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95/001 RU...Prospects for plant quarantine in Russia

An article by A.I. Smetnik of the Plant Quarantine Research Institute in Moscow sets out prospects for plant quarantine in Russia. Inspection services have to adapt to the fact that imports are now privatized and come from a much greater diversity of sources, without advance warning, consigned to many destinations in Russia. Thus, citrus fruit imports used to come mainly from Africa, but now come from European and Mediterranean countries. The main concern with them remains medfly (*Ceratitis capitata*), the form from Europe being possibly better adapted to Russian conditions. *C. capitata* did establish foci in Ukraine in the 1960s, which were then eradicated. In the past, consignments of citrus fruits were limited to certain points of entry, and were cold-treated or fumigated. This is now increasingly difficult to enforce.

In the past, seeds of vegetables and ornamentals entered in relatively small quantities, for research and breeding institutions, mainly from Hungary and elsewhere in Europe. Practically no imported seeds reached the retail market. Now, cheaper seeds come in from countries like India and Vietnam, often with *Trogoderma granarium*, or else with bostrychids or lyctids in the packing material. The only seeds which have regularly entered in large quantities directly for the producer have been maize, soybean and sunflower (and also planting material of fruit crops and grapevine). They have been the occasion for the entry of: *Cochliobolus heterostrophus* (*), *Diaporthe helianthi* (*), *Xanthomonas oryzae* pvs *oryzae* and *oryzicola*, *Diaporthe phaseolorum* var. *caulivora* (*), *Cercospora kikuchii* (*), *Phomopsis viticola*, plum pox potyvirus (*), grapevine flavescence dorée MLO, barley stripe mosaic hordeivirus. Some of these (marked *) have established locally.

With less possibilities to control consignments closely at import, surveillance for new outbreaks becomes increasingly important and the Russian quarantine service will have to organize itself better for this. Pheromone trapping is already practised for *T. granarium*, *Phthorimaea operculella*, *Spodoptera litura* and other insects.

Russia has also had to revise its regulations. Their fundamental basis changed very little from their first establishment in 1934 till the 8th revision of the Soviet regulations in 1986. In 1992, the Russian Federation produced its own regulations, divided as before into three lists (EPPO RS 95/002). The lists are shorter, for a number of pests have been excluded: pests of cotton and citrus of no direct interest to Russia, pests which have now reached the limits of their natural distribution (*Pseudococcus comstocki*, *Leptinotarsa decemlineata*). *Graphognathus* (*Pantomorus*) *leucoloma* (a pest of far-southern USA) has been eliminated and replaced by *Pantomorus godmani*, a pest already introduced from North America into Europe which seems of greater relevance to Russia. *Dinoderus bifoveolatus* and *Synoxylon* spp. have been added, as these are pests now regularly being intercepted on packing wood from the Far East. The Asian form of *Lymantria dispar* has been added to the list, and is distinguished from Siberian and European forms. The number of weeds on the lists has been reduced, partly due to the fact that of the 100 or so weeds introduced into Russia in the last 20 years, only 20 or so were ever found contaminating imported seed lots. However, measures against quarantine weeds remain very important.

Concerning pathogens, many have entered Russia in recent years of which some have established (see above). The soybean pathogens *D. phaseolorum* var. *caulivora* and *C. kikuchii* have established only in some frontier areas. Outbreaks of the pathovars of *Xanthomonas oryzae* were found, but did not persist. In Western Europe, *Globodera pallida* has tended to appear where cultivars resistant to *G. rostochiensis* are grown. It is not known in Russia, but this may be partly because such cultivars are at present little used. *G. pallida* may well be present at low levels.

Russia is much concerned with the export of wood to the Baltic and Scandinavian countries. All coniferous wood from the European part of Russia has been certified since the beginning of 1993; since mid-1993, all such wood from Russia east of the Urals is compulsorily debarked or kiln-dried according to EPPO requirements, and must be free from grubholes. There have been Chinese reports of *Bursaphelenchus xylophilus* in Siberian wood, but the Russian quarantine service does not confirm the existence of this nematode in Russia.

Finally, the importance of contact and cooperation with the plant protection services of trading-partner countries is stressed, so that acceptable scientifically based phytosanitary requirements can be established.

Source: Smetnik, A.I. (1994) [Outlook of research on plant quarantine]. **Zashchita Rastenii, no. 3, pp. 43-46.**

95/002 RU...New quarantine list for Russia

The new phytosanitary regulations for the Russian Federation include a revised list of quarantine pests as follows.

