ARAB AND NEAR EAST PLANT PROTECTION NEWSLETTER

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Number 71 August, 2017

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EDITORIAL

21st Century and Leadership Needs in Plant Protection in the Arab Region

Plant Protection is a multidisciplinary branch of plant sciences, drawing on botany, mycology, virology, entomology, weed science, microbiology, genetics, soil science, statistics and many other fields in an effort to improve plant health and crop/ecosystem sustainability. Graduate training programs conducted in institutions within the Arab region, and possibly in some others outside the region, focus mainly on scientific knowledge and critical thinking. Such training ignores a variety of "soft skills" badly needed for interpersonal skills, communication, management and leadership. Very few scientists confess that their scientific degree training prepared them to lead or manage others. Most plant protection scientists admit that most training they had received is tied to science. Less common in their training were critical topics such as resilience, entrepreneurship, visioning and persuasion, which are essential components to prepare scientists for a leadership role.

There is no doubt that scientific training is the primary purpose of graduate training, but the lack of leadership training and professional development in most of higher education institutions in the Arab region represent a critical deficiency, at a time when science is increasingly moving toward larger collaborative projects. "Soft skills" training options is no doubt available, but utilization of these resources need to be aggressively encouraged. For a more detailed insight on this topic readers are referred to a recent article by J. Beckerman and W. Schneider published in the December 2016 issue of Plant Disease journal.

The Arab Society for Plant Protection can play a role in bringing up the importance of communication, management and leadership skills through specialized workshops or symposia sessions within the regional congress organized once every three years. It might be a bit late for this coming congress in November 2017, but it is a point to consider for the future congresses.

Khaled Makkouk
National Council for Scientific Research
Beirut, Lebanon

❖ Crop Protection News from Arab and Near East Countries

INVASIVE AND NEW PESTS

IRAN

A New Species and Record of Bdellidae (Acari: Trombidiformes: Bdelloidea) from Iran. *Odontoscirus mazandaranensis* sp.nov. is described and illustrated based on female, male and tritonymph from Mazandaran province, Iran. Also, *Trachymologus purpureus* Fisher and Dowling, 2011 is reported for the first time from Iran. [Said Paktinat- Saeij, Mohammad Bagheri and Fabio Akashi Hernandes (Iran), Systematic & Applied Acarology 21(10): 1346-1354, 2016].

SAUDI ARABIA

New Record on the Association of Fungi with the Market Fruits of *Moringa oliefera* Lam., a Highly Valued Medicinal Plant. Moringa (*Moringa oliefera* Lam.) plant is a fast-growing multipurpose tree species growing throughout the world. They are used as human food, animal feed, treatments of many different human diseases, environment and industry etc. A survey on the microbial load was performed with the fruits collected from super market at Riyadh, Saudi Arabia. The collected fruits were incubated in moist chamber under laboratory conditions at 20 – 30 C for 7 - 15 days. The associated fungi were isolated in PDA medium and identified. The recorded fungi are: *Aspergillus niger, A. flavus, Alternaria alternata; Fusarium oxysporum, Macrophomina phaseolina* and *Rhizopus stolonifer*. The pathogenicity test was performed with the isolated fungi in detached fruits under laboratory conditions. *A. alternata, F. oxysporum* and *M. phaseolina* were proved to be pathogenic. As the fruits are usually used as vegetable and seeds are used as raw materials for oil production, so the quality of raw materials must be thoroughly monitored.[Mau Mridha and FN Al-Barakah (Saudi Arabia), Bangladesh J. Bot. 46(1): 245-248, 2017].
http://www.plantwise.org

SYRIA

First Record of the Glow Worm Beetle, *Lampyris noctiluca* (L.) (Coleoptera: Lampyridae) from Syria. The presence of the Glow-worm Beetle, *Lampyris noctiluca* (L.) (Coleoptera: Lampyridae) is reported for the first time from Syria. It was collected from fruit trees orchards at several localities in Jableh during the survey conducted in May 2017. *L. noctiluca* presents a conspicuous sexual dimorphism. The males are winged, length 1.7 cm, with brown elytra, a clearer pronotum and a large brown spot in the middle, and completely covering the head, while females are larviforme, wings are missing. Its predatory larvae feed on worms, slugs and snails by injecting them with a numbing fluid. The Glow-worm Beetles contain specialized cells in their abdomen that make light. The mechanism of light production involves a chemical called luciferin in the presence of oxygen, the enzyme luciferase, and the cellular energy source ATP (adenosine triphosphate). The reaction of these produces oxyluciferin, and light, with almost no heat. [Abdulnabi Basheer, Alaa Saleh, and Lamees Saker (Syria), Biological Control Studies and Research Center, Faculty of Agriculture, Damascus University,2017]

TURKEY

First Record of Invasive Tomato Spider Mite *Tetranychus evansi* (Acari: Tetranychidae) in Turkey. The invasive tomato spider mite, *Tetranychus evansi* Baker and Pritchard 1960 (Acari: Tetranychidae) is an important pest of solanaceous plants worldwide. Despite its records from almost all over Mediterranean countries, *T. evansi* had not previously been recorded from Turkey. In this study, we collected *T. evansi* on black nightshade, *Solanum nigrum* L. (Solanaceae) in Eastern Mediterranean region of Turkey. [Kazak, C.; Döker, İ.; Karut, K.(Turkey), International Journal of Acarology, 43 (4): 325-328, 2017].

TUNISIA

***Potosia opaca*, an Insect Newly Found on Canary Palm (*Phoenix canariensis*) in Tunisia.** Ornamental palm tree *Phoenix canariensis* has been introduced in Tunisia at late 1800's and becomes a symbol of the city landscape in different localities. *P. canariensis* was seriously attacked since 2011 by the red palm weevil (RPW), *Rhynchophorus ferrugineus*. Recently a new pest *Potosia opaca* was detected in North of Tunisia on living *P. canariensis* trees solely or associated with RPW. *P.opaca* develops one generation per a year; adult mating takes place in June-July and females lay eggs in humus inside decayed trunks of living palms tree. Larva lives in most accumulations of organic matter inside trunks between fibers and sheaths into close proximity with live wood. The pupa stage lasts on average 50 days. *P.opaca* lives on living trees and seems not to be associated with tree mortality. However it is essential to consider a number of indirect damage as this insect is likely becoming a vector of many pathogens.[Ben Jamâa, M.L., Boudhina, S., Dhahri, S., and Hdidi, S.(Tunisia), Tunisian Journal of Plant Protection 12: 83-90, 2017].

YEMEN

A List of Insect Fauna Found on Forest Trees in Yemen. A survey for insects of forest trees in Dhamar and Albyda governorates, Yemen was conducted during the period of November 1988 until April, 1989. Fourteen specimens of the collected insects were monitored, 4 of them were completely identified to the species, 10 to the genus and 1 specimen to the family. All of them belong to 11 families and 4 orders. The data obtained revealed that three insects namely, *Hypolixus nubilosus* (Boheman) (Coleoptera), *Kotochalia junodi* (Heylaerts) (Lepidoptera) and the Parasitoid, *Exeristes roborater* Fabricius (Hymenoptera) represent a new record for Yemen. All the samples (112) were sent by Mr. Kaack to the British Museum (Natural History) for confirm identification. Only 75 samples of them were identified as in the table below.[**Hassan Sulaiman Ahmed Mahdi (Yemen), and Hans Jack Kaack, Plant Protection Department, Faculty of Agriculture, Sana'a University, Yemen-German Plant Protection Project].** **Note:** The survey of the insect fauna did not published before although it has been conducted in the nineteenth.

Samples of insects collected from forest trees in Yemen during the period of 1988 until 1989.

Order Family	Insect genus and species	Host	Region and Date
1. Coleoptera			
Bruchidae	Fabaceae Beetles *Bruchidius* sp.(3 species)	Pods of *Acacia gerrardii*	Rada'a, Mabar and Huth (March-April 1989). Feeding on pods of Acacia in Mabar during November 1988
Curculionidae	*Hypolixus nubilosus* (Boheman)*	*Acacia* spp. (*Hypolixus* species are usually associated with *Amaranthus*)	April 1989, Overwintering on pods
2. Lepidoptera			
Gelechiidae	*Teleiodes* sp.*	*Acacia negrii*	April 1989. Overwintering on pods (larva and moth)
Geometridae	*? Xylopteryx sp.**	*Acacia negrii*	April 1989. Overwintering on pods (larva and female)

Order Family	Insect genus and species	Host	Region and Date
1. Coleoptera			
Psychidae	*Kotochalia junodi* (Heylaerts)*	*Acacia* spp.	April 1989. April 1989.
?Scythrididae	Material in a very poor condition for identification	Pods of *Acacia negrii*	April 1989. Overwintering on pods (larva and individuals of Bruchidae)
3. Hymenoptera			
Braconidae	*Macrocentrus* sp.*	Lep, larvae are feeding on *Acacia negrii* pods	Dhamar (November 1988). Parasitoid of Lep. larva (This group has been inadequately studied in our area)
Encyrtidae	*Copidosoma* sp.*	Lep, larvae are feeding on *Acacia negrii* pods	Dhamar (November 1988). All species of *Copidosoma* are polyembryonic Parasitoids of the larvae of Lepidoptera. The species is very probably an undescribed one.
Eulophidae	*Entedon* sp., male*	Lep, larvae are feeding on *Acacia gerrardii* pods	Mabar (November 1988). *Entedon* species are mostly parasites of Coleoptera (also occasionally Lepidoptera, Diptera, and Symphyta).
	Euderus sp.*	*Acacia negrii*	Dhamar (November 1988). Widely distributed genus from all geographic regions with varied host associations, including Lepidoptera, Coleoptera (perhaps also as hyperparasites)
Ichneumonidae	*Exeristes roborater* Fabricius*	*Acacia negrii*	November 1988. A common parasitoid in the Mediterranean on the larvae of Lepidoptera)
	Pimpla sp.*	*Acacia negrii*	November 1988.
4. Hemiptera			
Lygaeidae	*Oxycarenus* sp. nr *hyalinipennis*(Costa)	*Acacia negrii* & *Acacia gerrardii*	April 1989. Overwintering on pods of *Acacia negrii* and also it feeds on the pods of *Acacia gerrardii* in Mabar during November 1988

? Not yet identified * New record for Yemen

RESEARCH HIGHLIGHTS

EGYPT

Comparative Study on the Effect of Garlic Clove and Acetyl Salicylic Acid Aqueous Extracts with Emphasis on Inducing Resistance Against Root Knot Nematode, *Meloidogyne incognita* on Sugar Beet. Garlic clove and acetylsalicylic acid (ASA) aqueous extracts at concentrations 100 and 1000ppm were treated by soil drench and foliar spraying for controlling root knot nematode, *Meloidogyne incognita* infecting sugar beet cv. Gazelle under screen house conditions. The obtained results clarified, in general, that garlic and acetyl salicylic acid extracts at concentrations of100 and 1000 ppm either as soil drench or as foliar spraying reduced nematode parameters and increased plant growth, yield and percentage total soluble solids (TSS%) criteria as influenced by the tested concentration and type of treatment compared to untreated inoculated control1. In other words, by using soil drench, the two tested materials at 1000ppm highly affected nematode criteria compared to 100ppm and control1. Contrarily, the two materials at 100ppm, when used as foliar spraying, highly affected nematode criteria than did at 1000m which may indicate that they act as resistance inducers against root knot nematode. The enzyme, chitinase was increased in the treated plants according the same trend of the tested concentrations and type of treatment

compared to inoculated and uninoculated non-treated controls. [Mahmoud Mohamed Ahmed Youssef, Wafaa M.A. El-Nagdi and Asmahan M.S. Lashein (Egypt), International Journal of PharmTech Research, Vol. 9(10): 1-7, 2016].

Side Effects of Pesticides on non-target Organisms: 2- In Egyptian vegetable Crop Fields and Greenhouses. In the context of field vegetable crops and through 75 field trials, the direct count technique (100 leaves/ crop/ site/ date) was practiced to collect field data. The study included 4 crops; tomato, potato, cucumber, and pepper cultivated in open fields, and cucumber and pepper, cultivated in greenhouses (GH) through the period 2013-2016. The field trials were 29, 12, 9 and 7 in tomato, potato, cucumber and pepper fields and 16 and 2 in tomato and pepper greenhouses, respectively, conducted at: 33, 20, and 22 in Menoufia, Fayoum and Behera (Nubaria) Governorates, Egypt. Non-target pests and beneficials considered were: *Bemesia tabaci* (Genn.) *Aphis gossypii* (Glov.), jassids and *Tetranychus urticae* Kock as non-target pests and *Coccinella undicumpunctata* L., *Chrysoperla carnea* (Steph.) as predators. Twenty-six pesticides targeted the insect pests and mites, and 10 targeted the plant diseases were applied. Based on the IOBC classification, almost all pesticides used (different groups) showed different mortality rates and population reductions, ranged between the toxicity levels of 2–4, represented by 11, 28 and 12 pesticides at the levels 2, 3, and 4, respectively. Eight pesticides; Actellic, Chess, Commando, Imaxi, Proclaim, Rodiant, Super Actara, and Tafaban were recorded as class 4, to non-target pests as well to the predators. For the predators, only the highest toxicity levels 3 and 4 were recorded.. Therefore, selectivity of pesticides to non-target beneficial arthropods should be a key data for the implementation of IPM programs. Random analysis of pesticide residues in fruits showed some residue (6 compounds and/or microbes) in the fruits of pepper. [El-Heneidy, A. H., A. A. Khidr and F. M. Fahim, Egypt. Acad. J. Biolog. Sci., F. Toxicology & Pest control, 9(1): 49-57, 2017]

IRAQ

Surveillance the Occurrence of Black Stem Rust Disease Ug 99 on Different Wheat Cultivars (*Triticum aestivum* L.) and Evaluation of their Growth Characteristics in the Fields of Diyala Province, Iraq. Five wheat cultivars (8/172, 8/70, Tammuz/4, Guard and 124) were planted in the field at the Baladrooz district, Diyala province, Iraq during winter season 2011 to monitor the emergence of Ug 99 on different wheat cultivars and evaluate their performance under similar conditions in the field. The experimental unit consisted of 15 plots in area 25 m2 for each plot according to randomized complete block design. Results showed that all cultivars of wheat were not exposure to infection by the black stem rust disease (Ug 99), cultivar of 8/172 gave the highest number of spikes /m2, weight of grains /m2 (g) and weight of grains /25 m2 (g) from another treatments which recorded (401.0, 601.5g and 15037.5 g) respectively. Wheat cultivars of Tammuz/4 and 124 gave the highest total weight of 50 plants which recorded (140 g), whereas Tammuz/4 surpassed other treatments in plant height (79 cm) and 124 cultivar was superior from other treatments in weight of 1000 grains (36.3 g). [Hussein Ali Salim, Abid Hameed Faydh, Mahmood Matrood Salman and Abbas Lateef Abdulrahman (Iraq), Journal of Scientific Agriculture, 1: 25-28, 2017].

