Arab and Near East Plant Protection Newsletter

Number 59, August 2013

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

Arab and Near East Plant Protection Newsletter

Number 59, August 2013

CONTENTS

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

EDITORIAL

The Neonicotinoid Pesticides Ban-a Courageous Act by the European Commission

The potential harm caused by pesticides used to control crop pests on beneficial insects and other non-target organisms is of biologists and environmental activist's concern for many years. Recent studies suggest that the number of bees, whether honey or wild bees, are declining in many countries around the world, and biologists are pointing fingers towards some pesticides as causing increasing bee deaths. Pesticide companies say that pesticides are not the problem, whereas scientific evidence shows the opposite. The issue these days is focusing on the effect of neonicotinoids on both domestic honeybees and wild pollinators such as bumblebees.

Neonicotinoids are widely used at present for the control of aphids. As systemic pesticides, they spread through the plant into the nectar and pollen. They are neurotoxins, binding to neural receptors in the insect brain to cause paralysis and death. Experimental evidence suggest that exposure of bees to very low levels that are not sufficient to kill, affects their behavior, particularly their ability to learn, gather food and navigate. Evidence also suggests that sub-lethal doses of those chemicals reduces bee's ability to produce queens by 85% and leads to a drop in egg-laying of 30%. The above was enough evidence for the European Commission to decide in April 2013 to impose a ban on the use of neonicotinoid pesticides in the European Union. These chemicals will now be banned for two years for crops that attract bees. All EU nations must impose the ban by December 2013.

This is a courageous act by the European Commission which will hopefully be followed by similar ban imposed by other countries where there is evidence for reduced bee population in regions applying this group of pesticides. Such a two years ban will provide a large scale field trial which can lead to a realistic evidence for the harmful effect of these chemicals on bee population. For more information on this issue the readers are referred to a recently published book "A Sting in the Tale" written by the British biologist Dave Goulson, and to his article "Bees need Europe's pesticide ban, whatever the UK says" published in New Scientist, 30 April 2013.

Khaled Makkouk
National Council for Scientific Research (CNRS)
Beirut, Lebanon

INVASIVE AND NEW PESTS

OMAN

First report of *Euphorbia larica* dieback caused by *Fusarium brachygibbosum* in Oman. *Euphorbia larica* Boiss. (Arabic =*Isbaq*) is a dominant and common component of the native desert flora of northern Oman. Traditional ethnobotanical uses have included use of the latex for treating camels with parasites. In February 2011, *E. larica* plants showing stem lesions up to several cm long and in many cases with stem dieback were collected from Al-Khoudh 50 km west of Muscat. The disease appeared widespread within the location where several dead specimens were also recorded, although the cause was unclear. Sections (5 mm) of five diseased branches taken from different plants and placed on potato dextrose agar (PDA) and in all cases yielded *Fusarium*-like colonies. Colonies recovered were initially white becoming rose to medium red in color with abundant aerial mycelium. Macroconidia were scarce and scattered (mean of 20 spores: 26.83 × 4.73 µm) with three to four septa per spore; microconidia were slightly curved, ovoid, and fusiform (mean of 20 spores: 11.64 × 4.03 µm) with zero to two septa per spore. Spherical chlamydospores (mean of 20 spores: 11.05 µm) were terminal and intercalary, single, and in chains. In vitro characters and spores measurements conformed to previously described features of *Fusarium brachygibbosum* Padwick. Mycelial plugs (5 mm) were taken from 7-day-old cultures of the fungus grown on 2.5% PDA and applied to a small incision (3 mm) on the stems of healthy *E. larica* grown in situ and protected with wet cotton and Parafilm. The residual agar, mycelium, cotton, and Parafilm were removed after 7 days and symptoms were recorded. Control stems were inoculated using PDA (5 mm) plugs alone and inoculations were repeated twice. Artificial inoculations resulted in dieback of all stems within 11 days and fungal colonies identical to initial isolations were recovered from artificially infected surface-sterilized stem pieces. Identification of *F. brachygibbosum* was confirmed by comparing sequences generated from the internal transcribed spacer (ITS) region of the ribosomal DNA (ITS1 and ITS4 primers) and the intron region of translation elongation factor alpha (EF1-α) (EF-1-986 and EF-728 primers). The ITS and EF1-α sequences were found to share 100% and 99% nucleotide similarity to previously published sequences of the ITS (HQ443206) and EF1-α (JQ429370) regions of *F. brachygibbosum* in GenBank. The accession number of ITS sequence of one isolate assigned to EMBL-Bank was HF562936. The EF sequence was assigned to EMBL-Bank accession (submission number Hx2000027017; number will be sent later). This pathogen has previously been reported on date palm in Oman but, to our knowledge, this is the first report of this pathogen on *E. larica*. [H. Al-Mahmooli, Y. S. Al-Bahri, A. M. Al-Sadi and M. L. Deadman (Oman). Plant Disease, 97(5): 687, 2013].

TUNISIA

First report of *Grapevine rupestris stem pitting-associated virus* in Tunisian Grapevines. *Grapevine rupestris stem pitting-associated virus* (GRSPaV), a member of the genus *Foveavirus*, is associated with Rupestris stem pitting, a disease that, along with Kober stem grooving (KSG), Corky bark (CB) and LN33 stem grooving, constitute the rugose wood disease complex of grapevine. *Grapevine virus A* (GVA) and *Grapevine virus B* (GVB), which are associated with the KSG and CB, respectively, are common in Tunisian grapevines, whereas no information is avail- able on the presence of GRSPaV. Therefore, 140 samples of 10 table grape varieties (Italia, Superior Seedless, Down Seedless, Red Globe, Victoria, Early Sugar, Black Pearl, King's Ruby, Rich Baba and Sultanine) from different Tunisian grapevine-growing areas were collected and in- dexed for the presence of this virus by RT-PCR using as template total nucleic acid preparations extracted from phloem tissue (and primers RSP-48 (5'-AGCTGGGATTATAAGGGAGGT-3') and RSP-49 (5'-CCAGCCGTTCCACCACTAAT-3'). A 330 bp product corresponding to a fragment of the GRSPaV coat protein gene was amplified from 112 samples, accounting for an infection rate of 80%. The virus was present in all the surveyed areas and grape cultivars tested. More specifically, it was detected in all samples of cv. Early Sugar, King's Ruby and Sultanine, whereas in the other cultivars the infection rate ranged from 17% (cv. Down Seedless) to 97% (cv. Italia). To our knowledge, this is the first report of GRSPaV in grapevines in Tunisia. [I. Soltani, N. Mahfoudhi, T. Elbeaino, M. Digiaro, M.R. Hajlaoui (Tunisia). Journal of Plant Pathology, 95(1): 218, 2013].

