Arab and Near East Plant Protection Newsletter

Number 54, December 2011

The Arab and Near East Plant Protection Newsletter (ANEPPNEL) is jointly published Triple a year by the Arab Society for Plant Protection and the Near East Regional Office of the FAO. All correspondence should be sent either to Adwan Shehab, Editor (adwanshehab@gmail.com) or to Nouran Attar, Editorial Assistant (n.attar@cgiar.org).

ARAB AND NEAR EAST PLANT PROTECTION NEWSLETTER

Number 54, December 2011

CONTENTS

News and announcements from all on any aspect of plant protection in the Arab world are invited for the Newsletter. Contributions from the Executive Committee of the Arab Society for Plant Protection and from the four Subject Matter Committees, as well as from national societies in the Arab region dealing with any aspect of plant protection are kindly requested and highly appreciated.

EDITORIAL

The Most Important Achievements of the Arab Society for Plant Protection during the Past Three Decades

Before summarizing the society achievements, it is appropriate to document the main historical events which led to its establishment. It all started in the summer of 1978 when the late Dr. Walid Abougharbieh was a visiting nematology professor at the Faculty of Agricultural and Food Sciences, the American University of Beirut (AUB). During a coffee break chat with colleagues in plant protection sciences, the idea of establishing an Arab Society for Plant Protection was raised. The group agreed to send a circular to selected 40-50 plant protection scientists from across the Arab region to find out their response to the idea. Immediately, and in response to the questionnaire, the late Dr. Ghazi El-Hariri, who was then the Dean of the Faculty of Agriculture at Aleppo University, took the initiative to host a meeting in Aleppo to discuss the establishment of the Society. The meeting was held in 1979 in Aleppo and a draft by-law was approved by all those attending. In 1981, a group of AUB plant protection scientists (Drs. Kawar, Makkouk, Saad and Saghir) paid a visit to the Lebanese Prime Minster, the late Chafic Wazzan, to discuss the possibility of registering the "Arab Society for Plant Protection" officially in Lebanon. The Prime Minister was extremely cooperative and granted immediate approval to the request and a decree was issued.

Three decades passed since the establishment of ASPP, and it is appropriate to summarize the accomplishments of this period, which can be highlighted as follows:

- In 1982, the first ASPP conference was held in Amman at the University of Jordan, and the late Dr. Walid Abougharbieh was the chairman of the organizing committee of the conference. These conferences were held regularly every three years thereafter in Damascus (Syria), Al-Ain (UAE), Cairo (Egypt), Fes (Morocco), Beirut (Lebanon), Amman (Jordan), Al-Bayda (Libya), Damascus (Syria), and Beirut (Lebanon). The next meeting is planned to be in Cairo, Egypt in 2012.
- In 1983, ASPP published the first issue of the Arab Plant Protection Journal. Since then the journal has been published regularly, twice a year. The issues of the early years included 10-12 articles per issue, whereas the latest issues included 20 articles per issue.
- In 1984, the first issue of the Arab and Near East Plant Protection Newsletter was published in Arabic and English covering plant protection news of Arab and Near East countries in cooperation with the Regional FAO office in Cairo, Egypt. The newsletter was published regularly, twice per year. Starting in 2011, the newsletter is being published electronically, three times per year.
- In 1990, upon request from FAO, an Arabic version for the "Plant Pathologist Pocket Book" was prepared by ASPP.
- In 1994, upon request from FAO, an Arabic version of "Plant Quarantine: Theory and Practices" was prepared by ASPP.
- In 2000, ASPP was able to purchase an Office in Beirut, after being housed at the premises of the Faculty of Agricultural and Food Sciences of AUB since its establishment.
- In 2002, upon request from FAO, an Arabic version of "Locust Control by Pesticides" and "Desert Locust" was prepared by ASPP.
- In 2005, ASPP published an Arabic-English Dictionary of Scientific Terms in Plant Protection and a new edition in three languages (Arabic/English/French) will be available in the near future.
- In 2006, FAO in collaboration with ASPP launched the Arabic version of the International Phytosanitary Portail (IPP), and regularily updated its contents.
- In 2006, ASPP decided to publish 9-10 reference books in the various disciplines of plant Protection. So far, three books has been published, namely "Virus Diseases of Important Crops in the Arab Region" edited by K. Makkouk, I. Fegla and S. Kumari (2008), "Plant Nematodes in the Arab Countries" in two volumes edited by W.I. Abougharbieh, A.S. El-Hazmi, Z.A. Stephan and A.S. Dawabah (2010), "Safe Applications of Pesticides" edited by M.S.S. El-Zemaiti, I.K. El-Nazer and M.B. Ashour (2011).
- In 2007-2011, ASPP signed a contract with FAO for the translation to Arabic the International Standards of Phyotosanitary Measures (ISPMs)
- In addition to the publications and conferences mentioned above, ASPP held a number of specialized workshops covering topics such as serious diseases of fruit trees, integrated management of date palm pests, agricultural quarantine, crop health and food safety and others.

It is hoped that ASPP, with strong support from its 700 members, can enhance its activities further in the years to come to better serve the plant protection community in the Arab world and beyond.

Abdelrahman Saghir, Beirut, Lebanon
Bassam Bayaa, Aleppo, Syria
Ibrahim Jboori, Amman, Jordan

Prior to his passing away, Dr. Walid Abougharbieh planned to write an editorial for this issue with the same title. The authors of this editorial took the initiative to fulfill the wish of the late Dr. Abougharbieh

INVASIVE AND NEW PESTS

IRAN

***Steinernema arasbaranense* sp. n. (Nematoda: Steinernematidae), a new entomopathogenic nematode from Arasbaran forests, Iran.** A new species of entomopathogenic nematode, collected in 2007 from Arasbaran forests, near the Kerengan village, East Azarbaijan Province, Iran, is described herein as *Steinernema arasbaranense* sp. n. The new species can be separated from all the described species in the *affine/intermedium* group by having eight ridges in the lateral fields of infective juveniles, mucron in both generation males (except for the second generation males of *S. sichuanense)* and a hole-like structure at the spicule tip. It differs from S. *affine* by having infective juveniles with longer tail (84 *vs* 66 um) and absence of the internal tail spine. The new species can be distinguished from *S. intermedium* by the longer tail of the infective juveniles (84 *vs* 64 pm) and shorter spicules of males (75 *vs* 93 urn), and separated from *S. sichuanense* by the shorter pharynx of infective juveniles (112 *vs* 131 um) and presence of a mucron in the first generation male. DNA sequencing of the rDNA ITS regions revealed a unique sequence in *S. arasbaranense* sp. n., which clustered with species in the *affine/intermedium* group but which clearly differs from these species. [M. Nikdel, G. Niknam and W. Ye (Iran). Nematologia mediteranea, 39: 17-28, 2011].

First report of three known species of the genus *Aulolaimus* (Nematoda: Aulolaimidae) from Iran. Three known species of the genus *Aulolaimus,* namely *A. oxycephalus* Meyl, 1954, *A. mowhitius* (Yeates, 1967) Jaira- jpuri *et* Hooper, 1968 and *A. nannocephalus* Andrassy, 1972, collected from soil samples taken from Arasbaran forests, East-Azarbaijan province and Urmia, West-Azarbaijan province, Iran, are reported herein. The Iranian populations of the three species reported agree with the original and re-descriptions although some morphometric differences were observed. This is the first record of occurrence of the genus and its species from the country. [Sh. Moslehi, G. Niknam and M. Ashrafi (Iran). Nematologia mediteranea, 39: 53-57, 2011].

First record of *Hexamermis* CF. *albicans* (Siebold, 1848) (Nematoda: Mermithidae) infecting lepidopteran larvae from Iran. During the course of entomological investigations on natural enemies of forest pests in the Arasbaran area, northwest of Iran, a mermithid nematode, *Hexamermis* d. *albicans* was found parasitizing the abdominal cavity of larvae of two lepidopterans, *Euproctis chrysorrhoea* and *Lymantria dispar* (Lymantriidae), Infection occurs in the early instars of the host larvae. Parasitism continues until the late instar of the larval host, when the nematode emerges and remains in a post-parasitic free-living stage until it moults into an adult. The mean body length of the parasite ranges from about 14 to 22 ern. One to four mermithids were found per host. About 34% of E. *chrysorrhoea* and 57% of *L. dispar* larvae were found to be parasitized by the nematodes. However, the frequency of the parasite varied in different areas. The infection was more frequent in dense as opposed to more sparsely forested regions. This is the first record of *Hexamermis* d. *albicans* (Siebold, 1854) from Iran. [M. Nikdel, H. Kaiser and G. Niknam (Iran). Nematologia mediteranea, 39: 81-83, 2011].