Identification of Peach Fruit Fly, *Bactrocera zonata* (Saunders) in Iraq. Results of field study was carried out in citrus and fruit orchards in AL- Gheraiat region/ Baghdad during season 2016 showed the first appearance of peach fruit fly *Bactrocera zonata* (Saunders) in addition to the presence of Mediterranean fruit fly, *Ceratitis capitata* according to the results of the pheromone traps. The diagnostic characteristics that were adopted for the diagnose of the peach fruit fly *B. zonata*, as follows: (a) the presence of a small dark spot near the wing tip, (b) a black scutum and a black 'T' pattern on abdominal terga III-V. Infestation with this pest recorded on different host plant, the highest rate of infestation was (22) on the pear fruits and the lowest rate of infestation was (zero) on the sweet orange. This rate of infestation represents mixed infestation with both species of fruit fly, peach fruit fly *B. zonata* and Mediterranean fruit fly, *C. capitata*.[Samira A. Khlaywi, Hussain F. Alrubeai, Ali Dhumad Kadhim, Ahmed Fawzi Abbas and Sabreen A. Hadi (Iraq), Asian Journal of Science and Technology , 8 (4):4580-4582, 2017].

Population Density and Distribution of Medfly, *Ceratitis capitata* in the Middle Region Orchards of Iraq. Field experiments were conducted during 2013 to measure the population density and distribution of Medfly, *Ceratitis capitata* in Apricot and Citrus orchards of Baghdad and Wasit governorates. The field surveys were done in four orchards (1 ha. each), two of them in each governorate, one for apricot and other for citrus. Two monitor the density: Delta and Macphil traps supplied with the male and female attractant pheromones, and insecticide strip were

distributed in each orchard. The results indicated that population density of the Medfly in Wasit higher than that of Baghdad orchards. The peak density in apricot orchards occurred during the last week of May and first week of June, in coincidence with the fruits ripening. In citrus orchards, the peak density was in November at both regions. Fruits infestation percentage indicated that early fruit ripening varieties of apricot were less infested those late varieties. In citrus, mandarin was found the most favorable to infestation by Medfly, followed by Orange than sour orange and lemon fruits. Such results are important for the application of Sterile Insect Technique (SIT) and integrated control programs of Medfly.[Mohammed Zaidan Khalaf, Hussain. F. Alrubiae, Adnan. H. Salman and Umer. A. Mahmood (Iraq), Integrated Pest Control Research Center, Agricultural Research Directorate, Ministry of Science & Technology, Baghdad, Iraq, Third FAO–IAEA International Conference on Area-wide Management of Insect Pests: Integrating the Sterile Insect and Related Nuclear and Other Techniques Vienna, Austria 22–26 May 2017].

Evaluation of Some Biological Agents as an Integrated Pest Management Components to Control Cucurbit fruit fly (Leow) *Dacus ciliatus* and Melon Fruit fly *Dacus frontalis* (Beker) on Cucumber. This study aimed to evaluate the efficacy of some biological agents like commercial product Richarge that contains a mixture of *Beauveria bassiana* and *Metarhizium anisoplae* in addition to fungal isolate of *Lecanilicium lecanii* and *Metarizhium* spp. and insecticide Telstar at field experiment. The infestation percentage on cucumber fruits was very high 100% in all treatment at the beginning of fruit formation during 1st week of October 2015. The results showed that the number of infested fruits was reduced in next harvesting from 25 infested fruits until reached 4.67, 4.67, 6.33, 7, 7, 7 and 7.67 infested fruit/ sample for Recharge, Meta 10^7, Meta 10^5 ، Telstar ، Lecani 10^7 ، Lecani 10^5 and control respectively after five weeks of control that because of effect of biological and chemical agents in pest population reduction which approved by increasing of fungal colonies forming units (CFU). Treatment with Recharge had a rule in crop saved reached 16.37% from total crop harvest.[Hasanain Yousif Abdul Raheem Al Shalchi, Redah. Sequab. Al Jorany (Iraq), the Iraqi Journal of Agricultural Science, 48, 5, 2017].

JORDAN

Can We Use Entomopathogenic Fungi as Endophytes for Dual Biological Control of Insect Pests and Plant Pathogens? An increasing number of recent studies demonstrate that entomopathogenic fungi, often solely considered as insect pathogens, play additional roles in nature, including endophytism, plant disease antagonism, plant growth promotion, and rhizosphere colonization. These newly emerging, but not yet fully understood, ecological roles hint at the possibility that we have been overlooking important attributes in our quest to develop fungal entomopathogens exclusively as inundative biopesticides against insect and other arthropod pests. Such additional roles recently-discovered to be played by entomopathogenic fungi provide opportunities for the multiple use of these fungi in integrated pest management (IPM) strategies. Of particular interest is the ability displayed by various genera of entomopathogenic fungi to colonize a wide variety of plant species in different families, both naturally and artificially following inoculation, and confer protection against not only insect pests but also plant pathogens. This article reviews the literature currently available on the endophytic colonization of different host plants by fungal entomopathogens, and summarizes the negative effects of such colonization on insect pests and plant pathogens that have been reported to date. It also addresses the possible mechanisms of protection conferred by endophytic fungal entomopathogens and explores the potential use of these fungi as dual microbial control agents against both insect and pathogen pests. Moreover, interactions amongst endophytic fungal entomopathogens and other endophytes are discussed. Finally, current limitations and future research directions for the innovative use of endophytic fungal entomopathogens as dual microbial control agents are summarized. [Lara R. Jaber, The University of Jordan and Bonnie H. Ownley, The University of Tennessee; Biological Control, Review article (in Press)].

SYRIA

The Endophytic Ability of *Beauveria bassiana* (Balsamo) Vuill. In Potato Plant *Solanum tuberosum* L. Two inoculation methods with a local isolate of the entomopathogenic fungus of *Beauveria bassiana* were tested on potato plant *Solanum tuberosum*. The objective of this trial is to evaluate the ability of this fungus to colonize the tissues of potato plant endophytically. In the first method, the tubers have been immersed before planting in the fungal suspension in the concentrations of (0.75×10^7 spore / ml and 2.5×10^8 spore / ml). In the second method, potato seedlings with five true leaves sprayed with the same concentrations used in the first method. *B.bassiana* showed an endophytic activity within potato plant in both inoculation methods. The concentration 0.75×10^7 spore / ml of *B.bassiana* was enough to act as entophyte in the plant tissue, and enhanced the growth.

In the first method, the realized endophytic colonization ratio reached 50% of total treated plants; their roots had the highest percentage of endophyte (16.6% after treatment with 2.5×10^8 spore / ml and 5.5% after treatment with 0.75×10^7 spore / ml), followed by leaves and stems which realized the same colonization ratio 5.5% with both of the previous applied concentrations. By contrast, the fungal colonization ratio was 100% of total treated plants on foliage, where the leaves appeared the highest colonization ratio equal to 100%, no fungal growth showed in their roots, while the fungus appeared in their stem (22.2% after treatment with 2.5×10^8 spore / ml and % 19.4 after treatment with 0.75 × 107 spore / ml). There are no obvious negative effects of the treatment with the endophyte on the plant growth, neither on the length, nor on the dry weight. [Nisreen Alsaoud, Doummar Nammour, Ali Yaseen Ali (Syria), Journal of Albaath University, 39 (5) , 2017].

The Efficiency of a Virulent Isolate of the Entomopathogenic Fungus *Beauveria bassiana* (Balsamo) Vuill. as an Endophyte to Control the Larvae of Potato Tuber Moth *Phthorimaea operculella*. (Zeller). Nutrition efficiency of the first and the fourth instars larvae of potato tuber moth *P. operculella* on potato plants, which were inoculated with 0.75×10^7 spore / ml of the spore suspension of *B. bassiana* using two methods; tubers inoculation before planting and leaf inoculation. The results showed that the fungus has affected clearly both larval instars, through the reduction of survival rates, or the appearance of malformed adults. The survival rates for the first instar larvae was: 0% after tubers inoculation and 12.5% after leaf inoculation, compared to 18.75% for controls in the two methods. For the fourth instar larvae, survival rates were 25% and 18.75 % after tubers inoculation and leaf inoculation; respectively compared to 37.5% and 18.75% for controls in both methods; respectively. When larvae were fed on inoculated plants, the results showed a decrease in the average of the consumed surface of leaves, in a leaf inoculation method (36.3%, 0% for first and fourth instar, respectively) compared with tubers inoculation method (60.8% for, 14.6% for the same instars, respectively) including controls. [Nisreen Alsaoud, Doummar Nammour, Ali Yaseen Ali (Syria), Al-Baath magazine, 39(13), 2017].

TUNISIA

Impact of Aphids and Host Weeds Interaction on the Dissemination of *Potato virus YN* strains. Weeds and volunteer plants susceptible to *Potato virus Y* (PVY) infection in different seed potato production sites were investigated in this study. Aphids occurring within these plants and identified as *Aphis fabae*, *A. gossypii*, and *Myzus persicae* were studied for possible interaction occurring between vectors and plant reservoirs of PVY. Out of 772 plants belonging to 12 different families (Solanaceae, Amaranthaceae, Chenopodiaceae, Papaveraceae, Urticaceae, Convolvulaceae, Asteraceae, Polygonaceae, Euphorbiaceae, Brassicaceae, Portulacaceae, and Compositae), 337 were found to be infected by PVYN based on DAS-ELISA technique. Among these plants, *Solanum elaeagnifolium*, *Datura stramonium* and *Sonchus oleraceus* were found to be infected with the strain PVYNTN. In addition to these reported weeds, *S. nigrum* seems to be an important host for PVYN since this plant hosts aphid vectors. This investigation provides basic information about weeds and volunteer plants infected with PVYN and aphid vectors. Such finding will increase knowledge of the PVYN epidemiology in potato fields and consequently the possible management of this viral disease.[Boukhris-Bouhachem, S., Ben Fekih, I., Rouzé-Jouan, J., Souissi, R., and Hullé, M.(Tunisia), Tunisian Journal of Plant Protection 12: 41-48,2017].

Insecticidal Activity Assessment of *Thymus capitatus* Essential Oils in Combination with Natural Abrasives against *Myzus persicae*. This study was performed to evaluate the insecticidal activity of *Thymus capitatus* essential oils and two natural abrasives to control *Myzus persicae*. The in vitro application of thyme essential oils showed a significant toxic effect by fumigation as well as by spraying. The LC50 for both application methods recorded after 24 h were about 20.01 and 13.26 µl/l air, respectively. In addition, in vivo experiment based on bioinsecticide formulation (LC50 thyme essential oils + kaolin or diatomaceous earth) were carried out. The mortality rates registered after 24 h were 74.19 and 97.84% for the combination with kaolin and diatomaceous earth, respectively. Meanwhile, emulsions with 1 µl of these oils have been tested on the target aphid. This treatment has lead after 24 h to a mortality rate of 55.55%. The mechanical effect of both abrasive powders has been highlighted through dehydration, shrinkage and deformation of the aphid cuticle. Interestingly, the combination of diatomaceous earth with the *T. capitatus* essential oils was significantly the most effective to control aphid populations.[Khaled, W., Ben Fekih, I., Chaieb, I., Souissi, R., Harbaoui, I., and Boukhris-Bouhachem, S.(Tunisia), Tunisian Journal of Plant protection 12: 49-59, 2017].

Effects of *Melia azedarach* Leaf Extracts on Nutritional Behavior and Growth of *Spodoptera littoralis.* Synthetic chemicals used nowadays as insecticides caused many negative effects (pollution, toxicity…) which led to an increasing interest in botanical insecticides because of their minimal costs and less ecological side effects. In this respect, the activity of *Melia azedarach* leaf extract against the third stage larvae of armyworm (*Spodoptera littoralis*) has been assessed in this study. The aqueous and ethanolic extracts exhibited an antifeedant activity against *S. littoralis* larvae according to the applied doses. Ethanolic extract reduced the food consumption and digestibility inducing growth rate decrease of the armyworm larvae. An increase in the larval stage duration was also observed as well as anomalies. Pupation stage was affected and occurred only for the lowest doses with a significant decrease in pupa weight. Consequently, ethanolic *M. azedarach* leaf extract may be used in the alternative control strategies against *S. littoralis* pest.[Akacha, M., Chaieb, I., Laarif, A., Haouala, R., and Boughanmi, N.(Tunisia), Tunisian Journal of Plant Protection 12: 61-70, 2017].