TURKEY

First report of a 16SrIX group (pigeon pea witches'-broom) phytoplasma associated with sesame phyllody in Turkey. Sesame (*Sesamum indicum* L.) is an important oilseed crops widely grown in the southern regions of Turkey. Sesame seeds are primarily used in production of tahini as well as a garnish on sweets and bakery products in the country. Sesame plants with phyllody disease symptoms have increasingly been observed in the fields of Antalya province since 2007. The disease incidence in these fields was found to range from 37 to 62%. Infected plants display a variety of the disease symptoms such as virescence, asymptomatic shoot proliferation, infertile flower formation, reduced leaf size, and thin and weak capsule development. Total genomic DNA was extracted from samples collected from symptomatic (10 plants) and asymptomatic healthy-looking plants (10 plants) using a CTAB method and amplified with universal primers P1/P7 and R16F2n/R16R2 in direct and nested PCR, respectively. Amplifications of the DNA from the symptomatic plants yielded a product of 1.8 kb in direct and 1.2 kb in nested PCR assays. No amplification was observed in symptomless plants of the same age and collected from the same fields. Amplicons were purified, cloned in a pTZ57R/T Vector, and sequenced using a Beckman Coulter 8000 CEQ Genetic Analysis System. Four aligned 16S rDNA sequences (1,845 bp) were found to be all identical and belonging to one species. One sequence was deposited in GenBank under the accession number KC139791. A BLAST similarity search revealed that the sequence shared 99% homology with the sequences of the members of 16SrIX group phytoplasmas, '*Brassica rapa'* phyllody phytoplasma (HM559246.1) and Iranian Almond witches'-broom phytoplasma (DQ195209.1) available in GenBank. In addition, *i*PhyClassifier software was employed to create a virtual RFLP profile. The analysis showed that the RFLP profile of the sesame phytoplasma 16S rDNA sequence is identical (a similarity coefficient of 1.00) to the profile of the 16Sr group IX phytoplasma reference sequence (Y16389). A phylogenetic tree was also constructed using the neighbor joining plot option of the Clustal X program. The sequence clustered together with 16SrIX group phytoplasmas. To our knowledge, this is the first report of a natural infection of sesame by a new phytoplasma species from the 16SrIX group in Turkey. [M. Catal, C. Ikten, E. Yol, R. Üstün, and B. Uzun (Turkey). Plant Disease, 97(6): 835, 2013].

New data on large carpenter-bees of Turkey with considerations about their importance as pollinators. This study is formed on the basis of original data and published records on approximately 210 bee samples that have been collected almost all areas of the country, since the 1960s, which is presented based on the current knowledge of the *Xylocopa* Latreille 1802 fauna of Turkey. Ten species have been recognized as occurring in Turkey. Of these, three species, *X. valga* Gerstaecker, 1872, *X. violacea* (Linnaeus, 1758), and *X. iris* (Christ, 1791) were common and abundant. *Xylocopa olivieri* Lepeletier, 1841 and *X.* (*Koptortosoma*) *pubescens* Spinola, 1838 were moderately common, those of *X.* (*Copoxyla*) *armeniaca* Warncke, 1982, *X.* (*Ancylocopa*) *parviceps* Morawitz 1895, *X.* (*Xylocopa*) *varentzowi* Morawitz, 1895, *X.* (*Ctenoxylocopa*) *fenestrate* (Fabricius, 1798), and *X.* (*Proxylocopa*) *rufa* Friese, 1901 occur in restricted areas within Anatolia and could be accepted as rare species. Update floral associations and geographical distribution were included for each species. Field studies revealed that *Xylocopas* pecies, particularly *X. valga*, *X. violacea*, *X. iris* and *X. olivieri* are valuable pollinators of some cultivated plants, such as apple (*Malus domestica* Borkh), pear (*Pyrus communis* L.), plum (*Prunus domestica* L.), alfalfa (*Medicago sativa* L.), sainfoin, (*Onobrychis viciifolia* Scop), red clover (*Trifolium pretence* L.), soybean (*Glycine max* L.), beans (*Phaseolus* spp.), pea (*Pisium sativum* L.), chickpeas (*Cicer arietium* L.), peanut (*Arachis hypogaea* L.), licorice (*Giycyrrhiza glabra* L.), sunflower (*Helianthus annuus* L.), and *Canthamus tinctorius* L. Furthermore, *X. pubescens* has a potential in using pollination of certain plants in enclosures. [Hikmet Ozbek (Turkey). Journal of the Entomological Research Society, 15(1): 79-89, 2013].

UNITED ARAB EMIRATES

First report of *Tuta absoluta* in the United Arab Emirates. The presence of *Tuta absoluta* (EPPO A2 List – Lepidoptera: Gelechiidae) has recently been detected in the United Arab Emirates. The identity of the pest was confirmed by the British Natural History Museum. In July 2012, larvae of *T. absoluta* were found attacking leaves and fruits of tomato and aubergine (*Solanum lycopersicum, S. melongena*) grown in greenhouses. This is the first report of *T. absoluta* from the United Arab Emirates. The situation of *Tuta absoluta* in the United Arab Emirates can be described as follows: **Present, first found in 2012 in glasshouse tomato and aubergine crops.** [EPPO Reporting Service. No. 4: page 3, 2013].

YEMEN

First report of *Tuta absoluta* in Yemen. In January 2013, *Tuta absoluta* (Lepidoptera: Gelechiidae – EPPO A2 List) was found infesting tomato (*Solanum lycopersicum*) plants in Yemen, in the governorates of Sana'a, Hudeidah, Lahj, Abyan, and Al-Baydah. In February 2013, official surveys detected the pest on 304 tomato farms located in 88 districts of 12 governorates. These surveys also showed that 70% of the inspected tomato crops were infested by *T. absoluta*. It is estimated that in the absence of an effective control program, potential damage to tomato production could exceed 300 million USD. A control program is being developed and will include pheromone trapping (more than 15 000 pheromone traps will be distributed), a media campaign, and training of extension agents and growers on how to manage the pest. This is the first report of *T. absoluta* in Yemen. The situation of *Tuta absoluta* in Yemen can be described as follows: **Present, first found in 2013 in 12 governorates, under official control.** [EPPO Reporting Service. No. 4: page 3, 2013].