First Report of *Moroccan pepper virus* on Lisianthus in Iran and Worldwide. During the last decade, lisianthus (*Eustoma grandiflorum*) has been introduced in Iran in the horticultural cut-flower industry. This crop is currently produced in more than 800 small greenhouses on a surface of an estimated 0.8 km^2 in the Pakdasht region (southeast of Teheran Province). Plants exhibiting virus-like symptoms were observed in several greenhouses in 2010. The infected plants produced yellow and necrotic spots on the leaves and became severely deformed because of a strong leaf curling and the production of shorter internodes. Flower breaking has not been observed in the blue flowering plants. Approximately 85% of the plants were apparently infected in the inspected greenhouses. Extracts of infected material inoculated onto some indicator plant species induced mosaic and leaf malformation on *Nicotiana benthamiana*, mottling on *Capsicum annuum*, necrotic lesions on *Datura stramonium*, chlorotic local spots on *Vigna unguiculata*, systemic necrotic spots on *Emilia sonchifolia*, chlorotic local spots on *Cucumis sativus*, and necrotic local lesions on *Petunia hybrida*. Back-inoculation of infected material on lisianthus seedlings resulted in several chlorotic spots on the inoculated leaves and a severe downward curling of the systemic infected leaves. No symptoms were observed after

inoculation of *Pisum sativum, Phaseolus vulgaris, Vicia faba*, and *Chrysanthemum* spp. The virus could also be transferred from infected to healthy *N. benthamiana* plants by pricking leaves with a Pasteur pipette. Spherical tombusvirus-like particles of approximately 29 nm were found by transmission electron microscopy in leaf-dip and partially-purified preparations of infected *N. benthamiana*. Since *Tomato bushy stunt virus* (TBSV; genus *Tombusvirus*, family Tombusviridae) and *Moroccan pepper virus* (MPV) have been found in Iran, we studied by using ELISA whether our samples matched with TBSV. Since a negative response was obtained, two primers were designed on the basis of the available sequences of the coat protein in the GenBank (Accession No. EU27780) of an MPV isolate from soil in Fars Province, Iran. A reverse transcription (RT)-PCR of total RNA extract from infected lisianthus and *N. benthamiana* with the primers MPV-R (5′-TTACAACAATGTGGCATCATTG-3′) and MPV-F (5′-ATGGCAATGGTAGTAAG AAAC-3′) resulted in a DNA fragment of 1,176 bp. This fragment from *N. benthamiana* was cloned, sequenced (Accession No. HQ663881), and showed a 96% nucleotide and 99% amino acid identity with the coat protein of the soil isolate. MPV was originally found in pepper, tomato and pelargonium, pear tree, and surface water. To our knowledge, this is the first report of MPV on lisianthus in Iran and worldwide. This virus, which persists in soil, water, and plant debris, can be considered as a substantial threat for the lisianthus industry in Iran because farmers do not apply strict crop rotation or other sanitation measures. [N. Beikzadeh, D. Peters and A. Hassani-Mehraban. (Iran). Plant Disease, 95(11): 1485, 2011].

SUDAN

First report of *Cucurbit chlorotic yellows virus* infecting muskmelon and cucumber in Sudan. In summer 2009, a survey for virus diseases in cucurbits was conducted in open fields and plastichouses in Khartoum State, the most important growing area for cucurbits in Sudan. Chlorosis and yellowing symptoms on middle and lower leaves were observed on many muskmelon (*Cucumis melo* L.) plants grown in open fields in the Assilat agricultural scheme and on approximately 80% of the cucumber (*Cucumis sativus* L.) plants grown in plastichouses in Khartoum North. Large populations of whiteflies (*Bemisia tabaci* L.) were present in both locations. Leaf symptoms that were observed were similar to those caused by *Cucurbit chlorotic yellows virus* (CCYV), a recently described new *Crinivirus* species infecting cucurbits in Japan, Taiwan, and China. Seven leaf samples were collected from individual symptomatic muskmelon plants grown in different open fields in Assilat and from a symptomatic cucumber plant grown in a plastichouse. Comparative studies of selected genomic sequences showed 99% homology with Asian CCYV isolates. Whitefly transmission of the virus was confirmed by giving a population of *B. tabaci* an acquisition access period of 24 h and a further 24 h on muskmelon and cucumber seedlings. Symptoms were observed after 5 to 7 days, and the presence of CCYV was confirmed by RT-PCR. In conclusion, symptoms, RT-PCR, and dsRNA sequencing results confirm the presence and establishment of CCYV in cucurbit crops in Sudan. Because of the large whitefly vector populations, the spread of CCYV to neighboring countries in Africa and potentially southern Europe, or wherever cucurbits are grown, can be expected. To our knowledge, this is the first report of CCYV in Sudan and outside Eastern Asia. The sequences obtained in this study have been submitted to GenBank under Accession Nos. JF807053 to JF807055. [K. Hamed, W. Menzel, G. Dafalla, A. M. A. Gadelseed and S. Winter, (Sudan & Germany). Plant Disease, 95(10), 1321, 2011].

TUNISIA

First record of *Cephalonomia hypobori* on *Scolytus amygdali* in Tunisia. The biology and the life cycle of *Scolytus amygdali* collected from the Sahel of Tunisia were studied. Adults were collected together with their natural enemies. Branches of infested almond, plum, apricot, and peach were taken to the laboratory and insects were reared in plastic boxes at 25°C and photoperiod (16 h light/8 h dark). In November 2009, *Cephalonomia hypobori* was collected among other parasitoids of *S. amygdali*. To our knowledge, this is the first record of this species from Tunisia. A total of 73 Bethylidae wasps were collected. Only females of this wasp were observed. [A. Zeiri, M. Braham and M. Braham (Tunisia). Tunisian Journal of Plant Protection 6: 43-47, 2011].

TURKEY

First report of root-knot nematode (*Meloidogyne arenaria*) infecting parsley in Turkey. Commercial parsley plants in Safranbolu were found with symptoms of decline, stunting, yellowing and many galls in the roots, symptoms typical of infestation by root knot nematodes. Morphological, biochemical and molecular methods were used to identify the causal root knot nematode species. Morphological characteristic and perineal patterns of the females and

isoenzyme phenotypes matched the description of *Meloidogyne arenaria*. Polymerase chain reaction with the *M. arenaria* species-specific Far/Rar primer set also produced a 420-bp fragment, the same as obtained with a positive control population of *M. arenaria*. Results, therefore, confirm that the root knot nematodes isolated from parsley roots were *M. arenaria*. This is the first report of *M. arenaria* infecting parsley in Turkey. [Sevilhan Mennan, Gökhan Aydinli and Tuba Kati (Turky). Journal of Phytopathology, 159(10): 694–696, 2011].

