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2001/001 Read the EPPO Reporting Service on the EPPO Web Site !

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Source: **EPPO Secretariat, 2001-01.**

2001/002 Addition to the EPPO Alert List of sudden oak death: a new *Phytophthora* disease of oak in California, US

Since 1995, significant mortality has been observed on oak trees in coastal areas of California, US. Large numbers of *Lithocarpus densiflorus* (tanoaks), *Quercus agrifolia* (coast live oak) and *Q. kellogii* (black oaks) have been killed by a disease complex which was called sudden oak death. So far, the disease has not been observed on other Californian oak species such as: *Q. lobata* (valley oak), *Q. douglasii* (blue oak) and *Q. wislizenii* (interior live oak). Tree mortality has been noted in various forest types, as well as on trees growing at the urban-wildland interface. All age classes of trees are affected from saplings to mature trees over 1 meter diameter. Symptoms vary slightly between tree species. In *L. densiflorus*, wilted shoots are usually observed as the first symptoms. Older leaves become pale green and 2 to 3 weeks later the foliage turns brown, announcing the death of the tree. On the lower portion of the trunk, a burgundy-red to black sap oozing (bleeding) appears on the bark surface. In *Q. agrifolia* and *Q. kellogii*, the earliest symptom is usually the sap oozing. Sunken or flattened cankers are observed beneath the bleeding with a distinctive dark red canker margin in the bark and outer sapwood. Apparently, no root symptoms are observed on diseased trees. In June 2000, a *Phytophthora* species was isolated from dying trees. Based on morphological characteristics and nucleotide sequence of the internal transcribed spacer region (ITS) of the rDNA, it could not be assigned to any known *Phytophthora* species (the closest relative being *P. lateralis*) and hence was considered as a new *Phytophthora* species. Koch's postulates were completed by inoculating seedlings and mature trees. However, it is still not clear whether *Phytophthora* alone can kill mature trees. Other pathogens and pests, as *Hypoxylon thouarsianum,* and *Pseudopityophthorus pubipennis* (bark beetle), *Monarthrum scutellare* and *M. dentiger* (ambrosia beetles) are commonly present on diseased trees. In addition, it may be possible that unfavourable environmental conditions (e.g. water stress) could also play a role in the disease. So far, this new *Phytophthora* species is restricted to the following Californian

counties: Marin, Monterey, Napa, San Mateo, Santa Cruz, Sonoma (central coastal areas of California). It appears that the pathogen is favoured by cool wet conditions, such as the ones prevailing in the coastal areas of California. In culture, optimum growth was obtained around 20 °C. Like other *Phytophthora,* the pathogen is likely to be transported in infected plants or plant parts, and soil. As susceptible oak species also grow in Oregon, the Oregon Department of Agriculture and the Oregon Department of Forestry have recommended not to transport oak wood (firewood especially, but also seedlings, logs, bark products and acorns), and soil from infested areas (in particular, vehicles, shoes, bicycles have to be cleaned).

The origin of this new disease remains unknown. It is not known whether it has been introduced or if changes in environmental conditions have favoured the emergence of an already existing pathogen. The mode of transmission of the disease from tree to tree is not known. Research has been initiated on this new *Phytophthora* to better understand its etiology, biology and epidemiology, as it is felt that it could present a serious threat to oaks in California and in other parts of USA where susceptible oak species are present. European oaks are not known to be susceptible, but any damaging oak disease is a threat to the EPPO region.

Sudden oak death

Why	Sudden oak death came to our attention as significant tree mortality has been observed on several oak species in California (US). Recently, a new *Phytophthora* species has been found associated with the disease and is considered as the primary causal agent. However, other factors might be involved in the disease (such as secondary pests: *Hypoxylon thouarsianum, Pseudopityophthorus pubipennis* (bark beetle), *Monarthrum scutellare* and *M. dentiger* (ambrosia beetles) and unfavourable environmental conditions).
Where	USA: central coastal areas in California (counties of Marin, Monterey, Napa, San Mateo, Santa Cruz, Sonoma)
On which plants	*Lithocarpus densiflorus* (tanoaks), *Quercus agrifolia* (coast live oak) and *Q. kellogii* (black oaks). These oak species are native to California.
Damage	Symptoms vary slightly between tree species. In *L. densiflorus*, wilted shoots are usually observed as the first symptoms. Older leaves become pale green and 2 to 3 weeks later the foliage turn brown, announcing the death of the tree. On the lower portion of the trunk, a burgundy-red to black sap oozing (bleeding) appears on the bark surface. In *Q. agrifolia* and *Q. kellogii*, the earliest symptom is usually the sap oozing. Sunken or flattened cankers are observed beneath the bleeding with a distinctive dark red canker margin in the bark and outer sapwood.
Transmission	Infection would occur through zoospores, sporangia and chlamydospores. As for other *Phytophthora*, it is likely that the disease can be transmitted by infected plants and soil. However, it has also been observed that sporangia of the fungus are deciduous which opened the possibility that they could be transported by air currents but this has not been demonstrated. Bark beetles and ambrosia beetles are commonly found on diseased trees but their potential role of vectors has not been studied yet.
Pathway	Plants for planting, wood, bark of *L. densiflorus* (tanoaks), *Q. agrifolia* (coast live oak) and *Q. kellogii*, soil from areas where the disease occurs.
Possible risks	Oaks are important forest and amenity trees in the EPPO region, and in USA significant oak tree mortality is observed. However, there is no data on the susceptibility of European oak species to the disease. From experience with other *Phytophthora* diseases, control is difficult in practice. As a consequence of tree mortality, it was felt in USA that the disease could also have a negative impact on the biological diversity of forests and lead to environmental problems (enhanced fire risk and damage to water catchments). More data is

needed on the identity, biology, host range, geographical distribution and epidemiology of the pathogen.