RESEARCH HIGHLIGHTS

EGYPT

Controlling pests in canola – the role of natural enemies, climatic factors and performance of genotypes. Screening twenty five available advance lines of canola plant based on population density of the recorded pests throughout 2011 and 2012 seasons at Ismailia Agricultural Research Station Farm, Egypt were studied. The cabbage aphids; *Brevicoryne brassicae*, thrips; *Thrips tabaci*, diamondback moth; *Plutellaxy lostella***,** leafminer; *Liriomyza* sp**.**, whitefly; *Bemisia tabaci* and two-spotted spider mite; *Tetranychus urticae* were surveyed pests in canola. Six predacious species related pests; *Coccinella septempunctata*, *C. septempunctata*, *Stethorus gilivifrons*, *Chrysoper lacarnea*, *Syrphus corolla* and *Orius* spp. *Diaretiella rapae*, *Cotesia plutellae* and *Diadegma inslare* were the most common parasitoids emerging from the collected samples. The analysis of variance revealed significant variation among dates of observations, lines and in their interaction for all surveyed pests and their natural enemies. The results revealed that the maximum all overall mean numbers of different pests on canola genotypes at studied district throughout 2011 and 2012 seasons was 2.34 individuals/plant in genotype (Serw6 x N.A302), whereas the lowest level was 1.32 individuals /plant in genotype (Serw 4 x N.A355). With regard to the overall means of total number of estimated predators and parasitism percentages were 0.36 individuals and 27.65% in genotypes each of (N.A355 x N.A302) and (Serw6 x N.A302), respectively. Concerning the populations of pests at various dates, the highest level was recorded on 24/03/2011 (3.54 individual/plant) and on 17/04/2012 (3.54 individuals/plant), whereas the lowest was on 17/02/2011 (0.08 individuals/plant) and on 08/05/2012 (0.28 individual/plant). The percentage of explained variance of abiotic factors (minimum-maximum temperatures and relative humidity) and biotic factors (predators and parasitism percentages) altogether in the population densities of *B. brassica*, *T. tabaci*, *P. xylostella*, *Lirriomyza* sp., *B. tabaci* and *T. urticae* in the second season were the greater percentage values as 87.0, 94.7, 88.9, 70.1, 63.2, and 68.0%, respectively, compared in the first season (60.4, 89.6, 47.7, 31.1, 45.5 and 69.8% respectively). Mean performance of agronomic characters, phenotypic coefficient of variation (PCV), genotypic coefficient of variation (GCV), environmental coefficient of variation (ECV), heritability (Hb) and genetic advance (GS%) for yield and its attributes in canola genotypes were also studied. These results were of great interest for rapeseed breeder and yet they responded differently towards pest infestation to select highest seed and oil yields and free erucic acid in oil genotypes and could be involved in breeding program cultivated in a new land and to improve future integrated pest management programme of canola in Egypt. [Atef Mohamed Sayed, Wael Teilep (Egypt). Canadian Journal of Plant Protection, 1(2): 64-75, 2013].

Survival, fecundity and reproductive recovery period of *Neoseiulus californicus* (McGregor) during long-term preservation on maize pollen and after switching to feeding on *Tetranychus urticae* Koch. Immature stages of the predacious mite, *Neoseiulus californicus* (McGregor) were reared on eggs of *Tetranychus urticae* Koch and gravid females were preserved on pollen of maize, *Zea mays* L. for 30, 45, 60 and 80 days. Afterwards, pollen was shifted to prey eggs for 15 days to evaluate their survival, fecundity and reproductive recovery period. All adult females of *N. californicus* survived the different maintenance periods and the following 15 days after pollen switch to the prey. Furthermore, predator females consuming pollen produced relatively few eggs during the preservation experiments, while they laid the majority of eggs during 15 days after pollen change to *T. urticae* without a second mating. The fecundity during the conservation periods significantly

increased with increasing the maintenance period, whereas the reverse occurred subsequent to the shift to the prey. Moreover, the reproductive recovery period after the switch to *T. urticae* was inversely associated with the preservation period. Therefore, maize pollen is a useful alternative food for long-term survival and for maintaining fecundity of *N. californicus* females to exhibit an adequate numerical response to *T. urticae*at a subsequent time. [S.A. Saber (Egypt). Archives of Phytopathology and Plant Protection, 46(7): 789-795, 2013].

Seasonal dynamics of phytonematodes associated with date palm cvs. Barhi and Hyani as affected by soil temperature and moisture. Seasonal fluctuation of the reniform nematode, *Rotylenchulus reniformis* in soil and roots and the spiral nematode, *Helicotylenchus* sp. in soil and roots of date palm (*Phoenix dactylifera* L.) cvs. Barhi and Hyani over one year revealed that these nematodes were negatively correlated with the prevailing soil temperature (°C) and were positively correlated with percentage soil moisture at different sampling months and seasons. Correlation coefficients (r) were calculated to ascertain these relationships. [Asmahan M.S. Lashein and M.M.A. Youssef (Egypt). Archives of Phytopathology and Plant Protection, 46(8): 937-941, 2013].

Effect of some pesticides with different target sites on the pink bollworm, *Pectinophora gossypiella* (Saunders). Laboratory bioassay showed that the conventional pesticide, lambda-cyhalothrin, was more effective than thiamethoxam and buprofezin when tested against the newly hatched larvae of the pink bollworm, *Pectinophora gossypiella* (Saunders). The LC_{50} of thiamethoxam, buprofez in and lambda-cyhalothrin was 5.9, 87.5 and 4.9 ppm, respectively. When the synergism agent, piperonyl butoxide (PBO), was combined with the tested pesticides, the toxicity of all pesticides was increased and the LC_{50} was decreased to 1.4, 15.1 and 2.6, respectively. Some biological aspects (larval duration, pupal stage, number of eggs laid per female and percent of hatchability) were affected by buprofezin treatment more than thiamethoxam and lambda-cyhalothrin. A field experiment showed that lambda-cyhalothrin was the most effective when compared to thiamethoxam and buprofezin. The percentage of reduction in pink bollworm infestation to cotton bolls by using lambda-cyhalothrin, thiamethoxam and buprofezin was 85.7, 39.3 and 19.5%, respectively, during 2009 cotton season, and 80.1, 64.7 and 39.1%, respectively, during 2010 cotton season. These results suggested that lambda-cyhalothrin is the most effective pesticide against the pink bollworm larvae. And also, buprofez in has a good role in incidence of disturbance in developmental process. In addition, the use of synergistic agent PBO has a good role in increasing toxicity of all the tested pesticides especially with thiamethoxam. [Al-Kazafy Hassan Sabry (Egypt). Archives of Phytopathology and Plant Protection, 46(8): 942-951, 2013].