First report of powdery mildew caused by *Golovinomyces cichoracearum* on *Zinnia elegans* in Turkey. Powdery mildews are one of the most common diseases of plants growing in many nurseries, city parks, and home gardens in Turkey. Common zinnia (*Zinnia elegans* Jacq.) is widely cultivated in Turkey for ornamental purposes. In September 2010, zinnia plants grown in Hatay, Turkey were found to be heavily infected with a powdery mildew. Pathogen mycelia and sporulation were observed as circular to irregular, white patches on both sides of the leaves and on stems and flower petals. As the disease progressed, infected leaves turned yellow and died. Hyphae were straight to wavy and 4 to 7 µm wide. Conidiophores arose from the upper part of the hyphae, measured 120 to 190 × 10 to 13 µm, were simple, and produced two to six immature conidia in chains with a sinuate edge, followed by two to three straight cells. Conidia were hyaline, ellipsoid to barrel-shaped, measured 25 to 42 × 14 to 22 µm (length/width ratio = 1.3 to 2.5), lacked distinct fibrosin bodies, and produced germ tubes on the perihilar position, with reticulate wrinkling of the outer walls. No chasmothecia were observed. The structures described above were typical of the *Oidium* subgenus *Reticuloidium*, anamorph of the genus *Golovinomyces*, and the fungus measurements were compatible with those of *G. cichoracearum* (DC.) V.P. Heluta described previously. To confirm the tentative identification based on morphological characteristics, molecular analysis of internal transcribed spacer (ITS) rDNA sequences from a representative material (MKU-ZK311077, duplicate KUS-F25655) was conducted. The complete ITS regions of rDNA were amplified using primers ITS5 and P3 as described by S. Takamatsu and sequenced. The resulting sequence of 508 bp from MKU-ZK311077 was deposited in GenBank (Accession No. JN051414). A GenBank BLAST search using the current data revealed an exact match for several sequences of *G. cichoracearum*, including Australian and Korean powdery mildews on zinnia plants, with a 100% sequence similarity. Pathogenicity was confirmed through inoculation by gently pressing diseased leaves onto leaves of three healthy, potted zinnia plants. Three noninoculated plants served as controls. Plants were maintained in a greenhouse at 25°C. Inoculated plants developed signs and symptoms after 10 days, whereas the control plants remained healthy. The fungus present on the inoculated plants was morphologically identical to that originally observed on diseased plants. The powdery mildew infections of *Z. elegans* associated with *G. cichoracearum* are nearly circumglobal, including Europe, North America, South America, Africa, Oceania, and Western Asian localities like India, Nepal, Jordan, and Israel. The current work confirmed the occurrence of *G. cichoracearum* infecting *Z. elegans* in Turkey using detailed morphological and molecular analysis. [S. Soylu, S. E. Cho and H. D. Shin, (Turkey & Korea). Plant Disease, 95(10), 1317, 2011].

RESEARCH HIGHLIGHTS

ALGERIA

Temporal variations and trophic structure of the nematode communities associated with cabbage (*Brassica oleracea*) in Algeria. Temporal variations in the soil nematode communities were investigated in a cabbage (*Brassica oleracea*) field in Mitidja, Algeria. Soil samples were collected monthly between November 2008 to May 2009, on two varieties of green head cabbage (Enkuisen, Compne haguen) and a variety of red head cabbage. Twelve genera were observed. *Aphelenchus* and *Ditylenchus* (fungivorus); *Tylenchorhynchus* and *Pratylenchus* (plant parasitic) were the dominant taxis. Significant differences were found between seasons ($P<0.01$) in the absolute abundance of nematodes and the trophic groups, except plant parasitic group. [D. Nebih Hadj-Sadok, H. Belkahla and NZ. El Aimouche (Algeria). Nematologia mediteranea, 39: 29-34, 2011].

EGYPT

Biological control of *Meloidogyne incongnita* and *Fusarium solani* in sugar beet. *Meloidogyne incognita* and *Fusarium solani* cause the root-knot and root-rot diseases of sugar beet *(Beta vulgaris* L.) in Egypt. Therefore, the effect of several commercial products containing either the fungi *Paecilomyces lilacinus, P. fumosoroseus* and *Tndioderma album* and the bacteria *Bacillus subtilis* and *B. megaterium* were tested against both pathogens on sugar beet, and compared with the nematicides fenamiphos and cadusaphos, under *in vitro,* greenhouse and field conditions. *In vitro,* the mortalities of M. *incognita* were within the range of 61-94% with bio-control products, compared to 96-98% with fenamiphos and cadusaphos. All treatments significantly reduced the mycelial growth of *F. solani,* with the greatest reduction given by *T. album.* In the greenhouse, *B. megaterium* greatly reduced the numbers of galls, females and egg-masses of the nematode in the roots of sugar beet, followed by *B. subtilis, P. lilacinus, P. fumosoroseus* and *T. album,* respectively. All treatments increased shoot length and weight, root weight and percentage of total soluble solids (TSS) in sugar beet plants. In the field, all treatments greatly reduced the population densities of second-stage juveniles in soil, and the numbers of galls, females and egg masses of *M. incognita* in the roots, more so at the recommended than at half the recommended dose. *Aspergillus* spp., *A. niger,* F. *solani,* F. *oxysporum, Peniallium* spp., *Rbizoctonia solani, Rbizopus nigricans* and *Trichoderma* spp. were the most common fungi found in the rhizosphere of treated and untreated sugar beet plants. *All* treatments affected the frequency of the isolated fungi. Soil treatments with *P. lilacinus,* P. *fumosoroseus,* fenamiphos and cadusaphos increased plant weight, foliage weight, length, diameter and weight of roots, survival of plants and tap root yield. The treatments also affected total soluble solids, sucrose content, the sucrose purity of tap roots and sugar yield. [W.M.A. El-Nagdi, K.H.E. Haggag, A.I. Abd-El-Fattah and H. Abd- El-Khair (Egypt), Nematologia mediteranea, 39: 59-71, 2011].

Interaction of cucumber mosaic virus with the root-knot nematode, *Meloidogyne incognita*, and effects of certain medicinal and aromatic plants on infected cucumbers. Three experiments were conducted in a greenhouse to investigate the interaction of *Cucumber mosaic virus* (CMV) with the root-knot nematode, *Meloidogyne incognita,* in cucumber. In the first experiment, the effects of different inoculum levels of *M. incognita* (0, 100 and 1000 second stage juveniles per pot containing 2 kg soil), alone or in combination with CMV, were investigated on cucumber cv. Alpha Beta. Numbers of galls and egg masses of the nematode were greater on the roots of cucumber infected with the nematode alone than on those of plants inoculated with both the nematode and the virus. In the second experiment, the intercropping of cucumber with some medicinal plants was tested by planting them beside cucumbers. The numbers of juveniles of *M. incognita* in the soil were reduced ($P \leq 0.05$) and there were no significant differences among the tested plant species, one medicinal *(Ambrosia maritima)* and three aromatic (*Dianthus caryophyllus, Ocimum basilicum* and *Zinnia elegans*). In the third experiment, amendment of the soil with leaf powders of the same plants reduced the numbers of galls and egg masses of the nematode in the roots of cucumbers. In all cases, the treatments reduced the concentration and number of local lesions of the rirus and enhanced plant growth and yield. [M.M.A. Youssef, W.M.A. El-Nagdi and A.A. Ahmed (Egypt). Nematologia mediteranea, 39: 73-80, 2011].

JORDAN

Response of wheat, barley and oat cultivars and accessions to *Meloidogyne Javanica.* A screening was undertaken to assess the reaction of three gramineous crops to *Meloidogyne javanica.* Fourteen cultivars of barley, seven cultivars of durum wheat and four accessions of oat recently introduced in Jordan, were evaluated by inoculating the test pots with 1000 second stage juveniles) of the nematode or filling them with field soil containing 520 eggs and]/250 g. Inoculation of J_2 showed that two cultivars of barley (Morocco 9-75 and WI2291), one of wheat (Cham 5) and three ac- cessions of oat (022, 023, 024) appeared to be immune to the nematode, while the other tested cultivars were ranked resistant to *M. javanica* infection. *Using* field soil, all of the tested cultivars and accessions were ranked resistant except two cultivars of barley (Rum and Acsad 176) that were susceptible, and one of wheat (Khayar Tunis) that was tolerant. [M.R. Karajeh, A.H. Abdel-Ghani and N. Al-Majali. (Jordan). Nematologia mediteranea, 39: 85-89, 2011].