Source(s) INTERNET
University of California Sudden Oak Death Research Team Updates: http://himalaya.cnr.berkeley.edu/oaks/
University of California Cooperative Extension Sudden Oak Death: http://cemarin.ucdavis.edu/index2.html
Oregon Department of Agriculture Sudden Oak Death Alert: http://www.oda.state.or.us/Information/news/Sudden_Oak_Death.html
NAPPO Pest Alert: http://www.pestalert.org
Observations and comments on oak and tanoak dieback and mortality in California by Tedmund J. Swiecki (2000-10-19): http://www.phytosphere.com/tanoak.html

EPPO RS 2001/002
Panel review date 2000- Entry date 2001-01

Additional key words: new pest **Computer codes:** PHYTSP, US

2001/003 Situation of *Diabrotica virgifera virgifera* in the EPPO region in 2000

The situation of *D. virgifera virgifera* (referred to here as *D. virgifera* for convenience) has been reviewed during the 5th Meeting of the EPPO ad hoc Panel on *D. virgifera* held jointly with the 7th International IWGO Workshop on *D. virgifera* in Stuttgart, DE, 2000-11-16/17. In summary, the pest has continued to spread in 2000. It has been found for the first time in 2000 in Slovakia. Looking at a physical map of this region, it seems that *D. virgifera* has almost filled up what could be called the great Hungarian plain. But surprisingly, it has also been caught outside this region. Similarly to the previous finding near Venezia airport, *D. virgifera* has unexpectedly been found near 2 new airports in Italy and Switzerland: in Milano (Malpensa) and Lugano/Agno airports. The map in Figure 1 shows the spread of *D. virgifera* in Europe from 1992 to 2000. Economic damage has been seen on maize in Serbia, and also in some bordering areas in Croatia, Hungary and Romania. The map in Figure 2 shows the areas in which economic damage has been observed.

Albania

Monitoring started in Albania in 1999. In 2000, pheromone and yellow sticky traps were placed in maize fields in 7 counties (Shokodra, Bushat, Elbasan, Peshkopi, Durres, Sarande and Lushnja) and near Rinas International Airport. A specimen looking like *D. virgifera* was found near the International Rinas Airport but was shown after detailed examination to be another species. In conclusion, *D. virgifera* has not yet been found in Albania (see EPPO RS 2001/004).

Austria

Pheromone traps were placed along the borders with Slovenia, Hungary and Slovakia and near Vienna airport. In Austria, Steiermark is probably the most endangered region, as maize and pumpkins are widely grown. No *D. virgifera* was found in 2000. In 2001, monitoring will be intensified and conducted on larger areas.

Bosnia & Herzegovina

D. virgifera was first found in 1997 in areas bordering Serbia and Croatia. In the Federation of Bosnia & Herzegovina, 71 monitoring sites (pheromone and yellow sticky traps) were placed within the infested area and in endangered places where spread of the pest was expected. Traps were placed in Posavina, Tuzla, Zenica-Doboj and Una-Sana cantons. A total of 4374 beetles was caught in Posavina, Tuzla, Zenica-and Doboj cantons. No beetles were trapped in Una-Sana canton. Most catches were

made in Posavina and Tuzla cantons. In 2000, the spread of *D. virgifera* to new areas was limited (increase of 150 km² compared to 1999) but population levels have greatly increased. It is now estimated that the infestation covers 12,000 km², corresponding to 70% of the maize-growing area. No economic damage is reported from the Federation of Bosnia & Herzegovina.
Results of the monitoring programme carried out in Republica Srpska showed that spread continued towards the west (now approximately 150 km away from the Yugoslavian border). As the summer was very dry and hot, adult populations were active earlier than in previous years.

Bulgaria
A monitoring programme was initiated in Bulgaria in 1995. The first *D. virgifera* beetles were caught in 1998 in the north-west, near the Serbian and Romanian borders. In 2000, monitoring started at the beginning of July. Pheromone and yellow sticky traps were placed in the north and northwest of Bulgaria, near the cities of Vidin, Vratsa, Montana, Pleven, Veliko, Tarnovo and Sofia. The highest numbers of beetles were caught near Bregovo (372 adults), close to the Serbian border and in Gramada (214), Prevala (290), Mitrovei (138). In 2000, *D. virgifera* was also found in the region of Dimova and Montana. The conclusion was that the pest has continued to spread within Bulgaria.

Croatia
D. virgifera was first found in the east of Croatia in 1995, and has then spread towards the west of the country. In 2000, 130 trapping sites with pheromone and yellow sticky traps were monitored. In total, 15,084 beetles were caught in 2000. It was estimated that the infested area has reached 14,500 km² (on which 200,000 ha of maize are grown). The first beetles were caught 10-14 days earlier than in previous years (first catch on 20th June) because of the extremely dry and hot weather conditions prevailing in May and June. The pest continued to spread towards the west in the northern and middle part of the infested area (35 km in the north, 20 km in the middle part). But no spread was observed in the south of the infested area. The farthest point of spread towards the west is approximately 40 km away from Slovenia. Damage was observed only in some fields and was also related to the very dry conditions. In average, good results were obtained with chemical treatments (band treatment applied at sowing).

Czechia
In 2000, 34 monitoring sites were put in place in South Moravia and in the vicinity of airports (Prague and Ostrava) and were checked from June to beginning of October. *D. virgifera* was not found in Czechia.

