Arab and Near East Plant Protection Newsletter

Number 61, April 2014

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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

Promoting the Role of Social Media in Scientific Knowledge

Since early ages, documentation and dissemination of scientific knowledge have been the main determination of scientists, in order to make the new knowledge available to as many interested people as possible. Writing was the main approach to attain that purpose, while the speed of dissemination posed the other part of this challenge. Societies which developed systems for widespread and rapid dissemination of knowledge are credited with special contribution to human civilization. Traditional documents, in the past, were represented by written texts in books, journals or other publications. During the last three decades however, new types of digital documents have been developed, such as images, audio or video files, many being accessible via links on the World Wide Web. It is necessary for scientists and all those interested in new scientific knowledge to develop their skills and techniques for appropriate communication with interested people.

Social media holds huge potential for scientists. If used appropriately in a professional context, it can be a highly effective tool to quickly disseminate scientific knowledge and engage with different audiences. Social networking sites like Facebook, Twitter or YouTube can be used to share scientific information with a potentially huge audience, to network with other scientists and form new research collaborations, and to communicate with interested non-experts in an informal way.

Common barriers to using social media for science communication include the fear of being perceived as unprofessional, being wrong or misunderstood, lack of training or technical skills and, in special conditions, limited internet services. However, academic publishing is changing rapidly. Traditional metrics such as impact factors or citation numbers are being expanded with 'altmetrics', which aim to capture engagement with scientific content online (such as subscriber numbers, views, downloads or comments). Therefore we predict that digital literacy and social media will become essential skills in a scientist's tool kit (Osterrieder, 2013).

What is the level of ANEPPNEL's presence on social media? What is the level of contribution and interaction of ASPP members and other interested people after one year of establishment (April 2013)? Important questions should be discussed face to face – may be during the coming congress of the ASPP in Amman, Jordan, November 2014 - to evaluate the real impact of our newsletter on plant protection sciences in Arab world countries, and what strategies should be taken to promote the role of social networking sites to achieve widespread and rapid dissemination of new knowledge in plant protection sciences.

Anne Osterrieder, Oxford Brookes University, Oxford, UK

Adwan SHEHAB, General Commission for Scientific Agricultural Research, Damascus, Syria

❖ Crop Protection News from Arab and Near East Countries

INVASIVE AND NEW PESTS

EGYPT

First Report of Citrus Root Rot Caused by *Phytophthora palmivora* in Egypt. During spring-summer 2009, a survey was conducted to determine the species of *Phytophthora* present in citrus nurseries in Egypt. A total of 300 samples of soil and fibrous roots were collected from the rhizosphere of symptomatic Volkameriana lemon (*Citrus volkameriana* Tan. & Pasq.) plants growing in Delta (Benha-Qalyubia) and a desert (Cairo/Alexandria desert road) citrus nurseries. Plants showed various symptoms. Canopies of affected plants showed few and yellowish leaves, a general stunted growth, no new vegetation, and sometimes sudden desiccation; the root system showed few dark brown feeder roots, no new yellow-white apexes, and a fibrous appearance of the rootlets due to disintegration of the cortical bark but not of the xylem. Collected rootlets and soil were plated in Petri dishes containing a selective medium for the oomycete *Phytophthora* and incubated for 3 to 6 days at 19 ± 1°C as described by Ippolito et al. Pure cultures were obtained by single-hypha transfers and the isolates were identified as *Phytophthora palmivora* (Butler) Butler on the basis of morphological and cultural characteristics. Isolates formed stoloniferous colonies on potato dextrose agar (PDA) and grew between 10 and 30°C, with the optimum at 25°C. On V8 juice agar, they showed a highly fluffy pattern and produced terminal and intercalary globose chlamydospores. Sporangia were papillate, elliptical (45 to 51 × 29 to 35 µm; length/breadth ratio of 1.3:1.8), and were caducous with short pedicel. All isolates were A2 mating type, forming spherical oogonia and amphigynous antheridia in dual cultures with reference *P. palmivora* isolate of A1 mating type. Identification of the isolates was further confirmed by amplification and sequencing of the internal transcribed spacer (ITS) region using the universal primers ITS4 and ITS6. BLASTn analysis of ITS sequences (GenBank Accession No. HE583183) showed 99% homology with *P. palmivora* isolates available in GenBank. Pathogenicity tests for *P. palmivora* were conducted by inoculating three groups of ten 6-month-old Volkameriana lemon plants, transplanted into 1.4 liter pots with growing medium artificially inoculated at the rate of 1% (v/v) of *P. palmivora* inoculum produced according to Yaseen. Ten uninoculated plants served as a control. Two months after the inoculation, plants were analyzed for canopy symptoms and the presence of pathogen in feeder roots. More than 50% of inoculated plants showed foliage symptoms and extensive decay of feeder roots. Colonies of *Phytophthora* were recovered from necrotic rootlets and identified as *P. palmivora*, fulfilling Koch's postulates. To the best of our knowledge, this is the first report of *P. palmivora* as a pathogen to citrus plants in the Egyptian nurseries. *P. palmivora* should be considered a potential threat to the Egyptian citrus industry since it may negatively influence the nurseries and orchards production in the future. [Y. Ahmed, A. M. D'Onghia, A. Ippolito and T. Yaseen, (Egypt &Italy). Plant disease, 98(1): 155, 2014].

PAKISTAN

First Record of Tomato Wilt caused by the fungal pathogen *Acremonium* in Pakistan. During a survey in May 2011, tomato (*Lycopersicon esculentum* Mill.) plants were observed exhibiting wilt symptoms on the vegetable farm of the University of the Punjab, Lahore (31°32′59″ N, 74°20′37″ E), Pakistan. Plants were pale yellow and stunted. Diseased plants were scattered in the field either singly or in groups of two or three. Lower leaves turned yellow following necrosis and shedding from the plants. Roots of diseased plants were dark brown in comparison to the healthy ones. Vascular browning was observed when infected stems were split longitudinally and sectioned transversely. Necrotic vascular strands were also observed in infected stems. With a stereoscope, white hyphae were noticed in the vascular region of infected plants. Stained cross sections of stems of wilted plants showed fungal hypha. A diseased plant sample was taken to the First Fungal Culture Bank of Pakistan (FCBP) for identification of the pathogen. Conidia appeared on potato dextrose agar after incubation in diurnal light, and were unicellular, smooth, thin-walled, and oval in shape (3 to 6 × 1 to 3 µm), forming aggregations on the tip of conidiophores. With the help of diagnostic keys and available literature, the isolated fungus was identified as *Acremonium strictum* W. Gams. The fungus formed whitish flat colonies with deposition of gum granules on its surface. Hyphae and phialides were hyaline and non-pigmented. Phialides with expanded bottoms were elongated measuring 25 to 40 µm and solitary in position at right angles to the filament. To further confirm identification, amplification of the ITS1 and ITS2 regions was performed with universal primers

ITS1 and ITS4. The ITS sequence obtained was submitted to NCBI as accession JQ916901. The culture was deposited in FCBP (1099), Institute of Agricultural Sciences, University of the Punjab, Pakistan. A pathogenicity test of the isolated fungus was performed by inoculating 15 healthy tomato plants cv. Rio Grande in three replicates. The spore suspension (2×10^5 conidia/ml of sterile distilled water) was prepared from 12-day-old cultures of the fungus grown from a single spore on PDA in continuous light. Control plants were treated with sterile distilled water. Tomato plants inoculated with the fungus started showing wilting symptoms within 2 weeks, while the control remained healthy. *A. strictum* was re-isolated from inoculated wilted plants, thus satisfying Koch's postulates. Previously, *A. strictum* was a reported cause of wilt in many plants including *Chrysanthemum maximum*, watermelon, and *Gladiolous grandiflorus*. To our knowledge, wilt in tomatoes has been reported only from *Fusarium oxysporum* and *Pseudomonas solanacearum* from Pakistan. To our knowledge, this is the first record of Acremonium wilt in this economically important crop. [T. Anjum and W. Akram, (Pakistan). Plant disease, 98(1): 155, 2014].

SYRIA

First record of Yellow Safflower Fruit Fly *Chaetorellia carthami* Stackelberg 1929 (Diptera:Tephritidae) on safflower in Syria. The yellow safflower fruit fly *Chaetorellia carthami* Stackelberg 1929 is a pest of safflower in east Asia and north Africa, and was first discovered on safflower *Carthamus tinctonus* L. in 1974. It infests wild safflower *C.oxycantha* M. Bieb. and *C.tenuis*. Other composite weeds, such as *Sylibium marianum* Gaertin, *Sonchus oleraceus* L., *Centaurea iberica* Trev., and *Cirsium* sp. thistles were attacked by the same fly too. C.*carthami* distribute at each of Cyprus, East Palearctic, Turkey, Syria, Lebanon, Palestine, Egypt, Iraq, Iran, Azerbaijan, Caucasus, Armenia and Georgia, but it has not been recorded in Middle Asia since 1929. Safflower's heads infestation has been noticed during investigation of fruit fly spices on safflower in Damascus (2012), species was detected by microscopic examination as yellow safflower fly has is a dorsocentral seta before transverse suture of scutum that differentiates it from other genera in Terelliini. *C.carthami* belongs to the the *loricata* species group, where a supra-alar seta inserted in the black spot and cell cup usually extends well beyond the end of the cell bm. This species has a bright yellow body, yellow frons, pale brown scutal pattern, wings with four brown strips, and cell bm with a hyaline area in its basal two-thirds. Female laid its eggs in batches on bracts of safflower heads, the emerging neonates burrow into the heads, the larvae feed within a single head on receptacle tissue and on the developing seeds, then it pupate inside the head. Infestation causes leads to disrupted plant activities, reduction in flower buds, and, ultimately, decreased quality and quantity of seeds. [Abdulnabi Bashee, Louai Asslan and Faek Abdalrazaq (Syria), basherofecky@yahoo.com].