Repellency and Toxicity of the Crude Ethanolic Extract of *Limoniastrum guyonianum* against *Tribolium castaneum*. In nature, the interaction between plants and insects has led to the production of a set of secondary compounds. Many plant secondary metabolites have significant insecticidal activity. The aim of this study is to evaluate the repellent and insecticidal effect of the crude ethanolic extract of *Limoniastrum guyonianum* against adults of the red flour beetle *Tribolium castaneum*. For the insecticidal activity, five doses (100, 200, 400, 600, and 800 µg/insect) were tested and were topically applied onto insect thorax. An area preference method was adopted to assess the repellent activity. A phytochemical study and measurement of two enzymatic biomarkers: acetyl cholinesterase (AChE) and gluthatione S-transferase (GST) were made to understand the mechanisms of toxic action of the tested extract. Phytochemical study showed the presence of various groups of natural products. The plant is rich in flavonoids, tannins, alkaloids, and glycosides. Low amount of saponins was noted. The study also showed that this plant does not contain iridoids. For repellent activity, the results showed that the highest dose (800 µg/insect) exhibited obvious repellent effect against *T. castaneum*. The repellency percentage was 90.14 ± 2.5% after 4 h of exposure. The crude extract was found to be toxic to *T. castaneum* and the corresponding LD50value was 218.3 µg/insect. Moreover, the extract inhibits the activity of the acetylcholinesterase (IC50: 205.7 µg/insect).[Acheuk, F., Belaid, M., Lakhdari, W., Abdellaoui, K., Dehliz, A., and Mokrane, K.(Tunisia), Tunisian Journal of Plant Protection 12: 71-81, 2017].

Chemical Composition and Insecticidal Effects of *Citrus aurantium* Essential Oil and its Powdery Formulation against *Tuta absoluta*. The aim of this research was to investigate the chemical composition and to evaluate the insecticidal activities of the bitter orange *Citrus aurantium* essential oil and its major compound pure limonene against adults and larvae of the tomato miner *Tuta absoluta* using contact and fumigation bioassays. Results of chemical analysis of the essential oil using gas chromatography/mass spectrometry (GC-MS) revealed the presence of limonene (87.52%), β-myrcene (1.62%), α-pinene (0.56%) ß-ocimene (0.81%) and ß-pinene (0.61%) as major components. For bioassays, results indicated that both the oil and its major compound were found to be toxic to larvae and adults. In the fumigant assays, median lethal concentrations (LC50) were 10.65 and 37.36 µl/l air respectively for *C. aurantium* essential oil and pure limonene. In contact toxicity assay, the tomato miner adults were more susceptible to the oil than to its major compound even at the lowest concentration: LD50 values obtained after 48 h were respectively 0.21 and 0.73 µl. When insects were treated with the essential oil and its aromatized clay powder, significant differences in insect mortality were recorded depending on exposure time. The aromatized clay powder was more toxic (LT50 = 101.8 h) than the pure essential oil (LT50 = 146.32 h). Hence, bitter essential oil was found to be toxic for *T. absoluta*, and the clay powder could be used to stabilize the essential oil to increase its efficacy and possibly will be used as source of new eco-friendly insecticidal compounds.[Zarrad, K., Chaieb, I., Ben Hamouda, A., Bouslama, T., and Laarif, A.(Tunisia), Tunisian Journal of Plant Protection 12: 83-94,2017].

Chemical Composition and Herbicidal Potent of Cauliflower (*Brassica oleracea* var. *botrytis*) and Cabbage Turnip (*Brassica oleracea* var. *gongylodes*). This study was conducted to evaluate the phytochemical content and allelopathic potential of two cabbages botanical varieties leaves, ie. Cauliflower *(Brassica oleracea* var. *botrytis)* and cabbage turnip *(B. oleracea* var. *gongylodes)*. Their aqueous and organic extracts were evaluated on lettuce (*Lactuca sativa*) and one of the most dominant weeds in Tunisia, nettle-leaf goosefoot (*Chenopodium murale*). Field experiments were conducted to evaluate the smothering potential of the two varieties. The total phenolics, flavonoïds, flavonols and flavones, alkaloïds, and proanthocyanidins contents were higher in the aqueous extracts of both varieties. For organic extracts, petroleum ether and methanol cauliflower extracts and

chloroform and methanol cabbage turnip extracts were the richest ones. All aqueous and organic extracts had significantly delayed germination, reduced its rate and affected seedling growth. Reduction of germination and growth were more important using the higher concentrations and in presence of cabbage turnip extract. The organic extracts of both varieties had significantly inhibited the seedling growth of target species, especially petroleum ether, and methanol cauliflower extracts and chloroform and methanol cabbage turnip ones. Field experiment highlighted the smothering potential of the two varieties and confirmed the higher allelopathic potential of cabbage turnip as compared to cauliflower. [Saad, I., Rinez, I., Ghezal, N., and Haouala, R.(Tunisia), Tunisian Journal of Plant Protection 12: 95-113, 2017].

Evaluation of Different Techniques for Economical Control of Weeds Associated to Chickpea. A field experiment was carried out on farm at Peshawar, Pakistan, during spring 2012 for evaluating the efficacy of weed management strategies to control weeds associated to three chickpea cultivars and their cost benefit ratios. The design of the experiment was randomized complete block with split plot arrangement. Different chickpea cultivars (Karak-I, Sheenghar, and Karak-III) were assigned to main plot while weed control treatments i.e. black plastic mulch, white plastic mulch, saw dust mulch, wheat straw mulch, Stomp 330 EC, Dual Gold 960 EC, hand weeding and untreated control were assigned to subplots. The parameters recorded were the fresh weed biomass (kg/ha), the number of seeds/pod and the cost benefit ratio. The results revealed a relatively divergent response of various treatments and chickpea cultivars for all the studied parameters. The results showed that the lowest fresh weed biomass (655.33 kg/ha) was noticed in hand weeding followed by herbicides (Stomp 330EC and Dual Gold 960EC) while among chickpea cultivars the minimum fresh weed biomass (705.02 kg/ha) was recorded for Karak-III. Black plastic mulch and hand weeding positively affected the chickpea production where the maximum number of seeds/pod was of about 1.67 and 1.61, respectively. The cost benefit ratio results revealed that the highest net return to the farmer as a result of added cost to the crop was obtained by applying Stomp 330 EC (1:2.18) followed by Dual Gold 960 EC (1:1.94) and hand weeding (1:1.91). Hence, the present study recommends the sowing of chickpea cultivar Karak-III with hand weeding practice or herbicide application (Stomp 330 EC or Dual Gold 960 EC) at the recommended rate to obtain maximum weed control and high net income in the agroecological conditions of Peshawar.[Khan, I.A., Waqas, M., Shah, S.M.A., Khan, N., and Khan, R.(Tunisia), Tunisian Journal of Plant Protection 12: 115-122, 2017].

Effect of Allelopathic Sorghum Mulch on Growth and Yield of Faba bean (*Vicia faba*) and Companion Weeds. Field experiment was conducted during the growing season of 2015/16 to test the allelopathic effect of sorghum mulch on yield of faba bean and companion weeds. Plots (1.5 m× 2 m) were covered by dry plant material of sorghum at 5 and 10 t/ha. Plots without sorghum mulch were used as control. Seeds of faba bean were sown in rows at the beginning of October keeping space 40 cm between rows and 20 cm between plants. Weed density and weed dry biomass were recorded at two months after sowing. Yield components of faba bean were measured at the end of the growing season using standard procedures. The experiment was conducted in randomized complete block design with four replications. Sorghum mulch at 5 and 10 t/ha had significantly inhibited weed density by 62 and 78% relative to control and weed biomass by 64 and 90% compared to control, respectively. Plots with sorghum mulch at 5 and 10 t/ha provided higher broad bean above ground biomass (2.71 and 3.05 t/ha, respectively) which were 43 and 61% higher than control. The seed yield was enhanced by 73 and 111% over control plots (0.721 t/ha), which would be attributed to the increase of number of pods per unit area. [Alsaadawi, I.S., Tawfiq, A.A., and Malih, H.M.(Tunisia), Tunisian Journal of Plant Protection 12: 123-127, 2017].

Differentiation of Allelopathic Potential of Sorghum (*Sorghum bicolor*) Cultivars Using Chemical and Molecular Techniques. Laboratory tests were conducted to detect the differential allelopathic potential of two sorghum (*Sorghum bicolor*) cultivars (Enqath and Rabeh) residues. Chemical analysis of residues indicated that total phenolics were found to be higher in Enqath than in Rabeh plants suggesting the superiority of the allelopathic potential of the first cultivar over the second one against weeds. Results indicated that total phenolics were two folds in shoot than in root of both cultivars. These compounds appeared to be higher in Enqath shoot and root (1.60 and 0.80 mg/g, respectively) than in Rabeh shoot and root (1.2 and 0.50 mg/g, respectively). The increments in total phenolics in root and shoot of Enqath were clearly reflected on the increase of total phenolics in the whole plant reaching about 2.40 mg/g compared to Rabeh (1.70 mg/g). Chemical analysis by high performance liquid chromatography (HPLC) revealed the presence of seven allelochemicals namely ferulic, *p*-coumaric, gallic, vanillic, syringic, *p*-hydroxybenzoic, and sinapic acid in the residues of both cultivars. Total phenolic acids were found to be higher in Enqath than in Rabeh. Results of RAPD-PCR technique performed for sorghum genomic DNA revealed that all the 10 primers used in this study scored different amplification monomorphic and polymorphic bands in the

tested genotypes with the exception of 3 RAPD primers which generated a unique amplification bands, one of them (125 bp) scored by OPN 16 primer, present in high allelopathic sorghum genotypes and absent in the low allelopathic ones (Rabeh). Further work is recommended to analyze the sequence of this band to find out whether it is related to allelopathic trait or not. These results recommend screening more sorghum cultivars in order to offer a potential source of allelopathic germplasm that could be manipulated to enhance weed suppression in an effective and environmentally sustainable approach. [Al-Khateeb, T.A., Alsaadawi, I.S., and Hadwan, H.A. (Tunisia), Tunisian Journal of Plant protection 12: 1-13, 2017]

TURKEY

The Comparison of Population Percentages (%) of Yellow Stick Traps and D-Vac Sampling Methods of Arboridia adanae and Empoasca decipiens on vineyards in Elazig Province (Turkey).In this study have been aimed to determine two different sampling methods that effects of *Arboridia adanae* and *E. decipiens* population percentage. *Arboridia adanae* has been the dominant species in terms of each sampling methods. In this study will be contribute vineyard IPM Studies.[Inance Ozgen, Bioengineering Department, Firat University, Elazig, Turkey, Yusuf Karsavuran, Plant Protection Department, Ege University, Izmir Turkey, ICAIE International Conference on Advances and Innovations in Engineering, 2017].

Population dynamics of mites (Acari) on *Diospyros kaki* Thunb. and *Diospyros lotus* L. (Ebenaceae) trees in Ordu, Turkey. Population of mites (Phytoseiidae, Stigmaeidae, Cunaxidae, Cheyletidae,Tenuipalpidae, Tarsonemidae, Tydeidae,Acaridae) were monitored on *Diospyros kaki* Thunb. And *Diospyros lotus* L. (Ebenaceae) in Ordu, Turkey during 2012 and 2013. Phytoseiid, tydeid and acarid population were higher on *D.kaki* (both seasons). Cunaxid populations were higher on this species in 2012. Tunuipalpids (2012) and stigmaeids (2013) were significantly more abundant on *D.lotus*. Populations of pest mites did not reach high levels in persimmon trees not exposed to pesticides, a significantly positive correlation between rainfall and tenuipalpid (both persimmon species in 2013) and cunaxid (*D. lotus*, 2013) populations. There was also a significant negative correlation between relative humidity and tydeid (*D. kaki*) in 2012) and cunaxid (*D.kaki* in 2013) populations. Temperature showed generally a positive correlation with mite population however, a significant negative correlation was detected in tenuipalped (both species in 2012, *D.kaki* in 2013) and cheyletid population (*D.kaki* in 2012).[Rana Akyazi, Edward A.Ueckermann, Mete Soysal and Duygu Akyol (Turkey),Systematic & Applied Acarology society.21(10): 1334-1345,2016].

PLANT PROTECTION NEWS IN THE ARAB COUNTRIES AND NEAR EAST

Postgraduate Arab Students Activities (Master and Doctorate Thesis)

Safe and Environmentally Sustainable Method for Controlling Mycotoxigenic Fungal Species on Stored Grains. The overall main objective of my research work as a PhD candidate at Biosystems and Biotechnology Dept., College of Life Science and Biotechnology, Korea University, was to find a safe and environmentally sustainable method for controlling mycotoxigenic fungal species on stored grains. In achieving this goal, a comprehensive understanding of the ecological factors affecting the occurrence and dominance of such fungal species on stored grains was an urgent prerequisite. These ecological factors are mainly related to the environment of the stored grains and the biological interaction which could be conducive or suppressive to fungal growth and mycotoxin production. Therefore, work was divided into two main sections, the biological aspects of the stored grains eco-system and environmental factors affecting fungal growth and mycotoxins production. As for the biological control part, a screening of the microflora on stored rice grains resulted in the selection of 3 bacterial strains with efficient biocontrol activity against the major mycotoxigenic fungal species of stored rice grains. The biocontrol activities of these bacterial strains weredescribed in details. Intriguingly, one bacterial strain was able to biodegrade aflatoxin (the most hazardous mycotoxin and most carcinogenic compound ever) on stored rice grains and on liquid

media. This bacterium ability to utilize aflatoxin as carbon source in nutrient-poor media was illustrated for the first time. Further, the volatile organic compounds from this bacterium were found to not only inhibit the fungal growth but also to suppress aflatoxin production as a first report of aflatoxin production suppression by the action of bacterial volatiles. The latter finding would have several useful applications in the food industry and safe grain storage. On the other hand, the work on the influence of varying degrees of temperature and relative humidity on the stored-grain fungal growth and mycotoxins production was useful for understanding the roles of storage environment on mycotoxigenic fungal growth and their eco-physiological requirements. Finally, integration was made between the biological control as well as the environmental control in a combined strategy for minimization of the fungal contamination and mycotoxin production on stored grains. Work was successfully conducted, and scientific publications were written and submitted to prestigious journals in the field, and currently in press**. [Mohamed Ibrahim Mohamed Ahmed Mannaa (Egypt-Korea), College of Life Science and Biotechnology, Korea University, Biotechnology Department, (PhD, 2017)].**