IRAN

Genetic analysis of *Fusarium* head blight resistance in bread wheat. Seven spring wheat varieties were crossed in a half diallel mating system to assess the

genetic parameters of some traits of resistance to *Fusarium* head blight (FHB) including disease incidence (DIC), disease severity (DSY), *Fusarium* damaged kernels (FDK), disease index (DI) and incidence severity kernels (ISK). Differences were found to be signif- icant ($p<0.01$) for all the characters. The significance of additive components (D) and dominant components (H_1, H_2) demonstrated the importance of both additive and dominance effects for all traits. The greater value of Dover H_1 and H_2 demonstrated the additive nature of genes for all traits, which suggested the utilization of pedigree and full/sib selection for improvement of these parameters. All traits exhibited high narrow and broad sense heritability. Graphical representation demonstrated in DIe recessive alleles and in DSY, FDK, DI and ISK dominant alleles led to decreasing level of traits and increasing resistance to FHB. [Hassan Soltanloo, Effat Ghadirzade Khorzoghi, S. Sanaz Ramezanpour and Mehdi Kalatech Arabi (Iran). Australian Plant Pathology, 40(5): 453-460, 2011]

Widespread occurrence and molecular characterization of *Wheat dwarf virus* in Iran. *Wheat dwarf virus* (WDV), genus *Mastrevirus*, was associated with yellowing and dwarfing of wheat and barley in many parts of Iran. The complete nucleotide sequence of a barley isolate of the virus consisted of 2733 nucleotides and was most similar to barley isolates of WDV from Turkey, Czech Republic and Germany, but different enough to be regarded as a new strain of the virus. Phylogenetic analysis indicated that mastreviruses causing yellows and dwarfing in wheat and barley form two distinct groups. The Iranian and European barely isolates fall in one group while all wheat isolates are placed in another group. These results confirmed the division of WDV isolates into two distinct strains. WDV was also found in mixed infection with barley yellow dwarf viruses (BYDVs) in barley and wheat plants. Using dot blot hybridization with the full ssDNA genome of the Iranian barley isolate of WDVas a probe and PCR with primers which amplified the full length DNA of the virus, WDV was detected in 46 of 211 BYDV positive barley and wheat samples from northern, northwestern, northeastern, central and southern Iran. It is concluded that in addition to BYDVs, WDV is a major component of the yellows complex in cereal fields in Iran. [S.A.A. Behjatnia, A.R. Afsharifar, V. Tahan, M. H. Amid Motlagh, O. Eini Gandomani, A. Niazi and K. Izadpanah (Iran). Australasian Plant Pathology, 40(6): 12–19, 2011].

PAKISTAN

Screening of mungbean germplasm against mungbean yellow mosaic India virus and its vector *Bemisia tabaci.* Yellow mosaic disease (YMD) caused by whitefly (*Bemisia tabaci*) transmitted mungbean yellow mosaic India virus (MYMIV) is an important constraint of mungbean in Pakistan. One hundred sixty-two mungbean genotypes from eight different geographic regions were evaluated for resistance to MYMIV and its whitefly vector *B. tabaci*. Resistance levels were assessed by visual scoring of symptoms in the field under natural conditions, in net-house by artificial transmission through whitefly and in greenhouse using graft inoculation for two consecutive years in 2008 and 2009. None of the tested genotypes was found to be disease free, while considerable variation in responses was observed among the genotypes and testing methods. All genotypes were found to be systemically infected in the field. In 2008, 32 genotypes were found to be resistant and 67 were moderately resistant with severity index (SI) values ranging from 1.0 to 1.4 and from 1.5 to 2.4, respectively. In 2009 34 genotypes were found to be resistant and 38 were moderately resistant with the same SI value ranges as in 2008, and the remaining genotypes were moderately susceptible to highly susceptible. However, only 35 genotypes were found to be moderately resistant with SI values of 1.5–2.4 and latent periods (LP) of 17–21 days when evaluated using artificial transmission through whiteflies. Similar results were obtained when these genotypes were evaluated using graft inoculation. Significant differences in adult whitefly densities among tested genotypes were also observed during both years but no correlation between the number of whiteflies and disease severity was observed. The results indicated that these genotypes did not have a high level of resistance against MYMIV, however, they may provide sources of partial resistance which can be exploited in the breeding programmes to develop mungbean genotypes resistant to MYMD or they can be used directly as varieties to manage MYMD after evaluation for acceptable agronomic characteristics, adaptation and stability in various regions. [Khalid P.Akhtar, Ghulam Sarwar, Ghulam Abbas, Muhammad J. Asghar, Nighat Sarwar, Tariq M. Shah (Pakistan). Crop Protection, 30(9): 1202-1209, 2011].

SYRIA

Pathotype IV, a new and highly virulent pathotype of *Didymella rabiei*, causing ascochyta blight in chickpea in Syria. The causal agent of Ascochyta blight disease of chickpea (*Cicer arietinum* L.) is highly variable because of the presence of a sexual phase (*Didymella rabiei*). There is also selection pressure on the pathogen due to wide adoption of improved resistant chickpea cultivars in some countries. The pathogen is able to produce pathotypes with specific virulence on particular cultivars. Three pathotypes, I, II, and III, have been reported. In this study, we confirmed the presence of a new and highly virulent pathotype that we designate as pathotype IV. To test the pathogenicity of the isolates collected and maintained at ICARDA, 10 isolates representing a wide spectrum of pathogenic variation, including those classified by S. M. Udupa et al. and a putatively identified more virulent type, which was collected from a chickpea production field in the Kaljebrine area, Syria, were inoculated onto a set of differential chickpea genotypes. The differential genotypes, ILC 1929, ILC 482, ILC 3279, and ICC 12004, were sown in individual 10-cm-diameter pots containing potting mix and arranged in a randomized block design with three replications in a plastic house maintained at 18 to 20°C. Each differential genotype was inoculated individually with the 10 isolates. DNA was extracted from single-spored isolates to compare the genotypes of the isolates using three simple sequence repeat (SSR) markers (*Ar*A03T, *Ar*H05T, and *Ar*H06T) and to determine the frequency of mating types (MAT) through the use of MAT-specific PCR primers for MAT1-1 and MAT1-2. Host genotype reactions were measured on a 1 to 9 rating scale (1 = resistant and 9 = plant death). On the basis of the pathogenicity tests, the isolates were classified into four pathotypes: I (least virulent, killed ILC 1929 but not ILC 482, ILC 3279, or ICC12004); II (virulent, killed ILC 1929 and ILC 482 but not ILC 3279 or ICC12004); III (more virulent, killed ILC 1929, ILC 482, and ILC 3279 but not ICC12004); and IV (highly virulent, killed all four host differentials). Of 10 single-spore isolates tested, four showed similar disease reactions unique to pathotype I, four revealed pathotype II reactions, and one isolate each behaved like pathotype III or pathotype IV. SSR fingerprinting of these isolates provided evidence for genetic diversity since SSR *Ar*H05T was highly polymorphic and amplified five bands, including pathotypes III- and IV-specific bands, which need further investigation to discern if this locus has any role to play in the virulence. MAT-type analysis showed that seven isolates were MAT1-1 while the remaining three isolates were MAT1-2. Only pathotype I showed the profile of MAT1-2 and the other three pathotypes were MAT1-1. Initially, a number of chickpea wild relatives were screened to identify sources of resistance to pathotype IV, but none of the accessions tested showed resistance. However, efforts are underway to combine minor and major gene(s) available in the breeding program in addition to a further search of the wild gene pools to control pathotype IV. [M. Imtiaz, M.M. Abang, R.S. Malhotra, S. Ahmed, B. Bayaa, S. M. Udupa and M. Baum (Syria). Plant Disease, 95(5): 1192, 2011].

TUNISIA

Present status of some virus diseases affecting legume crops in Tunisia, and partial characterization of *Chickpea chlorotic stunt virus*. Field surveys were conducted in Tunisia during the 2005−2006, 2006−2007 and 2009−2010 growing seasons to identify viruses which produce yellowing, reddening and/or stunting symptoms of chickpea, faba bean and pea crops. Tissue blot immunoassay (TBIA) results showed that *Chickpea chlorotic stunt virus* (CpCSV) was the most common virus, followed by *Faba bean necrotic yellows virus*, *Bean leafroll virus* and *Beet western yellows virus*. The coat protein (CP) gene nucleotide sequence of seven CpCSV isolates collected from different regions of Tunisia was compared with sequences of five other isolates in the NCBI database. A homology tree of the CP nucleotide sequences was prepared and CpCSV isolates were grouped into two clusters. The first group contained two Tunisian CpCSV chickpea isolates collected from Bizerte and Kef; sequenced regions showed a high nucleotiode homology (95%) to that of the Ethiopian and Sudanese CpCSV isolates. The second group included five Tunisian isolates: two from chickpea, two from pea and one from faba bean, which showed a high homology (96%) when compared with the Moroccan, Egyptian and Syrian CpCSV isolates. [Asma Najar, Safaa G. Kumari, Nouran Attar and Samer Lababidi (Tunisia & Syria). Phytopathologia Mediterranea, 50, 310−315, 2011]