I. Quarantine pests absent from Russia

Insects

Bruchidius incarnatus
Callosobruchus spp.
Caryedon gonagra (*C. pallida*)
Caulophilus latinasus
Ceratitis capitata
Dinoderus bifoveolatus
Liriomyza trifolii
Pseudaulacaspis pentagona
Rhagoletis pomonella
Spodoptera littoralis
Synoxylon spp.
Trogoderma granarium
Zabrotes subfasciatus

Fungi

Angiosorus solani
Ceratocystis fagacearum
Diaporthe phaseolorum var. *caulivora*
Didymella ligulicola (*D. chrysanthemi*)
Phymatotrichopsis (*Phymatotrichum*) *omnivorum*
Tilletia indica

Bacteria

Clavibacter tritici
Erwinia amylovora
Erwinia stewartii
Xanthomonas oryzae (*campestris*) pv. *oryzae*
Xanthomonas oryzae (*campestris*) pv. *oryzicola*

Viruses & virus-like

American plum line pattern virus
Grapevine flavescence dorée MLO
Peach latent mosaic viroid (American peach mosaic)

Nematodes

Bursaphelenchus xylophilus
Globodera pallida

Weeds

Cenchrus pauciflorus
Helianthus californicus
Helianthus ciliaris
Iva axillaris
Solanum carolinense
Solanum elaeagnifolium
Striga spp.

II. Quarantine pests of limited distribution in Russia

Insects

Acrobasis (*Numonia*) *pyrivorella*
Agrilus mali
Carposina niponensis
Cydia (*Grapholitha*) *molesta*
Hyphantria cunea
Lymantria dispar (Asian form)
Phthorimaea operculella
Popillia japonica
Quadraspidiotus perniciosus
Spodoptera litura
Viteus vitifoliae

Fungi

Cochliobolus heterostrophus race T
Diaporthe helianthi
Synchytrium endobioticum

Viruses and virus-like

Plum pox potyvirus

Nematodes

Globodera rostochiensis

Weeds

Acroptilon repens
Ambrosia artemisiifolia
Ambrosia psilostachya
Ambrosia trifida
Cuscuta spp.
Solanum rostratum
Solanum triflorum

II. Potentially dangerous pests for Russia

Insects

Bemisia tabaci
Frankliniella occidentalis
Pantomorus godmani
Thrips palmi
Trogoderma angustum
Trogoderma longisetosum
Trogoderma ornatum
Trogoderma simplex
Trogoderma sternale

Fungi

Cercospora kikuchii
Eutypa lata (*E. armeniacae*)
Phoma andina
Phomopsis viticola
Physalospora zeicola (*Diplodia frumenti*)
Stenocarpella (*Diplodia*) *macrospora*

Bacteria

Xylophilus (*Xanthomonas*) *ampelinus*

Viruses and virus-like

Andean potato latent tymovirus
Andean potato mottle comovirus
Cherry rasp leaf nepovirus
Peach yellows MLO
Potato T capillovirus
Potato vein yellowing disease
Strawberry latent C disease
Strawberry witches' broom MLO
Tobacco ringspot nepovirus Andean calico strain (potato black ringspot nepovirus)
Wild potato mosaic virus (?)

Weeds

Anoda cristata
Bidens pilosa
Diodia terres
Euphorbia dentata
Ipomoea hederacea
Ipomoea lacunosa
Oenothera laciniata
Polygonum pensylvanicum
Sicyos angulata
Sida spinosa

Source: **EPPO Secretariat, 1994-12.**

95/003 AGRLMA...*Agrilus mali*: a quarantine pest for Russia

Agrilus mali is a buprestid beetle with a limited distribution in Russia (Amur province, Primorskii and Khabarovskii territories - all in the Far East). It also occurs in China, Japan and Korea. The larva burrows in the sapwood and heartwood of branches and shoots of apple in which it overwinters. Adults emerge in July, and lay the eggs from which a new generation of larvae emerges to attack the wood in late summer and autumn. Apple trees are damaged in nurseries and orchards. Affected branches show depressions which dry out and split. Young shoots show the tracks of larval feeding on the bark. The branches of a tree can carry up to 70 attacks, and the trunk up to 300, causing individual branches or the whole tree to die. Control measures included thorough pruning and burning of the pruned wood, uprooting and burning of the most damaged trees, insecticide treatments, shaking trees to catch adult beetles in trays of mineral oil. Strict measures are taken in Russia to stop spread of this pest to the European part. It may be of concern to other European countries.

Source: Nikritin, L.M. (1994) [Apple buprestid beetle]
Zashchita Rastenii, No. 3, p 46.

