this population found in Camargue belonged to non-B biotype which occurs in Spain. Climatic studies showed that outdoor survival of *B. tabaci* in France is most probably limited to the east part of Côte d'Azur. Conclusion was that *B. tabaci* is still of very limited distribution in France and remains confined to protected crops. The situation of *B. tabaci* in France can be described as follows: **Present, found sporadically in protected cultivation only**.

Source: Reynaud, P. (2000) L'aleurode *Bemisia tabaci* en France. Situation actuelle et possibilités de développement.
Phytoma – La Défense des Végétaux, no. 527, 18-21.

Additional key words: detailed record **Computer codes:** BEMITA, FR

2002/010 Further studies on the existence of cryptic species within *Liriomyza huidobrensis*

Earlier genetic studies had shown that *Liriomyza huidobrensis* (Diptera, Agromyzidae - EPPO A2 quarantine pest) may be composed of two cryptic species (EPPO RS 2001/016). Further phylogenetic analysis using DNA sequence data from 2 nuclear genes were done in USA, on specimens of *L. huidobrensis* from various hosts and locations around the world (USA, Guatemala, Ecuador, Colombia, Peru, Argentina, Sri Lanka, Israel and Indonesia). Results confirmed the existence of 2 different clades: a clade containing only specimens from California and Hawaii (US), the another clade containing all other specimens (mainly from South and Central America). The authors proposed that the North America cryptic species should be called *L. langei* (first name given to the leafminer when described in California) and restrict the name *L. huidobrensis* to the South and Central American species. The authors also noted that recent invasions of this leafminer to other areas of the world are due to the spread of *L. huidobrensis* from South or Central America. Morphological studies are under way, but so far it is not possible to differentiate *L. langei* and *L. huidobrensis* on the basis of morphological characters.

Source: Scheffer, S.J.; Lewis, M.L. (2001) Two nuclear genes confirm mitochondrial evidence of cryptic species within *Liriomyza huidobrensis* (Diptera: Agromyzidae).
Annals of the Entomological Society of America, 94(5), 648-653.

Additional key words: taxonomy **Computer codes:** LIRIHU

2002/011 First finding of *Paysandisia archon* in France

In 2001, in the south of France near Hyères (region Provence-Alpes-Côte d'Azur), an unusual pest has been identified in nurseries where dying palm trees were observed. INRA identified the insect as *Paysandisia archon* (*Castnia archon* – Lepidoptera: Castniidae) which originates from South America. This is the first report of this insect in France. It is suspected that *P. archon* was introduced from Argentina, as larvae hidden in the stipes of palm trees. The available bibliography did not mention particular damage caused by this insect in its area of origin. However in France, nursery growers and professionals responsible for city parks and gardens are particularly concerned about the damage this insect may cause to palm trees. Measures are being taken to control the pest. Studies are also being carried out on the biology and control of *P. archon*.

Source: **NPPO of France, 2002-02.**

Additional key words: new record **Computer codes:** FR

2002/012 Addition of *Paysandisia archon* to the EPPO Alert List

The EPPO Secretariat tried to find more data on *Paysandisia archon* but with little success: the only data it could find came from the Internet. Surprisingly, the same unusual insect has been found in Spain, also in one nursery importing palm trees from South America. Therefore, the EPPO Secretariat decided to add it to the EPPO Alert List, despite the lack of information.