Germany
Monitoring programmes have been carried out in Germany since 1998. According to the present situation of the pest in Eastern and Central Europe, it is felt that it will continue to spread naturally along the Danube and will enter Germany first in Bayern and then in Baden-Württemberg. However, the pest can also be transported by other means. The monitoring programme followed in Baden-Württemberg which is considered as a high risk area for *D. virgifera* in Germany was presented. In 2000, pheromone and MCA (plant kairomone) traps were placed in 30 locations in Baden-Württemberg in maize-growing areas, mainly along motorways, near airports, military installations and near places where large quantities of commodities are handled. No *D. virgifera* were found in Baden-Württemberg nor elsewhere in Germany.

Hungary

D. virgifera was first found in Hungary in 1995, in the south of the country and has then spread very significantly. In 2000, monitoring continued with pheromone and yellow sticky traps. The pest was trapped in 16 out of the 19 Hungarian counties. It is now present in the counties of Borsod-Abaúj-Zemplén, Nográd, Veszprém and Zala. It continued to spread towards the north, in particular along the river Tisza, and it has reached the Slovakian border. Towards the west, it has also reached the northern shore of lake Balaton. As in previous years, the highest numbers of adults were caught in the south of the country. Larval damage was seen in the following counties: Békés, Baranya, Bács-Kiskun and Csongrád on 3,103 ha. Economic damage was observed in some areas in Bács-Kiskun and Csongrád counties.

Italy

Measures taken in the Veneto region to eradicate *D. virgifera* were presented. Following the introduction of *D. virgifera* in Yugoslavia, a monitoring programme was put in place in Italy in 1995. In summer 1998, 7 specimens of *D. virgifera* were caught for the first time in one locality Tessera near the Marco Polo International Airport of Venezia. In 1999, 2 specimens were caught near the airport. Since 1999, phytosanitary measures have been taken to eliminate the pest and prevent any further spread. A Ministerial decree on compulsory control against *D. virgifera* is now in force in Italy.

In 2000, the containment and eradication measures implemented were the following:

1) Monitoring of *D. virgifera* populations in the quarantine area (1200 ha) and a surrounding buffer zone (within a radius of 22-25 km, i.e. 35,000 ha), using pheromone traps in maize fields (400 traps with a 400 x 400 grid in the quarantine area, and 250 traps in the buffer zone with a 1 x 1 km grid). Some additional traps of various types were placed for research purposes in the quarantine area.
2) Maize monoculture was not allowed.
3) Insecticide treatments[1] against the adults were applied twice (from July to end of August) in all maize fields throughout the regulated area (quarantine area and buffer zone).
4) Movement of fresh maize or soil in which maize was grown during the previous year was prohibited from the quarantine area.
5) Harvest was not allowed before the 1st October.

This containment and eradication programme was financed by Veneto region and EU. The total cost in 2000 was estimated at approximately 81,500 EUR.

In the quarantine area, all fields which had been planted with maize in 1999 were inspected in 2000 to see which crop was grown. As a result, 6.7 ha were recorded in June as maize monoculture (maize was cultivated in 1999) and these fields were immediately sprayed and destroyed. This was difficult to achieve in practice, as farmers saw no necessity to destroy their healthy looking fields. Despite these efforts, 4 very small plots of maize planted for home consumption (0.3 ha) were identified later in July, hidden between houses and vegetable crops. Maize had been grown on these plots for the last 4 years. 70 pheromone traps were placed in and around these plots. 73 *D. virgifera* males were caught in this small area from 26 to 29 July 2000. Insecticide treatment was applied on the 29th July. 2 more specimens were caught during the 1 or 2 days following this treatment. The insecticide application was repeated 7 days after and since then no other specimens were captured. No *D. virgifera* was caught in the surrounding zone.

It was concluded that the area in which insects can be caught has been drastically reduced from 1998 from 2000 (while the trapping intensity has increased). The key factor in eradicating the pest appears to be the suppression of maize monoculture. However, it was stressed that the existence of very small areas of monoculture is sufficient to maintain rather high populations of *D. virgifera*, and therefore to

[1] Chlorpyrifos (Dursban WG, 1.1 kg/ha) the only registered product against *D. virgifera* in Italy.

ensure reproduction and spread of the pest. It was also noted that insecticide treatments against adults were efficient and stopped their spread.

Other regions in Italy have started to monitor for *D. virgifera*. Surprisingly, 3 specimens of *D. virgifera* were caught for the first time in Lombardia, near Milano International airport (Malpensa). No further details were provided during the meeting on this new finding.

Romania
The first find of *D. virgifera* was made in 1996 at Nadlac (Arad district bordering Hungary). In the following years, the pest has spread towards the east (Figure 1). *D. virgifera* was caught for the first time in 2000 in the following counties: Satu Mare, Salaj, Alba, Gorj and Olt. Compared to previous years, population levels have increased in 2000, especially in Caras-Severin, Timis, Arad, and Mehedinti counties. Larval damage was noted in 1999 in maize monoculture in some areas in the Caras-Severin county, and economic damage appeared in 2000 in these areas. Because of high temperatures prevailing in spring 2000, the first adults appeared approximately 3 weeks earlier than in previous years.

Slovakia
Monitoring programmes have been conducted in Slovakia since 1996. In 1999, *D. virgifera* was already very close to Slovakia. In 2000, pheromone and yellow sticky traps were placed along the borders with Hungary and Austria, as well as near the airports of Bratislava and Košice. The first adult of *D. virgifera* was caught in a pheromone trap in the district Vel'ký Krtíš on the 7th July. 11 other adults were then caught in Vel'ký Krtíš district again and also in Komárno and Lučenec districts (all located in the south of the country). This is the first report of *D. virgifera* in Slovakia (see also EPPO RS 2000/149).