Efficacy of a hydroxytyrosol-rich preparation from olive mill wastewater for control of olive psyllid, *Euphyllura olivina*, infestations. Olive mill wastewater (OMW) is a problematic by product in Mediterranean countries. Despite this, it is a raw material that is an unfailing source of bioactive molecules. A hydroxytyrosol-rich preparation (HRP) (49.6% weight:dry weight) was extracted from fresh OMW using a hydrolysis and post-hydrolysis purification process. The field efficacy of HRP as a spray treatment (2500 l ha^{-1}) against olive psyllid,

Euphyllura olivina (Hemiptera: Psyllidae), was evaluated in 2008 and 2009 in a drip-irrigated olive orchard. The HRP showed strong insecticidal activity against *E. olivina* at a concentration of 2 g l^{-1} hydroxytyrosol. Application of HRP resulted in 41.1 and 72.1% control of nymphs and adults, respectively. However, HRP application did not reduce egg hatch. Neither phytotoxicity nor toxicity to auxiliary-fauna was recorded with concentrations of 1.25 g l^{-1} or 2 g l^{-1} HRP. But, the 2.5 g l^{-1} concentration was slightly phytotoxic, especially at the E and F floral phenological stages of the grapes. HRP offers a natural and effective extract for control of olive psyllid and opens a new opportunity for the reuse of OMW. [Ali Debo, Thabèt Yangui, Abdelhafidh Dhouib, Moheiddine Ksantini and Sami Sayadi (Tunisia). Crop Protection, 30(12): 1529-1534, 2011].

Genetic adaptability of the inheritance of the resistance to different levels of aggressiveness of *Septoria tritici* isolates in durum wheat. The aim of this study was to evaluate the variation in the mode of inheritance for resistance in durum wheat to *Septoria tritici* with the aggressiveness level of the pathogen. Material for the study involved two wheat cross-combinations and offspring populations. In each cross, the parental genotypes, F_1, F_2, BC_1P_r and BC_1P_s were inoculated with 15 isolates of *S. tritici* with different levels of aggressiveness. Generation mean analysis revealed that the mode of inheritance varied with the aggressiveness level of isolates. For less aggressive isolates, in both crosses, only additive and dominance effects were determined. When tested with isolates with moderate levels of aggressiveness, the additive-dominance model was not sufficient to explain the variation in generation means; and a di-genic epistasis model was found appropriate. For a high level of aggressiveness, both additive-dominance and di-genic epistatic models failed to explain the phenotypic variation in generation means, and probably higher order interaction or genes linkage were present. The quantification of gene effects revealed that the absolute total of epistatic effects increased with aggressiveness level of the isolate. Selection based on less aggressive isolates would be simpler, because only additive and dominance effects are implicated, but the genetic mechanism will not be stable with isolates of high aggressiveness level. Thus, selection with highly aggressive isolats is suggested for the stability of resistance to *S. tritici* in durum wheat. [Fethi Bnejdi, Mourad Saadoun, Mohamed El Gazzah (Tunisia). Crop Protection, 30(10): 1280-1284, 2011].

Virulence patterns of *Phytophthora infestans* isolates using R differential set of *Solanum demissum*: A useful tool to identify pathogen races in Tunisia. The current study uses a representative set of 31 Tunisian *Phytophthora infestans* isolates selected according to geographic diversity to analyze the virulence diversity of *P. infestans* via plant disease bioassays. Thirty-one isolates were tested onto detached leaves of a differential set of *Solanum demissum* having 11 late blight resistance (R) genes. Of these isolates, twenty-one races were characterized. *P. infestans* isolates showed different virulence patterns depending on sampling regions. While virulence patterns were found to be diverse in Korba and Bizerte, they seemed to be less diverse in Takelsa and North-West. Moreover, in all sampling regions, virulence patterns never followed the chronological level (year) of sampling. The most effective R genes recorded in Tunisia are R5, R9 and R8 that withstood more than 90% of tested isolates. These R genes could be useful in breeding programs. Furthermore, the presence of individuals with less than four virulence factors and that the 2 virulence factor races were the most frequent races in the population could be due to the possible presence of avirulent and heterozygous isolates. This implies that *P. infestans* population in Tunisia has not undergone high mutations in *Avr* genes contrarily to what was reported in other countries. The diagnostic of virulence in *P. infestans* needs a useful and high throughput technique reliable and linked to the bioassay screening that could replace neutral markers (allozymes, SSR markers, mtDNA). Combining phenotypic (disease bioassay) and genotypic techniques (virulence markers) could be a very interesting tool to identify the pathogen population structure and find a rapid solution for the break-down of resistance of potato cultivars. [K. Harbaoui, M. Harrabi, V. Vleeshouwers and W. Hamada (Tunisia). Tunisian Journal of Plant Protection 6: 1-10, 2011].

Quality of feed cereals in Tunisia: Natural occurrence of the mycotoxin deoxynivalenol. In Tunisia, the contamination of cereal grains with mycotoxins is very common. Such a situation is chiefly favored by the Mediterranean climate of the country, which plays a critical role in the development of toxigenic fungi and consequently, the accumulation of toxic metabolites. A survey of the natural occurrence of deoxynivalenol (DON), the most important group of fusarial mycotoxins, in barley and triticale intended for animal feeding and harvested in 2009 from the cultivating location of Bizerte has been conducted. A total of 21 samples was analyzed for DON content using an efficient high performance liquid chromatography (HPLC) with UV visible detector set at 220 ηm. Our investigation showed that 90% of triticale samples were contaminated with

DON with levels ranging from 0.5 to 2.8 µg/g whereas about 64% of barley samples showed DON contamination with amounts varying from 0.4 to 1.7 µg/g. We noticed that 77.8 and 85.7% of triticale and barley positive samples, respectively, exceeded the maximum permitted limit of 1.25 µg/g set by the European Commission for unprocessed cereals. [F. Bensassi, A. Zarrouk, L. Gargouri-Kammoun, M.R. Hajlaoui and H. Bacha (Tunisia). Tunisian Journal of Plant Protection, 6: 11-19, 2011].

Aphid enemies reported from Tunisian citrus orchards. In the context of biological control, regular prospecting was carried out for two years to identify the enemies of citrus aphids in Tunisia (Cap Bon). The study allows detecting 16 species of enemies, eight predators and eight parasitoids. Among predators preying on aphid colonies, five Coccinellids with a frequency of 6% were the most abundant predators: *Coccinella septempunctata, Scymnus subvillosus*, *Adalia bipunctata*, *Chilocorus bipustulatus* and *Hippodamia variegate*, then less abundant one Cecidomyie (3%): *Aphidoletes aphidimyza*, one Chrysopid (0.2%): *Chrysoperla carnea*, and one Syrphid fly larvae (0.6%): *Episyrphus balteata*. Parasitoids have the second most important activity to reduce the citrus aphids (5.1%) and were identified as *Aphidius matricariae*, *A. colemani*, *Ephedrus persicae*, *Lysiphlebus fabarum, L. testaceipes, Praon volucre*, *Trioxys angelicae*, and *Diaeretiella rapae*. We also found two hyperparasitoids belonging to genera *Pachyneuron* and *Phaenoglyphis*. Among aphid enemies, the four parasitoids *L. fabarum*, *A. matricariae*, *T. angelicae*, and *L. testaceipes*, and the lady beetle *S. subvillosus*, seem interesting to be used in an IPM program. [S. Boukhris-Bouhachem (Tunisia). Tunisian Journal of Plant Protection, 6: 21-27, 2011]

Composition and repellent efficacy of essential oil from *Laurus nobilis* against adults of the cigarette beetle *Lasioderma serricorne* (Coleoptera: Anobiidae). This study reports the chemical composition and the repellent activity of *Laurus nobilis* (Lauraceae) essential oil against 7-10 days old adults of the cigarette beetle *Lasioderma serricorne*. Essential oil chemical composition was assessed via GC and GC/MS analysis. 1,8-cineole (24.55%), linalool (17.67%), eugenylmethylether (12.40%), isovaleraldehyde (9.65%) and camphene (7.21%) were the major compounds. Significant pest repellent activity was demonstrated. Repellent action was highly dependent upon oil concentration and exposure time. The best repellent efficacy was observed for high doses and short exposure period. At the dose 0.12 µl/cm^2, repellency reached 92.5% after 1 h of exposure. Moreover, the median repellent dose value (RD_{50}) was 37.84 µl/cm^2. The results suggested that *L. nobilis* essential oil may have potential as a control agent against this stored product beetle. [J. Mediouni-Ben Jemâa, N. Tersim and M.L. Khouja (Tunisia). Tunisian Journal of Plant Protection, 6: 29-41, 2011].