95/004 PHYNCI...Further spread of *Phyllocnistis citrella* in United States

As mentioned in the EPPO Reporting Service 94/163, *Phyllocnistis citrella* has recently been introduced in Florida (1993-05) and despite measures taken, it has now spread to all 39 citrus-producing counties of this State. The citrus leaf miner has also been detected in several citrus orchards in Louisiana (in the following Parishes: Jefferson, Lafourche, Orleans, Plaquemines, St Charles, St James the Baptist and Terrebone) and in Texas (Cameron County). Considering the rapid spread of the pest, neither a cooperative eradication program nor a Federal regulation is being considered.

In addition, *P. citrella* appears to be spreading at an alarming rate throughout Central America and the northern Caribbean region, and is now present in: Bahamas, Belize, Cayman Islands, Costa Rica, Honduras, Jamaica, Mexico, Nicaragua, Panama and Puerto Rico.

Source: Anonymous (1994)
NAPPO Newsletter, 14 (4), p 6 & 8.

Additional key words: detailed record, new record.

95/005 PHYNCI/IL...*Phyllocnistis citrella* is present in Israel

The EPPO Secretariat has recently been informed by the Plant Protection Service of Israel that *Phyllocnistis citrella* has been identified for the first time in June 1994, in citrus groves situated at the northern edge of the sea of Galilee. Surveys were carried out in 1994 and it was found that the pest had rapidly spread throughout the citrus-growing areas of the country. A project of biological control has been immediately set up in collaboration with Thailand, China, Australia and Florida for the introduction of natural enemies.

Source: **Plant Protection Service of Israel, 1995-01.**

Additional key words: new record.

95/006 PHYNCI/SY...*Phyllocnistis citrella* is present in Syria

Phyllocnistis citrella has been observed for the first time in Syria, in the Tartous governorate, at the beginning of July 1994. The citrus leaf miner has been observed on lemon, grapefruit, pomello, clementine, sweet orange (cvs. Washington navel, Jafa, Baladi).

Source: Ahmad, M. (1994) A new citrus pest. **Arab and Near East Plant Protection Newsletter, ASPP/FAO, No. 18, p 30.**

Additional key words: new record.

95/007 TOXOCI/TRIZER...First report of *Toxoptera citricidus* and *Trioza erytreae* in Madeira (PT)

The EPPO Secretariat has recently been informed by the Portuguese Plant Protection Service that *Toxoptera citricidus* and *Trioza erytreae* (both EPPO A1 quarantine pests) have been found on Citrus plants in Madeira (PT). An eradication programme has immediately been set up which includes treatments and regulatory measures. Infested plants have been destroyed, surveys are being carried out in Madeira and also on the mainland. Concerning the possible presence of citrus tristeza closterovirus (EPPO A2 quarantine pest), all laboratory tests of samples collected from plants infested by the insect vectors gave negative results.

Source: **Plant Protection Service of Portugal, 1994-12**

Additional key words: new record.

95/008 **INTERCEPTIONS/FR...**Interceptions of fruit flies in France

The French Plant Protection Service has informed EPPO that during the period 1994-01 to 1994-10, 37 consignments of tropical fruits (mainly mangoes, but also guavas, Annona) from Cameroon, Egypt, Guinea, India, Indonesia, Kenya, Madagascar, Mali, Mexico, Philippines, Thailand, Vietman have been intercepted. Some of these fruit flies (especially those mentioned as non-European Tephritidae) are currently being identified. Some of the *Ceratitis* spp. may presumably be *C. capitata*.

Pests	Fruits	Country of origin	Quantity (total)	nb of consign.
Bactrocera correcta	Guavas	Thailand	9 boxes	1
Bactrocera dorsalis	Annona	Thailand	7 boxes	1
Bactrocera dorsalis	Mangoes	India	20 kg	1
Bactrocera dorsalis	Mangoes	Philippines	138 kg	2
Bactrocera dorsalis	Mangoes	Thailand	340 kg	4
Bactrocera sp.	Annona	Vietnam	23 boxes	1
Bactrocera sp.	Guavas	Philippines	1 box	1
Bactrocera sp.	Mangoes	Indonesia	48 kg	1
Bactrocera sp.	Mangoes	Thailand	120 kg	1
Bactrocera sp.	Mangoes	Thailand	20 boxes	2
Bactrocera sp.	Mangoes	Philippines	100 kg	1
Ceratitis anonae	Guavas	Cameroon	6 boxes	1
Ceratitis cosyra	Mangoes	Mali	10215 kg	5
Ceratitis malagassa	Guavas	Madagascar	5 kg	1
Ceratitis sp.	Mangoes	Egypt	49 boxes	1
Ceratitis sp.	Mangoes	Guinea	124 boxes	1
Ceratitis sp.	Mangoes	Kenya	30 boxes	1
Ceratitis sp.	Mangoes	Kenya	132 kg	1
Ceratitis sp.	Mangoes	Mali	4490 kg	3
Ceratitis sp.	Mangoes	Mali	52 boxes	2
Dacus sp.	Mangoes	Kenya	45 kg	1
Non-European Tephritidae	Guavas	Indonesia	4 boxes	1
Non-European Tephritidae	Guavas	Vietnam	1 box	1
Non-European Tephritidae	Mangoes	Mali	7 boxes	1
Non-European Tephritidae	Mangoes	Mexico	819 boxes	1