Biocontrol agents against the leafminer, *Liriomyza trifolii* in faba bean fields. Effect of entomopathogenic fungi formulations, *Beauveria bassiana*, *Verticillium lecanii*, *Metarhizium anisopliae and Paecilomyces fumosoroseus*, in controlling *Liriomyza trifolii* (Burg.) (Diptera: Agromyzidae), compared with botanical insecticide, Nimbecidine against *L. trifolii* was studied. Investigated compounds were applied twice at 15 days interval between sprays. The percentage reduction in larvae population and crop yield was estimated. Results showed that *M. anisopliae* was the most efficient compound among the other entomopathogenic fungi. Also, there were no significant differences between Nimbecidine and Bio-Magic (*M. anisopliae*). However, Nimbecidine and Bio-Magic caused 69.9 and 68.9% reduction in live larvae population after two applications. Also, Nimbecidine and Bio-Magic plots achieved 14.7 and 10.0 kg dry weight seeds/100 plants, respectively, compared to 5.7 kg dry weight seeds/100 plants in control plots. Nimbecidine and Bio-Magic were considered promising compounds in controlling *L. trifolii* and it could be exploitation in the integrated pest management programme of faba bean crop. [A.M.E. Abd El-Salam, H.A. Salem and S.A. Salem (Egypt). Archives of Phytopathology and Plant Protection, 46(9):1054-1060, 2013].

IRAN

Efficacy of plant essential oils on post-harvest control of rot caused by *Botrytis cinerea*on kiwi fruits. Antifungal activity of the essential oils of *Carum carvi* and *Pimpinella anisum* against *Botrytis cinerea* fruit rot of key kiwi fruit was studied. In vitro experiments, antifungal activities of essential oils were tested on potato dextrose agar media. Results of an *in vitro* experiment showed that these essential oils, at all applied concentrations, inhibited grey mould growth. Black caraway essential oil at concentrations of 600 and 800 $\mu L\ L^{-1}$inhibited germination spores of grey mould. Then, the fruits were artificially inoculated with a suspension at 1×10^5 conidia/ml and then treated with different concentrations of these essential oils. The results of *in vivo* conditions showed

that black caraway and anise essential oils applied at all concentrations were increasing the shelf life and inhibited the grey mould growth on kiwi fruits completely in comparison to control. The result showed that black caraway and anise oils at a concentration of 800 μL L^{-1} had higher total soluble solids, ascorbic acid, titrable acidity and antioxidant content compared to untreated fruits.[Hamide Fatemia,Mohammad Hossein Aminifarda and Samane Mohammadia (Iran). Archives of Phytopathology and Plant Protection, 46(5): 536-547, 2013].

Effective and ineffective resistance genes to wheat yellow rust during six years monitoring in Ardabil. Stripe (yellow) rust caused by *Puccinia striiformis* f. sp. *tritici* is the most devastating disease of bread wheat (*Triticum aestivum*) in the cool winter areas. This rust disease represents a constant threat to wheat production in several countries in Central and Western Asia. A wide range of virulent yellow rust pathotypes is evolving in this region causing the breakdown of widely utilised sources of resistance in wheat. Hence, the knowledge of effective resistance genes in the region will enable breeders to target those useful genes in their breeding programmes. From 2006 to 2012, in order to determine of effective resistance genes in Ardabil, north-west of Iran, virulence patterns of wheat yellow rust were studied under the field conditions by planting of differential sets and isogenic lines. The results showed that yellow rust resistance genes *Yr1*, *Yr2*$^{+}$, *Yr3V*, *Yr3a*, *Yr4a*, *Yr4*, *Yr5*, *Yr7*$^{+}$, *Yr10*, *Yr15*, *Yr16*, *YrCV*, *YrSD* and *YrND* were effective and race-nonspecific resistance genes *YrA3*, *YrA4*, *Yr18* and *Yr29* were partially effective during study periods. Genes *Yr2*, *Yr6*, *Yr7*, *Yr9*, *Yr17*, *Yr20*, *Yr21*, *Yr22*, *Yr23*, *Yr24*, *Yr25*, *Yr26*, *Yr27*, *YrSU*, *YrSP* and *YrA* were found ineffective. The Genes found effective against yellow rust under natural conditions may be deployed singly or in combinations with durable resistance genes to develop high yielding resistant wheat cultivars in wheat-growing areas in where yellow rust races have the same virulence profile to the prevalent race/s of Ardabil. [Safar Ali Safavi, Farzad Afshari and Amir Yazdansepas (Iran). Archives of Phytopathology and Plant Protection, 46(7): 774-780, 2013].

Sublethal effects of *Thymus vulgaris* essential oil on life-table parameters of two-spotted spider mite, *Tetranychus urticae* Koch (Acari: Tetranychidae). Sublethal effects of *Thymus vulgaris* were investigated on life-table parameters of *Tetranychus urticae* Koch. (Acari: Tetranychidae) in the laboratory conditions at 25 ±1 °C, 70 ±10% RH and a 14:10 h (L:D) photoperiod. Bioassay was conducted to assess the effect of different concentrations of *T. vulgaris* essential oil on two-spotted spider mite. LC_{50} and LC_{20} of *T. vulgaris* on *T. urticae* were calculated as 18.86 and 6.24 μl/litre air for 24 h after treatment. In the sublethal effects, after 24 h exposure to LC_{50} concentration, mortality, fecundity and longevity of the females that survived from treatment were determined. Results showed that *T. vulgaris* caused significant reductions in fecundity and longevity of adults. Life-table assay indicated that the intrinsic rate of increase (r_m), net reproductive rate (R_0), finite rate of increase (λ), mean generation time (T), significantly reduced treated females compared to control. These results suggest that *T. vulgaris* could be incorporated in integrated pest management programmes of *T. urticae*. [Moloud Gholamzadeh Chitgar, Roya Khosravi, Jalal JalaliSendi and Mohammad Ghadamyari (Iran). Archives of Phytopathology and Plant Protection, 46(7): 781-788, 2013].