Paysandisia archon (Lepidoptera: Castniidae) – a palm borer

Why	*Paysandisia archon* came to our attention because it has recently been introduced into France (near Hyères) and Spain (near Girona), where it caused damage to ornamental palm trees.
Where	*P. archon* originates from South America: Argentina and Uruguay. Found in France, in summer 2001 near Hyères. According to a French association of palm amateurs, numerous dead palm trees were observed in several nurseries. Adults were observed flying near Hyères, Six Fours and Ollioules. It is felt that the insect was introduced 4 years ago by various importers on *Butia yatay* and *Trithrinax campestris* from Argentina. In Spain, *P. archon* has been found in one nursery in Girona, Cataluña in 2000/2001 on *Trachycarpus fortunei, Phoenix canariensis* and *Chamaerops humilis*. It is felt that *P. archon* was introduced between 1985 and 1995 on palm trees from Argentina. In Girona, *Trachycarpus fortunei* was the most severely affected palm species.
On which plants	Many palm species, e.g.: *Butia yatay, Chamaerops humulis, Latania, Phoenix canariensis, Trachycarpus fortunei, Trithrinax campestris, Washingtonia.*
Damage	Larvae bore galleries within palm stipes, leading to serious damage, including plant death. In Girona, it has been observed that females lay eggs on palm stipe near the growing point. Young larvae bore into the stipe and make large galleries. Pupation takes place inside a cocoon made of plant fibres between palm petioles. Adults are beautiful butterflies, with a wingspan of 10 to 11 cm. Posterior wings are red with black and white maculas. It is probable that this species has a biannual life cycle, but more data is needed on the biology of this insect.
Dissemination	Natural dispersal can be ensured by flying adults. Over long distances, the pest has already showed its potential for spread, being introduced into two countries in Europe. Movements of infested plants can ensure long distance dissemination. Larvae are obviously very difficult to detect in palm trees due to their hidden mode of life.
Pathway	Plants for planting of Palmae from Argentina and Uruguay.
Possible risks	Palm trees are grown around the Mediterranean Basin. Apparently, only ornamental trees are concerned by *P. archon*, but more data is needed on the susceptibility of date palm trees (*Phoenix dactylifera*) to this insect as it is an important crop in certain parts of the EPPO region. Serious damage and plant mortality are reported in nurseries. Detection and control are difficult, as larvae cannot be seen nor reached easily within the stipe. Although more data is needed on the biology of *P. archon* and on its potential of establishment under Mediterranean climate, present experience shows that it can survive there for at least a few years.
Source(s)	INTERNET ACER Jardines. Presencia en España de una nueva especie de lepidoptero que afecta a las palmeras. http://www.acer-jardines.com Association des Amateurs de Palmiers. 'Fous de Palmiers' (Hyères) Palm warning. http://www.chez.com/palmiers/alertecastnia.php Vivers Ter, S.A. (Nursery near Girona) Nueva plaga en palmáceas. http://www.v-ter.com/set2001.htm

EPPO RS 2002/012
Panel review date - Entry date 2002-01

2002/013 Addition of *Homalodisca coagulata* to the EPPO Alert List

The xylem-limited bacterium *Xylella fastidiosa* (EPPO A1 quarantine pest) can cause different diseases on various host plants (e.g. alfalfa dwarf, grapevine Pierce's disease, citrus variegated chlorosis, peach phony disease, almond leaf scorch, plum leaf scald, oleander leaf scorch, leaf scorch on several forest tree species) and is transmitted by insect vectors. All sucking insects feeding on xylem sap may be potential vectors. In California (US), the recent establishment of *Homalodisca coagulata* (glassy-winged sharpshooter) resulted in an increase of grapevine Pierce's disease incidence and is perceived as a threat to the whole Californian grapevine industry and also to other plants such as alfalfa, almond, peach, plum and oleander. Until the introduction and establishment of *H. coagulata* in California, the most important vectors of grapevine Pierce's disease were *Graphocephala atropunctata* (blue-green sharpshooter), *Draeculacephala minerva* (green sharpshooter) and *Carneocephala fulgida* (red-headed sharpshooter). All three species are listed as quarantine pests in the EU Annexes. The EPPO Panel on Phytosanitary Measures considered that *H. coagulata,* as an efficient vector of *X. fastidiosa*, could present a risk to the EPPO region and therefore should be added to the EPPO Alert List