Slovenia
As in previous years, a monitoring programme was carried out in Slovenia. Pheromone and yellow sticky traps were placed at 50 locations mainly along the Croatian and Hungarian borders as this is an important maize-growing area. Additional traps were also placed near the Italian border and the International Airport in Ljubljana. In 2000, no *D. virgifera* was found in Slovenia.

Switzerland
In 2000, *D. virgifera* was reported for the first time in Switzerland, near the airport of Lugano/Agno, in Ticino. In July 2000, 4 adults were caught in 4 traps. As a result of this new introduction, measures were taken. Information on maize crops located within a radius of 5 km around the finding location was collected. All machinery used for harvest was disinfested. In this area, maize production will be prohibited (this concerns 8 farmers). The authorities also gathered information on flights from Eastern and Central European countries which arrived in 1999 and 2000 to try to find the possible origin of this introduction. In 2001, a larger and more intensive monitoring programme will be carried out in Switzerland.

Ukraine
Ukraine is an important maize producer. In 2000, this crop has been sown over 1,300,000 ha mainly in the southwestern and southern parts of the country. As it is expected that *D. virgifera* will continue its spread towards Ukraine, pheromone traps have been placed along the Hungarian and Romanian borders. In 2000, no *D. virgifera* was found in Ukraine. Research is currently being done on the efficiency of various types of traps and on the resistance of maize hybrid cultivars to *D. virgifera*.

Yugoslavia

D. virgifera was first found in Europe near Belgrade airport in 1992. Monitoring continued as in previous years (300 pheromone traps were placed in 10 counties). No more movement of the pest towards the south was observed, as it is a region of high mountains. Spread continued towards the Southeast, in the region of Negotin. Economic damage was observed on a significantly larger territory (Figure 2). It is estimated that 67,550 km² were infested by *D. virgifera* and that damage occurred on 50,000 ha of maize fields (the area has almost doubled compared to last year). In 2000, damage was rather severe also because the season had been extremely dry. It is expected that the area of economic damage will continue to increase in coming years. However, in areas where damage has been seen for several years, the level of damage is decreasing because maize is now rotated with other crops. 300 ha of hybrid seed maize planted after soybean were damaged. Further monitoring will be made in this area to study this situation. It can be recalled that similar situations have been observed in some parts of USA (Indiana, Illinois, Michigan, Ohio). It was suggested that this is caused by the emergence of variant populations of *D. virgifera* which have adapted to crop rotation by laying eggs in soybean fields. According to these preliminary observations made in Serbia, it seems that these variant populations also exist in Europe.

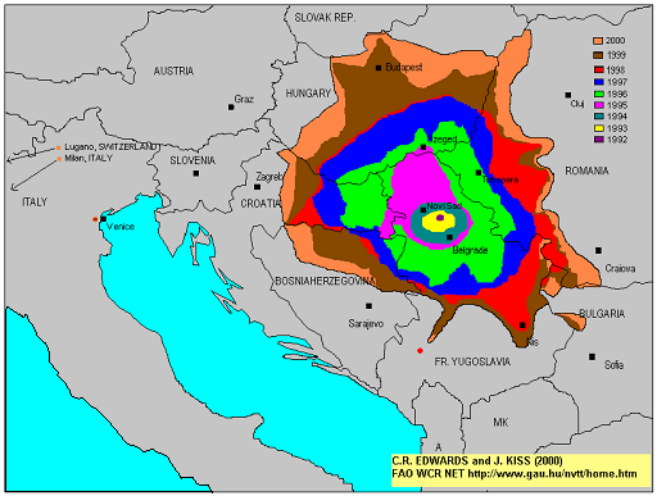

Figure 1

Spread of *Diabrotica virgifera virgifera* in Europe 1992-2000 (by C.R. EDWARDS and J. KISS; based on data from Festic, Furlan, Igrc-Barcic, Ivanova, Maceljski, Princzinger, Romeis, Sivicek, Sivcev and Vonica)

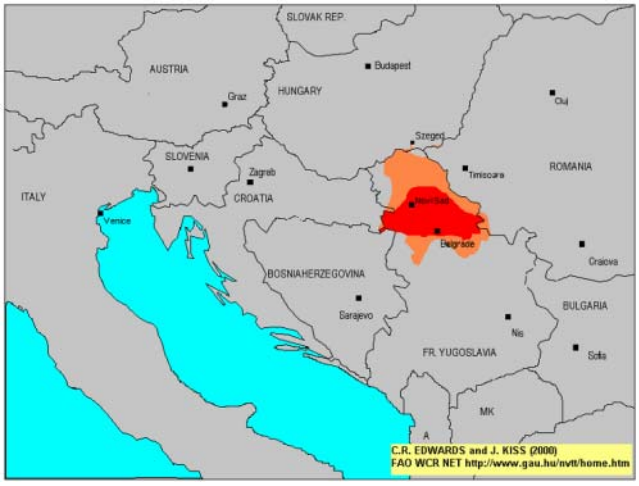

Figure 2

Economic larval damage of *Diabrotica virgifera virgifera* in Europe in 2000 (by C.R. EDWARDS and J. KISS; based on data from Igrc-Barcic, Princzinger, Sivcev and Vonica)

Source: Papers presented during the 5th Meeting of the EPPO ad hoc Panel on *D. virgifera* held jointly with the 7th International IWGO Workshop on *D. virgifera* in Stuttgart, DE, 2000-11-16/17.