Pathogenicity of a Jordanian Isolate of the Dagger Nematode (*Xiphinema* sp.) on Aleppo Pine *Pinus halepensis*; Molecular and Histological Studies. Leena Abdelwahab Irshaid, a PhD student at the Department of Plant protection, Faculty of Agriculture, University of Jordan, successfully defended her PhD thesis. Her thesis was entitled "Pathogenicity of a Jordanian isolate of the dagger nematode (*Xiphinema* sp.) on Aleppo pine *Pinus halepensis*; molecular and histological studies". The examination committee included her supervisor Dr. Luma Al-Banna, Co-Supervisor: Prof. Monther Sadder, and two faculty members from University of Jordan; Prof. Ahmad Katbeh-Bader, Dr. Neda' Salem and Dr. Abdelfattah Dababat, team leader in the International Maize and Wheat Improvement Centre (CIMMYT) as an external examiner. The study revealed that the dagger nematode belongs to the species *X. vuittenezi* which attacks roots of pine seedlings causing histological and chemical changes. The present study is the first study up to our knowledge of a dagger nematode attacking Aleppo pine; however, this study should lead to further epidemiological studies to understand the impact of the dagger nematode on such a forest tree**.[Leena Abdelwahab Irshaid , Department of Plant protection, Faculty of Agriculture, University of Jordan ,(PhD, 2017)].**

Bioassay of the Pathogenic Fungus *Isaria fumosorosea* (Wize) on the Behavior and Mortality of Termite *Microcerotermes diversus* Silv. (Isoptera: Termitidae) in the Laboratory and Field. The study was conducted to evaluate the efficiency of the entomopathogenic fungus *Isaria fumosorosea* in mortality of some individuals of termites *Microcerotermes diversus* Silv. in different concentrations (2.5, 5, 10 g/L) by direct spray and media treating of eucalyptus sawdust and filter paper in the normal laboratory conditions and incubator conditions at a temperature of 30 ± 2 C̊ and relative humidity 85±5%, in addition to evaluating the efficiency of fungus in different concentrations when added to the bait stations and direct spray of the olive trees for the control of termites under field conditions in Iraq. Result of the study proved that there was effect of the treated media on the efficiency of the fungus on termite workers mortality, in addition to the superiority of direct spray treatment over media treatment, and higher concentrations of 5 and 10 gm/l caused the highest mortality rate, and incubation temperature had an effect on mortality of termite workers. The results of the persistence of the efficiency of fungus on the workers mortality showed that the fungus was effective after 180 days of treatment and the fourth infection was the most efficient and faster to reach 100% mortality of termite workers compared with other infection as a result of favorable temperatures for the activity and growth of the fungus. Results of the study demonstrated that the high temperature had positive effect on fungus efficiency and speed in causing termite individuals mortality, whereas the low temperature in the first infection caused a decrease in the efficiency of fungus and speed of termites mortality. Results of the study demonstrated that the fungus was effective mortality to termite alates when increasing the duration of exposure and the concentrations. The mortality rate of 100% to termite alates reached in the eucalyptus sawdust media after 48, 24 and 57 days but in the filter papers after 6, 15 and 12 days of fungus concentrations 2.5, 5 and 10 g/L, respectively. Results of the study demonstrated that the different fungus concentrations of treated media caused a repellent effect for the termite workers at the beginning of treatment especially at high concentration of 10 g/L, where the workers showed some warning behavior and stayed away from the entrance of the treated media, until the time when the repellent was decreased gradually. The results showed that there was no presence of *I. fumosorosea* on termite individuals in Baghdad environment. The termite workers showed behaviors consisted of isolating the dead individuals and gathering them in a cemetery and secretion of a white substance on all them, the results of the extraction, separation, and diagnosis using the HPLC

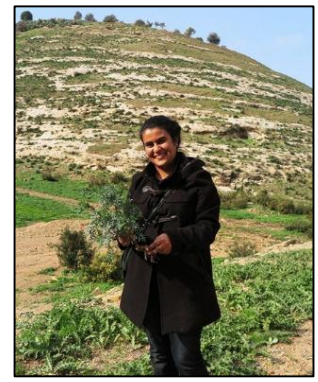
system showed the presence of the antibiotic Bacitracin in the extract of termite cemetery with concentration 838.718 (µg/ml) and the antibiotic showed its effectiveness in inhibition of the growth of some species of bacteria such as *Bacillus cereus*, *Escherichia coli* and *Staphylococcus aureus* and the inhibition zone diameters were 0.833 and 1.067, and 0.933 cm, respectively. The results showed that the Secondary reproductive individuals (Macropterous form) had ability to mate and lay eggs under the incubator conditions at a temperature of 30 ± 2 C̊ and relative humidity 85±5% in filter papers media. ,where laid egg- White transparent eggs, oval and elongated, were laid after eight days, and the number of eggs reached 25 eggs/female and egg incubation period reached 16 days. The results of the study proved that secondary reproductive individuals were able to lay eggs and sustain the colony when isolated from the colony and in the absence of the queen mother. Results of the study demonstrated that the alates after isolating them from the colony succeeded to mate in the eucalyptus sawdust media under incubator conditions at a temperature of 30 ± 2 C̊. The female was distinguished by a big abdominal region and change color to dark brown and wings nibble and laid the eggs, which reached 15eggs/female with incubation period of 2-4 weeks, and the queen took care of the eggs and small nymphs. The mite *Rhizoglyphus robini* is recorded for the first time in Iraq as a parasite of termite individuals in the laboratory and field where hypopus phase was observed in large numbers on the heads and mouth parts of individuals which caused the discomfort and activity reduction, and deterred from feeding. The mite was observed feeding on all body parts of the dead workers except head capsule. The presence of the mite *Sancassaina oudemans* with high numbers was also recorded on the bodies of workers and led to their death. The results showed that the direct spray of different concentrations of the fungus on the stem of olive trees and the soil surrounding a diameter of 20 cm was highly effective in termite infestation reduction, which decreased the tunnels length and the number of workers gradually and led to the absence the termite infestation after some time. The duration of termite's infestation absence depended on the fungus concentrations. The concentration of 2.5g/L provided full protection of olive trees for 5 months (from January until May), whereas the concentration of 5 g/L gave protection for three months, and concentration of 10 g/L gave protection for four months. In addition, fungus reduced the number of workers visiting the stem of olive trees gradually until the infestation was absent. The results showed that there was a difference in the effect of different concentrations of the fungus (2.5, 5, 10 g/L) in the protection of treated wood in the bait stations from termite infestation where the high concentration 10 g / L caused the lowest rate of infestation during five months, as well as reducing the number of workers present in the stations where percentage of loss in the treated wood weight reached 45.39 , 49.38 and 19.61% at fungus concentrations of 2.5, 5 and 10 g /L, respectively, while control reached 79.10%. Results showed that the sitting bait stations containing treated wood of different concentrations of the fungus around the olive trees caused withdrawal of the termite workers from infested trees, and the concentration of 5 g/L was the most effective in protecting olive trees from termite infestation. Results of the study also showed that the untreated Palm Sunday fronds was the most efficient bait to attract termites individuals compared with wheat bran and eucalyptus sawdust.[**Buraq Abdul Hassan Nassry, College of Agriculture, University of Baghdad-Iraq, Plant Protection/Entomology, (MSc, 2017)].**

Using of Carbon Dioxide and Ozone Gas in Reduction of Ochratoxin A in Peanuts. This study was conducted at the Plant Protection Department, College of Agriculture, University of Baghdad in 2015 -2016. The objective of the study is to investigate the fungus *Aspergillus niger* which contaminated peanut and walnut seeds collected from some Iraqi Governorates, the ability of its isolates to produce Ochratoxin A and the toxin reduction using Carbon dioxide (CO_2) and Ozone (O_3). Forty peanut and walnut samples were collected from local markets of Baghdad, Erbil, Sulaymaniyah, Anbar and Dyiala for *A. nigar* isolation. Results showed *A.niger* was founded in 50% of walnut samples from Erbil whereas 42.8% in the samples of peanut from Baghdad, and 40 % in peanut samples from each Anbar and Dyiala. In addition, the fungus *A.flavus* was found to contaminate walnut seeds by 33.3, 5.28 % of samples from Erbil and Baghdad respectively, while 30 and 28.5 % of peanut seeds from Anbar and Baghdad respectively. Eleven *A.niger* isolates grown in yeast extract and sucrose media were tested for their ability to produce Ochratoxin A using thin layer chromatography (TLC) at ultra violet wave length of 365 Nanometer. Two *A.niger* isolates from peanut referred to as (K, E) were detected to be able to produce Ochratoxin A at different rates when the degree of the brightness of the spots compared with the standard Toxin spot. Polymerase Chain Reaction technology (PCR) detection confirmed all eleven isolates belong to *A.niger*. The efficiency of the CO_2 and O_3 in radial growth inhibition, dry biomass and Ochratoxin A reduction of the two isolates of *A.niger* (K, E) under laboratory conditions. Results revealed that exposing the isolate colony E grown on PDA to CO_2 and O_3 at a concentration of 4 liter/minute for 60 minutes inhibited the growth rate by 28.33% and 20.0% respectively, followed by 1 l/ min. for 5 and 15 minutes CO_2 treatments of which the inhibition rates were 17.0% and 17.33% respectively, and 19.67% and 19.33% for O_3 treatment. The highest percentage of the fungus growth

inhibition was to isolate scored 17.0% and 15.0% when treated with CO_2 at 1 and 4 l/min. concentration respectively. Both gases reduced the dry biomass for fungus isolate E grown on potato sucrose broth (PSB) at concentration of 4 l/min for 60 minutes up to of 0.017 g which compared to 0.71 g for the control treatment when exposed to both gases for 60 min. at concentration of 4 l/min. dry biomass for isolate K was 0.013 g and 0.01 g for CO_2 and O_3 treatments respectively , followed by O_3 treatments at concentration of 1 l/min. for 5 and 15 minutes which were 0.057 and 0.053 g respectively. When compared to the standard spot Ochratoxin spot, No bright spot is shown when both isolates grown on the yeast extract sucrose broth were exposed each to both gases at different concentrations and exposure time, which indicate the effectiveness of the treatments in removing and degrading Ochratoxin A at the laboratory conditions. It is found that the treatment of 1 Kg of peanuts contaminated with 1 ml of the spore suspension (isolate E) at concentration of 175 X 10^7 spore/ml in a tightly plastic containers with CO_2 and O_3 separately at concentration of 1l\min for 5 minutes and 4 l\min for 60 minutes resulted in significant reduction *by* 87 – 98% for O_3 and Co_2 treatments respectively detected by HPLC compared to control treatment after two months of storage at incubator conditions (25_+2°C). **[Rashad Radhwan Khalifa, College of Agriculture, University of Baghdad, Plant Protection, (MSc, 2017)]**

***Orius laevigatus* strengthens its Role as a Biological Control agent by Inducing Plant Defenses**. *Orius laevigatus* is a generalist predator that is widely used in augmentative strategies against the key pest of sweet pepper, *Frankliniella occidentalis*. Despite being a zoophytophagous predator, the phytophagous behavior of *O. laevigatus* has not been previously explored in depth nor has the impact of phytophagy on plant physiology. Here, the hierarchical significance of *O. laevigatus* feeding on sweet pepper is compared with other behaviors. *O. laevigatus* spends the majority of its time (38%) feeding on apicalmeristems and apical fresh leaves, which were preferred residence locations. Here, the phytophagous feeding behavior of *O. laevigatus* on sweet pepper is shown to trigger defensive responses in the plant. These *O. laevigatus* plant-induced defenses are then shown to contribute to the repellence or attraction of pests or natural enemies, respectively. Specifically, *O. laevigatus*-punctured sweet pepper plants induce repellency for the whitefly *Bemisia tabaci* and the thrips species *F. occidentalis*. In contrast, the whitefly parasitoid *Encarsia formosa* was significantly attracted to *O. laevigatus* punctured plants. The plant responses to *O. laevigatus* punctures include the release of an altered blend of volatiles and activation of the jasmonic acid and salicylic acid signaling pathways. These results highlight an interesting facet to the biology of *O. laevigatus*, in which the ability of the predator to induce defensive responses in sweet pepper plants may serve to improve the biological control of both thrips and whiteflies.[**Sarra Bouagga (Tunisia-Spain), Alberto Urbaneja, Jose´ L. Rambla, Antonio Granell, Meritxell Pe´rez-Hedo ,Journal of Pest Science, Instituto Valenciano de Investigaciones Agrarias (IVIA), Valencia, Spain,(Ph.D.2017), DOI 10.1007/s10340-017-0886 4].**

A Comparison of Existing and New Methods for the Assessment of Forest Plant Diversity to Design a Monitoring Network at National Level. Forest monitoring is facing a big number of problems such as irregular funding, scale dependency, exclusion of the citizen's role in forest protection. This PhD research presents an Italian attempt to find solution overcoming these issues and it can be splitted into two phases. **The tasks of the first phas**e can, also, be subdivided into two steps focusing each on the two levels of ICP forest, the European forest monitoring system, LI (extensive monitoring system) and LII (intensive monitoring system), and it is based on the analysis of the Italian forest monitoring network CONECOFOR dataset collected from 1999.



At the LI level, the main aim was to reduce the number of plots and it revealed that a 60% reduction of plots is possible (85 possible candidates out of 201 plots), if capturing 95% of the species numbers of the entire Level I network is acceptable to maintain comparability at large scale

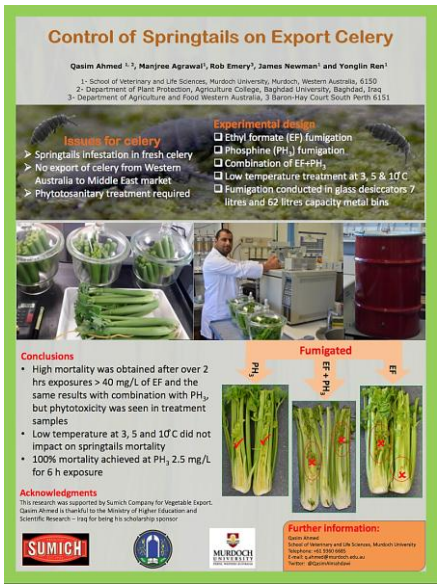
At the LII level, the focus was to reduce the sampling frequency (number of years) and sampling intensity (number of sampling units)

The analysis concerning the sampling intensity were based on three criteria; precision, finding the optimal combination and MARE (Mean Absolute Relative Error). The results of this analysis underlined that the best performing model for all the plots of the Level II network should be set at 11 SUs, which is not much when considering the current design with 12 SUs.