Homolodisca coagulata (Homoptera: Cicadellidae) – vector of *Xylella fastidiosa*

Why	In California (US), the recent establishment of *Homalodisca coagulata* (glassy-winged sharpshooter) resulted in an increase of incidence of grapevine Pierce's disease (caused by *Xylella fastidiosa*) and is perceived as a threat to the whole Californian grapevine industry and also to other plants such as alfalfa, almond, peach, plum and oleander. As *H. coagulata* seems to present a greater risk to the EPPO region than the listed vectors of *X. fastidiosa*, with respect to both grapevine and citrus, the EPPO Panel on Phytosanitary Measures felt that it should be added to the EPPO Alert List.
Where	Mexico (north, except in very arid areas), USA (southern states: Alabama, Arkansas, Florida, Louisiana, Mississippi, North Carolina, South Carolina, Texas). Recently established in southern California but it is expected that it will continue to spread towards the north. *H. coagulata* is thought to have been introduced from other parts of USA, most probably as egg masses on plant material. Since the early 1990s, *H. coagulata* has been seen in high numbers in citrus groves along the coast of southern California but until 1994 it was confused with a similar species *Homalodisca lacerta.*
On which plants	It has a very broad host range. It has been found on more than 70 plant species in 35 families including: avocado, citrus, macadamia, and many woody ornamentals (e.g. *Fraxinus*, *Lagerstroemia*, *Rhus*). A list of host plants can be viewed on Internet (California Department of Food and Agriculture).
Damage	Adults are 13-14 mm long, dark brown with small yellow dots on head and thorax. Membranous, translucent wings with reddish veins. Insects overwinter as adults and begin laying egg masses (10-12 eggs) in late February through May. Adults of this first generation appear in late May through late August. Second-generation egg masses are laid from mid-June though late September. *H. coagulata* feeds on stems rather than leaves, and excretes copious amounts of watery excrement. In California, *H. coagulata* is an efficient vector of *X. fastidiosa* to grapevine, almond, and oleander. In southeastern USA, *H. coagulata* is considered as the most efficient vector of peach phony and plum leaf scald. The strain of *X. fastidiosa* causing citrus variegated chlorosis does not occur in California. While *H. coagulata* is not positively mentioned as a

vector of this strain, it occurs abundantly on citrus and seems likely to facilitate spread of the citrus disease if it were ever introduced into California. Following the establishment of *H. coagulata* in California, an outbreak of grapevine Pierce's disease occurred in the Temecula Valley of Southern California. The outbreak started in 1997. In 1998, symptoms were visible in a few localized areas but when tests were done they revealed a disease incidence of 25% to 97% in vineyards. It is estimated that during the last 3 growing seasons, the disease has killed more than 120 ha of vineyards in the Temecula Valley and that it threatens the whole Californian grapevine industry. Phytosanitary measures are being taken in California to prevent the spread of *H. coagulata*.

Pathway — *H. coagulata* could be introduced via its many host plants into the EPPO region. Plants for plantings, cut flowers and branches, fruits?

Possible risks — *X. fastidiosa* does not occurs in Europe but it represents a very serious threat essentially to grapevine and citrus crops, but also to other host plants such as deciduous forest and amenity trees and oleander. Measures are already taken to present the entry of *X. fastidiosa* but it is also very important to prevent the entry of efficient vectors such as *H. coagulata*.

Source(s)

Blua, M.J.; Redak, R.A.; Morgan, J.W.; Costa, H.S. (2001) Seasonal flight activity of two *Homalodisca* species (Homoptera: Cicadellidae) that spread *Xylella fastidiosa* in Southern California. Journal of Economic Entomology, 94(6), 1506-1510.

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Purcell, A.H.; Saunders, S.R. (1999) Glassy-winged sharpshooters expected to increase plant disease. California Agriculture, 53(2), 26-27 (abst.).

Purcell, A.H.; Saunders, S.R.; Hendson, M. Grebus, M.E.; Henry M.J. (1999) Causal role of *Xylella fastidiosa* in oleander leaf scorch disease. Phytopathology, 89(1), 53-58.

INTERNET

Xylella Web Site. http://www.cnr.berkeley.edu/xylella/

California Department of Food and Agriculture.
Pierce disease control programme and list of host plants of *H. coagulata*. http://pi.cdfa.ca.gov/pqm/manual/454.htm
GWSS/PD Home page. http://plant.cdfa.ca.gov/gwss/gwpics.htm

University of California. Agriculture and Natural Resources. Report of the Pierce's Disease research and emergency response task force. http://danr.ucop.edu/news/speeches/glassywinged.html

California Farm Bureau Federation. Glassy-winged sharpshooter news and information service. http://www.cfbf.com/issues/gwss/

EPPO RS 2002/013
Panel review date - Entry date 2002-01

EPPO *Reporting Service*

2002/014 Details on the present situation of *Bursaphelenchus xylophilus* and its vectors in China