Additional key words: detailed records, new records

Computer codes: DIABVI, AL, AT, BA, BG, CH, CZ, DE, HR, HU, IT, RO, , SI, SK, UA, YU

2001/004 Record of *Diabrotica virgifera* in Albania is denied

The NPPO of Albania denied the previous report of *Diabrotica virgifera* appearing in EPPO RS 2000/117. It stated that monitoring of *D. virgifera* is currently being performed in Albania but that there is not any information on the presence of this pest in Albania yet. **Absent: pest record invalid, confirmed by surveys.**

Source: NPPO of Albania, 2000-10.

Computer codes: DIABVI, AL

Additional key words: denied record

2001/005 *Liriomyza sativae* is present in Israel

The EPPO Secretariat has recently been informed by the NPPO of Israel of the presence of *Liriomyza sativae* (EPPO A1 quarantine pest). "With reference to EPPO RS 2000/166, the NPPO of Israel (PPIS) acknowledges the presence of *Liriomyza sativae*, thus confirming the original detection and suspected identification by PPIS taxonomists (EPPO RS 99/151). As part of its commitment to prevent infestation of export commodities, PPIS has already increased the stringency of phytosanitary inspections, with a focus on cut flowers and herbs. As a result of the now confirmed leafminer finding, PPIS has initiated a delimiting survey, by trapping and host surveillance.
The situation of this pest in Israel can be described as: **Present, distribution undetermined**."

Source: NPPO of Israel, 2001-01.

Additional key words: new record **Computer codes:** LIRISA, IL

2001/006 *Bactrocera zonata* trapped in Israel

The EPPO Secretariat has recently been informed by the NPPO of Israel of the trapping of *Bactrocera zonata* (EPPO A1 quarantine pest) in the following terms: "The NPPO of Israel (PPIS) reports the first suspected interception, in mid-November, of a single male *Bactrocera zonata* (peach fruit fly) in quarantine station detection traps (loaded with the attractant methyl eugenol) at the Rafiach (Rapha) border crossing with Egypt and the Palestinian Autonomy. The pest is known to occur in Egypt (EPPO RS 99/060, 2000/075). This specimen will be sent to IAEA in Vienna to confirm the identification. PPIS has embarked on a delimiting survey, using 300 traps and host plant monitoring, and will take whatever quarantine actions are deemed necessary to prevent the pest's entry into Israel. In addition, PPIS is seeking the active cooperation of the NPPOs of Egypt and the Palestinian Authority, which exert control over the bordering areas". The situation of *B. zonata* in Israel can be described still as**: Transient: actionable.**

Source: NPPO of Israel, 2001-01.

Additional key words: detection **Computer codes:** DACUZO, IL

2001/007 *Thrips palmi* reported in United Kingdom

The NPPO of United Kingdom has recently informed the EPPO Secretariat that an outbreak of *Thrips palmi* (EPPO A1 quarantine pest) has been found in two glasshouses (all-year-round chrysanthemums produced for domestic cut-flower trade) on the same site in southern England. The outbreak was initially thought to be *Frankliniella occidentalis* and was not notified to inspectors. The authorities became aware of the outbreak in April 2000. An intensive treatment programme including soil, compost, foliar and space treatments has immediately been undertaken to eradicate the pest. In addition, no movement of planting material from the site has been allowed. Recent results from intensive monitoring of pest levels indicated that treatments appear to have been successful. Findings of the pest have been reduced to very low levels, leading to the belief that eradication should be possible in the near future. *T. palmi* is thus present in UK, at low prevalence in only two glasshouses of southern England, under eradication.

Source: NPPO of United Kingdom, 2000-12.

Additional key words: new record **Computer codes:** THRIPL, GB

2001/008 First report of *Tilletia indica* in South Africa

Tilletia indica (EPPO A1 quarantine pest) is reported for the first time in South Africa. It has recently been identified at a farm in the Northern Cape. To prevent any further spread of the disease, a quarantine area will be established around the farm concerned. The official authorities will conduct a delimiting survey to establish the extent of the infected area and of the infected seed stocks. They will also establish future control measures and provide information on *T. indica*. The situation of *T. indica* in South Africa can be described as: **Present, only in one farm (Northern Cape), under eradication**.

Source: ProMED posting of 2000-12-23. Karnal bunt, wheat - South Africa.
http://www.promedmail.org
Press release of the National Department of Agriculture of South Africa, Pretoria, 2000-12-19.
http://www.bibim.com/anc/nw20001220/29.html

Additional key words: new record **Computer codes:** NEOVIN, ZA

2001/009 *Cacyreus marshalli* continues to spread in the south of France

In France, *Cacyreus marshalli* (EPPO A2 quarantine pest) was first reported in 1997 in the département of Pyrénées-Orientales, south of France (see EPPO RS 98/080). In 1998, it spread around the Mediterranean coast in the following départements: Alpes-Maritimes, Aude and Hérault (see EPPO RS 99/042). In December 2000, its presence has been recorded in 20 départements in the south of France: Alpes de Haute Provence, Alpes-Maritimes, Ardèche, Arriège, Aude, Bouches-du-Rhône, Dordogne, Drôme, Gard, Gironde, Haute-Garonne, Hérault, Landes, Lot, Pyrénées-Atlantiques, Pyrénées-Orientales, Tarn, Tarn-et-Garonne, Var, Vaucluse. The situtation of *C. marshalli* in France can be described as: **Present, only in the south.**

Source: Anonymous (2001) Aquitaine, Languedoc-Roussillon, Midi-Pyrénées, PACA, Rhône-Alpes… Il vole, il vole, le papillon.
Phytoma-La Défense des Végétaux, n° 534, p3.