Efficacy of pesticides on the functional response on larval ectoparasitoid, *Habrobracon hebetor* Say (Hymenoptera: Braconidae). Exposing to sub-lethal and low lethal doses of pesticides may cause changes in natural enemy behavioural, such as functional, response. In this study, the effects of chlorpyrifos, carbaryl, abamectin and spinosad were evaluated on the functional response of the *Habrobracon hebetor* to different densities of last instar larvae of *Anagasta kuehniella* Zeller. Young adult females of the parasitoid were exposed to LC_{30} of chlorpyrifos, carbaryl, abamectin and spinosad that were 0.32, 4.03, 3.05 and 17.51 mg a.i./l for 24 h, respectively. Host densities of 2, 4, 8, 16, 32 and 64 were offered to treated young females for 2 h in 10-cm Petri dishes and then the parasitism data were recorded. Experiments were conducted in eight replications. Functional response type was determined using logistic regression and the parameters were appraised by non-linear regression using statistical analysis software. Functional response was type Ш in control and insecticide treatments. Searching efficiency in control, chlorpyrifos-, carbaryl-, abamectin- and spinosad-treated wasps were 0.008±0.002, 0.002±0.0009, 0.0034±0.0013, 0.0076±0.002 and 0.0073±0.002 $h^{-1}$and handling times were 1.38±0.1, 7.64±1.01, 3.3±0.315, 1.55±0.1 and 1.46±0.11 h, respectively. Chlorpyrifos and carbaryl had the highest effect on searching efficiency of *H. hebetor*. Spinosad and abamectin showed less adverse effect on the functional response parameters. Finally, after conducting the advanced field studies, spinosad and abamectin may be used as a compatible chemical material with biological control agent in integrated pest management programmes. [Vahid Mahdavi,

Moosa Saber, Hooshang Rafiee-Dastjerdi, Ali Mehrvar & Mehdi Hassanpour (Iran). Archives of Phytopathology and Plant Protection, 46(7): 841-848, 2013].

Virulence patterns of barley yellow rust and effective resistance genes to *Puccinia striiformis* in three parts of Iran. Stripe rust of barley (*Hordeum vulgare* L.), caused by *Puccinia striiformis* f. sp. *hordei*, is a serious problem of barley production in many parts of the world. Monitoring of the pathogen virulence factors and their changes provides basic information for development of an early warning system to breeders and researchers. To monitor the regular virulence changes, trap nurseries comprising of 12 barley differential sets were planted at different parts of Iran in six consecutive years 2007–2012. When the infection and severity under natural infection on susceptible cultivar Afzal as the check was high, then the response of each line was assessed using modified Cobbs scale. Results revealed that no virulence was observed on plants with resistance genes *rpsEm1, rpsEm2, rpsHF, Rps4, rpsVa1, rpsVa2 and rpsAst*. Therefore, these genes were considered effective genes and can be used to pyramid with those for race-non-specific resistance genes to achieve more durable and highly effective resistance to stripe rust. The plants with the resistance genes *rps2, Rps1.b, Rps3* and *rpsI5* showed susceptible reaction and virulence was observed on them, thus their resistance genes were considered ineffective. [Safar Ali Safavi, Yousef Jahani-Jelodar and Shapour Ebrahimnejad (Iran). Archives of Phytopathology and Plant Protection, 46(8): 903-910, 2013].

PAKISTAN

In vitro evaluation of some chemicals and plant extracts against colony growth of *Xanthomonas campestris* pv. *malvacearum* causing bacterial blight of cotton. Cotton (*Gossypium hirsutum* L.) occupies a significant place in cash crops of Pakistan. Bacterial blight is the most destructive disease of cotton. Three chemicals (Plant Protector, Agrimycine, and Copper oxy Chloride), and three plant extracts (*Citrullus colocynthis*, *Nicotiana tobaccum*, and *Curcuma lunga*) were evaluated *in vitro* by using inhibition zone technique against colony growth of *Xanthomonas campestris* pv. *malvacearum*. Plant Protector was found the most effective at 600 ppm after 72 hours of treatment. In chemicals, inhibition zone area increased with increasing dose and time. No relation was seen among plant extracts in colony growth inhibition of bacteria with respect to time and concentrations. Tobacco's extract (*Nicotiana tobaccum*) was the most significant at 10% concentration. Treatment means were compared by Tukey's HSD test. [Muhammad Ehtishm-ul-haq (Pakistan). Canadian Journal of Plant Protection, 1(2): 78-82, 2013].

Biocontrol potential of *Pasteuria penetrans*, *Pochonia chlamydosporia*, *Paecilomyces lilacinus* and *Trichoderma harzianum* against *Meloidogyne incognita*. The root-knot nematode, *Meloidogyne incognita*, is a sedentary endoparasitic plant pathogen with a very wide host range, which causes annual crop losses amounting to millions of dollars. The small number of available nematicides and restrictions on the use of non-fumigant nematicides due to high toxicity to humans and non-target organisms hinder effective nematode control. A possible alternative to chemical nematicides is the use of biological control agents for the management of this nematode. In the present study, the efficacy of four biocontrol agents was tested against *M. incognita* at different doses. The biocontrol agents *Pasteuria penetrans*, *Pochonia chlamydosporia*, *Paecilomyces lilacinus* and *Trichoderma harzianum* were mass produced and mixed with the formalin sterilized soil at the rates of 2×10^3, 4×10^3, 6×10^3, 8×10^3, and 1×10^4 endospores/chlamydospores/cfu per g of soil. Okra seeds (cv. Sabz Pari) were sown in pots of soil amended with the different agents, and 10 d after emergence, the plants were inoculated with 2000 freshly hatched second stage juveniles of *M. incognita.* Data on plant growth parameters and nematode infestations were recorded 7 weeks after inoculation. The antagonists varied significantly in enhancing various growth parameters and reducing nematode infestations in a dose-responsive manner. Both *P. penetrans* and *P. lilacinus* were equally effective and caused maximum reductions in number of galls, egg masses, nematode fecundity and build up as compared with *T. harzianum* and *P. chlamydosporia*. Reductions in these parameters at the concentration of 8×10^3 were statistically similar with those caused at the concentration of 1×10^4 chlamydospores/endospores/cfu. Our results indicate that application of antagonists can suppress galling and reproduction of *M. incognita* resulting in enhancement of plant growth. [T. Mukhtar, M. Arshad Hussain and M. Zameer Kayani (Pakistan). Phytopathologia Mediterranea, 52(1):66-76, 2013].

Infestation assessment of root-knot nematodes (*Meloidogyne* spp.) associated with cucumber in the Pothowar region of Pakistan. Studies to estimate root-knot nematode infestations on cucumber were

conducted during mid- to late-season at 378 randomly selected sites in 126 villages of the four districts across the Pothowar zone of the country. The overall mean infestation of root-knot nematodes in the region was found to be 15.66%. The studies revealed variations in the incidence and severity of root-knot nematodes in the four districts. The incidence of root-knot nematodes was the highest in Rawalpindi district (21.86%), followed by 13.89% in Attock. Of the four districts, the minimum incidence of 10.97% was recorded in Jhelum district. The maximum mean severity (3.79), measured in terms of the galling index, was found in Rawalpindi district, while the minimum (1.86) was observed in Jhelum district. The mean severities of root-knot nematodes in the districts of Attock and Chakwal were 2.66 and 2.19 respectively. Variations in incidence and severity were also observed among subdivisions of the districts. Of all the associated species of root-knot nematodes, *Meloidogyne incognita* constituted 78.53%, *Meloidogyne javanica* 19.03%, *Meloidogyne arenaria* 1.82% and *Meloidogyne hapla* 0.62%. *M. incognita* and *M. javanica* were recorded in all of the districts, with *M. incognita* predominating. *M. incognita* as a pure population was recorded in 29.63% of the villages, while the other three species were found as mixtures. The most common mixed population was *M. incognita* and *M. javanica*, observed in 70.37% of villages in the region. *M. arenaria* and *M. hapla* were not found together in any of the population mixtures. The results indicate that cucumber is severely attacked by root-knot nematodes, warranting adoption of strict control measures for its management. [Muhammad Zameer Kayani, Tariq Mukhtar, Muhammad Arshad Hussain and Muhammad Irfan Ul-Haque (Pakistan). Crop Protection, 47: 49-54, 2013].