Results concerning the reduction of the sampling frequency on Level II plots highlighted that only in two plots (LOM1 and FRI1) a biennial sampling allows to maintain the information achieved by annual sampling, in terms of linear regression. In general, a reduced sampling frequency results into a reduced temporal information and

biased comparability with past time series.Analyses makes clear that no major decreases of the number of SUs or frequency of measurements are possible on Level II plots without losing important information. Meanwhile **for the second phase**, In order to study the plant community and the assembly rules at fine scale, the present research adopts the information theory models of Juhász-Nagy Pàl in two different biomes; an evergreen oak forest (Ajloun-Jordan) and an old growth beech forest(Val cervara-Abruzzo – Italy). Using only two coesntrate descriptors, considered the most important and related to the scale dependency, we underlined that regardless the simplicity of the adopted fine scale approach, it represents a "powerful" and reliable technique in the study of forest stand undergoing to different dynamics status in different biomes and not being restricted to any specific type of climatic conditions neither one type of forest stands. In sum, all the steps included in this research underline the critical points which are to be included when planning a national-wide monitoring systems for forest biodiversity. Statistical power analysis and minimum detectable changes analysis must be performed prior to definitely establish the system**.[Khawla Zouglami(Tunis), University of Camerino, School of Biosciences and Veterinary Medicine - Plant Diversity and Ecosystems Management unit, (PhD ,2017).**

Control of Springtails on Export Celery. [Qasim Ahmed (Doctorate Project Australia-Iraq), Manjree Agrawal, Rob Emery, James Newman and Yonglin Ren, 2017]



Experimental design
-Ethyl formate (EF) fumigation
-Phosphine (Ph_3) fumigation
-Combination of EF+ PH_3
-Low temperature treatment at 3,5 & 10C.
-Fumigation conducted in glass desiccators 7 litres and 62 litres capacity metal bins.

Issues for celery
-Springtails infestation in fresh celery
-No export of celery from Western Australia to Middle East market
-Phytosanitary treatment required

Conclusions
-High mortality was obtained after over 2 hrs exposures 40 mg/L of EF and the same results with combination with PH3 but phytotoxicity was seen in treatment samples
-Low temperature at 3, 5 and 10C did not impact on springtails mortality 100% mortality achieved at PH_3 2,5 mg/L for 6 h exposure

❖ Some Plant Protection Activities of FAO and Other Organizations

ACTIVITIES OF FAO REGIONAL OFFICE FOR NEAR EAST AND NORTH AFRICA (FAORNE)

The FAO Red Palm Weevil (RPW) Steering Committee meeting.

The meeting was held in Cairo, Egypt during 22-24 May 2017. During three days meeting, the RPW Steering Committee evaluated the results of the first RPW international conference held in Rome, during 29-31 March 2017and reviewed the final draft of the report of the RPW Scientific Consultation & High Level Meeting (SC&HLM). Additionally, the committee reviewed and agreed on the proposed follow-up actions. The committee also discussed the structure and the contents of the proposed manual on RPW best management practices. The committee members agreed about the topics, target group, responsible expert, and contributors of each guidelines to be developed under the manual and the deadline of submission of first draft of the guidelines. Regarding the Second Global Meeting on RPW, the committee recommended to organize the meeting in 2019 while, they agreed

on holding the researchers meeting hosted by CIHEAM by end of June 2018. The committee identified the objectives and topics to be covered by each meeting. At the end, the committee checked the proposed pilot project on supporting the farmers and other stakeholder's involvement in RPW management programme. International experts attended the Committee's meetings from several countries in the field of Management of RPW as well as representatives from Headquarters, the Near East Regional Office and the North Africa Sub-regional Office Food and Agriculture Organization of the United Nations (FAO)

Xylella fastidiosa TOT workshops.

In the framework of the implementations of the proposed work plan of the TCP/RAB/3601 project "Preventive Measures for the Introduction and Spread of *Xylella fastidiosa*- Olive Quick Decline Syndrome in NENA Countries", a series of training of trainers (TOT) workshops was organized by the Near East Regional office of the Food and Agriculture Organization of the United Nations (FAO-RNE). Six workshops were held in the participated country as follows:

1. Beirut – Lebanon, 04-09 December 2016.
2. Amman, Jordan, 11-15 December 2016.
3. Algiers, Algeria, 18-22 December 2016.
4. Tunis, Tunisia, January 30- February 03 2017.
5. Meknès, Morocco, 20-24 February 2017.
6. Cairo, Egypt, 30 April - 04 May 2017.

The main objective of these workshops was building capacities in the participated countries and prepare a national team could raise the awareness about the disease and deliver the message to the all stakeholders and farmers. Each workshop covered the following topics,

1- *Xylella fastidiosa* – general overview.
2- Main insect vectors of *x. fastidiosa* worldwide & in Italy.
3- History and current situation of *X. fastidiosa* in Apulia region, in Italy and Europe.
4- Surveillance methodology and sampling procedures adopted in Apulia (on olive, and other hosts)
5- *X. fastidiosa* in the framework of quarantine law.
6- Diagnostic methods of *Xylella fastidiosa* .
7- Laboratory diagnostic methods for *Xylella fastidiosa* (EPPO standards) and Briefing on routine detection methods for the detection of *Xylella fastidiosa.*
8- Capacity development and awareness raising on *X. fastidiosa*–stakeholder involvement and media control.
9- Critical points for inspection and sampling (time, amount, sampling of material for laboratory testing, preserve and transfer of samples to the laboratory etc.).

Trainer's team in those workshops were consisted of international experts in the field of management of *X. fastidiosa*, while the target trainees were plant protection and plant quarantine professionals. The programme of each workshop was including one field visit to olive orchards/groves for practical training on the sampling methods besides laboratory training on the laboratory diagnostic methods.

DESERT LOCUST SITUATION

Situation level: Caution

General Situation of the Desert Locust during July 2017 and Forecast until mid-September 2017 provided by the FAO Emergency Centre for Desert Locust (ECLO).

The Desert Locust situation continued to remain calm during July. Control operations were undertaken in Iran and, to a lesser extent, in Algeria where small-scale breeding had occurred. Low numbers of adults appeared in the summer breeding areas of Mauritania, Sudan and along both sides of the Indo-Pakistan border. Good rains fell in all summer breeding areas of the Sahel in West Africa and Sudan, in the interior of Yemen and along the Indo-Pakistan border. Consequently, small-scale breeding is expected to occur in all of these areas during the forecast period, causing locust numbers to increase slightly. Regular surveys should be conducted in all areas wherever possible.

Western Region. The situation remained calm during July. Scattered mature solitarious adults mixed with solitarious hoppers of all instars were present in a few places in the Central Sahara of **Algeria** where 3 ha were treated. Isolated mature solitarious adults appeared in the summer breeding areas of southeastern **Mauritania** as well as in central areas which is somewhat unusual. For the second consecutive month, good rains fell throughout the northern Sahel of West Africa because the Inter-Tropical Convergence Zone (ITCZ) was much further north than normal. Consequently, small-scale breeding will cause locust numbers to increase slightly between **Mauritania** and **Chad** during the forecast period.

Central Region. The locust situation remained calm in the region during July. Low numbers of solitarious adults were present in the interior of **Sudan** where good rains fell and small-scale breeding is expected to cause locust numbers to increase slightly during the forecast period. Good rains also fell in the interior of **Yemen** but surveys could not confirm the situation due to prevailing insecurity. Nevertheless, adults are probably present and small-scale breeding is likely to occur, which will cause a further increase in locust numbers.

Eastern Region. Control operations continued during the first decade of July in southeast **Iran** where 8,500 ha of hoppers and adults were treated in the Jaz Murian Basin. Although above-normal monsoon rains fell in the summer breeding areas along both sides of the **Indo-Pakistan** border, only isolated adults have been seen in a few places in both countries. Nevertheless, locust numbers are expected to increase slightly as a result of small-scale breeding during the forecast period.

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 and FAO Commission for Controlling the Desert Locust in the Central Region http://desertlocust-crc.org.

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://desertlocust-crc.org).

ACTIVITIES OF FAO COMMISSION FOR CONTROLLING THE DESERT LOCUST IN THE CENTRAL REGION (CRC)

The FAO Commission for Controlling the Desert Locust in the Central Region (CRC) and the Desert Locust Organization for Eastern Africa (DLCO-EA) was jointly organized the 5th training course on Desert Locust aerial operations in Moshi, Tanzania, 17-21 July 2017. The course was designed to strengthen the national training capacity of the locust affected countries, and the air spraying companies on aerial survey and control operations using DGPS.

Thirteen participants from Egypt, Eritrea, Ethiopia, Iraq, Jordan, Oman, Saudi Arabia, Sudan and, Tanzania, attended the training course. Two of the trainees were pilots and the remaining trainees were either Plant Protection or Locust Officers.

The training course covered all aspects relating to Desert Locust aerial survey and control operations. Desert Locust biology, behaviour, and distribution; information collection and reporting. The use of Differential Global Positioning System were explained and demonstrated extensively. Use of fixed wing and helicopter aircraft for survey and control. Types of aircraft and their specifications. Organizing aerial operation campaign, protocol and the necessary items to be considered when contracting an air spraying company and ground support needed. Calibration and measurement of flow rate of the spray system of the aircraft. Pesticide safety in aerial application and alternative to pesticides for Desert Locust control were also discussed.

INTERNATIONAL PLANT PROTECTION CONVENTION (IPPC) ACTIVITIES

Training workshop on IPPC and ISPMs

A national training workshop on the IPPC and International Standards for Phytosanitary Measures (ISPMs) was held in Erbil, Iraq from 24-26 April 2017. The workshop was organized under the framework of the TCP/IRQ/3602 "Technical support for surveillance and management of Red Palm Weevil in Iraq".

The workshop aimed at building the capacity of the NPPO technical staff on the implementation of the IPPC and ISPMs with focus on the control of the spread of invasive plant pest, particularly RPW.

The workshop was facilitated by Mr. Shoki Al-Dobai, Plant Protection regional officer and Mr. Orlando Sosa, IPPC Capacity Building Officer.

The workshop was organized through three days that included presentations and group work exercises. Twenty-nine professional attended the workshop came from the central NPPO, plant quarantine departments and entry points of different governorates of Iraq.

The participants were familiarized with the elements and operation of phytosanitary systems presentations, interactive discussion and exercises that covered the below topics:

- Understanding the International Plant Protection Convention (IPPC)
- Understanding what is the Phytosanitary Capacity Evaluation (PCE)
- International Phytosanitary Legal Framework
- Presentation of International Standards on Phytosanitary Measures (ISPMs) and the scope of the ISPMs
- The IPPC phytosanitary resources (websites, DPs and guidelines,.....etc)
- NPPO Establishment and Management
- Pest Surveillance
- Pest Risk Analysis
- Phytosanitary import and export regulatory system
- Pest eradication programmes and establishment and maintenance of Pest Free Areas (PFA)
- Pest Reporting

A specific presentation was given on the phytosanitary measures to be adopted to control red palm weevil that has been developed based on the Strategic Framework on Eradication of PRW endorsed in Rome, March 2017.

IPPC Regional Workshop for the Near East & North Africa Region Tunis, Tunisia, 21-24 August 2017

"FAO and IPPC supporting NENA Countries to boost trade facilitation and enforce rigorous phytosanitary measures against invasive plant pests".

21-24 August 2017: Fifteen Near East and North Africa countries have been gathered in Tunis (Tunisia) from the 21st to the 24th of August 2017 at the invitation of the International Plant Protection Convention (IPPC) Secretariat and the Regional Office of the Food and Agriculture Organization for the Near East and North Africa Region (FAO-RNE). The annual regional workshop aims at strengthening phytosanitary capacities for effective enforcement of internationally harmonized standards for phytosanitary measures to prevent the introduction of plant pests to their countries, while facilitating the international trade of plant products.

The International Plant Protection Convention (IPPC) is an international agreement aims to protect cultivated and wild plants by preventing the introduction and spread of pests (see www.ippc.int) to which 183 contracting parties currently adhere.

Protecting plant resources and the environment against plant pests requires global as well as national actions. Pests introduced and spread through international trade and human activities caused economically and environmentally negative impacts. Forty-one IPPC International Standards on Phytosanitary Measures (ISPMs) have been adopted, promoted and are being implemented by member countries for saving the plant resources, economy and environment. Phytosanitary activities need to be increasingly coordinated at the regional scale, through the efforts of the Near East Plant Protection Organization (http://www.neppo.org/).

During this IPPC Regional Workshop, the Near East and North Africa (NENA) countries reviewed new draft ISPMs. At the same time, the meeting was a great opportunity to update the participants on the new developments of the IPPC activities, new emerging issues in plant health, and to exchange and share the experiences and the updates between the participants in the field of plant protection in general.

On the margins of the workshop, the participants reviewed the progress made in the implementation of the contingency plans against the introduction and spread of the so-called olive killer - bacterium *Xylella fastidiosa*. The contingency plans have been developed by contracting parties in 2016 with support of FAO and IPPC. The workshop shaded the light on the recent updates of some plant pests which could figure a real threats to the NENA countries in the near future such as Fall Armyworm on corn and several crops and Cochineal scale (scale insects) on cactus which already causing serious issues in Morocco.