TUNISIA

First Report of *Botryosphaeria dothidea, Diplodia seriata*, and *Neofusicoccum luteum* Associated with Canker and Dieback of Grapevines in Tunisia. In 2011, common symptoms of grapevine dieback were frequently observed in 2- to 5-year-old table grape (*Vitis vinifera* L.) cvs. in four vineyards located in northern Tunisia. The symptoms included dead spur and cordons, shoot dieback, and sunken necrotic bark lesions, which progressed into the trunk resulting in the death of large sections of the vine. Longitudinal and transversal sections of cordons and spurs from symptomatic vines revealed brown wedge-shaped cankers of hard consistency. Twelve symptomatic samples from spur and cordons were collected, surface disinfected by dipping into 5% (v/v) sodium hypochlorite for 2 min, and small pieces from the edge of necrotic and healthy tissue were removed and plated onto potato dextrose agar (PDA) at 25°C in the dark. Based on colony and conidia morphological characteristics, isolates were divided in three species, named *Diplodia seriata, Botryosphaeria dothidea*, and *Neofusicoccum luteum*. *D. seriata* colonies were gray-brown with dense aerial mycelium producing brown cylindric to ellipsoid conidia rounded at both ends and averaged 22.4 × 11.7 µm (n = 50). *B. dothidea* colonies were initially white with abundant aerial mycelium, gradually becoming dark green olivaceous. Conidia were fusiform to fusiform elliptical with a subobtuse apex and averaged 24.8 × 4.7 µm (n = 50). *N. luteum* colonies were initially pale to colorless, gradually darkening with age and becoming gray to dark gray producing a yellow pigment that diffuses into the agar. Conidia were hyaline, thin-walled, aseptate, fusiform to fusiform elliptical, and averaged 19.8 × 5.5 µm (n = 50). Identity of the different taxa was confirmed by sequence analyses of the internal transcribed spacer (ITS1-5.8S-ITS2) region of the rDNA and part of the elongation factor 1-alpha (EF1-α) gene. BLAST analysis of sequences indicated that six isolates were identified as *D. seriata* (GenBank: AY259094, AY343353), one isolate as *B. dothidea* (AY236949, AY786319) and one isolate as *N. luteum*

(AY259091, AY573217). Sequences were deposited in GenBank under accessions from KC178817 to KC178824 and from KF546829 to KF546836 for ITS region and EF1-α gene, respectively. A pathogenicity test was conducted on detached green shoots cv. Italia for the eight Botryosphaeriaceae isolates. Shoots were inoculated by placing a colonized agar plug (5 mm diameter) from the margin of a 7-day-old colony on fresh wound sites made with a sterilized scalpel. Each wound was covered with moisturized cotton and sealed with Parafilm. Control shoots were inoculated using non-colonized PDA plugs. After 6 weeks, discoloration of xylem and phloem and necrosis with average length of 38.8, 17.6, and 11.2 mm were observed from inoculated shoots with *D. seriata, N. luteum*, and *B. dothidea*, respectively, and all three fungi were re-isolated from necrotic tissue, satisfying Koch's postulates. Control shoots showed no symptoms of the disease and no fungus was re-isolated. In Tunisia, Botryosphaeria-related dieback was reported only on citrus tree caused by *B. ribis*, on *Pinus* spp. caused by *D. pinea* (4), on *Quercus* spp. caused by *D. corticola*, and on olive tree (*Olea europea*) caused by *D. seriata*. To our knowledge, this is the first report of *D. seriata, B. dothidea*, and *N. luteum* associated with grapevine dieback in Tunisia. [S. Chebil, R. Fersi, A. Yakoub, S. Chenenaoui, M. Chattaoui, I. Melki, H. Zemni, A. Rhouma, G. Durante, E. Zacchi, and A. Mliki (Italy&Tunisia). Plant disease, 98(3): 420, 2014].

First Report of Fire Blight Caused by *Erwinia amylovora* on Pear in Tunisia. In the spring of 2012 and 2013, symptoms similar to those of fire blight were observed on pear trees (*Pyrus communis* cv. Alexandrine, Williams) in Tunisia at flowering stage. Disease symptoms appeared in 2012 in the region of Mornag and in the following year extended to the regions of Manouba and Tebourba. More recently, the disease was observed in the regions of Bizerte, Zaghouan, and Beja. The percentages of orchard areas that had infected plants varied from 10 to 40%. Some orchards in Mornag region exhibited more than 75% disease incidence. Symptoms were observed on flowers and young shoots. Blighted blossoms appeared wilted, shriveled, and brown, and dead flowers remained on the stems. Infected shoots wilted rapidly and often formed shepherd's crooks at their tips. Samples of diseased young shoots and flowers were subjected to pathogen isolation and identification. Bacteria were isolated from washed tissues on King's B medium (KB). Colonies with morphology similar to that of *Erwinia amylovora* were purified by sub-culturing on KB. The strains were first characterized based on morphology and biochemical tests. Sixteen strains produced white colonies on KB, were gram-negative, did not produce a fluorescent pigment on KB, did not grow at 35°C, and induced a hypersensitive reaction when infiltrated into tobacco leaves (cv. Xanthi). These strains were identified as *E. amylovora* by double-antibody sandwich indirect-ELISA and immunofluorescene microscopy using a polyclonal antibody and nested PCR targeting the pEA29 plasmid. Pathogenicity was tested using a detached-fruit assay. Each strain was inoculated onto three pear fruit (cv. Alexandrine) wounded with a scalpel dipped in a 10^9 CFU/ml bacterial suspension. The inoculated fruit were incubated at 25°C and 80% relative humidity in plates with sterile 1% agar. Negative controls consisted of fruit wounded with a scalpel dipped in sterile distilled water. Seven days after inoculation, symptoms of discoloration, browning, and production of bacterial ooze appeared at the inoculated points. No symptoms developed on negative controls. Reisolation of bacteria yielded colonies with characteristics of *E. amylovora*. Purified amplicons from nested PCR were sequenced (KF302525, KF302526) and a BLAST search of the GenBank database revealed 98% homology with *E. amylovora* strain HF560643.1. [A. Rhouma, F. Helali, M. Hajjouji and M. R. Hajlaoui, (Tunisia). Plant disease, 98(1): 158, 2014].

TURKEY

First Report of Fire Blight Caused by *Erwinia amylovora* on Meadowsweet (*Spirea prunifolia*) in Turkey. Fire blight, caused by *Erwinia amylovora* (Burr.) Winslow et al., affects plants in the Rosaceae family, which includes trees and shrubs in orchards, nurseries, and landscape plantations. During spring and summer of 2008 and 2010, dying branches, necrotic leaves attached to shoots, and blighted twigs of meadowsweet (*Spirea prunifolia*) were observed at three different locations of landscape areas in Konya Province, Turkey. Disease incidence was approximately 1% on the plants during the surveys. Initial symptoms of reddish to brownish streaks on the shoots of infected plants were observed in spring. Nine representative bacterial strains were isolated from the lesions on shoots of seven meadowsweet plants on nutrient sucrose agar (NSA) medium and identified as *E. amylovora* on basis of biochemical, physiological and molecular tests. Bacteria were gram-negative, rod shaped, aerobic, fermentative, yellow-orange on Miller and Scroth medium, positive for levan formation and acetoin production, did not grow at 36°C, positive for gelatin hydrolysis, and negative for esculin hydrolysis, indole, urease, catalase, oxidase, arginine dehydrolase, reduction of

nitrate, acid production from lactose, and inositol. All strains were hypersensitive response-positive on tobacco (*Nicotiana tabacum* var. White Burley) plants. All strains were identified as *E. amylovora* using the species-specific primers set, A/B, by PCR assay, and by fatty acid methyl ester (FAME) profiles determined by Sherlock Microbial Identification System software (TSBA 6 v. 6.00; Microbial ID, Newark, DE) with similarity indices ranging from of 79 to 99%. Pathogenicity was tested by injecting of petioles and actively growing three shoot tips of 2-year-old *S. prunifolia* seedlings cv. number 29 using a 0.46 mm-diameter hypodermic needle with bacterial suspensions containing 10^8 CFU mL^{-1} in sterile distilled water (SDW) Plants were inoculated with each of the nine bacterial strains and two references strains, Ea29 and NCPPB 2791 (Selcuk University, Department of Plant Protection, Konya, Turkey). Symptoms resembling those associated with natural infection appeared on the inoculated plants 7 days after inoculation. Plants inoculated with SDW served as a negative control treatment, and no symptoms were observed on these plants. All tests were repeated three times with the same results. Bacterial re-isolations were attempted from the control plants as well as shoots and leaves inoculated with the two reference strains and the nine bacteria identified as *E. amylovora*. Bacteria isolated from inoculated plants were identified as *E. amylovora* using the biochemical, physiological, and molecular tests described above, but this bacterium was not isolated from the control plants. Phytosanitary measures must be taken to avoid spread of the pathogen to ornamentals in new landscape areas in Turkey. This report is important because infected *Spirea* spp. can be a potential inoculum source for other rosaceous ornamentals. To our knowledge, this is the first report of the occurrence of fire blight on meadowsweet in Turkey. [K.K. Bastas and F. Sahin, (Turkey). Plant disease: 98(1): 153, 2014].

RESEARCH HIGHLIGHTS

ALGERIA

Fusarium wilt of chickpeas (*Cicer arietinum* L.) in north- west Algeria. *Fusarium oxysporum* (Schletend: Fr) f.sp. *ciceris* (Padwick) (FOC) is a soil fungus that is a permanent threat to the chickpea (*Cicer arietinum* L.) causing wilt syndrome. During spring of 2005 to 2009 surveys at three agro-climatic zones of north-western Algeria through seven sites were conducted. The presence of the disease was found in all the 50 fields chickpea visited. The pathogen, *F. oxysporum* f.sp. *ciceris* was isolated from infected plants harvested. Three types of symptoms are observed on chickpea plants in fields: Symptom-yellowing, Wilting and Root rot- that appeared in very wet conditions on few fields from locality: Tighenif-Maoussa-Field station (Mascara region). The means of incidence and severity of the disease were high in all regions. From region of the Mascara; the incidence was estimated between 5% and 54% for stage 2 branching, of 10% to 69% for stage prebloom, and of 54% to 98.33% in maturation stage. It was higher in dry years. The severity varies from 2 to 3.56 for the three stages and the index of the disease was evaluated between 2.5 and 68.77%. The average rating was drawn between 7 sites, were incidence varies between 50 and 100%, severity from 1 to 2.88 and the disease intensity index drawn between 15% and 62.5%. *F. oxysporum* was the main species isolated from diseased parts of the plant with an average frequencies of 43.26% followed by *Fusarium solani* with 31.61%. *F. culmorum F. equiseti, Sclerotium* spp. and *Rhizoctonia solani*, are which part of the microflora isolated and could be responsible for various disease collar and root. The study of virulence on a susceptible cultivar that very susceptible to *Fusarium oxysporum* f.sp. *ciceri*, ILC482 confirmed the presence of this special form. [Faouzia Zemouli-Benfreha, Djamel-eddine Henni and Aoumria Merzoug (Algeria). African Journal of Agricultural Research, 9(1): 168-175, January 2014].