SUDAN

Isolation and charachtarisation of new entomopathogenic fungi from the Sudan. Various entomopathogenic fungi are known as important biocontrol agents worldwide. Recent studies in Sudan have revealed numerous promising isolates. Fortuitously, an infected dead beetle (unidentified pest) with dense fungal growths, was encountered in 2011 on *Lablab purpureus* at El-Gorair scheme, Northern Sudan. Therefore, the sample was studied to identify the pathogenic agents. Parts of fungal growths were cultured on PDA medium and incubated in the dark at 24^0C. The variable growths obtained were purified, prepared on slides and studied for micro-morphological features. Based on literature, many fungi were identified (viz., *Alternaria* sp., *Penicillium* sp., *Aspergillus* sp., *Paecilomyces* sp. and *Beauveria bassiana*). However, the latter two species were stressed as important bioagents. Hence, their morphological characters were carefully described. Moreover, *B. bassiana* was verified through a preliminary bioassay test against the adult *Epilachna elaterii*, which reflected the characteristic white muscardine sign. So, both the previous fungi species were considered as the first records in Sudan. They necessitate further studies to verify the species through advanced techniques, and to evaluate their potentialities in formulating natural insecticides. [A.A. Satti and N.E. Gorashi (Sudan). International Journal of Science Innovations and Discoveries, 3(3): 326-329, 2013].

SYRIA

Characterization of a Syrian *Chickpea chlorotic stunt virus* strain and production of polyclonal antibodies for its detection. Reverse transcription-polymerase chain reaction analysis with two primer sets of luteoviruses was used to characterize an isolate of *Chickpea chlorotic stunt virus* (CpCSV, genus *Polerovirus*, family *Luteoviridae*) (SC402-08) collected from Lattakia, Syria, during the 2007–2008 chickpea growing season. Sequence analysis revealed that the coat protein gene of the isolate shared nucleotide sequence identities ranging from 97 to 98% with the CpCSV isolates from Egypt, morocco and Syria. The capsid protein was separated as a protein of approximately 20 kDa in sodium dodecyl sulphate polyacrylamide gel electrophoresis, and was visually detected by its reaction with CpCSV monoclonal antibody in Western blot. SC402-08 isolate of CpCSV was purified from faba bean-infected plants, and yielded 112–182 µg of purified virions kg-1 of infected tissue. The purified preparation was injected into a white rabbit, and an antiserum was obtained and used to detect CpCSV in infected tissues by tissue-blot immunoassay. The antiserum obtained was able to detect CpCSV by the immunoassay up to a dilution of 1:1,024,000. [Yaseen Alnaasan, Safaa G. Kumari, Joop A.G. Vanleur, Amin A. Haj Kassem and Fawaz Azmeh (Syria). Phytopathologia Mediterranea, 52(1):130-135, 2013].

Genetic diversity of microsatellite alleles located at quantitative resistance loci for Ascochyta blight resistance in a global collection of chickpea germplasm. A global collection of 43 chickpea (*Cicer arietinum* L.) genotypes, resistant and susceptible to Ascochyta blight caused by *Ascochyta rabiei* was evaluated for the disease under controlled conditions. In this study three known pathotypes (P-I, P-II, and P-

III) were used to evaluate the reactions of this collection. the chickpea genotypes were also characterized using 14 microsatellite markers flanking the genomic regions associated with Ascochyta blight resistance quantitative trait loci (QTLs). Phenotyping results indicated that 27 genotypes were resistant to P-I, 14 to P-II, and five to P-III, revealing the possible erosion of resistance through the evolution of virulent pathogen pathotypes. the genetic diversity analysis revealed 67 alleles at 14 microsatellite loci with an average of 4.8 alleles per locus among the genotypes tested. Genetic similarity estimates differentiated four subclusters (A, B, C, and D) of the genotypes. However, none of sub-clusters were separated into resistant genotypes for a specific pathotype. The genetic diversity ranged from 0.48 to 0.80 which indicated that there is considerable variation in QTL regions associated with Ascochyta blight resistance among the collections of chickpea genotypes studied, as assessed using the hyper-variable microsatellite markers. [Aladdin Hamwieh, Muhammad Imtiaz, Kristy Hobson and Seid Ahmed Kemal (Syria). Phytopathologia Mediterranea, 52(1): 183-191, 2013].

TUNISIA

Aggressiveness and host range of *Phoma medicaginis* isolated from *Medicago* species growing in Tunisia. Aggressiveness of 14 Phoma medicaginis isolates obtained from *Medicago truncatula* (barrel medic) and *M. ciliaris* (ciliate medic) growing in Tunisia was measured after inoculation on leaves and roots of *M. truncatula*. The ability of one isolate to cause disease on *M. sativa* (alfalfa), *Cicer arietinum* (chickpea), *Pisum sativum* (pea), *Lens culinaris* (lentil) and *Phaseolus vulgaris* (common bean) was also tested. The pathogen caused dark lesions that enlarged and coalesced causing yellowing and premature abscission of leaves, resulting in decreased shoot fresh weight in barrel medic plants. All *P. medicaginis* isolates infected barrel medic roots causing collar rot, brown root discoloration, yellowing of cotyledons and reduced shoot and root development. The pathogen colonized the cortex and the stele of plants and produced fertile pycnidia on infected roots. Symptoms on leaves allowed for greater discrimination in aggressiveness among isolates in comparison to symptoms on roots. No correlations were observed between the parameters measured on leaves and roots suggesting organ specialization in this pathogen. *Phoma medicaginis* infected leaves of alfalfa, pea, common bean and chickpea causing necrosis and tissue yellowing at 15 d post inoculation (dpi). Pycnidium production was observed on dead and dying foliar tissues of alfalfa, pea and common bean, but not on chickpea. The pathogen caused symptoms of collar rot and brown root discoloration on alfalfa, chickpea, pea and common bean, but did not cause symptoms on leaves or roots of lentil at 15 dpi. *Phoma medicaginis* was more pathogenic on barrel medic, the host of origin, in comparison to the other legumes, suggesting that these species are likely to be secondary hosts for this pathogen. [Naceur Djebali (Tunisia). Phytopathologia Mediterranea, 52(1): 3-15, 2013].