TURKEY

Influence of actinomycete isolates on cereal cyst nematode *Heterodera filipjevi* juvenile motility. The effects of 126 actinomycete isolates were investigated *in vitro* on the motility of the second stage juveniles of the cereal cyst nematode, *Heterodera filipjevi* Madzhidow. Among them, isolate 3208 inhibited the motility of juveniles by 56.6% more than the negative control after one day of exposure. Motility inhibition reached 59.6% with isolate 3307 relative to the negative control after three days of exposure. All active actinomycete isolates were identified at the genus level as *Streptomyces* spp. Some of the isolates appear promising and worthy of further investigation for use as bio-control agents. [E. Yavuzaslanoglu, M. Yamac and J.M. Nicol (Turkey). Nematologia mediteranea, 39: 41-45, 2011].

❖Some Plant Protection Activities of FAO and Other Organizations

DESERT LOCUST SITUATION

General Situation during October 2011 Forecast until mid-December 2011

The Desert Locust situation remained calm during October due to unusually poor rainfall in the summer breeding areas of the northern Sahel in West Africa and Sudan, and an early end to monsoon rains along the Indo-Pakistan border. Nevertheless, small-scale breeding occurred in western Mauritania and on the coast in Pakistan, and scattered adults were present in Mauritania, Mali, Niger, Chad, Sudan and Pakistan. Limited ground control operations were carried out in southeastern Mauritania and northern Mali. In general, locust numbers were much lower this year at the end of the summer breeding period than in previous years. During the forecast period, low numbers of adults will shift from the summer breeding areas to northwest Mauritania and to the winter breeding areas along both sides of the Red Sea. Small-scale breeding will occur in these areas once the winter rains fall.

Western Region: No significant rain fell during October in the summer breeding areas of the northern

Sahel. Consequently, only low numbers of solitarious adults were present in parts of Mauritania, northern Mali, Niger and Chad. Small-scale breeding occurred in western Mauritania. Ground teams treated 1,200 ha of adult groups in northern Mali and 60 ha of solitarious adults in southeast Mauritania. During the forecast period, low numbers of adults will move from southern Mauritania to the northwest of the country where there is a risk that higher than normal rain may fall during November. If this occurs, small-scale breeding will take place, causing locust numbers to increase. Elsewhere, scattered adults may persist in parts of northern Mali, Niger and Chad. In Northwest Africa, no locusts were reported in October. During the forecast period, scattered adults may appear in the Western Sahara and breed if rainfall occurs. Small-scale breeding could also take place in areas of recent rainfall in the central Sahara of eastern Algeria and southwestern Libya.

Central Region: Locust numbers continued to remain low in the summer breeding areas of Sudan due to poor rainfall for a second consecutive month. Only scattered solitarious adults were seen in a few places. Although locusts have not been seen so far in the winter breeding areas along the Red Sea coastal plains in Sudan and Eritrea, scattered adults are expected to appear and breed on a small scale with the onset of the winter rains. Small-scale breeding is also likely during the forecast period on the Red Sea coast in Yemen and Saudi Arabia. No locusts were reported elsewhere in the region.

Eastern Region: Locust numbers declined in the summer breeding areas along both sides of the Indo-Pakistan border in Cholistan, Pakistan and Rajasthan, India as no further monsoon rains fell and vegetation was drying out in October. Small-scale breeding occurred on the coast west of Karachi but locust numbers remained low. There remains a low risk of potential breeding in Tharparkar Desert of southeast Pakistan where heavy rains and floods occurred in August and September. No locusts were reported in Iran. No significant developments are expected during the forecast period.

❖Short Plant Protection Notes

- Two tomato genes involved in gibberellin or jasmonic acid biosynthesis contain binding sites for Potato spindle tuber viroid small RNAs in their respective open reading frames report Y. Wang and associates at Hirosaki University, Japan, and USDA-ARS, Beltsville (Virology, 413: 72-83, 2011).
- *Valsamali* var. *mali* infects apple, but *V. mali* var. *pyri* infects apple and pear, and hosts catalyze genetic changes, report X. Wang and associates at Northwest A & F University, Shaanxi, P.R. China (Mycologia, 103: 317-324, 2011).
- *Maize dwarf mosaic virus* populations (539 isolates) comprised 49 genetic variants (3 accounted for 44% of isolates) report M.A. Achon and associates at Universidad de Lieida, Spain. (Plant Pathology, 60: 369-377, 2011).
- A transgenic sweet potato cultivar was developed for resistance to stem nematode using oryzacystatin-1 gene with Agrobacterium tumefaciens-mediated transformation report S. Gao and associates at the China Agricultural University, Beijing, China (Horticultural Science, 128:408-414, 2011).
- Single-oospore progenies of Phytophthora ramorum show aberrant variation during post-meiotic genomic rearrangements report A. Vercauteren and associates at ILVO, CRA-W, and Ghent University, Belgium (Fungal Genetics and Biology, 48: 537-543, 2011).
- *Soybean mosaic virus* (SMV) isolate 4469-4 may be a recombination of SMV and Bean common mosaic virus (or like it) in the genome N-terminus report Y. Yang and associates at Nanjing University, China (Virus Research, 157: 13-18, 2011).
- To control rice blast, four new tricyclazole-related compounds were synthesized report J. L. Balcer and associates at Dow Agrosciences Indianapolis, Dow Chemical Company Midland, and ViVentiChem LLC-NC (Pest Management Science, 67: 556-559, 2011).
- Azalea little leaf disease is caused by a phytoplasma in the aster yellows phytoplasma group report W. Wei and associates at ARS-USDA, Beltsville, University of Maryland, and Yunnan Agricultural University, China (Annals of Applied Biology, 158: 318- 330, 2011).
- *Ralstonia solanacearum* mutant MotN is hypermobile and has reduced virulence report F. Meng and associates at the University of Wisconsin (Journal of Bacteriology, 193: 2477-2486, 2011).
- A Tomato leaf curl China virus was identified and characterized by X. Yang and associates at Zhejiang University, People's Republic of China

(Applied and Environmental Microbiology, 77: 3092-3101, 2011).

- Combined applications of *Datura metel* leaf extracts plus biocontrol bacteria reduced incidence of Fusarium wilt of banana 75% in the field report R. Akila and associates at Tamil Nadu Agricultural University, India (Biolgical Control, 57: 175-183, 2011).
- Watermelon genotype affected soil microbial communities, and differences in rhizosphere microbial community contribute to differences in resistance to Fusarium oxysporum report M. An and associates at Northeast Agricultural University, People's Republic China (Canadian Journal of Microbiology, 57: 355-365, 2011).
- The interaction between Tobacco mosaic virus replication protein and a host-encoded dissociation inhibitor alters vesicle trafficking to enhance establishment of infection report S.R. Kramer and associates at the University of Maryland (Virology, 414: 110-118, 2011).
- *Cucurbita moschata* accessions PI 176531, PI 458740, PI 442266, PI 442262, and PI 634693 had the lowest infection rates with Phytophthora capsici report D.J. Chavez and associates at the University of Florida (HortScience, 46: 536-540, 2011).
- Two unrelated sweet potato viruses causing vein clearing in Ipomoea setosa are associated with symptomless but vein-clearing infections in sweet potato when coinfected with Sweet potato chlorotic stunt virus report W.J. Cuellar and associates at CIP, Peru, and Otto von Guericke University, Germany (Journal of General Virology, 92: 1233-1243, 2011).
- Oat cultivars Ronald and AC Gwen have the dominant gene Pg2 and recessive gene Pg13 for Puccinia graminis f. sp. avenae report J. M. Fetch and T. Fetch Jr. at Agriculture and Agri-Food Canada, Winnipeg (Canadian Journal of Plant Science, 91: 419-423, 2011).
- An RT-PCR assay detected Onion yellow dwarf virus, Leek yellow stripe virus, Garlic common latent virus, Shallot latent virus, and Mite-borne filamentous virus in 50 garlic genotypes report L. Leisova-Svobodova and K. Karlova-Smekalova at the Crop Research Institute, Czech Republic (Journal of Phytopathology, 159: 429-434, 2011).