High-performance liquid chromatography (HPLC) Identification of five new phenolic compounds associated with olive tree (*Olea europea* var. Sigoise) resistance to *Verticillium dahlia*. Verticillium wilt is a vascular disease caused by *Verticillium dahliae* which represents a serious threat for olive growing in Algeria. Many studies have shown the potential involvement of phenolic compounds in the reaction of plants to pathogens. Our study shows that the presence of Verticillium wilt induces a high production of polyphenols in infected olive trees compared to uninfected ones. The presence of high concentrations of flavonoids (3.45%) and alkaloids (0.44%) in the infected trees suggests that flavonoids and alkaloids may play a role in the olive tree resistance to verticillium wilt. The high performance liquid chromatography (HPLC) analysis showed the presence of five phenolic compounds: oleuropeine, luteonine, catechin, and for the first time verbascoside, apigenine-7-glycoside and some derivatives hydroxycinnamic compounds. These substances are good resistance markers and should help to make efficient strategies for the biocontrol of verticillium wilt. [Fatema Bensalah, Nassira Gaouar-

Benyelles and Mohammed Choukri Beghdad. (Algeria). African journal of Microbiology Research, 8(2): 192-199, January, 2014].

EGYPT

Insecticidal effect of certain ecofriendly compounds on some scale insects and mealybugs and their side effects on antioxidant enzymes of mango seedlings. This work was aimed to stop the using of conventional scalicides in controlling scale insects and mealybugs; so rosacide, cascade and ibex oily were evaluated on *Aulacaspis mangiferae* (Newst.) and *Icerya seychellarum* (Westw.) which were reared on mango nurslings. Obtained results cleared that females of *A. mangiferae* reduced by average of 97.6, 41.9 and 56.2% and nymphs reduced by 99.1, 75.3 and 22.8% when rosacide, cascade and ibex oily were sprayed, respectively. Also, *I. seychellarum* females were reduced by average of 82.4, 80.6 and 88.3% and nymphs were reduced by 91.7, 84.7 and 96.3% at the same arrangement. It is deduced that population of *A. mangiferae* responded to cidal effect of rosacide, cascade and ibex oily by average reduction of 98.3, 58.6 and 39.5%, respectively. Population of *I. seychellarum* responded to the same compounds by higher average of 87.1, 82.6 and 92.3% reduction, respectively. Antioxidant activities of superoxide dismutase, catalase and polyphenol oxidase enzymes as well as total Indole acetic acid and total phenol contents had been investigated. It is well known that the insect infestation increased plant enzymes activity to defence them against insect attack. So, the results clarified a significant reduction in all the treated tested enzymes and were more pronounced for rosacide treatment than cascade and ibex oil,This reflect the order of efficiency of the tested compounds in controlling the tested insects. So, treatments with natural insecticide had effective tools in controlling *A. mangiferae* and *I. seychellarum*. [Nahed F. Abdelaziz, H.A. Salem, E.A. Sammour (Egypt) *Archives of Phytopathology and Plant Protection*, 47(1): 1-14, January, 2014].

Use of Quantitative PCR Detection Methods to Study Biocontrol Agents and Phytopathogenic Fungi and Oomycetes in Environmental Samples. Quantitative polymerase chain reaction (qPCR) is a versatile technique for the accurate, sensitive, reliable and high-throughput detection and quantification of target DNA in various environmental samples, and in recent years, it has greatly contributed to the advancement of knowledge in the plant pathology field. Indeed, this technique is ideal to evaluate inoculum threshold levels and to study the epidemiology, biology and ecology of phytopathogenic fungi and oomycetes, thus opening up new research opportunities to investigate host–pathogen interactions and to address tasks related to quarantine, eradication and biosecurity. Moreover, it can be a useful tool in breeding programs. The present review analyses the most relevant applications of qPCR for the detection and quantification of filamentous fungi and oomycetes within host tissues and in soil, air and water, along with brief paragraphs focusing on new application fields such as the detection and quantification of mycotoxigenic fungi and biocontrol agents. The high potentiality of qPCR for present and future applications is highlighted together with a critical analysis of major drawbacks that need to be corrected to definitively confirm it as a preferential routine quantitative detection method. [Simona M. Sanzani, Maria G. Li Destri Nicosia, Roberto Faedda, Santa O. Cacciola and Leonardo Schena (Egypt). Journal of Phytopathology, 162(1):1-13, January 2014].

Comparative effects of different modified atmosphere exposures at 20 ° and 34 °C on the immature stages of cereals grain moth *Sitotroga cerealella* (Olivier) (Lepidoptera: Gelechiidae). This study aimed to determine the sensitivity of newly-laid eggs, 4th instar larvae and 3-day-old pupae of *Sitotroga cerealella* to four modified atmospheres (MAs) containing 30% (MA1), 45% (MA2), 65% (MA3) and 75% (MA4) CO_2 in air at 20 ° and 34 °C, and exposure periods between 2 h and 288 h. Results showed that egg mortality and adult emergence reduction from treated larvae or pupae increased gradually with the increase of either exposure period or CO_2 concentration in air at both 20 ° and 34 °C. Suppression of adult emergence from treated larvae reached 100% after 12 days at 20 °C for all MAs, but was achieved after 3 days for MA4 (75% CO_2) and 6 days for MA1, MA2 and MA3 at 34 °C. Suppression of adult emergence from treated pupae at 20 °C reached 100% after 11 days for MA1 and MA2 and after 9 days for MA3 and MA4, while at 34 °C it reached 100% after 5 days for MA1, and 4 days for MA2, MA3 and MA4. The order of sensitivity of *S. cerealella* stages to MAs at both 20 ° and 34 °C was eggs > pupae > larvae. The most effective MA treatment was that containing 75% CO_2 at 34 °C. This combination killed all eggs and larvae within 3 days and all pupae within 4 days. [Sayeda S. Ahmed, Mohamed Y. Hashem, Samir I. El-Sherif (Egypt). Journal of Stored Products Research, 56: 54-59, 2014].

OMAN

A Distinct Strain of *Chickpea chlorotic dwarf virus* Infecting Pepper in Oman. During a field survey in 2011, pepper (*Capsicum annum*) plants showing symptoms suggestive of geminivirus infection were observed in three fields in the Al-Sharqiya region of Oman. Symptoms observed included upward leaf curling leading to cupping and stunting with 15 to 25% disease incidence in surveyed fields. Total DNA was extracted from the leaves of seven symptomatic plants and subjected to rolling circle amplification (RCA). The RCA product was digested with several restriction endonucleases to obtain unit length of ~2.6 to 2.8, typical of geminivirus. Out of seven samples, only four yielded a product of ~2.6 kb in size by *Kpn*I digestion. The fragments were cloned in pUC19 and sequenced. The partial sequences of four isolates were >95% identical to each other at the nucleotide (nt) level and thus only one isolate (P-25) was fully sequenced, determined to be 2,572 nt in length, and its sequence deposited in GenBank (KF111683). The P-25 sequence showed a genome organization typical of a mastrevirus, with four open reading frames (ORFs), two in virion-sense and two in complementary-sense. The virion and complementary-sense ORFs were separated by a long intergenic region, containing a predicted hairpin structure with the nonanucleotide sequence (TAATATTAC) in the loop, and a short intergenic region. An initial comparison to all sequences in the NCBI database using BlastN showed the isolate to have the highest level of sequence identity with isolates of the dicot-infecting mastrevirus *Chickpea chlorotic dwarf virus* (CpCDV). Subsequent alignments of all available CpCDV isolates using the species demarcation tool (2) showed the isolate P-25 to share between 83.6 and 90.3% identity to isolates of CpCDV available in databases, with the highest (90.3%) to CpCDV strain A originating from Syria (FR687959). Amino acid sequence comparison showed that the predicted proteins encoded by the four ORFs of P-25 (coat protein [CP], movement protein [MP], replication associated protein A [RepA], and RepB) share 91.5, 88.2, 89.1, and 90.8% amino acid sequence identity, respectively, with the homologous proteins of the CpCDV isolate from Syria. Based on the recently revised mastreviruses species and strain demarcation criteria (78 and 94% whole genome nt identity, respectively) proposed by Muhire et al., the results indicate that isolate P-25 represents a newly identified strain (strain F) of CpCDV. The presence of CpCDV in symptomatic pepper plants was further confirmed by Southern blot hybridization technique using digoxygenin (DIG) labeled probe prepared from CpCDV isolate P-25. The genus *Mastrevirus* consists of geminiviruses with single component genomes that are transmitted by leafhoppers. Mastreviruses have so far only been identified in the Old World and infect either monocotyledonous or dicotyledonous plants. To our knowledge, this is the first report of a mastrevirus on the Arabian Peninsula and the first record of pepper as host of CpCDV. Recentl, several begomoviruses of diverse geographic origins have been found infecting vegetable crops in Oman. The propensity of geminiviruses to evolve through recombination may lead to evolution of recombinant CpCDV with new host adaptability. Due to extensive agricultural/travel links of Oman with rest of the world, there exists high probability for the spread of this virus. [S. Akhtar, A. J. Khan and R. W. Briddon (Oman & Pakistan). Plant disease, 98(2): 286, 2014].

PALESTINE

Control of powdery mildew in grapes using sodium bicarbonate. The powdery mildew is one of the most serious grapes' diseases in Palestine, as it causes fruits destruction, which pays farmers to use many of the chemical pesticides to control the disease and at intervals too close together during the period of maturation and harvest, causing a high rate of pesticides residues in fruits, so it has been carried out many experiments to reduce the use of pesticides. The results showed that sodium bicarbonate is the most important vehicles used to combat powdery mildew in grapes. Where the results were use of 5 grams of sodium bicarbonate per liter of water is the focus of the most appropriate to fight powdery mildew and achieved a ratio of control of 90% with the lack of any side effect on leaves and fruits, and when you use a concentration of 3 grams or less did not have a any effect on the disease, but when you use a concentration of 3.5 grams The effect was 25% on the disease, when using 4 grams to be ratio 50%, And mosaic symptoms appeared 10% on grape leaves When you use a concentration of 6 grams per liter, The use of concentration 10 g / l burn all the plant. [Mousa Yousuf Aljadba (Gaza – Palestine). UAWC. E-mail: mousaj@hotmail.com].

PAKISTAN

Assessment of the antibacterial activity of *Cuscuta pedicellata* Ledeb. In search for alternative ways for bacterial fruit lesions control, we evaluated the aqueous decoction and aqueous infusion extract of *Cuscuta pedicellata* L. for their antibacterial activity against different pathovar of *Xanthomonas campestris*, the causal agent of this disease. The

collected leaves were washed, dried and powdered. Aqueous decoction and aqueous infusion extract were prepared and observed for their antibacterial efficacy by using the well diffusion method in vitro. The significant results obtained showed that both extracts tested inhibited the bacterial growth of pathogen with inhibition zone diameter ranging from 1.0 to 5.0 cm. The aqueous decoction revealed strongest antibacterial activity on *X. campestris* pv. *mangiferaeindicae* and *X. campestris* pv. *punicae* whereas aqueous infusion extract showed strongest antibacterial activity on *X. campestris* pv. *citri* and *X. campestris* pv. *pinicae*. The susceptibility of different pathovars of *X. campestris* to this plant extracts varied. The study indicates the potential of this plant extracts in the management of diseases caused by *X. campestris* in several important crop plants. [Amna Ali, Muhammad Saleem Haider, Sana Hanif and Nosheen Akhtar (Pakistan). African journal of biotechnology, 13(3): 430-433, 2014].