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

2001/010 Final results of the 2000 survey on plum pox potyvirus in Canada

As reported in EPPO RS 2000/131, plum pox potyvirus (PPV - EPPO A2 quarantine pest) has been found for the first time in June 2000 near Niagara-on-the-Lake, Ontario, Canada. A survey was initiated to determine the extent of the disease in Canada. Sampling was conducted in Ontario, Québec, British Columbia and Nova Scotia. As of 2000-11-14, 112,250 samples have been tested and 948 positive samples were found. In Ontario, PPV was detected in 947 samples collected from 57 sites (53 in the Niagara Peninsula, 2 near Blenheim, 1 near Simcoe and 1 near Fonthill). In Nova Scotia, PPV was detected in one sample (out of 1377 tested for that Province) corresponding to one sampling site in the Annapolis Valley. PPV was not detected in British Columbia and Québec. It is now felt that the origin of this outbreak has been traced to a nursery in Niagara-on-the-Lake.
The situation of plum pox potyvirus in Canada can be described as: **Present: only in some areas (Ontario, 1 finding in Nova Scotia), under eradication.**

Source: CFIA Plum pox virus survey update - November 14, 2000.
http://www.cfia-acia.agr.ca/english/plaveg/hort/survey6e.shtml
ProMED posting of 2001-01-03. Plum pox potyvirus, source - Canada.
http://www.promedmail.org

Additional key words: detailed record **Computer codes:** PLPXXX, CA

2001/011 Specific monoclonal antibodies to detect the cherry strain of plum pox potyvirus

Two monoclonal antibodies specific to the cherry strain of plum pox potyvirus (PPV – EPPO A2 quarantine pest) have been developed in Italy. These monoclonal antibodies reacted in DASI-ELISA with sweet and sour cherry isolates of PPV. But they gave no reaction with 44 isolates belonging to the Dideron, Marcus and El Amar strains. However, the authors noted that further studies are needed on the reliability of ELISA tests using these specific monoclonal antibodies to detect the PPV cherry strain in field-grown cherry trees.

Source: Myrta, A.; Potere, O.; Crescenzi, A.; Nuzzaci, M.; Boscia, D. (2000) Properties of two monoclonal antibodies specific to the cherry strain of plum pox potyvirus.
Journal of Plant Pathology, 80(2), 95-101.

Additional key words: detection method **Computer codes:** PLPXXX

EPPO *Reporting Service*

2001/012 News from NAPPO

The NAPPO Annual Meeting took place in 2000-10-16/20 at San Diego, California, US, and the EPPO Secretariat has selected the following information:

Canada

- Following the detection of plum pox potyvirus (PPV – EPPO A2 quarantine pest) in Ontario in June 2000 (EPPO RS 2000/131), a task force has been established including representatives of the administration of the horticultural industry and of research institutions. An eradication plan has been established, in three phases: containment, national survey, eradication. The results of the national survey (covering 80,000 samples in Ontario, 9000 in British Columbia and a few in Nova Scotia and Québec) showed that about 80 positive samples in Ontario, one in Nova Scotia and none elsewhere. The results suggested that, in some cases, PPV may have been present for 3-5 years (see also RS 2001/010).
- *Tetropium fuscum* (brown longhorn beetle), a species from Europe and Asia has been introduced into Point Pleasant Park, Halifax. It was first found in 1990, but misidentified as a native species. The pest became damaging in 1998, affecting white, red and Norway spruce (*Picea glauca*, *P. rubens*, *P. abies*). It is a primary pest, causing mortality in 2-3 years. An eradication task force has been set up. The pest has not been found beyond a radius of 15 km from the park. Affected trees are incinerated.

Mexico

- A limited outbreak of *Maconellicoccus hirsutus* (EPPO Alert List) was found in Mexico, in the Mexicali valley, Baja California, near the California border, and in San Luis Rio Colorado in Sonora. This is under eradication in cooperation with USA.
- Outbreaks of *Toxoptera citricida* (brown citrus aphid – EPPO A1 quarantine pest) were found in Yucatan and Quintana Roo. It is intended to eradicate the pest within 20 km of citrus-producing areas.
- Pest-free areas are being declared for *Tilletia indica* (EPPO A1 quarantine pest), and areas of low prevalence for certain fruit flies. In particular, Baja California Sur, Sonora and Chihuahua States are classed as pest-free areas (US also has recognized all the fruit-growing areas in these states as pest-free areas). Coahuila, Nueva Leon, Tamaulipas, Sinaloa States are classed as areas of low prevalence of fruit flies (fruits are exported following a system approach). The aim is to create a continuous west-east band of fruit fly-free States by 2004.

USA

- In Florida, *Xanthomonas axonopodis* pv. *citri* (EPPO A1 quarantine pest) is now present in 7 counties (Broward, Dade, Palm Beach, Manatee, Hillsborough, Collier and Hendry) and an active eradication programme has been engaged. Exposed trees are being destroyed within a 600 m radius of infested areas. In the absence of major storms favouring spread of the disease, this campaign is progressing successfully.
- After detection of the outbreak of plum pox potyvirus (PPV – EPPO A2 quarantine pest) in Pennsylvania (EPPO RS 99/169), and in Canada (see above), surveys are being intensified in New York and Michigan.
- The outbreaks of *Anoplophora glabripennis* (EPPO A1 quarantine pest) in Chicago and New York have been delimited and contained. However, insecticide treatment of trees has only been authorized in Chicago.
- The glassy-winged sharpshooter (*Homalodisca coagulata*) is widespread in south-east USA and has occurred incidentally in California. It is now recorded as a major new vector of *Xylella fastidiosa* (EPPO A1 quarantine pest) in California.
- Concerning fruit flies, low numbers of *Bactrocera dorsalis* (EPPO A1 quarantine pest) have been found in California (not triggering action) and two small outbreaks of *Anastrepha ludens* (EPPO A1 quarantine pest) in San Bernardino and San Diego counties (eradicated). 159 *A. ludens* were found in lower Rio Valley, Texas (under eradication).