Source: **French Plant Protection Service, 1994-11.**

95/009 **ELSIAU/TMBRXX/IT...*Elsinoë australis* and tomato black ring nepovirus are not present in Italy**

The EPPO Secretariat has been informed by the Italian Plant Protection Service that *Elsinoë australis* (EU Annex II/A1) and tomato black ring nepovirus (EU Annex II/A2) are not present in Italy.

In the EPPO Data Sheet on *E. fawcetii*, it is recorded that *E. australis* was found on lemon fruits in Sicily according to a publication of Ciccarone, 1957. However, the Italian authorities stressed that this fungi was observed once in summer on green fruits of lemon, under very specific climatic conditions, and was never found again since that date.

Concerning tomato black ring nepovirus, the EPPO Data Sheet mentioned that its presence in Italy has not been confirmed (see also EPPO RS 94/234). At present, the Italian authorities noted that according to national surveys carried out on the national territory, tomato black ring nepovirus is not present in Italy.

Source: **Italian Plant Protection Service, 1994-11.**

Ciccarone, A. (1957) [Elsinoë australis Bitancourt et Jenkins, causing a citrus scab in Sicily].
Rivista di Agrumicoltura 2, 1-36.

Additional key words: denied record.

95/010 NEW PEST...New *Phytophthora* root disease of common alder in Great Britain

A new and serious disease of common alder (*Alnus glutinosa*) caused by a *Phytophthora* species has recently been observed in southern Britain. Concerns about this disease were first raised in early summer 1993 in Kent. Further surveys conducted along waterways have showed that the disease is widespread in southern Britain and now affects more than 20.000 alders; in some areas up to 25 % of the trees are affected. However, the disease has not been found in Northern Britain. Symptoms are typical of *Phytophthora* root disease: leaves are abnormally small, yellow and sparse, and frequently fall prematurely. Dead roots can be found, and examination of the base of a stem with severe crown symptoms usually reveals the presence of strips of dead bark extending up from ground level. These are often marked externally by the production of a tarry or rusty exudate. Alder stems showing these symptoms will either die or suffer severe dieback. At present very few dead alders have been found near affected trees suggesting that it is a new disease. The causal agent is thought to be a form of *Phytophthora cambivora* but further studies are needed to clarify the issue. It produces water-borne spores which are playing an important role in the spread of the disease. Several factors can also facilitate spore dispersal, such as: inter-basin water transfer, movement of fish stocks, use of contaminated fishing equipment, wading birds etc. Chemical control does not appear feasible for environmental reasons, one possibility would be to find varieties of alder which are resistant to the disease.

Source: Gibbs, J. (1994) *Phytophthora* root disease of common alder. **Research Information Note 258. Forestry Authority, Forestry Commission, Wrecclesham, Farnham, Surrey, GB, 4 p.**

Additional key words: new pest.

95/011 **PSDMSO/ES...*Pseudomonas solanacearum* is not present in the Canary Islands (ES)**

In reaction to the publication of the Distribution List for *Pseudomonas solanacearum* (EPPO A2 quarantine pest - EPPO RS 94/227), in which the disease was mentioned as present only in the Canary Islands and eradicated on the mainland, the Spanish Plant Protection Service has recently informed the EPPO Secretariat that *P. solanacearum* has been eradicated from Canary Islands and has never been found on the mainland.

In the Canary Islands, the disease was detected in 1981, only in Las Palmas, on potatoes grown from imported seeds. An eradication program was implemented on the affected plot. Since then, the disease was never found again during surveys carried out on the whole island.

Therefore, the record for Spain should now read: eradicated in Canary Islands, never found on the mainland.

Source: **Spanish Plant Protection Service, 1994-11.**

Additional key words: denied record.