Effect of different concentrations of *Eriobotrya japonica* extract on control of infection by *Meloidogyne incognita* and *Cephalobus litoralis*. This study discusses and developed methods for obtaining plant extracts/pure compounds and its usages as a nematicidal agent. Freshly hatched second-stage juveniles of two nematode species, *Meloidogyne incognita* and *Cephalobus litoralis* were used. A bioassay guided isolation of the extract, fractions and pure compounds were done for their nematicidal activity at different concentrations in comparison with *Azadirachta indica*, while distilled water was taken as control. The crude extract showed 90% and ethyl acetate fraction 97% mortality rate after 48 h at 1% concentration against *M. incognita* species and 81 and 50% against *C. litoralis* specie at the same concentration. Among the pure compounds, 4 and 9 showed maximum mortality of 90 and 91% and compounds 8, 3, 6, 2, 5, 7 and 1 showed 89, 88, 88, 82, 80, 80 and 69% mortality, respectively after 48 h in *M. incognita* sp. In *C. litoralis*, compounds 8 and 9 showed 72 and 75%, significant mortality, while 7, 4, 3, 5, 6, 2 and 1 showed 70, 70, 70, 68, 62, 60 and 58% mortality, respectively after 48 h. The plant is of economic importance with nematicidal value. [N. Sultana, M. Akhtar, S. Ferheen, R. Sultana Bina and Gh. Ahmed (Pakistan). Journal of Entomology and Nematology, 6(2): 27-31, 2014].

SSR based genetic diversity analysis in a diverse germplasm of groundnut ('Arachis hypogaea' L.) from Pakistan. The current study was aimed to explore the genetic diversity among seventy Pakistani accessions of *Arachis hypogaea*. In Pakistan their morphological and biochemical variations have already documented but still so far, molecular variations need to be studied for this valuable crop. For molecular diversity study DNA was extracted from all seventy accessions of *Arachis hypogaea*. The extracted DNA was primed with thirty SSR primers and amplified through PCR. Fifteen out of thirty primers generated polymorphic bands among the selected accessions. In total, forty different polymorphic loci were determined across the selected accessions. The range of number of polymorphic loci detected was ranged from 2 to 4 for each primer, with an average of 2.6 loci per primer. Polymorphic Index Content (PIC) value was calculated for each marker. The dendrogram was constructed on the basis of allelic data from fifteen SSR markers across the selected accessions. All the accessions were divided into six clusters at 0.67 coefficients of similarity. This study of variations at molecular level of Pakistani groundnut accessions will be helpful for conservation and breeding purposes of groundnut and other legumes. [Sohaib Roomi, Bibi Sabiha, Arshad Iqbal, Muhammad Suleman, Izhar Muhammad, Muhammad Amir Zia, Muhammad Zulfiqar Ahmad, Farooq Rashid, Abdul Ghafoor and Nabila Tabbasam (Pakistan). Australian Journal of Crop Science, 8(1):55-61, 2014].

Selection, mechanism, cross resistance and stability of spinosad resistance in *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae). *Spodoptera litura* is one of the most destructive pests in Pakistan and in many other regions of the world. A field collected population of *S. litura* was selected with spinosad for eleven generations under controlled laboratory conditions to study the cross resistance, mechanism and stability of spinosad resistance in *S. litura*. The resistance to spinosad in *S. litura* increased 3921-fold (after eleven generations of selection with spinosad) as compared to a susceptible population of *S. litura*. No cross resistance between spinosad and emamectin benzoate, methoxyfenozide, fipronil, indoxacarb, profenofos, lufenuron or deltamethrin was found in the spinosad-selected population of *S. litura*. To find the possible mechanism of spinosad resistance in *S. litura* two synergists, Piperonyl butoxide (PBO), S, S, S-tributyl phosphorotrithioate (DEF) were tested on the susceptible and resistant strains and on the un-selected field population. The values of the synergism ratios of PBO and DEF were 2.33 and 1.06 for the spinosad-selected strain, 1.36 and 1.06 for the un-selected field population and 1.14 and 1.00 for the susceptible strain, respectively. As high PBO ratio indicates the role of microsomal O-demethylase in causing spinosad resistance in *S. litura*. The spinosad-resistant and field populations of *S. litura* were reared

without any selection pressure from the 12th to the 16th generation (G_{12}–G_{16}). The spinosad resistance decreased from 3921 to 678-fold in the spinosad-resistant population and from 31.1 to 15.1-fold in the un-selected population of *S. litura* as compared to the susceptible strain. Spinosad resistance in *S. litura* has a high reversion rate (−0.15) which indicates that spinosad resistance in *S. litura* is unstable and can be easily managed by switching off the selection pressure for a few generations or alternating with insecticides having different modes of action. [Adeel Rehan, Shoaib Freed (Pakistan). Crop Protection, 56:10-15, 2014].

Simultaneous selection for stem borer resistance and forage related traits in maize (*Zea mays* ssp. *mays* L.) × teosinte (*Zea mays* ssp. *mexicana* L.) derived populations. Maize spotted stalk borer (**Chilo partellus** Swinhoe Pyralidae) (MSSB) is a serious pest of the maize (Zea mays ssp. Mays L.) crop in Pakistan. This study was conducted to introgress resistance in maize against MSSB by exploring wild sources of resistance for the development of a resistant maize variety. To achieve this, teosinte ('PI566674') × maize ('Sargodha-2002') crosses were conducted and three populations (F_1, $F_2$and F_3) were established. These populations were screened at various locations and in a contrasting artificial insect infestation experiment. Teosinte species 'PI566674', following screening, was shown to be highly resistant to MSSB and had the ability to produce a high biomass (5 times higher than susceptible genotypes) under high temperatures (36–40 °C). The biomass of the F_1 hybrid, which was highly susceptible to MSSB, was significantly reduced ($P \leq 0.05$) following infestation by MSSB in all experiments. The introgression from teosinte for genes conferring resistance to MSSB was screened in segregating F_2 and F_3 generations. Despite a susceptible F_1 population, F_2 was resistant to MSSB. Twenty new recombinant plants with resistance to MSSB and a high leaf soluble solid (16 °Brix) content were identified. They were selected to grow the F_3 population. Mean values of F_3 progenies showed similar resistance to the F_2 population but a high percentage (60%) of resistant plants was recovered. [Imtiaz Akram Khan Niazi, Avais Rafique, Saeed Rauf, Jaime A. Teixeira da Silva, Muhammad Afzal. (Pakistan). Crop protection, 57: 27-34, 2014].

SAUDI ARABIA

Behavior of the non-selective herbicide glyphosate in agricultural soil. Glyphosate [*N*-phosphonomethyl] glycine is a systematic, non-selective, organophosphorus herbicide used worldwide in agriculture and industrial zones. Following its application, residues of glyphosate can threaten soil or aquatic organisms in adjacent water. In this study, we followed the degradation, stabilization, remobilization and leaching of ^{14}C-glyphosate in three agricultural soils in laboratory incubations and in lysimeters under field conditions. Glyphosate degradation was relatively rapid with a half-life of 14.5 days in the silt clay loam soil incubated at 20Â°C. Glyphosateâ□™s degradation product, Aminomethylphosphonic Acid (AMPA), represented more than 85% of residues after 80 days of laboratory incubation. Leaching of glyphosate in lysimeters of three different investigated soils under outdoor conditions was very slow, less than 1% of the initial applied amount has been detected in the leachates after 100 days of experimentation. Glyphosate rapidly formed non-extractable residues after treatment. In summary, glyphosate was removed from soil very rapidly and its leaching seems to be very slow regardless the type of treated soil. On the other hand, the contamination risk of groundwater with its metabolite AMPA at long term is probably due to the release of the non-extractable residues. [Al-Rajab, A.J. & O.M. Hakami (Saudi Arabia). American Journal of Environmental Science, 10: 94-101, 2014].

TUNISIA

Virulence spectra and geographical distribution of Mal Secco disease of citrus caused by *Phoma tracheiphila* in the Mediterranean countries: Tunisia and Italy. This work aimed to find out patterns of virulence variability of a *Phoma tracheiphila* population of 51 isolates, to determine geographic distribution of Mal Secco disease in citrus orchards of six Mediterranean countries and also to establish correlation between geographic distribution and pathotypic distance of *P. tr* population structure over our sampling spatial scale. Based on unweighted pair-group method with arithmetic averaging clustering and mean disease rating scores, three distinct virulence groups were identified. The 51 isolates were classified into 20 pathotypes. Extensive virulence variability was detected in 51 isolates of *P. tr* causing MSD of citrus in the Mediterranean basin. Regression plot between pairwise virulence and geographical distance showed that virulence is independent of the geographical origin and that isolates collected from the same country have different degrees of virulence. The lack of significant correlation between virulence and geographic structure confirmed the absence of isolation-by-distance pattern, suggesting non-regular and non-

gradual dispersal of the pathogen over this spatial scale. [Sana Ziadi, Samir Chebil, Imen Melki (Tunisia & Italy). European Journal of Plant Pathology, 138(1):123-131, 2014].

❖Some Plant Protection Activities of FAO and Other Organizations

DESERT LOCUST SITUATION

Situation level: Threat

General Situation of the Desert Locust during March 2014 and Forecast until mid-May 2014 provided by the FAO Emergency Center for Desert Locust (ECLO).

The Desert Locust situation improved during March along both sides of the Red Sea due to control operations and drying conditions. Nevertheless, there remains a risk that adult groups and perhaps a few small swarms may move into the spring breeding areas in the interior of Saudi Arabia and Yemen where one generation of breeding is possible. Local breeding occurred in northern Oman where it is expected to continue. A few hopper bands formed in irrigated areas along the Nile Valley in northern Sudan. Several swarms formed on the northwest coast of Somalia and moved into eastern Ethiopia where breeding is likely to occur in areas of recent rainfall. Elsewhere, small-scale breeding is likely to occur during the forecast period in the spring breeding areas of Northwest Africa and Southwest Asia, causing locust numbers to increase slightly.

Western Region - The situation remained calm during March. Ground teams treated a few small hopper groups near irrigated agricultural schemes in the central Sahara of **Algeria**. No locusts were reported elsewhere in the region. During the forecast period, low numbers of adults are likely to appear in the spring breeding areas south of the Atlas Mountains in **Morocco** and **Algeria** as well as in southwest **Libya** and breed on a small scale in areas that receive rainfall. No significant developments are expected.