Efficiency of marker-assisted selection in detection of ascochyta blight resistance in Tunisian chickpea breeding lines. Ascochyta blight (AB) resistance reactions were studied in 23 chickpea cultivars, mainly advanced lines and Tunisian varieties from the Tunisian chickpea breeding program, growing both at two locations and under controlled conditions. Two co-dominant markers both associated with AB resistance were also used in this study; the CaETR marker tightly linked to QT_{LAR1} in combination with the SCAR $SCY17_{590}$ marker linked to QTL_{AR2} to explore their usefulness in discriminating between resistant and susceptible chickpea genotypes. These two markers contribute efficiently in the selection of new chickpea varieties with better combinations of alleles to ensure durable resistance to AB. The advanced line V10 presenting the resistance allele for CaETR, but being still heterozygous for the $SCAR17_{590}$ was characterized as resistant to moderately resistant in field studies and under controlled conditions. This line could be very useful for developing a new variety that is fixed for both resistance alleles and expresses good levels of resistance to AB in different chickpea cropping environments. These markers are very useful in assisting chickpea breeding programs, especially thanks to their robustness, their co-dominance and their utility across different genetic backgrounds. [M. Bouhadida, R. Benjannet, E. Madrid, M. Amri and M. Kharrat (Tunisia). Phytopathologia Mediterranea, 52(1): 202-211, 2013].

Occurrence and distribution of pome fruit viruses in Tunisia. The phytosanitary status of pome fruit trees was examined in Tunisia, in surveys conducted in spring 2009 and 2010, in the main Tunisian mother blocks. A total of 248 samples were collected (111 from apple, 106 from pear and 31 from quince), and tested for the presence of *Apple chlorotic leaf spot virus* (ACLSV) and *Apple mosaic virus* (ApMV) using ELISA and RT-PCR, and for *Apple stem pitting virus* (ASPV) using RT-PCR. 37% of the samples were infected by at least one virus. ACLSV was the

most widespread virus (34% of samples), followed by ApMV (4%). Furthermore, molecular analysis showed that 69% of the sampled trees were infected and apple was the most infected species (80%), followed by pear (75%) and quince (10%). ASPV was the most prevalent virus (46%), followed by ACLSV (39%) and ApMV (10). Mixed infections occurred in several trees, and the most common combination was ASPV+ACLSV (23%). This is the first report on the presence of viruses infecting pome fruits in Tunisia. [N. Mahfoudi, M. El Air, W. Salleh, R. Moujahed and K. Djelouah (Tunisia). Phytopathologia Mediterranea, 52(1): 136-140, 2013].

Some recent progress in oat crown rust in Tunisia. Crown rust caused by *Puccinia coronata* f.sp. *avenae* is a major fungal disease of cultivated oats (*Avena sativa* and *A. byzantina*) in Tunisia. Surveys conducted during different cropping seasons showed that crown rust severity in farmer's fields varied according to the year; the humid year favorable to oat culture was also favorable to crown rust epidemics and vice versa mainly when the year is too dry. The *Pc* gene differential oat lines, used by oat researchers to study the virulence pattern in oat crown rust populations showed that the virulence phenotypes locally recorded are TJFR, TDFL and TBLM; indicating that the *Pc* genes still expressing resistance to oat crown rust were *Pc38*, *Pc39*, *Pc52* and *Pc68*. Results on alternate host indicate that *Rhamnus lycioides*, a common and an endemic forest Tunisian vegetation, is a new aecial host of oat crown rust and that the aeciospores released in April and May represent the source of the fungus virulence diversity. Landraces of oats recently collected from different regions were evaluated for leaf rusting and for agronomic traits. The results suggest that vast areas in Tunisia are still rich with oat crown rust resistance as many landraces displayed important agronomic traits and good resistance to crown rust making them useful in breeding programs. [M.B. Allagui (Tunisia). Tunisian Journal of Plant Protection, 8: 1-6, 2013].

Hot air treatment for postharvest control of the date moth *Ectomyelois ceratoniae*. This work was intended to verify whether the hot air treatment would be an alternative to methyl bromide to effectively control the date moth *Ectomyelois ceratoniae*. Heating characteristics of dates, thermal death of the pest and quality parameters were established using a forced hot air heating system. When batches of dry and soft dates of the variety Deglet Nour were exposed to hot air at 65°C, the heating kinetics of the surface and the core of individual dates in homogenous and heterogeneous batches were similar. Hot air treatment at 65°C for about 40 min of artificially infested dry, soft and mixture of dry and soft dates increased internal and external temperatures of date to more than 55°C, which effectively disinfested date from moth larvae, nymphs and eggs by 100%. Date quality characteristics of treated dates such as color, water content, sugar rate and weight were not significantly different from those of untreated dates. [A. Zouba, M. Jmoui, B. Chermiti, A. Msetra and H. Bouabidi (Tunisia). Tunisian Journal of Plant Protection, 8: 23-32, 2013].

Fumigant control of the Mediterranean flour moth *Ephestia kuehniella* with the noble laurel *Laurus nobilis* essential oils. This work aims to investigate chemical composition and to assess for the first time the fumigant toxicity of the noble laurel (*Laurus nobilis*) essential oils from Tunisia and Algeria. The toxicity evaluation was made against the Mediterranean flour moth *Ephestia kuehniella* in storage. GC-MS analyses showed that both Tunisian an Algerian oils presented a certain number of the same major compounds whereas others were predominant common components. Results demonstrated the fumigant toxicity of the two groups of oils against adults of *E. kuehniella*. The fumigant toxicity potential of Algerian *L. nobilis* oil (LC_{50}= 20.77, LC_{95}= 34.93 µl/l air) was greater than Tunisian oil (LC_{50}= 33.75, LC_{95}= 46.98 µl/l air). Lethal time values (LT_{50} and LT_{95}) were respectively 74.12 and 247.24 h versus 90.10 and 337.08 h for Algerian and Tunisian oils. These results showed that essential oils from Tunisian and Algerian *L. nobilis* have a potential toxicity against *E. kuehniella* under storage conditions and could be used as control agents in post-harvest treatment program. [J. Mediouni-Ben Jemâa, N. Tersim, E. Boushih, K. Taleb Toudert and M.L. Khouja (Tunisia). Tunisian Journal of Plant Protection, 8: 33-44, 2013].