ARAB SOCIETY FOR PLANT PROTECTION NEWS

The Arab Journal of Plant Protection Electronic Archives are now complete. The Arab Society of Plant Protection is glad to announce that all volumes of the Arab Journal of Plant Protection (AJPP) from volume 1 until volume 35 are now available on both the journal (www.ajpp.asplantprotection.org) and the society (www.asplantprotection.org) websites. It took around two years of hard work of scanning and uploading of articles to reach this stage. It is a significant achievement that all the AJPP published articles are now preserved electronically for the present and future generations. This achievement was not possible without the dedication and hard work exercised by Dr. Safaa Kumari and her group. ASPP is now making arrangements to include these archives in the world directory of open access journals (DOAJ), which will be a further step to preserve the knowledge generated by the AJPP at the global level.

The Arab Journal of Plant Protection will be indexed by SCOPUS starting in 2017. The Arab Society for Plant Protection received the following letter from ELSEVIER: "Elsevier is happy to inform you that the Arab Journal of Plant Protection has been accepted for coverage in selected Elsevier product(s) starting

with 2017 material. We intend to index and extract data from the full text article and integrate such data in these product(s). Coverage in Elsevier product(s) increases dissemination of authors' work via linking technologies which drive additional traffic to individual articles, promoting journal brand awareness and subscription. In short, the benefits are high visibility to a global audience, fast online dissemination of content and increased exposure and profile for authors, editors and your publishing organization. The Arab society for Plant Protection is extremely happy with this achievement, which is an indication of the journal high professional standard. Thanks to all Society members, especially those who are serving as referees, including members of the Editorial Board, for their voluntary contribution and serious effort towards continuously improving the journal quality.

The Final Program of the 12th Arab Congress of Plant protection

A small sub-committee of the Congress Organizing Committee held a meeting in Cairo, Egypt during the period 6-8 August, 2017 to finalize the program of the 12th Arab Congress of Plant Protection which will be held in Hurghada 5-9 November, 2017. As shown in the photo, sub-committee members who participated in the meeting included Dr. Mortada Eissa, Dr. Ahmed El-Heneidy, Dr. Hasan Dahi, Mr. Mohsen Amin, Dr. Yehia Abo El-Lil, Dr. Walaa Gamil Ibrahim, Dr. Safaa Kumari and Dr. Khaled Makkouk. The congress secretariat received around 300 abstracts and the Organizing Committee accepted 280 abstracts, and those were organized in 180 oral and 100 poster presentations. The oral presentations are distributed into four symposia and 28 oral concurrent sessions. The concurrent sessions will cover the following themes: Economic entomology, pesticides, plant extracts, fungal diseases, viral diseases, bacterial diseases, integrated pest management, biological control, nematodes, mites, and beneficial insects. In addition, there will be two specialized workshops, one on *Tuta absoluta* and the other on scientific publishing. The posters will be organized in two sessions, each session will be for two days. The detailed congress program will be soon available on the congress web site. Until today, there are 420 colleagues who registered to attend the congress. On June 7, the third day of the congress, there will be an interesting touristic tour to Luxor which will include a visit to Luxor Museum, Karnak Temple, lunch, Hatchebthut Temple, Mamnoun, and the Valley of Kings.


Another two meetings have been done prior to the meeting of August with the committee or part of the committee to discuss the conference preparations and agreed for the conference suspended points.


Welcome to the 12th International Arab Congress of Plant Protection 4-10 November, ACPP 2017 Hurghada – Egypt (Towards Future Secure Agricultural Production)

INVITATION

The Arab Society for Plant Protection (ASPP)in collaboration with the Agricultural Research Center (ARC), Ministry of Agriculture and Land Reclamation, Egypt, represented by the Plant Protection Research Institute and the Plant Pathology Research Institute, has the pleasure to welcome and invite scientists, researchers,

academicians, and those who are involved with various aspects of pests management from government agencies, universities, research and extension institutions, and international agencies to present and exchange regional expertise of all aspects of plant protection, including recent developments related to integrated pest management strategies.

DATE and VENUE

The Congress will be held at the SEAGULL BEACH RESORT, Hurghada, Egypt from 4 to 10 November 2017.

CONGRESS BOARD

President of the Agric. Res. Center, Congress Chairman
Prof. Dr. Ibrahim H. Al-Abassi, Congress Vice-chairman
Prof. Dr. Mortada A. Essa, Chairman of the Congress Organizing Committee,
Prof. Dr. Mohamed El-Said El-Zemaity, ASPP President

CONTACTS

ACPP 2017 Secretariat:
Postal Address: 7 Nadi El-Said Street, Dokki, Giza, Egypt
E-mail: acpp2017@arc.sci.eg Phone/ Fax: +202-33372193
Mobile: +20127499831

acpp2017

CONGRESS LANGUAGE

Arabic (Official) for paper presentation and English for symposia presentations.

REGISTRATION FEES (Hotels NOT included):

Participation Type	Egyptians (Egyptian Pound)	Non-Egyptians (US $)
ASPP members	1500	150
Graduate Students	900	60

- **The registration fee covers participation in the congress + the conference publications + Coffee/tea breaks + field trip.**
- **Graduate students, applying for registration, should present a certificate in support of their current studentship status from their college/university/institution.**

ACCOMMODATION (Full board in a single or double bed room per person for 6 nights and ,lunch, dinner, snacks Transportation to and from Cairo and Congress trip):

Participation Type	Egyptians (Egyptian pounds)		Non-Egyptian$	
	Single Room	Double Room	Single Room	Double Room
ASPP members	1100	2000	400	275
Graduate Students	1100	2000	400	275
Accompanying persons (No congress fees)	1500	2250	400	275

Reservation should be made through the organizing committee to get this reduced rates

PAYMENT OPTIONS

Please, kindly request to pay for registration Cash at the conference venue.

CONGRESS PROGRAM

The Congress program includes various concurrent sessions. Each session will include a number of contributed papers and posters. The congress will also organize four symposia on some important plant protection topics in the Arab world, where distinguished speakers from many countries are invited to participate. The detailed full program will be posted in the congress website in September 2017.

A) Congress Topics

1. Economic insect and animal pests
2. Integrated management of Phytopathogens
3. Etiology and epidemiology of plant diseases
4. Natural enemies and their role in pest management
5. Post-harvest pests
6. Effect of environmental changes on insect pests, plant pathogens and natural enemies
7. Date palm pests
8. Bio-pesticides
9. Nanotechnology for pests and Plant diseases control
10. Safe use of agrochemicals
11. Quarantine regulations and phytosanitary measures
12. Integrated pest management
13. Genetic engineering and pest control
14. Integrated control of weeds
15. Apiculture and Sericulture

B) Symposia

Keynote address in the opening session of the congress

Title: Building bridges between plant protections disciplines of sustainable management of crop pests. Invited speaker: Dr. Rangaswamy Muniappan, International Association of Plant Protection Sciences (IAPPS), Virginia Tech, USA (muni@vt.edu)

C) Daily Schedule

Saturday, 4/11/2017

Travel from Cairo to Hurghada by buses (2-3 different timings) (Details later).

14:00 - 24:00	Registration at the Congress venue.

Sunday, 5/11/2017

08:00 – 09:00	Placing posters (first posters session)
09:00 – 10:30	Opening Ceremony (Including the keynote address)
10:30 – 11:00	Coffee/Tea Break
11:00 – 13:00	General Lectures (Symposium I)
13:00 - 14:00	Lunch
14:00 – 18:00	Concurrent Sessions of Oral Paper Presentations
18:00 – 20:00	*Tuta absoluta* Workshop
20:00 – 21:00	Dinner

Monday, 6/11/2017

08:30 – 10:30	General Lectures (Symposium II)
10:30 – 11:00	Coffee/Tea Break
11:00 – 14:00	Concurrent Sessions of Oral Paper Presentations
14:00 – 15:00	Lunch Break
15:00 – 17:00	Concurrent Sessions of Oral Presentations + Poster Session
18:00 – 20:00	ASPP General Assembly Meeting
20:00-21:00	Dinner

Tuesday, 7/11/2017

8:00- 18:00	Touristic trip to Luxor

Wednesday,8/11/2017

08:30 – 10:30	General Lectures (Symposium III)

10:30 – 11:00	Coffee/Tea Break
11:00 – 14:00	Concurrent Sessions of Oral Paper Presentations
14:00 – 15:00	Lunch Break
15:00 – 17:00	Concurrent Sessions of Oral Presentations + Poster Session
18:00 – 19:30	Election of the new ASPP Executive Committee
20:00 – 22:00	Farewell Dinner

Thursday, 9/11/2017

08:30 – 10:30	General Lectures (Symposium IV)
10:30 – 11:00	Tea Break
11:00 – 12:30	Concurrent Sessions of Oral Paper Presentations
12:30 - 01:00	Closing Session
20:00-23:00	Farewell cultural event and awards ceremony

Friday, 10/11/2017

08:00 Departure to Cairo (by Buses)

FOREIGN EXCHANGE

The official currency is the Egyptian pound (L.E.). Foreign exchange facilities are available at the airport, banks and exchange offices. The current exchange rate of one US Dollar is around 17.00 L.E.

ENTRY VISA

Participants are responsible for obtaining their entry visas. Please contact the Egyptian 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 CAIRO / HURGHADA

Public buses and/or taxis are available at Cairo and Hurghada International Airports. The participants coming to Cairo first are requested to inform the Congress Secretariat (at least 2 weeks earlier) with their arrival schedule to arrange for them joining the buses going to Hurghada on Saturday 4th of November 2017. The participants flying directly to Hurghada can use the taxis available at the airport to take them to the venue resort.

WEATHER CONDITIONS

November weather in Hurghada is moderate and nice. The temperature ranges between 25-30°C. Swimming and diving are popular.

Symposia Program: 12th Arab Congress of Plant Protection (12th ACPP), Hurghada, Egypt, 4-9 November 2017.

KEYNOTE ADDRESS IN THE OPENING SESSION OF THE CONGRESS:

- **Building bridges between plant protection disciplines for sustainable management of crop pests.** By Dr. Rangaswamy Muniappan, International Association of Plant Protection sciences (IAPPS), Virginia Tech, USA.

SYMPOSIUM I. IMPLICATIONS OF DISEASE AND INSECT PEST'S BIOLOGY AND ECOLOGY ON DESIGNING PEST MANAGEMENT STRATEGIES

1. **IPM of soil-borne pests and sustainable food production.** By Dr. Abdelfattah A. Dababat, CIMMYT, Turkey
2. **Risk analysis and its impact on prevention and control measures of economically important pests.** *By Dr. Martin Ward, EPPO, France.*
3. **Effects of insect vector movement in developing and deploying integrated disease management strategies for whitefly-transmitted viruses.** *By Dr. Judith K. Brown, University of Arizona, USA.*

SYMPOSIUM II. ADVANCED TECHNOLOGIES AND PLANT PROTECTION

1. **Use of remote sensing and GIS for developing improved crops IPM strategies.** *By Dr. Burkhard Golla, Julius Kuhn-Institut, Germany.*

2. **Development of integrated fine scale systems for informed decision making in sustainable crop protection.** *By Dr. Tito Caffi, Universita Cattolica, Italy.*
3. **Overview on novel techniques for sustainable pest management in protected and open field agriculture.** *By Dr. J. Meyer, Bayer AG, Monheim, Germany.*
4. **The use of molecular tools in developing pest resistant crops. By** Dr. Alaadin Hamwiyeh, ICARDA, Cairo, Egypt.

SYMPOSIUM III. MANAGEMENT OF NEWLY EMERGING AND SERIOUS PESTS: THE CASE OF OLIVE DECLINE CAUSED BY *XYLELLA FASTIDIOSA*, A THREATENING DISEASE TO OLIVE PRODUCTION IN THE MEDITERRANEAN BASIN

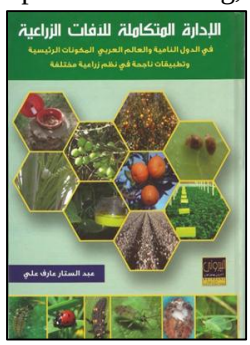
1. **Research progress on *X. fastidiosa*: biology, genetics, diagnosis and control.** *By Dr. Giovani Martelli, University of Bari, Italy.*
2. **Experience gained from efforts to contain olive decline in southern Italy and research needs to manage it in the Mediterranean region.** *By Dr. Anna Maria D'Onghia and Dr. Thaer Yassin, IAM-B, Italy.*
4. **The status of *X. fastidiosa* in the Arab region and efforts underway to contain it.** *By Mr. Shoki Al-Dobai, FAO-RNE, Cairo, Egypt.*

SYMPOSIUM IV. IMPACT OF CLIMATE CHANGE ON PLANT PROTECTION UNDER MEDITERRANEAN AND OASIS CONDITIONS

1. **Climate change and plant disease management in the Mediterranean region: present status and future needs.** By Dr. Sahar Zayan, ARC, Egypt.
2. **Role of Information packages for potential effects of climate change on crop pests dynamics.** *By Dr. Mahmoud Medany, Ministry of Agriculture and Land Reclamation, Egypt*
3- **Impact of Climate change induced by global weather engineering technology of "Chemtrails" on Plant Protection.** By Dr. Monir El-Husseini, Cairo university, Egypt.

GENERAL NEWS

Integrated Pest Management in Developing Countries and Arab World, the Main Components and Successful Applications in Different Agrosystems. This book was designed to be as a reference for the benefit of young scientist, undergraduate and graduate students in the field of integrated pest management and pest control in general. The book also contains applied examples on IPM for the benefit of the decision makers, plant protection institutions and personals, Extension, and other agribusiness sectors in the Arab world. Chapters of the book were organized in three main sections. The first section consisted of five chapters focusing on the history and the development of plant protection methods, the concepts of IPM, and the principles of IPM (Sampling, Monitoring, the biology and Ecology of the pest, Economic threshold, and the components of natural control). The second section contained the chapters 6 – 21 dealing with the main applied component of IPM system in addition to some other chapters on Modeling, organic farming, farmer field school, consumer response, the experiences of Arab countries with the application of IPM and the future of IPM in the agriculture sustainability. Examples on some successful projects and applications of IPM tools in different agro ecosystems from developing and Arab countries were presented in chapters 22-28 within section tree. These agroecosystems included field crops (wheat, cotton), vegetables (tomato in protected and open fields), and fruit trees (citrus, date palm, olive, apple and stone fruits). The IPM experience of some countries was presented for each crop and an overall outlines of suggested components was presented at the end of each chapter. Some emphasis was directed to the application of farmer field school in different agrosystems which proved to be an effective mean for dissemination of IPM principles and application in many parts of the world especially in the developing countries**. [Abdul– Sattar Arif Ali(Iraq), Beyrouni Publishing Co. PP 618,2017].**



Rodents, Taxonomy, Morphology, Behaviour and Control: Arabic book edited by Abd El-Aleem Saad Soliman Desoky (University of Souhag) and Saoudy Abdelwahab Said(University of Azhar-Assiut), 2017. Rodents are among the most important agricultural pests cause damage to crops, stored products, and public health, The rodents damage estimated to be around 42.5 million tons of cereals annually.