Central Region - Locust infestations declined in winter breeding areas along both sides of the Red Sea due to control operations and drying conditions. Aerial and ground control operations were undertaken in **Saudi Arabia** (23,277 ha) and **Sudan** (4,669 ha) while limited ground control operations were carried out in **Eritrea** (160 ha) and **Yemen** (4 ha). Numerous hopper bands persisted on the central coast of Saudi Arabia and egg-laying occurred on the northern coast. During the forecast period, adult groups and perhaps a few small swarms are likely to appear in the interior of Saudi Arabia and lay eggs in favourable areas that will cause locust numbers to increase as hatching and band formation occurs. Locust numbers are also likely to increase in the Nile Valley in northern **Sudan** and, to a lesser extent, in northern **Oman**. In the Horn of Africa, several swarms moved from the northwest coast of **Somalia** to eastern **Ethiopia** where they are expected to mature and lay eggs that could start to hatch by the end of April. Limited aerial and ground control operations were carried out in Ethiopia.

Eastern Region - The situation remained calm in March. Local breeding occurred at one place in the interior of southeast **Iran**. During the forecast period, low numbers of adults are likely to appear in coastal and interior areas of southeast Iran and southwest **Pakistan** and breed on a small scale in areas of recent rainfall.

For more up to date information about the Desert Locust situation and forecasts, visit the FAO's Desert Locust website: http://www.fao.org/ag/locusts/en/info/info/index.html

Source: The FAO Desert Locust Bulletin issued monthly in English and French by the Desert Locust Information Service, AGP Division (Rome, Italy; and Arabic version by the Commission for Controlling the Desert Locust in the Central Region (FAO Regional Office for Near East, Cairo, Egypt. http://crc-empres.org).

PEST RISK ANALYSIS TRAINING IN JORDAN

Pest risk analysis (PRA) is an important tool for agriculture, trade, food security and the environment. This science-based process helps countries protect their plant resources from pests and fulfill their international obligations.

Pest risk analysis collects and analyzes scientific information and supports key decisions to protect plant health. These decisions have cascading effects on agricultural production, accessing and sustaining trade markets, enhancing food security and protecting the environment and biodiversity.

A training course on pest risk analysis and import regulation for staff of MoA in Jordan was organized in the framework of the Regional Project (TCP/RAB/3402) on *Tuta absoluta* management during 2-13 February 2014. The training course was facilitated by Mr. Jeffrey Jones, the International

Phytosnitary Expert. Twelve participants attending the workshop were drawn from the Plant Protection, Plant Quarantine and other sections of the Ministry of Agriculture. The training aimed at creation of a qualified national team for PRA.

THE 9TH SESSION OF THE COMMISSION ON PHYTOSANITARY MEASURES OF THE INTERNATIONAL PLANT PROTECTION CONVENTION (IPPC)

The International Plant Protection Convention (IPPC) is an international plant health agreement, established in 1952, that aims to protect cultivated and wild plants by preventing the introduction and spread of pests.

The 181 Parties to the Convention form the Commission on Phytosanitary Measures (CPM) that serves as the Convention's governing body. The members of the Commission are the contracting parties to the Convention and are responsible for implementing the work programme of standards development, information exchange and capacity building. The CPM meets during March or April each year at FAO headquarters in Rome, Italy, to promote cooperation to help implement the objectives of the IPPC. The ninth session of the Commission of Phytosanitary Measures (CPM-9) was held at the Headquarters of the Food and Agriculture Organization, during 31 March - 4 April 2014.

The main IPPC activity is the formulation of science-based, internationally-agreed standards which detail how plants and plant products should be handled during trade, known as International Standards for Phytosanitary Measures (ISPMs), or so called new ISPMs.

Fifty ISPMs have been developed so far, covering issues ranging from how plant products or wooden packing materials should be treated prior to export, to recommended procedures and methodologies used by agricultural inspectors, to procedures for conducting risk analysis and required formats for phytosanitary certificates.

Throughout its annual 9th Session, the CPM addressed various issues including adoption of new international standards and CPM recommendations. Three ISPMs were adopted as following:

- Annex 2 to ISPM 26:2006 Control measures for an outbreak within a fruit fly-pest free area
- Revised Appendix 1 to ISPM 12:2011 Electronic certification, information on standard XML schemes and exchange mechanisms
- Annex 15 to ISPM 28:2006 Vapour heat treatment for Bactoceraa cucurbitae on Cucumis melo var. reticulatus

The participants also notably benefited from many technical and informative side-events held between the CPM Sessions.

- Side session on National Plant Protection Organizations (NPPOS) experiences: Preparation and responding to natural disasters

The session aimed at sharing some experiences on preparation and responding to natural disasters and to learn from selected contracting parties and Regional Plant protection Organizations (RPPOs) on the steps taken to mitigate phytosanitary impacts of natural disasters particularly on agriculture in terms of trade disruption, environment, food security and other related issues.

Belize and ORISA shared their experience in preparedness for hurricanes and flood and earthquakes by providing for emergency fund among other preparedness issues. The National Plant Protection Organization in Japan also shared its experience with the Great East Japan Earthquake reflecting the key point when a disaster strikes is cooperation with relevant Ministries and agencies in the country and abroad.

- Side session Awareness Raising Materials for Pest Risk Analysis and Quick Guide to Dielectric Heating Treatment Launched

The IPPC launched awareness-raising materials for pest risk analysis and a quick guide for dielectric heating. Pest risk analysis collects and analyzes scientific information and supports key decisions to protect plant health. Pest risk analysis awareness-raising materials include simple, photo-based presentations and video-interviews. The IPPC Capacity Development Committee produced these materials to support plant protection officials' abilities to convey the importance of pest risk analysis to policymakers and other decision-makers.

Quick guide on dielectric heating treatment was launched to provide information on this new treatment for wood packaging material that was adopted in 2013.

- Side session Regional perspectives: Emerging Pests

The IPPC Secretariat, in collaboration with the Capacity Development Committee and FAO AGP Regional Plant Production and Protection Officers, held a seminar on Emerging Pests from a regional perspective. Four out of seven FAO regions presented on:

•Maize Lethal Necrosis Disease (MLND) in East Africa
•Red Palm Weevil and *Tuta absoluta* in the Near East and North Africa
•Potato moth, Tomato moth and Webworm in Central Asia and Eastern Europe
•Cassava pink mealy bug in Asia.

The seminar was as an initiative to have FAO regions sharing their experiences of an emerging pest and was very well received and appreciated by about 70 delegates of the contracting parties attended and there was an interest to develop this sessions further.

- System Approaches and Tools developed in STDF Project 328

A side session on System Approaches and Tools developed in STDF projects 328, to enhance competency and confidence in the South East Asian sub-region and other relevant regions, applying Systems Approach to plant health and to provide new decision support tools and apply them to case studies of trade opportunities. A case study on use of the tools developed to control Thrips palmi on Orchids was delivered by the NPPO of Thailand.

The tools have now been used for accessing and maintaining new markets, negotiating equivalence agreements and for challenging the number of measures required and their scientific justification.

THE 2ND INTERNATIONAL WHEAT RUST SYMPOSIUM, IZMIR, TURKEY, 28 APRIL - 1 MAY, 2014.

Under the slogan "Joining Hands to Fight Wheat Stripe Rust", the 2nd International Wheat Rust Symposium will be organized jointly by ICARDA, FAO, Turkish Ministry of Food, Agriculture and Livestock, Borlaug Global Rust Initiative, CIMMYT.

The Symposium is hosted by the Regional Cereal Rust Research Center in the Aegean Agricultural Research Institute in Izmir, Turkey, during 28 April - 1 May, 2014.

The 2nd International Wheat Rust Symposium brings together the world's leading stripe (yellow) rust researchers to interact with decision makers from rust-affected countries and assess the current state of research and regional cooperation on rust surveillance. This symposium builds on the results of the 1st Wheat Stripe Rust Symposium, led by ICARDA in 2011, in Aleppo, Syria.

This 2nd Symposium provides a platform to encourage sustained international collaboration on wheat stripe rust – reviewing the latest science, practices and policy options to improve the management of wheat stripe rust globally.

REGIONAL WORKSHOP ON THE GOOD PRACTICES FOR THE PARTICIPATION IN THE IPPC'S GOVERNING BODY, SUBSIDIARY BODIES AND MEETINGS HAMMAMET, TUNISIA, 3-5 MARCH 2014

The Regional Workshop on the Good Practices for the Participation in the IPPC's governing body, subsidiary bodies and meetings was organized by the Near East Plant Protection Organization (NEPPO) and Subregional Offices for North Africa (FAO-SNE) in collaboration with IPPC, FAO Regional Office for the Near East and North Africa (FAO-RNE) and MoA in Tunisia during the period 3-5 March, 2014.

The workshop aimed at strengthening the capacities of the IPPC national focal points for good and effective participation in the IPPC bodies and meetings, with focus on the Commission for the Phytosanitary measures (CPM-9) Session. Thirteen participants representing eight countries participated in the workshop.

The sessions of the workshop provided the participants with detailed information on the structure, roles and procedures, and ToRs of the IPPC governing body and its subsidiary bodies. Participants were also familiar with the different types of CPM documents, roles and procedures at the CPM Session. The workshop was very useful for the efficient preparation to the CPM, providing guidance on comprehension and getting the clear information of the content of the CPM documents to enable the Contacting Parties to take rational decisions toward them. The workshop discussed some agenda items of the CPM-9 of the interest for the region and gives the participants opportunity and platform for generating a common vision for the decision at the CPM-9 Session.

MIDTERM WORKSHOP OF THE TCP/RAB/3402 ON MANAGEMENT OF TOMATO BORER: *TUTA ABSOLUTA* IN THE NEAR EAST REGION

FAO has launched the Regional TCP at the beginning of 2013, aiming at strengthening the regional collaboration, coordination, information and knowledge exchange in management of T. abosluta. The TCP is contributing to the countries' capacity building in management of T. absoluta with focus on bio-ecological pest control approaches against the tomato borer that are environmentally and economically sustainable methods reducing the heavy use of pesticides, and favour the use of natural enemies and "attract-and-kill" pheromone traps. The project is assisting countries in the survey and

identification of the natural enemies and developing programmes of biological control.

The project is also working to strengthen the Farmer Field Schools (FFS) approach, as a successful and distinguished method based on the participatory knowledge transfer approach. The TCP supports the continuity and expansion of FFSs that have been created by the Regional IPM programme for the Near East, and the establishment of new FFSs.

The midterm workshop was held in Amman, Jordan during 14-16 April 2014 aimed to:

- review the progress in the implementation of the activities and achievements of the project during the previous period in the five countries participating in the project (Egypt, Iran, Jordan, Lebanon and Yemen).
- exchange the experiences, success stories and lessons learned from each participating country, and to discuss the challenges encountered in the implementation of the project activities to take necessary measures to overcome in the coming period,
- exchange the experiences and knowledge between the participating countries and with advanced countries in the management of this pest through international experts invited from Spain and Morocco.
- Review and adjust the proposed national workplans for the second period of the project for the year 2014 in line with the country priority, available budget and the remaining period of the project.