❖GENERAL NEWS

EPPO/IOBC/FAO/NEPPO JOINT INTERNATIONAL SYMPOSIUM ON MANAGEMENT OF *TUTA ABSOLUTA*

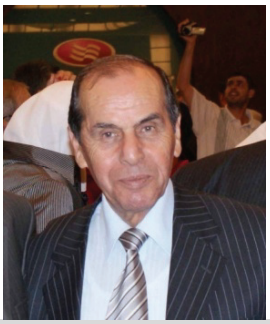
A Joint International Symposium on management of *Tuta absoluta* (tomato borer) was held on 2011-11-16/18 in Agadir, Morocco. The Symposium was organized jointly by IOBC, FAO, NEPPO and EPPO and in collaboration with IRAC and IBMA. There were more than 240 participants from 40 countries, agrochemical companies and international organizations. For more information see: http://archives.eppo.org/MEETINGS/2011_conferences/tuta_absoluta.htm

Group photo for participants of *Tuta absoluta* International Symposium (Agadir, Morocco).

11TH ARAB CONGRESS OF PLANT PROTECTION

Because of the events in Egypt, the Executive Committee of the Arab Society of Plant Protection decided that the location of the 11th Arab Congress of Plant Protection should be moved to another location and the 12th ACPP congress will be returned to Egypt. Accordingly, contacts are being made to identify the host country for the 11th ACPP, and the available options are Tunisia, Morocco and Jordan. Once a final agreement is reached, an announcement will be made, hopefully soon.

THE DEPARTURE OF PROF. WALEED ABU GHARBIEH



On Sunday 16 October 2011, The Arab Society for Plant Protection lost one of its founders, Prof. Dr. Walid Abu Gharbeyyah. His death has deeply touched all the members of the society and his colleagues at the Faculty of Agriculture, University of Jordan.

Dr. Abu Gharbeyyah was born on 2 Nov. 1935 in Palestine. He earned his B.Sc. in Pesticides from the University of Alexandria in Egypt in 1958. He got his MSc. in Plant Pathology from Rutgers University USA. His Ph.D.in Plant Nematology was from University of Florida.

Dr. Abu Gharbeyyah worked as a research assistant and as a researcher in the Department of Research at the Ministry of Agriculture in Jordan from 1958 to 1973. Then he started his work at the Faculty of Agriculture, University of Jordan tell he retired in 2006. He taught the courses of Nematology and Plant Pathology and supervised 20 MSc, students and 2 PhD. students. He conducted many research projects in the field of plant nematology and soil solarization.

Dr. Abu Gharbeyyah was among few scientists who thought about establishing the Arab Society for Plant Protection. He attended the preparatory conference in Aleppo, Syria in 1982. He organized, with his colleagues, the first congress of the society in 1982 at the Faculty of Agriculture, University of Jordan in Amman, Jordan.

After the success of the first congress he continued his activities in the society and attended all subsequent congresses. He headed the organizing committee of the seventh congress which was held in 2000 in the University of Jordan. He attended his last congress in Beirut and was awarded the society's "Honor Professorship" for his great efforts in establishing and supporting the society and for his contribution in the research in the field of plant nematology and plant protection.

I have known Dr. Abu Gharbeyyah as a faculty member, he taught me Plant Nematology. He was a great lecturer and a serious researcher. He gave us lots of knowledge and information. He used to set near each one of us showing us all the details of the nematodes under the microscope during lab. periods.

Also I have known Dr. Abu Gharbeyyah as a Dean of the Faculty of Agriculture, University of Jordan. He was one few founders who established the Faculty. And I knew him as colleague, and as a brother who gave me advice and guidance. He was a respected person by his colleagues and by all of those who worked with him in teaching or research. After he retired, he continued to work on an important book "Plant Nematology in Arab countries" which will remain for years a fundamental reference in the field of nematology in our region.

The death of Dr. Abu Gharbeyyah has left a great space in our society, but we are sure that he left behind him colleagues who love the society, and like to work for it, those who are able to curry on the duties of such work as Dr. Abu Gharbeyyah wished and wanted. At the end we ask for him from God mercy and forgiveness. " To God we belong and to him we shall return".

Prof. Dr. Ahmad Katbeh
Department of Plant Protection
Faculty of Agriculture
University of Jordan

PRIZE OF THE DISTINGUISHED RESEARCHER IN AGRICULTURAL SCIENCES IN JORDAN

The Ministry of Higher Education and Academic Research of the Hashemite Kingdom of Jordan, Amman, Jordan, has awarded Dr Jamal Ragheb Qasem, Professor of Weed Science at the Department of Plant Protection, Faculty of Agriculture, University of Jordan, Amman, Jordan, the "PRIZE OF RESEARCH FUND FOR THE DISTINQUISHED RESEARCHER IN AGRICULTURAL SCIENCES FOR THE YEAR 2010". The prize is awarded for researchers who met the requirements in having excellent scientific records, while the work considered for the prize is that mainly achieved in the last 10 years (2001-2010). The recipient of the prize, Prof. Qasem has submitted a total of 55 research achievement completed within the indicated period. These included 38 research papers published in refereed national and international journals, 3 specialized books, 12 book chapters published in international specialized books, 2 scientific final research reports and many other research abstracts and supporting documents. The award was handed to Prof. Qasem by the Minister of the Higher Education and Scientific Research (Professor Wajeeh Owies) in attendance of the Director of the Scientific Research Funds (Professor Nasri Al-Rabbadi) on 14 July 2011. The Ministry is occasionally announce on 3 prizes yearly, named the Prize of Distinguished Researcher, the Prize of Distinguished Research, and the Prize of Distinguished Post-Graduate Student in Jordanian Universities. The prizes are made from the sum amount of money 5000, 3000, 3000 JD, for each respectively, and a formal certificate of recognition. The awards are usually triennially rotated to cover all fields of sciences. However, for the year 2010, Prof. Qasem was the only recipient of the prize of all fields of sciences.

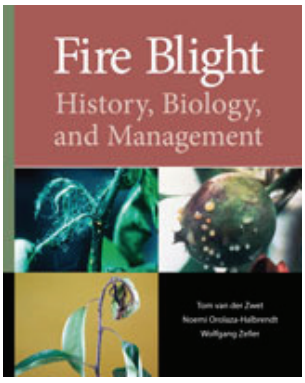
❖ Publications

NEW BOOKS

Fire Blight: History, Biology, and Management

By Tom van der Zwet, Noemi Orolaza-Halbrendt, and Wolfgang Zeller

Three world-renowned experts provide comprehensive scientific coverage of this first known plant disease caused by a bacterium. Fire blight is present in 47 countries and affects many common host plants in the rose family worldwide. Although enormous progress has been made against the disease, it remains a devastating and difficult problem to control in certain locations under optimum weather conditions and agricultural scientists must remain diligent. It is expected that the disease may eventually spread around the globe to all countries growing pome fruit, and the knowledge presented here will be an important first line of defense.



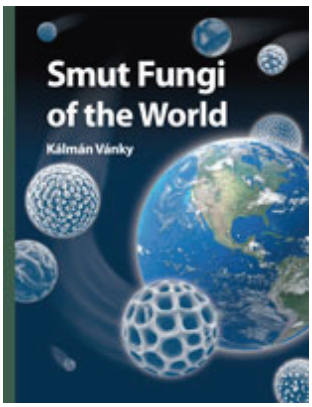
This nearly 500-page book includes a history of the disease, plus detailed information about the biology, epidemiology, and host-pathogen interactions, as well as horticultural, chemical, and biological control management strategies. It includes important coverage of the discovery of pathogenicity and virulence genes, induced resistance, and the variability and diversity of the bacterial pathogen. These research advances offer promise for controlling the disease, where the traditional studies of epidemiology and conventional chemical or biological control have been unsuccessful. An addendum chapter compiling most of the literature covering phytobacteriological and molecular techniques for quick and easy reference is included.

The book will be especially useful to scientists beginning work on this disease and essential wherever scientists and the growers they serve are fighting its devastating effects on the economically important crops of pear and apple.

Smut Fungi of the World

Kálmán Vánky

Outstanding book will be indispensable in helping the scientific community to identify smut fungi everywhere. It includes keys to the genera and species and a host plant–smut fungus list and compiles more than 3,500 micrographs and line drawings into a single sourcebook.