95/012 LYMADI...Possible methods to differentiate Asian form of *Lymantria dispar* from the European form

The Asian form of *Lymantria dispar* (of which the females fly more freely that in the European form and have different host plant preferences) has been introduced into North America by trans-Pacific trade (RS 94/136). Research is being carried out in United States and Canada to differentiate these two forms. By comparing mitochondrial DNA restriction fragment length polymorphisms and sequences, it has been possible to reveal differences between Asian (from China, Japan and Russia) and North American populations. In a survey carried out in the Pacific Northwest in 1990 and 1991, the presence of the Asian form was detected in Vancouver (British Columbia), Washington and Oregon. The authors (Bogdanowicz *et al.*, 1993) concluded that mtDNA was a useful genetic marker which provided a basis for undertaking efforts in 1992 to eradicate Asian Gypsy moth. (Note that in 1992, it was then reported that Asian Gypsy moth was successfully eradicated from British Columbia, CA).

However, as DNA analysis is a time-consuming and expensive method some work is being done on other possible detection methods. Wallner *et al.* (1994) have shown that it was possible to discriminate between Gypsy moth populations from the former Soviet Union, northeastern United States and from the laboratory (known lineage) by analyzing the colour spectrum of head capsules. This method was then tested on populations from Japan, China, Yugoslavia and Maryland (US) and provided separation as well as a high level of correct classification. The authors concluded that this method is a reliable tool for identifying progeny from geographic regions and perhaps families from that region, and could be used to try to discriminate between Asian and European races and also other insects.

Source:

Bogdanowicz, S.M.; Wallner, W.E.; Bell, J.; Odell, T.M.; Harrison, R.G. (1993) Asian gypsy moth (Lepidoptera: Lymantriidae) in North America: evidence from molecular data.
Annals of the Entomological Society of America, 86 (6), 710-715.

Walner, W.E.; Grinberg, P.S.; Walton, G.S. (1994) Differentiation between gypsy moth (Lepidoptera: Lymantriidae) populations by spectral colour discrimination of head capsules.
Environmental Entomology, 23 (3), 659-664.

95/013 **THRIPL/BM...*Thrips palmi* is not present in Bermuda**

In the literature, *Thrips palmi* (EPPO A1 quarantine pest) has once thought to be present in Bermuda (EPPO RS 94/057). However, the Department of Agriculture, Fisheries & Parks has stated that *T. palmi* has not been recorded from Bermuda. In addition, quarantine measures are actively taken in order to prevent its entry into this island.

Source: Anonymous (1994) *Thrips palmi* continued.
NAPPO Newsletter, 14 (4), p 7.

Additional key words: denied record.

95/014 **BEMITA...Insecticide resistance management strategy against *Bemisia tabaci* in Israel**

An insecticide resistance management strategy has been developed in Israel to control *Bemisia tabaci* (EPPO A2 quarantine pest) in cotton fields and glasshouse crops and to delay the onset of resistance of new insecticides with novel modes of action (e.g. buprofezin, pyriproxyfen and diafenthiuron). So far, high levels of resistance to conventional products, i.e. DDT, organophosphates and various pyrethroids have been reported in populations of *B. tabaci*. The IPM strategy includes the use of insecticides with different modes of action in rotation and tries to avoid destruction of natural enemies during periods when they are effective. This strategy has also allowed to reduce the number of insecticide applications against the entire range of cotton pests. The authors have found that the application of one treatment with pyriproxyfen in cotton fields during a one-month period followed by an additional treatment with buprofezin, if necessary, did not alter the susceptibility of *B. tabaci* to either compounds. However, in some greenhouses without resistance management strategy, a ten fold increase in resistance to buprofezin was observed after two or three applications during each season from 1989 to 1993 with this compound, and a 500-fold increase of resistance to pyriproxyfen was recorded after three successive applications (see also RS 93/164 and 93/165).

Source: Horowitz, A.R.; Forer, G., Ishaaya, I. (1994) Managing Resistance in *Bemisia tabaci* in Israel with emphasis on cotton.
Pesticide Science, 42 (2), 113-122.

Paper presented at the SCI Pesticide Group Symposium 'Management of Bemisia tabaci', in London, on 1994-01-25.

95/015 **BEMITA...Biological control against *Bemisia tabaci***

An integrated pest management programme against *Bemisia tabaci* (EPPO A2 quarantine pest) has been tested on Poinsettia (*Euphorbia pulcherrima*) and *Hibiscus* grown in a commercial glasshouse in Florida (US). The main component of the program was the use of an entomogenous fungus *Paecilomyces fumosoroseus* which was applied as a conidial suspension (1.0 x 10^7 conidia per ml). The strain used (PFR 97), recently isolated in Florida, has been found highly virulent against *B. tabaci*. The following applications were made: dipping of cuttings and drenching of pots during the propagation stage and three foliar treatments in the production greenhouse (at 5 to 7 day-intervals) followed by additional treatments if the threshold level of one adult per plant was exceeded. Every week, plants were inspected and whitefly populations were estimated. The IPM programme was compared with a conventional chemical programme. The authors concluded that the final quality of plants protected with *P. fumosoroseus* was fully comparable with the quality of plants protected by chemicals, and noted that in order to suppress the population density of *B. tabaci* equally, respectively 18 and 21 insecticide treatments were needed to protect Poinsettia and *Hibiscus*.