❖Short plant protection notes

* A summary of over 100 programs for eradicating environmental weeds, conducted by the NEW ZEALAND Dept. of Conservation, revealed that progress has been slow and difficulties were significantly underestimated. -> C.J. Howell, CHowell@doc.govt.nz.

* Trial results in SOUTH AFRICA determined that a combination of Spinosad and a protein-based attractant was an effective replacement for the organophosphate malathion in fruit fly control in citrus orchards. -> A. Manrakhan, Aruna@cri.co.za.

* Native nematodes are being harnessed as biocontrol agents against pest snails in areas of AUSTRALIA. -> G. Ash, Gash@csu.edu.au.

* A volunteer network established in the U.S. to monitor *Drosophila suzukii*, (spotted wing drosophila) an invasive pest of fruit crops, has provided stakeholders with information in an accessible and interactive format while involving them as direct participants in data collection and other activities. -> H.J. Burrack, Hannah_Burrack@ncsu.edu.

* Through the efforts of scientists in Western Australia State, AUSTRALIA has gained a new national protocol to detect the serious rice fungal disease, rice blast, caused by *Magnaporthe oryzae*. -> V. Lanoiselet, VLanoiselet@agric.wa.gov.au.

Source:
http://www.ipmnet.org/IPMNews/2013/news200.html

❖GENERAL NEWS

NEW BANANA DISEASE SPREADING THROUGHOUT AFRICA

According to a ProMED-mail Plant post at http://www.promedmail.org on 6 December 2013, shocked by the outbreak of a new strain of banana disease in Africa, farmers in Nigeria and regulators of the agricultural sector are bracing to prevent and combat the possible attack of the nation's plantain-banana producers by the scourge of Fusarium wilt. The destructive strain of banana wilt disease, which was discovered on Cavendish bananas in Mozambique, has begun to spread to other African nations. The disease, widely known as Foc TR4, is a form of Fusarium wilt or Panama disease, caused by the fungus *Fusarium oxysporum* f. sp. *cubense* Tropical Race 4. This fungus has devastated banana plantations in Asia over the past two decades.

The African outbreak was discovered on a commercial farm in northern Mozambique earlier in 2013 with support from UEM (Universidade Eduardo Mondlane), and the responsible fungus subsequently identified at Stellenbosch University in South Africa. The Ministry of Agriculture in Mozambique has announced this outbreak via the IPPC (International Plant Protection Convention) portal. Mozambique government officials have visited the farm, and have introduced in-country measures to contain and prevent spread to other parts of the country. A stakeholder consultation meeting to explain the outbreak was held in Maputo in November 2013, and will be followed by similar meetings in neighbouring countries to raise awareness, heighten surveillance and put in place an emergency response plan. A consortium of partners, including the Mozambique Department of Agriculture, International Institute of Tropical Agriculture (IITA), Stellenbosch University, Bioversity International, FAO, National Agricultural Research and Regulatory Organisations and government officials throughout Africa are being mobilised to address the outbreak, monitor plantations and raise awareness in Mozambique, the region and continent. (Source: **ISPP Newsletter 44 (4) April 2014**).

A NEW VIRUS ON COFFEE

A ProMED-mail post at http://www.promedmail.org reported a new ermaravirus on coffee in Hawaii, USA. (type species _European mountain ash ringspot-associated virus) was accepted as a new genus in 2009. It is not yet assigned to a family or order. Emaraviruses are transmitted by eriophyid mites, which can disperse on wind currents. If this virus is the causal agent, it has the potential to move through a field rather quickly. The disease [may not] kill any coffee trees, but it makes the berries unmarketable. (Source: **ISPP Newsletter 44 (4) April 2014**).

THE FIRST JOURNAL ARTICLE ON INSECTICIDE RESISTANCE WAS PUBLISHED 100 YEARS AGO

One hundred years ago this month (April), an entomologist at the Washington Agricultural Experiment Station named A. L. Melander published an article in the *Journal of Economic Entomology* called "Can Insects Become Resistant to Sprays?" It is widely regarded as the first ever published article on arthropod resistance to insecticides.

"Melander's 1914 paper not only reported the first case of field-evolved insecticide resistance, it also foreshadowed the refuge concept for delaying resistance," said Dr. Bruce Tabashnik, head of the Entomology Department at the University of Arizona. "It's remarkable!"

Melander noticed that certain populations of insects — but not all of them — were becoming less susceptible to sulphur-lime than they had been in the past. While the chemical was documented to be very effective at killing scale insects in a previous experiment in Wawawai, WA, Melander found that 90% of the specimens that he had sprayed in Clarkston had survived. Even when he increased the amount of active ingredient by ten times, 74% of them still survived.

❖ Arab Society for Plant Protection News

ELEVENTH ARAB CONGRESS OF PLANT PROTECTION
Second Announcement and Call for Abstracts

CONGRESS SECRETARIAT

Correspondence should be addressed to:
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DATE AND LOCATION

The Congress will be held in Meridien Amman hotel from 9-11 November 2014

CONGRESS PROGRAM

The program of the Congress includes various sessions. Each session will include a number of contributed papers and posters. The congress will also organize symposia on some important plant protection topics in the Arab world, where distinguished speakers are invited to participate.

The Program includes:

A) Paper Presentation Sessions

The main general topics of the paper presentation sessions are:

1. Economic insect and animal pests,
2. Fungal, bacterial, phytoplasmal and viral plant diseases,
3. Nematodes,
4. Weeds and parasitic flowering plants,
5. Pesticides,
6. Spiders and mites,
7. Rodents and Birds,
8. Use of biotechniques for pest control,
9. Integrated pest management,
10. Geographical distribution of diseases and insects of quarantine significance in the Arab countries,
11. Safe use of agrochemicals in the Arab countries.

B) Symposia

Opening Session Keynote Address

Plant Health Management in the 21st century –issues and responsibilities for plant health professionals. Speaker: Dr. Greg Johnson, President, International Society of Plant Pathology, Australia.

Symposium I: New Invasive Pests and Phytosanitary Measures for the Arab and Near East Countries and lessons learned from other regions

1. Invasive pests and phytosanitary measures: the case of Europe. Speaker: Dr. Francoise Petter, EPPO, France.
2. Invasive pests in the Mediterranean and Near East region and risks associated with their spread. Speaker: Dr. Stefano Colazza, University of Palermo, Italy.
3. How the Netherlands confronted the introduction of crop bacterial diseases: The case of potato. Speaker: Dr. Jan van der Wolf, Wageningen University, The Netherlands.
4. Huanglongbing (HLB), a critical and invasive disease of citrus: Lessons learned from the USA and China and their applicability to the Arab and Near East countries. Speaker: Dr. Jianchi Chen, USDA, ARS, USA.
5. Importance of accurate and easy to use pest detection methods for use by plant health inspection services. Speaker: Dr. Francesco Spinnelli, University of Bologna, Italy.

Symposium II: Prospects and limitations of novel action pesticides

1. Challenges for the development of novel insecticidal products. Speaker: Dr. Joachim Meyer, Bayer Crop Science, Germany.
2. New developments in chemical disease management. Speaker: Dr. Andy Leadbeater, Syngenta, Switzerland.

3. The role of strigolactones in the biology and control of parasitic weeds: Speaker: Dr. M. Vurro, Bari, Italy.
4. Environmental side effects of novel pesticides. How much are we aware of their limitations? Speaker: Dr. Mohamed T. Ahmed, Egypt.

Symposium III: Pest Management in Organic Farming Systems

1. Biological soil disinfestations for the control of soil-borne pests using renewable resources. Speaker: Dr. Adriana Van Bruggen, University of Florida, USA.
2. Development of biopesticides formulations in the Arab region. Speaker: Dr. Walaa El-Sayed, Egypt.
3. Post-harvest disease management in organic farming: integration of strategies. Dr. Davide Spadaro, Agroinnova, University of Torino, Italy.
4. Pest management strategies for organic stone fruit crop production. Speaker: Dr. Fabio Molinari, Italy.

Symposium IV: Natural Compounds and Other Alternatives for Pest Management

1. Plant natural compounds for the control of insect pests. Speaker: Dr. Hari Sharma, ICRISAT, India.
2. Insect pheromones and their application in integrated pest management. Speaker: Dr. Shaker Al-Zaidi, Russell IPM, UK.
3. Effectiveness of bioherbicides on aquatic and land weed systems. Speaker: Dr. Yasser Shabana, Egypt.
4. The use of allelopathy in weed management. Speaker: Dr. Ibrahim S. Alsaadawi, Iraq.

Symposium V. Advances in Academic Teaching and Extension to Farmers Appropriate Knowledge for Pest Management

1. How to combine basic and applied research in plant protection to make an impact on farmers lives. Speaker: Dr. Mohamed Khan, North Dakota State Univ., USA.
2. Farmers Field schools for the dissemination of pest management knowledge within farming communities of the Arab and near East countries: successes and limitations. Speaker: Dr. Alfredo Impiglia, FAO, Italy.

Symposium VI. Breeding Strategies for Host Resistance to Invasive and Emerging Pests

1. Durable disease resistance in pome fruit trees. Speaker: Dr. Bruno Le Cam, INRA, Angers, France.
2. Host plant resistance to insect pests: progress made over the past few decades. Speaker: Dr. Mustapha El-Bouhssini, ICARDA, Aleppo, Syria.
3. Durable nematode resistance in agricultural crops. Speaker: Dr. Soledad Verdego-Lucas, Spain.

C) Near East Weed Science Society Participation

The steering committee of the Near East Weed Science Society (NEWSS) decided to participate in the 11th ACPP which is an excellent opportunity for NEWSS members to meet and discuss the society affairs, hoping that all weed scientists from the Near East Region can participate. NEWSS members meeting will be arranged during the congress. The NEWSS weed science sessions will be merged within the 11th ACPP congress weed science sessions. For more information, please contact Prof Dr. B.E. Abu Irmaileh, Department of Plant Protection, Faculty of Agriculture, Jordan University. E-mail: barakat@ju.edu.jo

FOREIGN EXCHANGE

The official currency is the Jordanian Dinar (JD). Foreign exchange facilities are available at the airport and at banks. Current exchange rate for one Dollar is about (0.70) JD.

ENTRY VISA

Participants are responsible for obtaining their entry visas. Please contact the Jordanian Embassy or Consulate nearest to you in order to obtain an entry visa before your departure. To avoid any inconveniences, it is important that you check the visa requirements ahead of time.

ARRIVAL TO Amman

Public buses or taxis are available from Queen Alia Airport to the hotel of your choice. Airport is about 25 km from downtown Amman. If you are arriving by car, you are advised to proceed directly to the hotel in which you made your reservation.