The book focuses on the status of rodents as a pest in Egypt and contains the following chapters:

-Economic importance of the rodents.
-Recognition of rodent species and the signs of its presence.
-Behavior of rodents
-Taxonomical status of rodents
-Survey of rodents in Egypt.
-Loss estimated methods.
-Control methods

Molecular Identification of Fungal Contamination in Date Palm Tissue Cultures.

Mohammed H Abass, Date Palm Research Centre, University of Basra, Basra, Iraq. Fungal contamination of in vitro cultures of date palm (*Phoenix dactylifera* L.) is the major constraint to their initiation and maintenance. Different molecular approaches have been applied successfully to analyze both inter- and intraspecific variation among fungal species as well as determine their identity. This chapter describes step-by-step procedures of molecular identification of fungal contaminants by internal transcribed spacer (ITS) products of the most common fungal contaminants of date palm tissue culture. To begin with, samples of genera *Alternaria*, *Aspergillus*, *Cladosporium*, *Epicoccum*, and *Penicillium* were collected to isolate each fungal genus and extraction of genomic DNA. Polymerase chain reactions were accomplished by ITS primers (ITS1 and ITS4) for each fungal contaminant as well as for sequencing. Subsequently, they are analyzed by Basic Local Alignment Search Tool (BLAST) search of ITS sequence to reveal the identity of each individual fungal contaminant species. https://link.springer.com/protocol/10.1007%2F978-1-4939-7159-6_9

International Training Course on: Date palm *(Phoenix dactylifera l.)* Root System Modeling and Architecture. 30 October – 03 November 2017, Ouarzazate, Morocco

The knowledge on roots is very scattered and fragmented. Studying the root system is complex and destructive of the plant and the soil. However, a rising interest on better understanding of the agronomical and ecological aspects is increasing among the researchers. Therefore, models development by computer simulation constitute a novel and complementary approach to in vivo experiments. Modeling root system consists on making a formal and more elaborated representation of the date palm root development and distribution. Selected models depend on agronomic and ecological issues and needs.

Training objectives:

✓ Train researchers and staff from laboratories and institutions working of date palm modeling.

✓ Spreading the knowledge, techniques and know-how in sampling, data analysis, modeling and simulation of plants developed at CIRAD BIOS.

✓ Better understanding of the use of plant simulation software PRINCIPES and XPLO and the applications on palm trees.

Trainers:
• Dr. Christophe Jourdan - CIRAD-Persyst MUR Eco & Sols - Montpellier, France.
• Dr. Claudio Littardi - CRSP - San Remo, Italy.
• Dr. Hervé Rey -CIRAD-BIOS UMR AMAP - Montpellier, France.
• Pr. Malika Bennaceur -LRZA - University of Oran1 Ahmed Ben Bella – Algeria.
• Pr. Mohammed Aziz Elhoumaizi -LBPM- University Mohammed 1st, Faculty of Science, Oujda -Morocco.
• Dr. Mohamed Ben Salah –ICARDA- OMAN.
• Dr. René Lecoustre-CIRAD-BIOS UMR AMAP - Montpellier – France

Partners:
• Laboratory for Arid Zone Research, University of Oran1 Ahmed Ben Bella (Algeria).
• Laboratory of Plant Biology and Microorganisms, Faculty of Sciences, Oujda (Morocco).
• Centre for Studies and Research on Palm Trees, San Remo (Italy).
• Agricultural Research Centre for International Development, Montpellier (France).
• Arid Regions Institute, Medenine (Tunisia).

Organizers:
- Pr. Mohammed Aziz Elhoumaizi, University Mohammed 1st, Faculty of Science, Oujda -Morocco.
- Hanane M'hamdi, FSO.
- Fouzia Alla, FSO.
- KawtarJdaini, FSO.
- Imane Zahiri, FSO.

Training language and documentation:
- The official language of the event is English with possibility of translation to French and Arabic.
- Documentation composed of Software and selected documents and presentations will be distributed to participants.

Training cost:
- Total cost of training and full accommodation (hotel + meals) during the short course (29 October to 03 November 2017) is 780 Euros (868 $).

Registration:
- Registration deadline: 01October 2017. The number of places is limited to 25.
- Applications should be sent to:

Prof. Med Aziz ELHOUMAIZI
University Mohammed 1st Faculty of Sciences,
Department of Biology, Oujda 60000, Morocco
Tel: +212666013757; Fax: +212536500603
E-mail: elhoumaizi@yahoo.fr

Program

30/10/2017
• Modeling of plants, historical (case of date palm).
• Presentation of the essential measures for the modeling of aerial and date the palm root systems.
• Description of the measurements protocol for the calculation of the sampling and the protocol of measurements for the modeling and the simulation relate dive to the root system.
• Software Installation: XPLOT and Dig- Rhiz.

31/10/2017
• Techniques for monitoring the root systems growth in rhizotron and sampling.
• Observational techniques for of adult root systems and growth monitoring in experimental on-site pits.
• The pit and calculation construction of biomass.
• Installation of the rhizotron.
• Sampling of the date palm root system.

01/11/2017
• Study of seedling's root systems of and the date palm rejects.
• Field data capture and transformation.
• Handling of the digitizing table.

02/11/2017
• Interpretation of root system data.
• Presentation of measurement results in the modeling framework.

03/11/2017
• Training recommendations.
• Training evaluation.

Risk Assessment of the Side-effects of Agricultural Pesticides on Non-target Organisms in Egyptian Agro-ecosystemsc". Pesticides are an integral part of agriculture and chemical control, using pesticides is still the most effective tool for controlling economic pests, but the wide and miss-use of pesticides has created several problems. Despite many advantages of pesticides, there are some potential hazards or risks when using farm chemicals. These risks may be associated with all chemicals, whether they are industrial chemicals, pesticides, household products or even natural chemicals found in the environment. Undesirable side effects of farm chemicals use usually stem from a lack of understanding their risks on the environment, compounded by indiscriminate and overuse of the product. A side effects of usage some pesticides results in unfortunate consequences to many non-target organisms, particularly natural enemies and pollinators. It is known that the populations of many arthropod species can develop various degrees of resistance to the pesticides action. Early detection of pesticide resistance provides a basis for management of resistant pest and natural enemy populations. Little has been reported about the biochemical mechanisms and molecular determination of developing resistance against the pesticides used. Rapid biochemical assays coupled with biological assays are potential tools for estimating both the intensity and the frequency of resistance in the field strains. Field and laboratory evaluations of the side effects of pesticides on non-target organisms in different Egyptians agro-ecosystems, including common species and crops, using advanced techniques are practiced to accomplish proposed objectives. The present proposal is a contribution for minimizing risk assessments of recommended agricultural pesticides to non-target organisms in Egyptian agro-ecosystems and for developing biotechnological management programs for non-target organisms based on safe control methods against target pests by using alternatives or less toxic or specific chemical pesticides, supported with biochemical assays of molecular studies on resistance in both target and their associated non-target organisms in different agro-ecosystems. This project achieved the objectives as follow:

Achievements

Throughout the project period (42 months, May 2013 – Jan. 2017), 190 field trials were conducted, in 14 locations (4 Governorates), in 15 crops, using 71 pesticides, on 20 target pests, 9 non-target pests and 5 non-target predatory species. The direct count technique was practiced for data collection. The majority of the recommended pesticides tested, demonstrated different population reduction percentages, reaching 85.8 and 94.60% for non-target pests and predators, respectively. Twelve laboratory studies were conducted on several non-target pests, predators, parasitoids and pollinators, based on the LC_{50} & LC_{20} & LC_{90} values for each pesticide. The toxicity index for each was estimated. Field and laboratory samples from some economic target pest species, such as the cotton boll worms and the fruit flies, non-target pests and predators were subject to enzyme assays. A discriminating concentration technique was used for rapid monitoring of pesticide resistance in the field-samples compared with the laboratory cultures. Molecular biology studies on the side effects of pesticides on target and non-target organisms, by detecting of DNA polymorphisms, using the random amplified polymorphic DNA polymerase chain reaction (RAPD-PCR), were practiced. The field collected samples showed differences in RAPD-PCR patterns of amplified genomic DNA as compared to the laboratory colonies. In conclusion, selectively of pesticides is a key data for the safe, sustainable agriculture and IPM implementation programs**. [Ahmed .H. El-Heneidy, (Egypt), 2017].**

11th International Congress of Plant Pathology (ICPP2018), Boston, Massachusetts, USA. The coming International Congress of Plant Pathology will be held in Boston, USA during the period 29 August-2 September 2018. There are possibilities of financial support for participants from developing countries to attend the congress. To learn more about qualifications and how to apply, please check the following link: http://www.icpp2018.org/hoteltravel/Pages/Travel-Awards.aspx

Opening of Nominations for the 10th Session 2018 of Khalifa International Award for Date Palm and Agricultural Innovation

Khalifa International Award for Date Palm and Agricultural Innovation, the Secretariat General of the Award announced opening of nominations for the 10th Session/2018.Opportunity is allowed for all the farmers, producers**,** researchers, academics and lovers of the date palm tree and agricultural innovation around the world to for one of the Award's five categories, namely: Distinguished Innovative Studies and Modern Technology Category, Distinguished Producers in Date Palm Sector Category, Pioneering and Sophisticated Innovations Serving the Agricultural Sector Category, Pioneering Development and Productive Projects Category and Influential Figure in the Field of Date Palm and Agricultural Innovation Category.

Prof. Abdelouahhab Zaid, Secretary General of Khalifa International Award for Date Palm and Agricultural Innovation pointed out that, after 10 years, the diagram of the Award is steadily growing forward at all the levels the Award has reached. Prof. Hilal Hamid Said Alkaabi, Member of the Board of Trustees of the Award, pointed out that the total number of candidates to the various categories of Khalifa International Award for Date Palm and Agricultural Innovation was 1010 participants, representing 48 countries around the world. The percentage of Arab participants in the Award was 87.5%, representing 20 Arab countries and including 9.3% participants from the UAE. The percentage of foreign participants, however, was 12.5%, representing 28 countries around the world.Alkaabi added that the highest participation rate at the Arab level over the last ten years was from Egypt with 189 participants followed by Iraq with 114 participants. Saudi Arabia was the third with 107 participants and Algeria fourth with 95 participants. The UAE was the fifth among the Arabs with 84 participants during ten years.

At the world's level, India has had the highest participation rate over ten years with 26 participants; USA was the second with 13 participant and Italy the third with 12 participants. At the categories level, the "Best Distinguished Studies and Researches Category" recorded the highest participation rate so far with 607 participants. The "Best Developmental Project Category" came second with 160 participants and the "Best Distinguished Influential Figure Category" third with 134 participants.

Under the Slogan " Date Palm and the Challenges of Future Outlook" Abu Dhabi Will Host the 6th International Conference of Date Palm, March 2018.

Abu Dhabi will host the 6th International Conference of Date Palm on March 18 - 20, 2018 amid a specific scientific and academic presence from world countries. Organized by Khalifa International Award for Date Palm and Agricultural Innovation in collaboration with University of the United Arab Emirate and the International Centre of Bio-saline Agriculture under the slogan "Date Palm and Challenges of Future Outlook", the conference aims at providing an opportunity for updating of scientific knowledge and foresight of the various challenges of production, propagation, protection and marketing of date palm around the world. The conference also aims at presenting the modern experiences of the United Arab Emirates and comparing them to those of similar date producing countries as well as support of international technical cooperation in the various areas of date production chain.The blessed tree is one of the most important salinity-tolerant plants and in which we should invest as matching the local environment of the Arab Region. The work papers of the conference will focus on the following four main topics: future challenges of date palm cultivation and production around the world; propagation, protection and marketing of date palm around the world; presentation of the modern experiences of the United Arab Emirates and comparing them to those of similar date producing countries and support of international technical cooperation in the various areas of dates production chain.The 6th International Conference of Date Palm will be a valuable opportunity for updating knowledge and exchange of scientific experiences in date palm and future challenges among all concerned parties, organizations and research centers around the world.

ASPP MEMBERS IN THE NEWS

Khaled Makkouk Elected as ISPP Vice-President for the Period 2018-2023.

The International Society for Plant Pathology (ISPP) was founded in 1968 to promote the world-wide development of plant pathology and the dissemination of knowledge about plant diseases and plant health management. At present, ISPP includes 67 national or regional plant parthology/protection societies from all around the world. Since its establishment, ISPP organizes an international plant pathology congress once every five years, and the coming congress will be held in Boston, USA, in August 2018. ISPP is managed by an executive committee (EC) that serves for a five years term. In the past few months, election procedures were followed to elect the new ISPP EC members who will serve for the period 2018-2023. Deadline for voting by member societies was July 15, 2017. The ISPP President, Dr. Greg Johnson, announced on July 20 the names of the new elected EC members as follows: Dr. Jan Leach, President (USA); Dr. Khaled Makkouk, Vice-President (Lebanon); Dr. Nathalie Pouserreau, Vice-President, (France); Dr. Brenda Wingfield, Secretary General (South Africa); Dr. Zamir Punja, Treasurer (Canada); Dr. Greg Johnson, Past President (Australia). The Arab Society for Plant Protection is happy to see one of its active members becomes an EC member of such a prestigeous international scientific society. This is also a credit for ASPP, who has been actively interacting for many years with other regional and international professional societies.