NAPPO

- Following a PRA, North America has been divided into high, medium and low risk zones for *Tilletia indica*, based on the dates at which winter and spring wheat crops can be expected to reach the heading stage. High risk zones are relatively restricted. The zones of Mexico where *T. indica* occurs coincide with high risk zones.
- An analysis has been made of pest interceptions on packing wood over the last 10 years. Over 50 quarantine pests have been intercepted from 27 countries, on 300 consignments. This corresponds to and interception rate of about 3 % for live pests and 8 % for presence of bark or signs of pests.
- A NAPPO alert system is now in place, and may be consulted at www.pestalert.org. It focuses attention on significant new pests, groups of pests or pathways.

Source: EPPO Secretariat, 2000-11.

Additional key words: new records, detailed records

Computer codes: ANOLGL, ANSTLU, DACUDO, NEOVIN, PHENHI, PLPXXX,TETOFU, TOXOCI, XANTCI, XYLEFA, CA, MX, US.

2001/013 USDA-APHIS Draft Pest Risk Assessment for importation of solid wood packing materials into the United States

A draft Pest Risk Assessment for importation of solid wood packing materials into the United States has been recently published by USDA-APHIS. This draft document can be viewed on Internet:
http://www.aphis.usda.gov/ppq/pra/swpm
This is a detailed study on the potential risks associated with the import of solid wood packing materials (pallets, crates, dunnage etc.) into USA. It also includes: data on interceptions of pests on packing material, case histories of previous introductions of forest pests (e.g. *Anoplophora glabripennis*, *Bursaphelenchus xylophilus*, *Callidiellum rufipenne*, *Cryphonectria parasitica*, etc.) and pest risk analysis for a number of specific pests associated with wood packing material (e.g. *Anoplophora glabripennis*, *Ceratocystis fimbriata*, *Ips typographus*, *Lymantria dispar*, *Ophiostoma* and *Ceratocystis*, etc.).

Source: EPPO Secretariat, 2000-11.

Additional key words: publication

2001/014 Eradication programme against *Anthonomus grandis* in USA

In the cotton-growing states of USA, an eradication programme is enforced against the cotton boll weevil (*Anthonomus grandis* - EPPO A1 quarantine pest). Eradication has now been achieved in the following states: Alabama, Arizona, California, Florida, Georgia, North Carolina, South Carolina, Tennessee and Virginia. The eradication programme will continue in: Arkansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma and Texas.
The situation of *A. grandis* in USA can be described as: **Present: only in some areas (Arkansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma and Texas), under eradication.**

Source: National Agricultural Pest Information System (NAPIS) web site
http://ceris.purdue.edu/napis/pests/bw/mgif/ppq2000-erad.gif

Additional key words: eradication, detailed record **Computer codes:** ANSTGR, US

2001/015 *Colletotrichum acutatum* causes post-bloom fruit drop and lime anthracnose on citrus

In the new edition of the APS Compendium of citrus diseases, it is explained that there are three anthracnose diseases of citrus caused by *Colletotrichum* species. *Colletotrichum acutatum* (EU Annexes) is the causal agent of two diseases: post-bloom fruit drop and lime anthracnose. *Colletotrichum gloeosporioides* causes a post-harvest anthracnose which usually appears on bruised or injured fruits.
Post-bloom fruit drop is widespread throughout humid, and subtropical regions of the Americas. It can cause serious crop losses during in high rainfall areas and sporadic outbreaks elsewhere. *C. acutatum* infects flower petals and induces drop of fruitlets. The fruitlet usually abscises at the base of the ovary, and the floral disk, calyx and peduncle remain attached to the tree. Leaves surrounding an affected inflorescence are usually small, chlorotic, twisted and have enlarged veins.
Lime anthracnose was originally thought to be caused by *Gloeosporium limetticola* (a name of uncertain status which was previously listed in the EU Annexes), but its causal agent is *C. acutatum*. The lime anthracnose strain only affects Mexican lime (*Citrus aurantifolia*) and it occurs throughout the humid areas of the Americas, in Zanzibar and is probably present in other humid citrus-growing areas. It affects flowers, young leaves shoots and fruits. Infected fruitlets also drop. Another difference with post-bloom fruit drop, is that the pathogen produces acervuli on all tissues (leaves, twigs, flowers and fruit) whereas the post bloom fruit drop pathogen produces acervuli only on flower petals.
The EPPO Secretariat had previously no data on citrus being a host of *C. acutatum*.

Source: Timmer, L.W. (2000) Anthracnose diseases. In: Compendium of Citrus Diseases, 2nd edition (Ed. by L.W. Timmer, S.M. Garnsey, J.H. Graham), APS, USA. p 21-23.