In China, pines are very important forest trees, covering approximately 20% of the total forest area. *Bursaphelenchus xylophilus* (EPPO A1 quarantine pest) was first reported in 1982 on a dead *Pinus thunbergii* tree at Nanjing city, Jiangsu Province. In 1988, it was found in Anhui Province (mainly on *P. thunbergii* and *P. massoniana*), and in Shenzhen city, Guangdong Province (mainly on *P. massoniana*). It is felt that it had spread from Hong-Kong to Guandong Province. In 1991, it was found in Zhejiang (*P. massoniana* and *P. thunbergii*), and in Changdao county, Shandong Province (it was found on an island which was a harbour before, on *P. thunbergii* and *P. densiflora*). In 1999, *B. xylophilus* was detected in Hubei Province (*P. massoniana*). In areas where the nematode was found, phytosanitary measures are being applied: destruction of dead pine trees, treatments of logs (burning, fumigation, chemical treatments), treatments against insect vectors.
The most efficient vector of *B. xylophilus* is *Monochamus alternatus*. This insect is widespread in China where it occurs in almost all areas planted with pine in Central and South China. Other vectors species present in China are *M. saltuarius* and *M. sutor*.

- *M. alternatus* occurs in Anhui, Beijing municipality, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei*, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi*, Shandong, Shanghai municipality, Shanxi*, Sichuan, Tianjin municipality, Xizhang, Yunnan, Zhejiang.
- *M. saltuarius* occurs in: Beijing municipality*, Hebei*, Heilongjiang, Jilin*, Shandong*, Tianjin municipality*.

-*M. sutor* occurs in: Helongjiang*, Inner Mongolia*, Jilin*, Liaoning*, Qinghai*.*

Source: Yang, B.-J. (2001) The History, Spreading Manner and Potential Threat of PWN in China.
Paper presented at the International Workshop on the pine wood nematode (PWN), *Bursaphelenchus xylophilus*, Evora, PT, 2001-07-20/22.

Additional key words: detailed record **Computer codes:** BURSXY, MONCAL, MONCSL, MONCSU, CN

* New detailed records

2002/015 Invasive plant species: "black" list of species established by the Swiss Commission for the Conservation of Wild Plants

The EPPO Working Party on Phytosanitary Regulations and Council have agreed that EPPO should develop activities in the field of invasive alien species. It is recognized that quarantine pests are one category of invasive alien species, but that EPPO activities should be extended to other invasive alien species which may present risks to cultivated or wild plants. Therefore, from now on the EPPO Secretariat will try to gather information on invasive species, including in particular invasive plants.

In Switzerland, the Swiss Commission for the Conservation of Wild Plants has gathered a "black list" of invasive neophytes which are particularly aggressive and harmful for the environment (including for certain species risk for human health, indicated below with an asterisk). It is clearly stated that present populations of these invasive species should be reduced as much as possible and that any further spread should be avoided.

Black list

Scientific name	**Origin**
Highly invasive species	
*Heracleum mantegazzianum**	Caucasus
Impatiens glandulifera	Himalaya
Reynoutria japonica (*Fallopia japonica* or *Polygonum cuspidatum*)	Far East
Rubus armeniacus	Caucasus
*Solidago canadensis**	North America
Solidago gigantea (*S. serotina*)*	North America
Other invasive species	
*Ambrosia artemisiifolia**	North America
Artemisia verlotiorum	Far East
Buddleja davidii	China
Cornus sericea (*C. stolonifera*)	North America
Elodea canadensis	North America
Erigeron annuus	North America
Helianthus tuberosus	North America
Impatiens parviflora	Asia
Polygonum polystachyum	Himalaya
Rhus typhina (*R. hirta*)*	North America
Robinia pseudacacia	North America
Senecio inaequidens	South Africa

Invasive species present in the South of the Alps

Ailanthus altissima	China
Lonicera japonica	Far East
Phytolacca americana	North America

Source: Anonymous (2002) Plantes sauvages: production et utilisation des semences et des plants. Recommandations 2001. CPS (editeur) Commission Suisse pour la conservation des plantes sauvages.
Revue Suisse d'agriculture, 34(1), cahier spécial, 12 pp.

Web site of the CPS (Swiss Commission for the Conservation of Wild Plants)
http://www.cps-skew.ch/francais/liste_noire02.htm

Additional key words: invasive plant species **Computer codes:** CH

EPPO *Reporting Service*

2002/016 Studies on *Potato yellow vein crinivirus* in South America

It is recalled that sporadic outbreaks of potato yellow vein disease (EPPO A1 quarantine pest) were first observed by potato growers in Antioquia, Colombia, as early as 1943. Disease incidence rapidly reached alarming levels, and yield losses were observed as affected plants usually produce fewer tubers. It was noted that *Trialeurodes vaporiorum* transmitted the disease. Recent studies done in South America showed that the disease is associated with a crinivirus called *Potato yellow vein crinivirus*. Epidemiological surveys carried out in Rio Negro, Colombia showed that weeds such as *Polygonum mepalense* could provide important reservoirs for *Potato yellow vein crinivirus*. Lower virus concentrations were also found in *Rumex obtusifolium*, *Tagetes* and *Catharanthus roseus*. Further details were given on its geographical distribution in South America.