Congratulations for New Position

Dr. Shoki Al-Dobai, member of the Editorial Board of the Arab and Near Plant Protection Newsletter has been moved from his position as FAO Regional Crop Protection Officer for the Near East & North Africa to FAO Headquarters in Rome, Italy to assume his new position as Integration and Support Team Leader at the International Plant Protection Convention Secretariat. The editorial board expresses to our colleague Dr. Al-Dobai its heartfelt congratulations and wish him all success in his new position, and looking forward for his usual continuous support to the Newsletter and the Arab Plant Protection Society from his new position.

In memoriam:

Alaa Eldeen Dawood Ali, Ph.D., a retired chief researcher of plant pathology at the Ministry of Agriculture, Iraq, passed away in Bagdad 2017.He graduated from the University of Ain Al-Shames / Egypt 1972.

Abdul Sttar Al-Baldawi, Ph.D., a retired chief researcher of plant pathology at the Ministry of Agriculture, Iraq, passed away in Switzerland 2017.He graduated from the University of Louisiana, USA, 1972.

Khalid Mohamed Al-Adil, Ph.D., a retired professor of toxicology at the University of Baghdad, passed away in Baghdad July 29, 2017.He graduated from the Environmental Toxicology Dept., University of California, USA 1972.

SELECTED RESEARCH PAPERS

- ***Orius laevigatus* Strengthens its Role as a Biological Control Agent by Inducing Plant Defenses**. Sarra Bouagga, Alberto Urbaneja, Jose´ L. Rambla, Antonio Granell, Meritxell Pe´rez-Hedo, Journal of Pest Science, DOI 10.1007/s10340-017-0886-4,2017.

- **First Report of *Sweet Potato Leaf Curl irus* Infecting Sweet Potato in Sudan.**[H. S. Mohammed, M. A. El Siddig, A. A. El Hussein, and F. A. Ibrahim, and J. Navas-Castillo and E. Fiallo-Olivé (Sudan), Plant Disease ,101,(5): 849-850,2017]. http://www.plantwise.org

- **Temperature-dependent Functional Response of *Nesidiocoris tenuis* (Hemiptera: Miridae) to Different Densities of Pupae of Cotton Whitefly, *Bemisia tabaci* (Hemiptera: Aleyrodidae).** Mohammad Ali Ziaei Madbouni, Mohammad Amin Samih, Peyman Namvar, Antonio Biondi, Eur. J. Entomol. 114: 325-331, 2017. doi: 10.14411/eje.2017.040.

- **Natural Infection of Potato by Sclerotinia Sclerotiorum Causing Stem Rot Disease in Turkey.** Şener KurtAysun UysalMerve KaraSoner SoyluEmail authorEmine Mine Soylu, Australasian Plant Dis. Notes DOI 10.1007/s13314-017-0266-1, 2017].

- **Biological Control of Plant Diseases.** Philip A. O'Brien, Australasian Plant Pathology ,46, Issue 4, pp 293–304, 2017].

PAPERS PUBLISHED IN THE ARAB JOURNAL OF PLANT PROTECTION (AJPP) VOLUME 35, ISSUE 1, APRIL 2017

BIOLOGICAL CONTROL

Efficacy of a local isolate of *Beauvaria bassiana* (Bals.) Vuil. on the mortality of tomato leaf miner (*Tuta absoluta* Meyrick) larvae. M. Ahmed, I. Ghazal, L. Rajab and A. Haj Hasan (SYRIA). Pages 1-5.
http://dx.doi.org/10.22268/AJPP-035.1.001005

Evaluation of efficacy of four bacterial strains of plant growth promoting rhizobacter to induce systemic resistance against *Cucumber mosaic virus* in tomato plants grown in the greenhouse. H. Kawas, O. Hamoudi, A. Ahmad and I.D. Ismail (SYRIA). Pages 6-15.
http://dx.doi.org/10.22268/AJPP-035.1.006015

CONTROL

The effect of acetylsalicylic acid on conidia germination of some pathogenic fungi, and evaluation of its effectiveness against tomato leaf mold disease caused by *Cladosporium fulvum* Cooke under greenhouse conditions. L. Al-Matroud, R. Al-Baghdadi, S. Al-Masri Arafeih, A. Al-Ghazawi, S. Al-Chaabi and T. Abu-Fadel (SYRIA). Pages 16-26.
http://dx.doi.org/10.22268/AJPP-035.1.016026

HOST RESISTANCE

Reaction and growth of cucumber hybrids grafted on hybrid squash in response to infection with Fusarium wilt disease. A. Ibrahim, O. Hammoudi, G. Asmar and N. Sheikh Suleiman (SYRIA). Pages 27-35.
http://dx.doi.org/10.22268/AJPP-035.1.027035

Susceptibility of some local grape varieties cultivated in southern Syria to powdery mildew caused by *Erysiphe necator* Schwein. N. Alimad, W. Naffaa and F. Azmeh (SYRIA). Pages 36-42.
http://dx.doi.org/10.22268/AJPP-035.1.036042

ECOLOGY

New record of the golden apple snail *Pomacea canaliculata* in Iraq. R.F. Al-Jassany and M. M. Al-Hassnawi (IRAQ). Pages 43-47.
http://dx.doi.org/10.22268/AJPP-035.1.043047

PAPERS, WHICH WILL BE PUBLISHED IN THE ARAB JOURNAL OF PLANT PROTECTION (AJPP), VOLUME 35, ISSUE 2, AUGUST 2017

- **Effect of four strains of plant growth pr**
- **omoting rhizobacter (PGPR) for peroxidase enzyme activity and growth of the tomato plants under greenhouse conditions.** Hanan Kawas, Ahmed Ahmed, Omar Hammoudi and Imad Ismail (SYRIA).
- ***Susceptibility* of egg stage of potato tuber moth *Phthorimaea operculella* to native isolates of *Beauveria bassiana*.** Nisreen Houssain Alsaoud, Doummar Hashim Nammour and Ali Yaseen Ali (SYRIA)
- **Effect of some insecticides on the apple spider mites and predatory mites**. Jehan Al-Abdallah and Nariman Al-Zoghbi (SYRIA).
- **Genetic parameter study for yield parameters and its components studied for three hybrids of maize (*Zea mays*) under artificial infestation with the large corn stem borer *Sesamia cretica*.** Nizar Harba, Moussa Alsamara and Nadine Asaad (SYRIA).
- **Genetic diversity of tomato leaf miner using RAPD molecular Markers**. Fateh Khatib, Abdelnaser Treysi, Ziad El-eissa and Mustapha Bouhssini (SYRIA & MOROCCO).
- **Influence of brood type on infestation with Varroa mite in colonies of local Syrian honeybees.** Noureddine Yousef Zaher Hujeyj and Ali Khaled Al-Bouraqi (SYRIA).
- **Survey of nematodes associated with Burley and Virginia flue-cured tobacco fields along the Syrian coast.** May Ali Kaser and Nada Allouf (SYRIA).
- **The role of some fungal and bacterial biological control agents in inducing resistance to the fungal pathogen *Rhizoctonia solani* in cucumber plants.** Rabab Majead Abed, Hadi Mahdi Aboud and Ali Hashem El-Mousawy (IRAQ).
- **Virulance of the entomopathogenic fungus *Beauveria bassiana* againstthe tomato leaf miner*Tuta absoluta* (Meyrick).** Ziad Al Eissa, Abdul Nasser Trissi, Fateh Khatib and Mustapha El Bouhssini (SYRIA & MOROCCO).
- **Induced systemic resistance in tomato to root knot Nematodes by *Beauveria bassiana* and a mixture of mycorrhizal fungi.** Dhulfiqar L.E. Al-Sandooq and Farkad A. Fattah (IRAQ).
- **Screening of lentil genotypes for resistance to *Bean yellow mosaic virus* and effect of mixed infection on the susceptibility of some resistant lentil genotypes.** Aya Kanawaty, Safaa G. Kumari, Joop van Leur and Hassan Hammadi (SYRIA & Australia).

EVENTS OF INTEREST

2017 - 2018

25 - 27 July, 2017	International Conference on Emerging Trends Integrated Pest and Disease Management for Quality Food Production (IPM), Sarawak, Malaysia. https://www.mypadnow.com/ipm2017
11-15 September,2017	The 5th International Symposium on Biological Control of Arthropods, Langkawi, Malaysia. http://www.isbca-2017.org
11-15 September 2017	The 6th International Cereal Nematodes Symposium, Agadir-Morocco. http://www.cimmyt.org/event/6th-international-cereal-nematodes-symposium-agadir-morocco-11-15-sept-2017/
12-15 September, 2017	Asian Conference on Plant Pathology 2017 Jeju Island, South Korea. acpp2017.org/
25-27 September 2017	The 21st Australasian Plant Pathology Society conference., Brisbane, Queensland, www.apps2017.com.au/

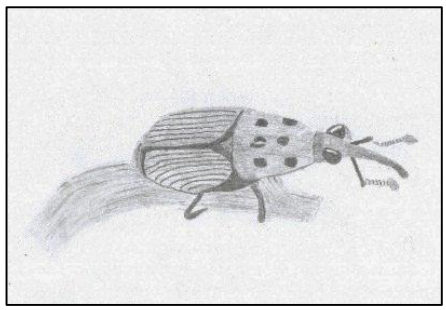
5 - 8 October ,2017	8th International Agriculture Symposium"AGROSYM 2017"-Bosnia & Herzegovina http://www.agrosym.rs.ba/index.php/en/
10-12 October, 2017	4th International Congress on Sunn Pest Management, Iranian Research Institute of Plant Protection Tehran, Iran.
23 – 26 October 2017	22nd meeting & scientific conference, VENUE: ARC, Wad Medani, Sudan. www.facebook.com/aais2015/
5 -9 November, 2017	12th Arab Congress of Plant Protection, ACPP 2017, Hurghada, Egypt. www.acpp2017.sci.eg
16 -17 December,2017	IJTA 6 International Conference on Recent Advances in Agriculture and Horticulture Sciences. New Delhi, India.
5 - 6 February, 2018	Global forum for innovations in agriculture 2018 ,ABU DHABI |-UAE, Abu Dhabi National Exhibition Centre. http://innovationsinagriculture.com/
7-9 March, 2018	The 23rd Biannual International Plant Resistance to Insects Symposium. RoCRE, Rothamsted Research, Harpenden, Hertfordshire, AL5 2JQ. UK. https://www.rothamsted.ac.uk/
19 - 23 March, 2018	Biocontrol Africa and The 16th New Agricultural Conference & Exhibition - Nairobi, Kenyain Kenya. https://www.newaginternational.com/index.php/en/
29 July – 03 Aug, 2018	11th International Congress of Plant Pathology (ICPP2018), Boston, Massachusetts, USA. www.icpp2018.org
July 29 -August 02, 2018	The III Latin American Congress of Acarology (III CLAC), and VI Brazilian Symposium of Acarology (VI SIBAC). Pousada dos Pirineus, Brazil. http://www.clac3sibac6.com.br/.
2 - 8 September,2018	XV International Congress of Acarology in Antalya, Turkey. http://www.acarology.org/ica/ica2018/
19 -24 July,2020	XXXVI International Congress of Entomology, Helsinki, Finland. www.ice2020helsinki.fi

SELECTED PESTS FROM ARAB AND NEAR EAST COUNTRIES

Adult and Juvenile Zelus renardii (Kolenati, 1857) (Heteroptera: Reduviidae)
(Copyright Francesco Porcelli and Valdete Sefa, University of Bari Aldo Moro,2017)

Predatory Assassin bug, *Zelus renardii* also called as a stink bug because they emit strong odor when disturbed. These predatory assassin bugs are considered as the most effective biological control agents because they can kill and feed on aphids, caterpillars, larvae and grubs of many insect pests that are responsible for causing a serious damage to many agricultural and horticultural, and ornamental plants. Adult assassin bugs are medium sized, blackish to brownish in color with about 1/2 to 3/4 inch long body. They have red eyes. Females generally lay eggs in cluster masses on the leaves and in the soil. These eggs hatch within a week into small nymphs that look like their parents but they are wingless. Adults have piercing and sucking type of mouthparts also called beaks that they use for killing and feeding on the body content of the host larvae or grubs. https://www.bugsforgrowers.com/products/predatory-assassin-bug-zelus-renardii

School children taking interest on red palm weevil and drew a nice pencil Sketch of the important pest of Date palm weevil. Her Name is Nuha Hassan, year 7, West Kirby Grammar School, West Kirby, Wirral, UK. Proud daughter of Dr **Nayem Hassan**.



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

Mahmoud Mohamed Youssef (Egypt), Mamoon Alalawi (FAO), Tokali, Heba (FAORNE), Lidia AbdelShahid, (FAORNE), Lara R Jaber(Jordan), Nisreen Alsaoud(Syria), Luaay Khalaf (Iraq-USA), Hussein Ali Salim (Iraq), Dhulfiqar Layth Al-Sandooq (Iraq), Samira O.Khlewy(Iraq), Hussain Fadel Alrubeai (Iraq), Mohammed Zaidan Khalaf (Iraq), Sarra Bouagga(Tunis), Sebahat K. Ozman-Sullivan (Turkey), Abdul– Sattar Arif Ali (Iraq), Hasanain Yousif Al Shalchi (Iraq), Abdulnabi Basheer(Syria), Mohammed Aziz Elhoumaizi(Morocco),Aziz Ajlan (Saudia Arabia), Mohamed Ibrahim Mohamed Ahmed Mannaa(Egypt-Korea), Abd El-Aleem Saad Soliman Desoky(Egypt), Khawla Zouglami(Tunis), Qasim Ahmed (Iraq-Australia), Hassan Sulaiman Ahmed Mahdi (Yemen), Francesco Porcelli (Italy), Valdete Sefa(Italy), Nuha Hassan,(UK), Nayem Hassa (UK) , Anne- Sophie Roy (France-EPPO), Leena Abdelwahab Irshaid (Jordan). Abdelouahhab Zaid (UAE), Samir Al-Shakir(UAE).

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.