Additional key words: new host plant **Computer codes:** COLLAC

2001/016 *Liriomyza huidobrensis* may be composed of two cryptic species

Observations of differences between populations of *Liriomyza huidobrensis* (EPPO A2 quarantine pest) concerning crop preferences and levels of insecticide resistance in the field have led to the assumption that *L. huidobrensis* might consist of 2 or more cryptic species. Phylogenetic relationships among populations of *L. huidobrensis* from different origins (Ecuador, Guatemala, Indonesia (Java), Israel, Sri Lanka, US (California, Hawaii) were studied by comparing DNA sequences (mitochondrial cytochrome oxidase genes). Results showed that the currently recognized *L. huidobrensis* contains two very distinct groups: one

clade composed of specimens from California and Hawaii, and another clade composed of specimens from South and Central America and also from other parts of the world where *L. huidobrensis* has recently been introduced (Indonesia, Israel, Sri Lanka). These results are consistent with field observations of differences in pest status and insecticide resistance between *L. huidobrensis* populations (California and Hawaii populations showed a different behaviour from populations in other parts of the world). The author noted that these results suggest that the populations recently introduced into Indonesia, Israel, Sri Lanka originate from South or Central America. However, it is premature to conclude that all recently introduced populations came from this region. It is also pointed out that so far, there are no known morphological differences that could distinguish between the 2 *L. huidobrensis* clades. For the moment, it was felt too early to propose any change in the taxonomy of *L. huidobrensis*, but further studies on morphological characteristics and additional DNA sequences will be conducted.

Source: Scheffer, S.J. (2000) Molecular evidence of cryptic species within the *Liriomyza huidobrensis* (Diptera: Agromyzidae).
Journal of Economic Entomology, 93(4), 1146-1151.

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

2001/017 Temperature requirements for the development of *Diabrotica virgifera zeae*

Temperature requirements for *Diabrotica virgifera zeae* (Mexican corn rootworm – EPPO A1 quarantine pest) were studied in the laboratory and compared with those of *Diabrotica virgifera virgifera* (Western corn rootworm - EPPO A2 quarantine pest). Development of immature stages of *D. virgifera zeae* was investigated at 8 temperatures (15, 18, 21, 25, 27, 30, 31.5, 33 °C). Development from egg hatch to adults was only completed for temperatures between 15 to 30 °C. Larvae failed to complete the third instar at 31.5 °C and 33 °C, and survival of both sexes declined above 27 °C. Development from egg hatch to adult emergence was fastest at 30 °C (≈25 days) and slowest at 15 °C (≈105 days). The best temperature range for development and survival was between 21 and 27 °C (for *D. virgifera virgifera*, this range goes from 21 to 30 °C). It was observed that males emerged only 1 or 2 days before females (whereas *D. virgifera virgifera* males emerge several days before females). The development threshold was estimated at 10.3 °C (9° C for *D. virgifera virgifera*), and development from egg hatch to adult was estimated to take 473 degree-days (434 for *D. virgifera virgifera*).

Source: Woodson, W.D.; Chandler, L.D. (2000) Effects on development of immature Mexican corn rootworm (Coleoptera: Chrysomelidae).
Annals of the Entomological Society of America, 93(1), 55-58.

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

2001/018 Studies on heat treatment specifications for phytosanitary purposes

Heat treatments can be used as phytosanitary treatments against fruit flies. But several factors can influence the ability of fruit fly larvae to tolerate high temperatures: 1) the heat conducting capacity of the medium in which insects are immersed; 2) the temperature to which larvae have been exposed before the treatment; 3) the rate at which the heat is applied. Studies were done in USA on the influence of heat rates. Hot water treatments of third instar larvae of *Anastrepha ludens* (EPPO A1 quarantine pest) placed in artificial fruits were applied at different heat rates in the laboratory. Results showed that the 99 % lethal time dose for larvae exposed to 44 °C core temperature in artificial fruits is 61.5 min when a slow heating rate is used (120 min), but only 41.9 min when a fast heating rate is used (15 min). The authors concluded that when designing phytosanitary treatments, the commodity heating rate has to be included in the treatment specifications. So far, most phytosanitary treatment specifications only included a specific temperature with a fixed treatment time. This is felt no longer appropriate, and it is proposed that heat treatments should now indicate a specific temperature and a commodity heat dose which could be expressed in terms of: minimum time necessary to reach the required core temperature within the commodity, and the time during which this core temperature should be maintained.

Source: Thomas, D.B.; Shellie, K.C. (2000) Heating rate and induced thermotolerance in Mexican fruit fly (Diptera: Tephritidae) larvae, a quarantine pest of citrus and mangoes.
Journal of Economic Entomology, 93(4), 1373-1379.

Additional key words: quarantine treatment **Computer codes:** ANSTLU

2001/019 Symposium on integrated pest management in crops in the Mediterranean region (Rabat, MA, 2001-05-29/30)

A Symposium on integrated pest management in crops in the Mediterranean region will be organized by the Ministry of Agriculture, Rural Development and Forestry of Morocco in collaboration with the Moroccan Association of Plant Protection and GTZ, in Rabat, Morocco, on the 2001-05-29/30.
The following topics will be discussed during the Symposium:

- Concept and practice of IPM (crop monitoring, decision-making systems)
- Implementation in the Mediterranean region (protected crops, citrus, olive and fruit trees)
- IMP technology: biological control, biopesticides
- Alternatives to methyl bromide

The Symposium will be held in English and French.
Registration fees (including proceedings) will be approximately 50 USD.

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Source: NPPO of Morocco, 2000-12.

Additional key words: conference

2001/020 53rd International Symposium on Crop Protection in Gent

The 53rd International Symposium on Crop Protection will be held on 2001-05-08 at the Faculty of Agricultural and Applied Biological Sciences, University in Gent, Belgium.
Deadline for submission of abstracts is 2001-01-31. The full programme will be available in March 2001.

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Source: EPPO Secretariat, 2000-12.

Additional key words: conference