- Colombia: during 1995-1998, visual surveys showed that disease incidence varied among potato fields. It varied from 5 to 80 % in Rionegro (1997), and from 10 to 60 % in Cundinamarca (1995-1998). In Boyaca, no symptoms were seen (1996).
- Ecuador: the disease has been observed in Ibarra and Quito (it was found there even before 1996).
- Peru*: in 1996, the disease was observed in 2 fields in Chota (Cajamarca), 3 fields in Huaras, and 1 field in Huancayo. In Cajamarca and Huaras, disease incidence varied from 5 to 98 %, whereas in Huancayo, only 2 potato plants showed symptoms. Information gathered from farmers and extension services suggested that the disease has been recently introduced, probably from Ecuador or Colombia.
- Venezuela: in 1998, diseased plants were observed in 4 states: Lara, Merida, Tachira and Trujillo. Incidence in potato fields above 1700 m was 3-10 %. Affected cultivars were mostly of Colombian origin.

The authors concluded that considering its transmission via trade of seed potatoes, the increase of *T. vaporariorum* populations and its survival in weeds, *Potato yellow vein crinivirus* represents a potential threat to the world potato production.

Source: Salazar, L.F.; Müller, G.; Querci, M.; Zapata, J.L.; Owens, R.A. (2000) Potato yellow vein virus: its host range, distribution in South America and identification as a crinivirus transmitted by *Trialeurodes vaporariorum*. **Annals of Applied Biology, 137(1), 7-19.**

Additional key words: detailed record, new record **Computer codes:** CO, EC, PE, VE, PYVV00

* The EPPO Secretariat had previously no data on the occurrence of this virus in Peru.

EPPO *Reporting Service*

2002/017 Research on a new disease of sugarbeet in France: 'Syndrome des Basses Richesses'

In France, a new disease of sugarbeet appeared in Bourgogne and Franche-Comté regions in 1991. This disease which was called 'Syndrome des Basses Richesses' is of uncertain aetiology. Symptoms are characterized by yellowing and curling of old leaves, leading to the new growth of central leaves which appear chlorotic, lanceolated and asymmetrical. Roots are of normal size but contain brown vascular bundles, and their sugar content suddenly decreases at the beginning of September. Since 1991, this disease has occurred with variable severity in these regions. Economic losses could be observed due to the poor sugar content of affected roots. Considering the apparent aerial transmission of the disease, the similarity of symptoms with yellow wilt (phytoplasma disease) and the detection of phytoplasmas in affected plants, it is strongly suspected that phytoplasmas are involved in the disease. However, the presence of detectable phytoplasma DNA in leaves and roots could not reliably be related to the expression of symptoms. In 1997 and 1998 in Franche-Comté, searches were made for potential phytoplasma vectors in an area where sugarbeet crops had been affected by the disease since 1996. Results revealed the presence of a cixiid, tentatively identified as *Pentastiridius beieri* (full determination is not yet finalized). High populations of this insect were observed in sugarbeet plots during summer. In addition, *Stolbur phytoplasma* (EPPO A2 quarantine pest) was detected in several individuals (and also in diseased sugarbeet). Experiments showed that *P. beieri* could transmit *Stolbur phytoplasma* to periwinkle and sugarbeet. So far, only *Hyalesthes obsoletus* was a known vector of *Stolbur phytoplasma*. Research will continue to better understand the aetiology and epidemiology of this new sugarbeet disease.

Source: Gatineau, F.; Larrue, J.; Clair, D.; Lorton, F.; Richard-Molard, M.; Boudon-Padieu, E. (2001) A new natural planthopper vector of stolbur phytoplasma in the genus *Pentastiridius* (Hemiptera: Cixiidae).
European Journal of Plant Pathology, 107(3), 263-271.

Additional key words: aetiology, epidemiology **Computer codes:** PHYP10, FR