Source: Osborne, L.S.; Landa, Z. (1994) Utilization of entomogenous fungus Paecilomyces fumosoroseus against sweetpotato whitefly, Bemisia tabaci. **IOBC WPRS Bulletin, 17 (3), 201-206.**

Additional key words: biological control.

95/016 **BEMITA...**Insecticide dips of poinsettia cuttings against *Bemisia tabaci*

Studies have been carried out in United Kingdom on the efficacy of insecticide dips of poinsettia cuttings (*Euphorbia pulcherrima*) to control *Bemisia tabaci* (EPPO A2 quarantine pest). The dipping technique consisted of immersing individual cuttings into an insecticide solution for 30 s. Several compounds were tested (spraying petroleum oil, teflubenzuron, buprofezin) and the best results were obtained with petroleum spraying oil (5 and 10 ml l^{-1} were the tested concentrations), none of the other treatments gave good control of the egg stage. Though no phytotoxicity was observed on the poinsettia cultivar tested, the authors noted that further tests should be done to check the crop safety of petroleum oils on all commercially available poinsettia cultivars.

Source: Buxton, J.; Clarke, A. (1994) Evaluation of insecticide dips to control *Bemisia tabaci* on Poinsettia cuttings.
Pesticide Science, 42 (2), 141-142.

Paper presented at the SCI Pesticide Group Symposium 'Management of *Bemisia tabaci*', in London, on 1994-01-25.

Additional key words: control method.

95/017 **BEMITA/DK...***Bemisia tabaci* is not present in Denmark

The EPPO Secretariat has been informed that *Bemisia tabaci* (EPPO A2 quarantine pest) has been successfully eradicated and is no longer present in Denmark. In addition, since 1993 Denmark has a status of EU protected zone for European populations of *B. tabaci* and this pest will be eradicated if found. The previous EPPO distribution list published by EPPO (RS 94/103) can be modified accordingly.

Source: **EPPO Secretariat, 1994-09.**

95/018 **BEMITA...**Transmission of geminiviruses by *Bemisia tabaci*

Bemisia tabaci (EPPO A2 quarantine pest) is known to transmit viruses of the carla-, poty-, clostero- and nepo-groups and especially of the geminivirus group (approximately 60 geminiviruses have been recorded - see Table 1). More than 20 colonies of *B. tabaci*, including B and non-B biotypes from different countries have been compared for their ability to transmit more than 20 geminiviruses. As a result, all colonies were able to transmit most geminiviruses, except two biotypes (E and J) and some viruses were transmitted more efficiently than others. The authors noted also that the viral coat protein is essential for vector recognition and transmission. They suggested that comparative studies on the molecular basis of transmission between transmissible viruses and those which are no longer transmissible could provide useful tools for future integrated pest management programmes against *B. tabaci*.

Source: Markham, P.G.; Bedford, I.D., Liu, S.; Pinner, M.S. (1994) The transmission of geminiviruses by *Bemisia tabaci*.
Pesticide Science, 42 (2), 123-128.

Paper presented at the SCI Pesticide Group Symposium 'Management of Bemisia tabaci', in London, on 1994-01-25.