REGISTRATION FEES

The Congress registration fees are:

1. Members of the Arab Society for Plant Protection 100 US$
2. Non-members of the Arab Society for Plant Protection 125 US$
3. Accompanying persons 50US$
4. University students especially graduate students 20 US$

Students should submit a statement form their adviser or university to confirm their student status

The registration fee for participants covers congress publications (program and abstracts book), coffee breaks, and a one day field trip).

PROGRAM FOR ACCOMPANYING PERSONS

A special guest program will be announced during the Congress for the persons accompanying the participants. It includes one day visits to touristic sites (e.g. Jarash, Dead sea, and Petra); more information will be available in the third announcement.

CONGRESS LANGUAGE

The Arabic language is the official congress language. The non-Arab speaking participants can present their work in English. Titles of presentations should be submitted in both Arabic and English. Arabic numerals (1, 2, 3…) should be used. Symposia language is English

CONTRIBUTED ABSTRACTS

Abstract of oral presentations or posters should be mailed to the organizing committee not later than June 30, 2009. Please refer to the abstract form and abstract sample in this announcement and follow strictly the instructions provided inside the abstract sample box. For each presentation, both Arabic and an English abstracts should be submitted. The abstracts book which will be distributed to congress participants will contain both Arabic and English abstracts for all submitted papers. The Abstracts book will be printed as a special issue of the Arab Journal of Plant Protection.

GRADUATE STUDENTS AWARDS

1. Awards will be granted to the best five research papers presented by graduate students in plant protection. Graduate students should their application for the award by May 15, 2014 .

The requirements for the awards include:

- Applicants should be registered as graduate students (diploma, M.Sc. Or Ph.D.(.
- The paper presented by the candidate should not be already published somewhere else.
- The student's should provide a document to certify that the submitted title is part of her/his thesis research prior to earning the degree.
- Submitted abstract should comply with the congress abstract format.

2. Awards could be offered by certain foundations to some participants.

PARTIALL SUPPORT TO ATTEND THE CONGRESS

The Congress Organizing Committee will provide partial financial aid to attend the congress to a limited number of participants. Those who are interested should apply for such aid and fill the application form which appears in this announcement and send it to the Organizing Committee. Colleagues who receive support from their institutions are not eligible to apply. The last date for application is May 30, 2014. The Organizing Committee will inform the applicants about amount of support no later than August 15, 2014.

WEATHER CONDITIONS

October weather in Beirut is moderate. The temperature ranges between 15-27°C with a chance of rain during this period.

THIRD ANNOUNCEMENT

The third congress announcement will be mailed to those who would have completed and returned the registration form by June 30, 2009. The third announcement will include more detailed information on the scientific program, hotel accommodations, field trip, program for accompanying persons and related issues. It is expected that the third announcement will be mailed to participants during August, 2009.

THE DEPARTURE OF PROF. MOHAMAD F. TAWFIK
ONE OF DISTINGUSHED IPM RESEARCHERS IN ARAB COUNTRIES

On 2nd of April 2014, the Arab Society for Plant Protection has lost one of the leading scientists of biological and integrated control of pests; Prof. Dr. Mohamed Fouad Tawfik, God's mercy. His death has deeply touched all the members of the society, his colleagues and students in Egypt and in the Arab world.

Dr. M. F. Tawfik was born on 15th of April 1925 in Cairo. He obtained his Bachelor's degree in Agricultural Science from the Plant Protection Department, Faculty of Agriculture, Cairo University in Egypt in 1947, obtained his master's degree in Economic Entomology from the same department in 1953 and his Ph. D. degree in Philosophy of Science (Economic Entomology) from Trinity College, University of Dublin in Ireland in 1957.

Dr. M. F. Tawfik was appointed as a demonstrator at the Department of Plant Protection, Faculty of Agriculture, Cairo University in Egypt in 1948, and remained until his death at the same department, where he was promoted to be a lecturer of economic entomology in 1958, an assistant professor in 1964, a professor in 1971, a chairman of the board of the department in 1981, then emeritus professor in 1985, and part-time professor in 2000. He spent also four years (1974-1978), as a professor of Economic Entomology, Faculty of Agriculture, University of Baghdad, Iraq.

Dr. M. F. Tawfik contributed in establishment of a large scientific school in the field of biological control of agricultural pests in Egypt and throughout the Arab world, where many undergraduate students graduated on his hand. He supervised 38 master and 21 doctoral theses. He also published more than 160 scientific papers in the field of biological and integrated pest control in many magazines and scientific international journals. He published 7 reference books (General Entomology (1983), Biological Control of Agricultural Pests (1993), Biological Control of Agricultural Pests (second edition in 1996), Aquatic Insects (2004), Insects and the Environment (2004), Locusts and Biological Control (2005), Basic Morphology of Insects (2006).

He also contributed in management of many research projects and applied researches in the field of biological control of agricultural pests. The success of a number of them had created distinct units for the production of natural enemies (safe bioagents) of agricultural pests that still running for now supplying farmers and producers of organic crops with their needs, such as: production unit of predatory insects, production unit of entomopathogenic viruses, applied center for entomopathogenic nematodes and production unit of entomopathogenic fungi. All of which were within the applied research projects funded joint Egyptian / foreign (European Union, and the United States of America) in collaboration with the Egyptian Ministry of Agriculture.

In 1989, Dr. M. F. Tawfik founded the Egyptian Society of biological control of pests, based in the Faculty of Agriculture, Cairo University, Giza, Egypt, for the purpose of uniting efforts of specialists and those interested in the field of biological control through a scientific association. The association has now more than 800 members from Egypt and the Arab states and some foreign countries. It carries out specific scientific conferences and symposia and also publishes an international scientific journal named “Egyptian Journal for Biological Pest Control” publishes in two issues per year. Dr. Tawfik was the president of the association council board since its inception until his death.

Dr. M. F. Tawfik was honored on his recognition of his efforts in the field of biological control by the President of Egypt with a Medal of Arts from the first class in 1986, awarded by the scientific creativity in 2000 and the State Award in Agricultural Science (Advanced Technology) in 2001. He also used to be a voted member of many national committees specialized in pest control at the Ministry of Agriculture and the Academy of Scientific Research and Technology. He was also honored by the Food and Agriculture Organization (FAO) in the World Food Day X in 1990 with a certificate of appreciation for his prominent in the development of agricultural research and the advancement of Egyptian agriculture.

As far it is hard to lose such a great scientist, we as his school students will imitate his attitudes, his faithfulness in work and dedicate our efforts to continue and maintain his scientific heritage left for us.

In conclusion, we can only pray to God for mercy and forgiveness to him.

Prof. Dr. AHMED EL-HENEIDY
Plant Protection Research Institute, Agricultural Research Center, Giza, Egypt

❖Publications

New Books

Virology

Edited by Amen Amer HAJ KASSEM (2013)

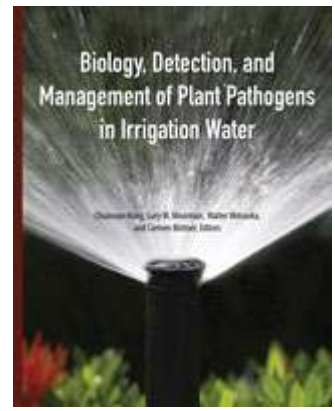
This book is an important addition to the Arabic library. It is useful to many graduate and undergraduate students of faculties of different disciplines, may it be medicine, biology, agriculture, or veterinary science. It covers many important topics: General features of viruses, their nature, definition, significance, chemical composition, classification, morphology and structure, methods of transmission, and mechanisms of viral infection. The book also includes sections on bacteriophages and virus-like organisms. Methods to control, reduce or prevent spread of viruses are also included. Some examples for human, animal and plant virus diseases are given. Finally, it covers the detection and diagnosis of viruses by serological and molecular techniques. 446 pages, including appendix, and colored plates to show symptoms of the most important viral diseases. University of Aleppo Publications. The book can be requested from the Publication Department, Aleppo University, Aleppo, Syria. Price for students is 350 SP.

Comportement-des-pesticides-dans-l'environnement

Behavior of pesticides in the environment, particular case of a non-selective herbicide glyphosate (Round-Up)

Author: Dr. Abdul Jabbar Al-Rajab

A new book entitled "Behavior of pesticides in the environment, particular case of a non-selective herbicide glyphosate (Round-Up)" has been published in French by Presses Academiques Francophones PAF in December 2013. This book contains four main chapters; the first one explains in general the behavior of pesticides in environment, the second chapter contains an experimental study on adsorption and desorption of glyphosate in soil, the third chapter contains a study on degradation and stabilization of glyphosate in soil, the last chapter contains a detailed study about the leaching and degradation of glyphosate under outdoor conditions.



This book of 176 pages is available for a price of $70 US. For further information, you may contact the author by E-mail at: alrajab@hotmail.com.

Biology, Detection, and Management of Plant Pathogens in Irrigation Water

Edited by: Chuanxue Hong, Gary W. Moorman, Walter Wohanka, and Carmen Büttner

In one place, this comprehensive 420+ page book compiles biological information on the many pathogens found in irrigation water, as well as practical information needed to detect these pathogens, manage them effectively, and mitigate risk. The combination of scientific and applied information in ***Biology, Detection, and Management of Plant Pathogens in Irrigation Water*** makes it ideal for both scientists and practitioners working on and in farms, greenhouses, nurseries, and other crop-based systems using irrigation

This book: ©2014; 8.5" × 11" hardcover; 420 pages (est.); 128 images; 37 line drawings; 5 pounds; ISBN 978-0-89054-426-6. Expected to ship July 2014, $229.00 Sale Price.

SELECTED RESEARCH PAPERS

Entomology

Colony-Level Variation in Pollen Collection and Foraging Preferences Among Wild-Caught Bumble Bees (Hymenoptera: Apidae). (USA). Saifuddin, Mustafa; Jha, Shalene. Environmental Entomology, 43(2): 393-401, April, 2014.

Spatial Density and Movement of the *Lygus* spp. Parasitoid *Peristenus relictus* (Hymenoptera: Braconidae) in Organic Strawberries with Alfalfa Trap Crops. Swezey, Sean L.; Nieto, Diego J.; Pickett, Charles H.; Hagler, James R.; Bryer, Janet A.; Machtley, Scott A. Environmental Entomology, 43(2): 363-369, April, 2014.

Fungi

Inoculum Sources, Infection Periods, and Effects of Environmental Factors on Alternaria Brown Spot of Mandarin in Mediterranean Climate Conditions. (Spain). D. D. M. Bassimba, J. L. Mira, and A. Vicent. Plant Disease, 98(3):409-417, March, 2014.