This nearly 1,500-page treatise is authored by the worldwide authority on the subject, Dr. Kálmán Vánky, who has spent more than 50 years collecting and describing smut fungi species. The book provides complete and detailed presentations of species in 93 genera through descriptions and illustrations. The book updates our knowledge of valid scientific names and synonyms and provides taxonomic references and the host plant range of each species. Dr. Vánky's passion for the topic shines through on every page through the excellent illustrations, and detailed descriptions which complement each other to make identification easier. Having all content in a single volume allows the reader to flip back and forth between similar looking fungi for detailed comparison and analysis.

This is a must-have resource for diagnosticians working in agricultural and food labs. Mycologists, plant pathologists, molecular biologists, teachers and students, as well as amateurs will appreciate its clear, concise, and comprehensive descriptions.

Agriculture, Nematology and the Society of Nematologists

Agriculture, Nematology and the Society of Nematologists, delves into the world of American agriculture, the importance of Nematology in agriculture and the vital role the Society of Nematologists played in enhancing agriculture and the science of Nematology. This 144 page book is bursting with fascinating research, insightful interviews and historic photographs. Originally slated to be a book dealing solely with the history of the Society of Nematologists, this book evolved into a history of agriculture, the science of Nematology as well as the history of the Society of Nematologists. "Once research into the history of the Society of Nematologists began, it was discovered that the decisions which shaped the formation and direction of the Society were affected by the events that took place in Nematology and agriculture during specific decades from the 1950's until the present. This book has given us the opportunity to examine trends and key events which occurred from the Society's conception to the present in an attempt to capture the trials, joys and accomplishments of those who dreamt a dream that came to fruition in the embodiment of the Society of Nematologists." -*Preface Agriculture, Nematology and the Society of Nematologists.*

Desk Encyclopedia of General Virology

This volume, derived from Encyclopedia of Virology, provides an overview of the development of virology during the last ten years. Entries detail the nature, origin, phylogeny and evolution of viruses. It then moves into a summary of our understanding of the structure and assembly of virus particles and describes how this knowledge was obtained. Genetic material of viruses and the different mechanisms used by viruses to infect and replicate in their host cells are highlighted. The volume is rounded out with an overview of some major groups of viruses with particular attention being given to our current knowledge of their molecular biology.

- The most comprehensive single-volume source providing an overview of virology to non-specialists.
- Bridges the gap between basic undergraduate texts and specialized reviews.
- Concise and general overviews of important topics within the field will help when preparing for lectures, writing reports, or drafting grant applications.

Publisher: Elsevier Science and Technology.

For more information please click on: http://www.researchandmarkets.com/product/3f7515/desk_encyclopedia_of_general_virology

Section 1 - GENERAL TOPICS History of virology: bacteriophages History of virology: plant viruses History of virology: vertebrate viruses Nature of viruses Origin of viruses Ribozymes Virus species Quasispecies Virus databases Phylogeny of viruses Evolution of viruses Taxonomy, classification and nomenclature of viruses Virus classification by pairwise sequence comparison Prions of vertebrates Viruses and bioterrorism.

Section 2 - VIRIONS Principles of virion structure Structure of non-enveloped virions Electron microscopy of viruses Cryo-electron microcopy Assembly of non-enveloped virions Assembly of enveloped virions Assembly of bacterial viruses Genome packaging of bacterial viruses Viral membranes Mimivirus.

Section 3 - NUCLEIC ACIDS Recombination Satellite nucleic acids and viruses Retrotransposons of vertebrates Defective interfering viruses Interfering RNAs Viruses as vectors in gene therapy.

Section 4 - VIRUS INFECTION Viral receptors Virus entry to bacterial cells Membrane fusion Replication of viruses Persistent and latent viral infection Apoptosis and virus infection Viral pathogenesis Antiviral agents Diagnosis using serological and molecular approaches Diagnosis using microarrays Disease surveillance.

Section 5 - IMMUNE RESPONSES Innate immunity Defeating innate immunity Antigen presentation Antigenicity and immunogenicity of viral proteins Cytokines and chemokines Cell-mediated immunity to viruses Antibody - mediated immunity to viruses Orthomyxovirus antigen structure Antigenic variation Vaccine strategies DNA Vaccines Vaccine safety Neutralization of infectivity Immunopathology.

Section 6 - DESCRIPTION AND MOLECULAR BIOLOGY OF SOME VIRUSES Adenoviruses: molecular biology Baculoviruses: molecular biology of granuloviruses Baculoviruses: molecular biology of nucleopolyhedroviruses Coronaviruses: molecular biology Hepatitis virus B: molecular biology Herpes simplex viruses: molecular biology Human cytomegalovirus: molecular biology Human immunodeficiency viruses: molecular biology Iridoviruses Kaposi's sarcoma-associated herpesvirus: molecular biology Mononegavirales Nidovirales Nodaviruses Orthomyxoviruses: molecular biology Papillomaviruses: molecular biology Partitiviruses Phycodnaviruses Picornaviruses Reoviruses: molecular biology Seadornaviruses Tetraviruses Togaviruses: molecular biology.

Pricing: Hard Copy: EUR 71

Ordering - Three easy ways to place your order: Order online at

http://www.researchandmarkets.com/product/3f7515/desk_encyclopedia_of_general_virology

EVENTS OF INTEREST

2012

***March 27-29**

7th International Integrated Pest Management (IPM) Symposium. Memphis, Tennessee, USA.
http://www.ipmcenters.org/ipmsymposium12/

*** March 30 – April 2**

11th European Congress of Fungal Genetics. Marburg, Germany
http://www.ecfg.info/

*** April 16-21**

Weed Management in Modern Agriculture, Short Course, Zaragoza, Spain
Email: Belkodja@iamz.chiheam.org
http://www.iamz.ciheam.org

*** April 22-26**

Asochyta 2012: 3rd International Ascochyta Workshop, Cordoba, SPAIN.
Email: ge1mivat@uca.es
http://tinyurl.com/3ftul4y

*** May 21-25**

4th International Workshop for Phytophthora, Pythium, and Phytopythium, University of Maryland, College Park, Maryland.
http://www.psla.umd.edu/faculty/Balci/workshop2011/index.cfm

*** May 28 - June 1**

Training course on "Detection techniques for mycotoxins and toxigenic fungi in the food chain", Bari, Italy.
http://www.mycotox-society.org\MycoRedTraining-2012.

*** June 3-8**

22nd International Conference on Virus and Other Graft Transmissible Diseases of Fruit Crops' (ICVF), Rome, Italy.
Email: icvf2012@cra-pav.it

*** June 3-8**

International Fusarium Laboratory Workshop 2012, Bari, Italy.
http://www.mycotox-society.org\fusarium-2012

*** June 17-22**

VI International Weed Science Congress, Dynamic Weeds, Diverse Solutions, Hangzhou, China.
Email: iwsc2012local@wssc.org.cn
http://www.iwss.info/coming_events.asp

*** June 18-21**

8th International Workshop on Grapevine Trunk Diseases, Valencia, Spain.
http://www.icgtd.org/8IWGTD.html

*** August 14-16**

New Zealand Plant Protection Society 2012 Conference, Nelson, New Zealand.
Email: secretary@nzpps.org
http://www.nzpps.org.

* **September 17-20**

  7th Australasian Soil-borne Diseases Symposium in Fremantle, Western Australia.
  http://www.asds7.org

* **November 18–23**

  The International Citrus Congress. Valencia, Spain**.**
  http://www.citruscongress2012.org/

2013

* **February 18-22**

  International Herbicide Resistance Conference, Perth, Australia.
  Email: Stephen.Powles@uwa.edu.au

* **August 25-30**

  10th International Congress of Plant Pathology (ICPP2013), Beijing, China.
  Email: president@cspp.org.cn
  http://www.icppbj2013.org/

2014

* **August 3-8**

  10th International Mycological Congress (IMC10, Bangkok, Thailand.
  Email: agrlkm@ku.ac.th

ACKNOWLEDGMENT

The Editorial board of the Arab and Near East Plant Protection Newsletter highly appreciates the contribution of several Arab Scientists in this issue, namely:

Samir Alahmad (Australia), Lidia Naguib Abdel Shahid (Egypt), Mohamad Al Besri (Morocco).