TABLE 1

Virus	Code	Country of origin
Euphorbia mosaic	EuMV	N. America
Texas pepper	TPGV	N. America
Squash leaf curl	SLCV	N. America
Cotton leaf crumple	CLCrV	N. America
Tomato mottle	TMoV	N. America
Melon leaf curl	MLCV	N. America
Watermelon curly mottle	WCMV	N. America
Wissadula mosaic	WMV	N. America
Rhynchosia mosaic	RhMV	Puerto Rico
Passiflora leaf mottle	PLM	Puerto Rico
Malvaceous chlorosis	MCV	Brazil, Puerto Rico
Pepper mild tigre	PeMTV	Mexico
Chino del tomate	CdTV	Mexico
Tigre disease	TDV	Mexico
Sinaloa tomato leaf curl	STLCV	Mexico
Bean calico mosaic	BCaMV	Central America
Sida golden mosaic	SiGMV	Central America
Jatropha mosaic	JMV	Central America
Tomato yellow mosaic	ToYMV	S. America
Tomato golden mosaic	TGMV	S. America
Bean golden mosaic	BGMV	S. America
Bean dwarf mosaic	BDMV	S. America
Euphorbia mosaic	EuMV	S. America
Potato yellow mosaic	PYMV	S. America
Abutilon mosaic	AbMV	S. America
Solanum apical leaf curl	SALCV	S. America
Eggplant yellow mosaic	EYMV	S. America
Tomato yellow leaf curl	TYLCV	C. Amer., Africa, Asia, Yemen, Australia
Tomato leaf curl	TLCV	Mediterranean countries, Japan, Sudan, India
Tobacco leaf curl	ToLCV	Australia
Watermelon chlorotic stunt	WCSV	Asia, Yemen; Kenya
Pseuderantheum yellow vein	PYVV	Yemen
Tomato yellow dwarf	ToYDV	Yemen, Ghana, Singapore
Honeysuckle yellow vein mosaic	HYVMV	Ceylon, Japan
Eupatorium yellow vein	EpYVV	Japan
Mungbean yellow mosaic	MYMV	Japan
Soybean crinkle leaf	SCLV	Asia
Horsegram yellow mosaic	HgYMV	Asia
Lupin leaf curl	LLCV	India
Indian cassava mosaic	ICMV	India
African cassava mosaic	ACMV	Africa
Basil golden mosaic	BaGMV	Kenya
Cotton leaf curl	CLCuV	Sudan, Pakistan
Cowpea golden mosaic	CGMV	E. Africa, W. Africa
Sida yellow vein	SYVV	Nigeria
Macrotyloma mosaic	MMV	Benin
Limabean golden mosaic	LGMV	Nigeria
Asystasia golden mosaic	AGMV	Benin, Nigeria
Dolichos yellow mosaic	DoYMV	India
Okra leaf curl	OLCV	Benin
Ageratum yellow vein	AYVV	Asia, Singapore

95/019 **TMYLCX/TR...**Update on tomato yellow leaf curl geminivirus in Turkey

Tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest) affects tomato production in Turkey. It has been observed earlier (1974) in the Çukurova region and more recently (1993) in the Aegean region. Studies have shown that the following weeds: *Datura stramonium*, *Solanum nigrum* and *Urtica* sp. could act as reservoirs for the virus.

Source: Mehmet Asil Yilmez (1994) TYLCV affects tomato production in Turkey. **Arab and Near East Plant Protection Newsletter, FAO, ASPP, No. 18, p 29.**

Additional key words: detailed record.

95/020 **VIRUSES...**Detection of geminiviruses from tropical countries

By using DAS-ELISA and two monoclonal antibodies prepared against particles of a Nigerian isolate of African cassava mosaic geminivirus, it was possible to differentiate African geminiviruses (tomato yellow leaf curl from Senegal (EPPO A2 quarantine pest); African cassava mosaic virus from West and East Africa, okra leaf curl from Côte d'Ivoire), from those originating in other parts of the world (Euphorbia mosaic virus from America, Indian cassava mosaic virus and tomato yellow leaf curl both from India). The authors concluded that these two monoclonal antibodies can allow the detection of whitefly-transmitted geminiviruses from various plants and various geographical origins and could be used on a large scale for epidemiological, sanitation or resistance programmes. However, when the full identification of the virus is needed other tests should be performed (symptomatology, transmission and host range).

Source: Givord, L.; Fargette, D.; Kounouguissa, B.; Thouvenel, J.C.; Walter, B.; Van Regenmortel, M.H.V (1994) Detection of geminiviruses from tropical countries by a double monoclonal antibody ELISA using antibodies to African cassava mosaic virus.
Agronomie, 14 (5), 327-333.

Additional key words: detection method.

95/021 IICA...News from the Caribbean

A report on Plant Health has been prepared by IICA Office in Trinidad and Tobago/CARAPHIN (CARibbean Animal and Plant Health Information Network), which compiles replies to a questionnaire on quarantine pests received from several countries in the Caribbean (Antigua & Barbuda, Barbados, Belize, Bermuda, Curaçao, Dominica, Grenada, Guyana, Jamaica, Martinique, St Kitts & Nevis, St Lucia, St Vincent & Grenadines, Suriname, Trinidad & Tobago). New records (according to EPPO) are given in bold. When one of the list of countries is not mentioned, the pest concerned can be presumed absent.

* *Anthonomus grandis* (EPPO A1 quarantine pest)

Absent in all.

* Citrus tristeza closterovirus (EPPO A2 quarantine pest)

Present in: **Antigua & Barbuda**, **Belize**, **Bermuda**, Curaçao (symptoms have been observed on lemon but unconfirmed), Guyana, Jamaica, Suriname, Trinidad & Tobago.

EPPO record in Dominica is denied.