Susceptibility of almond cultivars to *Tranzschelia discolor*. (Australia). Andrew Horsfield and Trevor Wicks. Australian Plant Pathol., 43: 79-87, 2014

The effect of temperature, leaf wetness and light on development of grapevine rust. Francislene Angelotti, Claudia R. Scapin, Dauri J. Tessmann. Australian Journal of Crop Science, 43(1):9-13, January 2014.

Isolation and characterization of microsatellite markers for the causal agent of barley leaf rust, *Puccinia hordei*. (Australia). H. Karaoglu and R. F. Park. Australian Plant Pathology, 43(1): 47-52, January, 2014.

Development and evaluation of water-in-oil formulation of *Pseudomonas fluorescens* (FP7) against *Colletotrichum musae* incitant of anthracnose disease in banana. (India). Mohammed Faisal Peeran, Nagendran Krishnan. European Journal of Plant Pathology, 138(1): 167-180, 1 January 2014.

Pesticides

Fumigant toxicity of phosphine to the Japanese termite, *Reticulitermes speratus* Kolbe (Isoptera: Rhinotermitidae). (Korea). Kwang-Soon Choi, Hyun Kyung Kim, Byung-Ho Lee, Bong-Su Kim, Jung-Ho Yang, Hyun-Na Koo, Gil-Hah Kim. Journal of Stored Products Research, 57: 24-29, April 2014.

Assessment of lure and kill and mass-trapping methods against the olive fly, *Bactrocera oleae* (Rossi), in desert-like environments in the Eastern Mediterranean. (Palestine, Greece and Jaban). S. Yasin, P. Rempoulakis, E. Nemny-Lavy, A. Levi-Zada, M. Tsukada, N.T. Papadopoulos, D. Nestel. Crop protection, 57: 63-70, January, 2014.

Efficacy of Three Strategies Based on Insecticide, Oil and Elicitor Treatments in Controlling Aphid Populations and Potato virus Y Epidemics in Potato Fields. (Switzerland). Brice Dupuis, Ruedi Schwaerzel and Jacques Derron. Journal of Phytopathology, 162(1): 14-18, January, 2014.

Weeds

The impact of tillage system and herbicides on weed density, diversity and yield of cotton (*Gossipium hirsutum* L.) and maize (*Zea mays* L.) under the smallholder sector. (Zimbabwe). Zira Mavunganidze, Ignacio Casper Madakadze, Justice Nyamangara, Paramu Mafongoya. Crop Protection, 58: 25-32, April, 2014.

Henbit (*Lamium amplexicaule*), Common Chickweed (*Stellaria media*), Shepherd's-Purse (*Capsella bursa-pastoris*), and Field Pennycress (*Thlaspi arvense*): Fecundity, Seed Dispersal, Dormancy, and Emergence. (USA). Erin C. Hill, Karen A. Renner, and Christy L. Sprague. Weed Science 62(1):97-106. 2014.

Effects of Soil Amendments on the Abundance of a Parasitic Weed, Yellow Rattle (*Rhinanthus minor*) in Hay Fields. (USA). Richard G. Smith and Dorn A. Cox. Weed Science 62(1):118-124. 2014.

Effects of Weed Cover Composition on Insect Pest and Natural Enemy Abundance in a Field of *Dracaena marginata* (Asparagales: Asparagaceae) in Costa Rica. (Costa Rica). Sadof, Clifford S.; Linkimer, Mildred; Hidalgo, Eduardo; Casanoves, Fernando; Gibson, Kevin; Benjamin, Tamara J. Environmental Entomology, 43(2): 320-327, April 2014.

PAPERS WHICH WILL BE PUBISHED IN THE ARAB JOURNAL OF PLANT PROTECTION (AJPP), VOLUME 32, ISSUE 1, APRIL 2014

- **Effect of antagonistic microorganisms on gray mold caused by *Botrytis cinerea* on tomato and strawberry under laboratory and greenhouse conditions.** O. Hamoudi (Syria)
- **Evaluating the efficiency of some fungicides in controlling black dot disease on potato**. M. Matar (Syria).
- **The efficacy of the organic insecticide Fytoclean 40SL against the nymphs and adults of Dubas bug *Ommatissus lybicus* De berg.** B.H. Hassan, I.J. Al Jboory, H.F. Alrubeai, A.H. Selman and M.Z. Khalaf (Iraq)
- **Effect of salicylic acid induced systemic acquired resistance in tobacco against potato virus Y.** M. Khadam, M. Yassin and S.Y. Ra'ai (Syria)
- **Sugar constituents of flowers nectar of some cultivated medicinal plants and compared with honey in its effect on longevity and fertility of sunn pest egg parasitoid *Trissolcus grandis* Thomson.** W. Dawalibi, M. El Bouhssini, N. Kaaka and S. Khoja (Syria)
- **Characterization of some Syrian isolates of *Potato Virus Y.*** W. Mobayed, S.G. Kumari, S. Ra'ao and N. Attar (Syria)
- **The effect of prey density of *Aphis fabae* on some biological characteristics of the predator *Coccinella undecipunctata* adults.** N.A. Al-Jamaly, A.K. Al-Jboory and A.N Al-Zobidi (Iraq)
- **Effect of temperature on some biological parameters of the cigarette beetle, *Lasioderma serricorne* (F.) in the laboratory.** A. Basheer, H. Bilal and A. Saleh (Syria)
- **Detection of some genetic diversity between populations of *Bemisia tabaci* Genn. occurring on tomato and eggplant grown in greenhouses and fields of Syrian coast.** A.M. Mouhanna and H.S. Barhoum (Syria)
- **The use of formic acid for the control of Varroa mite in bee hives.** N.Y.T. Hajej, A. Alburaki and T. Al Abed (Syria)
- **The efficacy of some fungal isolates of *Beauveria bassiana* (Balsamo) Vuillemin on the biology of the red palm weevil, *Rhynchophorus ferruginus* Olivier along the Syrian coast.** Z. Al-Kadour, M. El-Bouhssini, A.N. Trissi, M.K. Nahal and A. Masri (Syria)
- **First record of two gall-inducing wasps on Eucalyptus (*Eucalyptus* sp.) in Syria.** A.N. Trissi and F. Shehadi (Syria)
- **Studies on the soft citrus scale insect, *Coccus pseudomagnoliarum* (Kuwana) on citrus trees along the Syrian coast and efficacy of its associated predators.** R. Abood, M. Mofleh, H. Habaq, F. Al-Qem and M. Ahmed (Syria)
- **Monitoring of Some Tephritidae of Fruit Trees and their Host Range in Abugubeiha region, South Kordofan State, Sudan.** S.A.I. Ali, S.A. Mohamed and M.A. Fadel (Sudan and Kenya)

EVENTS OF INTEREST

2014

*** 04-09 May**

6th International Congress of Nematology. Cape town, South Africa. e-mail: info@6thICN.com. See: http://www.6thicn.com/

*** 07-09 May**

IOBC/WPRS Working Group on Integrated Control in Citrus Fruit Crops. Adana, Turkey. E-mail: Dr. Serdar Satar (hserhat@cu.edu.tr) http://www.iobcwprscitruswg.org/default.asp

*** 06-10 July**

XVI Congress of the International Society of Molecular Plant-Microbe Interactions (IS-MPMI 2014) on Rhodes Island, Greece. Contact: Prof. Eris Tjamosect@aua.gr, See: http://www.mpmi2014rhodes-hellas.gr/index.php

*** 06-11 July**

19th Triennial Conference of the European Association for Potato Research in Brussels, Belgium. Visit: 19th triennial conference EAPR 2014. See: www.eapr2014.be

*** 13-18 July**

Eight International Symposium on Chemical and Non-Chemical Soil and Substrate Disinfestation, Torino, Italy, www.sd2014.org

*** 27 July-1 August**

XIVth International Congress of Mycology, the XIVth International Congress of

Bacteriology and Applied Microbiology and the XVIth International Congress of Virology in Montreal, Canada. See: http://www.montrealiums2014.org/; Contact: iums2014@nrc-cnrc.gc.ca

*** 03-08 August**

10th International Mycological Congress (IMC10). Bangkok, Thailand. Contact: Leka Manoch; e-mail: agrlkm@ku.ac.th

*** 09-13 August**

APS Annual Meeting in Minneapolis, Minnesota, USA. See: http://www.apsnet.org

*** 10-14 August**

13th IUPAC International Congress of Pesticide Chemistry. San Francisco, California, USA. Contact info@iupac2014.org, see: http://www.iupac2014.org/

*** 13-15 August**

11th Australasian Plant Virology Workshop in Brisbane, Australia. See: http://www.appsnet.org/Interest_Groups/Virology_workshop/index.html.

*** 17–24 August**

29th International Horticultural Congress, "Horticulture - sustaining lives, livelihoods and landscapes", in Brisbane, Australia. See: www.ihc2014.org

*** 25-29 August**

Joint International Congress, 14th Mediterranean Phytopathological Union & International Society for Mycotoxicology. Istanbul, Turkey. See: http://www.mpu-ism2014.org/

*** 03-06 November**

The 5th Asian Conference on Plant Pathology. Chiang Mai, Thailand. see: http://www.acppthailand2014.com/welcome.php

*** 9-13 November**

11th Arab Congress of Plant Protection. Al-Salt, Jordan. Contact:Dr Hazem Hasan, Secretary of the Organizing Committee acpp@bau.edu.jo, see: http://acpp.bau.edu.jo

*** 18-20 November**

9th International Workshop on Grapevine Trunk Diseases in Adelaide, Australia. see: http://www.plevin.com.au/iwgtd2014/index.html

2015

*** 23-26 March 2015**

The **8th International Integrated Pest Management Symposium.** Salt Lake City, Utah, USA. Contact Elaine Wolff at 217-333-2880 or ipmsymposium@ad.uiuc.edu. See: http://www.ipmcenters.org/ipmsymposium12/

*** 24–27 August 2015**

XVIII**IPPC (International Plant Protection Congress) in Berlin, Germany.** See: http://www.ippc2015.de

2016

*** 24–27 August**

XVIII**IPPC (International Plant Protection Congress) in Berlin, Germany.** See: http://www.ippc2015.de

*** 25-230 September 2016**

The XXV International Congress of Entomology in Orlando, Florida, USA. See: http://ice2016orlando.org/

2018

*** 29 July – 03 August**

11thInternational Congress of Plant Pathology (ICPP2018) in Boston, Massachusetts, USA..See: http://www.icpp2018.org/.

ACKNOWLEDGMENT

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Abdelatif Al-Ghazawe (Syria), Abdeljabar Rajab (Syria), Adnan Nahlawi (Syria), Bashar Helal (Syria), Faiz Imasil (Syria), Ibrahem Al Joury (Syria), Imad Khriba (Syria), Jamal Mando (Syria), Marwa AlAhmad (Syria), Thaer Yaseen (Italy), Yousef Aboahmad (Syria), Desert locust team (FAO).