* Fruit flies

Anastrepha sp. (unless species is specified)

Present in: Belize, Curaçao, Dominica, Guyana, Jamaica (*A. obliqua*, *A. suspensa*, *A. ocresia*, *A. cryptostrepha*), Martinique (*A. obliqua*), St Kitts & Nevis (*A. obliqua*), St Lucia (*A. obliqua*), Suriname, Trinidad & Tobago.

Bactrocera sp. (Carambola fruit fly).

Present in: Suriname.

Ceratitis sp.

Present in: Curaçao

Dacus sp.

Present in: Guyana (new occurrence, found in February and March 1994).

* Palm lethal yellowing MLO (EPPO A1 quarantine pest)

Present in: **Belize** (new occurrence but no details are given), Jamaica.

EPPO record in Guyana is denied.

* *Phyllocnistis citrella* (potential A2 quarantine pest)

Present in: **Belize** (new introduction). *P. citrella* is considered there as a new major quarantine pest.

* *Pseudomonas solanacearum* race II (Moko disease of banana) (EPPO A2 quarantine pest)

Present in: Belize, Grenada, Guyana, Suriname, Trinidad & Tobago.

* *Radopholus similis* on Anthurium (no details are given for other hosts) (EPPO A2 quarantine pest)

Present in: Grenada, Jamaica, Martinique, St Lucia, St Vincent & Grenadines, Suriname, Trinidad & Tobago.

* *Sternochetus mangiferae* (EU Annex II/B)

Present in: Barbados, Dominica, Martinique, St Lucia, **Trinidad & Tobago.**

* *Thrips palmi* (EPPO A1 quarantine pest):

Present in: Antigua and Barbuda, Barbados, **Dominica**, **Grenada**, Guyana, Martinique, St Kitts & Nevis, St Lucia, Trinidad & Tobago.

In the literature, *T. palmi* was once reported as present in Bermuda (see EPPO RS 94/057) but its absence is confirmed by this study (see also RS 95/013).

* Tomato yellow leaf curl geminivirus (EPPO A2 quarantine pest)

Present in: **Jamaica** (new occurrence), **Martinique** (new occurrence).

* *Toxoptera citricidus* (EPPO A1 quarantine pest)

Present in: Jamaica (new occurrence see EPPO RS 94/157), **St Vincent & Grenadines** (no details given).

* *Xanthomonas campestris* pv. *citri* (EPPO A1 quarantine pest)

EPPO records in Dominica, St Lucia and Trinidad & Tobago are denied.

* *Xanthomonas campestris* pv. *dieffenbachiae* (EPPO A1 quarantine pest) on Anthurium

Present in: **Bermuda**, **Dominica**, Jamaica, Martinique, **St Vincent & Grenadines**, **Trinidad & Tobago**.

Source: Anonymous (1994) CARAPHIN - Plant Health, January-June 1994, 45 p.

Additional key words: new record, denied record.

95/022 PSDMPE/XYLEFA...Correct Bayer codes

The EPPO Secretariat is proposing to Bayer AG that the codes used in the EPPO plant quarantine information system PQR for the quarantine pests of the A1 and A2 lists, and of Annexes I and II of Directive 77/93, should be added to the Bayer lists, in the few cases where they are not already there. These codes are already cited in "Quarantine Pests for Europe". In checking these proposals, it was found that EPPO had used the codes PSDMPS for *Pseudomonas syringae* pv. *persicae* and XYLLFA for *Xylella fastidiosa*, but that Bayer had in the meantime assigned the codes PSDMPE and XYLEFA. These are the correct codes for these pests, and will be used in the next release of PQR (after the recently released version 3.0). Note that the EPPO coding system for viruses and MLOs is, in any case, still not harmonized with the Bayer lists. Discussions are under way on this.

Source: **EPPO Secretariat, 1994-12.**

95/023 NL...International course on 'Modern crop protection: developments and perspectives'

The second international course on 'Modern crop protection: developments and perspectives' will be held in Wageningen (NL) in 1995-11-21/29. The aim of this course is to unable participants to: overview the field of modern crop protection for integrated agriculture, assess the feasibility of proposals in the area of crop protection, estimate the economic prospects of innovations in crop protection. The course is intended for scientists and managers working in the field of crop protection, workers in pesticide production and trade, government administrators and college or university teachers. The deadline for registration is 1995-08-15.

Further information can be obtained from:

International Training Centre (PHLO)
Wageningen Agricultural University
P.O. Box 8130, 6700 EW Wageningen
The Netherlands

Tel: 31-8370-84092/3
Fax: 31-8370-26547

Source: **EPPO Secretariat, 1994-12.**

Additional key words: training course.