Molecular identification of *Eurytoma striolata* reared from almond bark beetle *Scolytus amygdali* in Tunisia. Eurytomidae parasitoids of *Scolytus amygdali* were collected from rearing boxes during August 2010, killed with absolute ethanol and conserved for morphological and molecular characterization. Wasps were identified morphologically as belonging to the genus *Eurytoma* (Hymenoptera: Eurytomidae) and characterized at the species level by using molecular tools. In fact, a fragment of the mitochondrial gene that codified for the cytochrome oxidase subunit I (COI) has been sequenced, and the obtained sequences of the Tunisian *S. amygdali* parasitoids were compared by phylogenetic analysis with sequences available from Genbank. Both morphological and molecular studies

revealed that the parasitoids reared from *S. amygdali* in Tunisia belonged to the *E. morio* species group, and they represent one specimen; *E. striolata*. Sequences were submitted to Genebank under following accession number; KC934900, KC934902 and KC934903. [A. Zeiri, M. Braham and M. Braham (Tunisia). Tunisian Journal of Plant Protection, 8: 57-64, 2013].

Parasitoids of the almond bark beetle *Scolytus amygdali* in Tunisia. Since 2009, the biology and the life cycle of *Scolytus amygdali* have been studied in Tunisia. Branches of infested almond, plum, apricot, and peach trees were taken to the laboratory and put in plastic boxes. Adults of *S. amygdali* and their natural enemies have been collected. Among the parasitoids found on *S. amygdali*, we identified three species belonging to the family Pteromalidae, namely *Cerocephala eccoptogastri* with average coefficient of dominance of 53.26%, *Cheiropachus quadrum* with 14.88% and *Rhaphitelus maculatus* with 10.44%. The Eupelmidae parasitoid *Eusandalum merceti* wascollected in October 2009 and this is the first record of this parasitoid in Tunisia. It was found to be an ectoparasitoid of the mature larvae and pupae of *S. amygdali*. Larvae of *S. amygdali* were also attacked by an Acari species: *Pyemotes* sp. Several bioassays were conducted in Petri dishes to evaluate the damage caused by this mite on the studied beetle. Results showed that it attacks all the developmental stages of *S. amygdali* and also the associated hymenopteran parasitoids. [A. Zeiri, M. Braham and M. Braham (Tunisia). Tunisian Journal of Plant Protection, 45-56, 2013].

Use of seminotherapy to improve control of Septoria leaf blotch of durum wheat in Tunisia. Septoria leaf blotch (SLB), due to *Zymoseptoria tritici* (teleomorph: *Mycosphaerella graminicola*), is considered as the most important durum wheat disease in Tunisia. The chemical treatments applied as foliar sprays have been effective in controlling this disease. In order to explore the chemical control, three trials have been conducted to study the effect of seminotherapy to control SLB on the durum wheat cv. Karim at Bou-Salem, Beja and Bizerte (Om-Hani) during 2010/11 season using different fungicides. Prior to the unique foliar spray (Epoxiconazole 12.5%, 1 l/ha), the results proved the importance of seminotherapy, especially by using the fungicide composed of Fluxapyroxad at rate 100 ml/q, to decrease the primary infections by *Z. tritici*. After the foliar spray, the results showed the effectiveness of the seed treatment with Fluxapyroxad at rate 75 ml/q combined to the foliar spray with Epoxiconazole 12.5% (1 l/ha) applied at the ear emergence stage in disease control at the three studied sites and in yield increase at two sites. [K. Taher, M.M. Fakhfakh, A. Bouajila, S. Rezgui, M. Khammassi, J. Haber, B. Nasraoui and A. Yahyaoui (Tunisia), Tunisian Journal of Plant Protection, 8: 7-22, 2013].

TURKEY

Characterization of root rot disease of kiwifruit in the Black Sea region of Turkey. Forty-two kiwifruit orchards from Rize and Samsun provinces (Black Sea region, Turkey) exhibiting symptoms of root rot disease were examined between 2009 and 2010. Twenty-four fungal isolates recovered from affected roots were included in this study. Morphological characteristics of all isolates were recorded on potato dextrose agar, malt extract agar and Spezieller Nährstoffarmer agar. The effect of temperature on radial colony growth was also evaluated at 5, 10, 15, 20, 25, 30, and 35°C. Histone H3 gene (HIS) was amplified with primers CYLH3F and CYLH3R and the amplified fragments were sequenced. The HIS phylogeny grouped all the isolates into six well-supported clades which were in agreement with phenotypical characteristics. Isolates were identified as "*Cylindrocarpon*" *pauciseptatum*, *Cylindrocladiella parva*, *Ilyonectria liriodendri*, *I. torresensis*, *I. robusta* and *I. europaea, I. liriodendra* being the most frequent species. All of them are reported for the first time on kiwifruit in Turkey, with the exception of *I. liriodendri.* Pathogenicity tests with selected isolates showed that 10 out of 11 isolates tested were able to induce typical root rot disease symptoms, affecting plant development and leading to the death of some plants. This study shows the high diversity of root rot pathogens found in kiwifruit trees in the Black Sea region of Turkey, being the first step towards a better understanding and management of the disease in local conditions. [Ismail Erper, Carlos Agustí-Brisach, Berna Tunali and Josep Armengol (Turkey). European Journal of Plant Pathology, 136(2): 291-300, 2013].

***Fusarium* species isolated from common weeds in eggplant fields and symptomless hosts of *Fusarium oxysporum*f. sp. *melongenae*in Turkey.** Thirteen species of weed plants were collected between May and September in 2010 and 2011 from eggplant fields representing 11 distinct locations covering a wide geographical area of Turkey. Weeds are potential hosts of many plant pathogens and may not exhibit disease symptoms when colonized. *Fusarium* spp. were isolated from five monocotyledonous species

and eight dicotyledonous species. A total of 212 isolates recovered from weeds were assigned to eight *Fusarium* species on the basis of morphological characteristics. *F. oxysporum* was the most frequently isolated species (29.7%), followed by *F. solani* (19.8%), *F. graminearum* (13.7%), *F. verticillioides* (12.7%), *F. equiseti* (9.9%), *F. avenacearum* (8.0%), *F. proliferatum* (3.8%) and *F. subglutinans* (2.4%). The *F. oxysporum* isolates from different weed hosts were characterized by means of pathogenicity and vegetative compatibility grouping (VCG) tests. Among these, 29 isolates were found to be pathogenic to eggplant cv. Kemer and re-isolated as *Fusarium oxysporum* Schlecht. f.sp. *melongenae* (Fomg) as evidenced. These isolates from weed hosts were assigned to VCG 0320. This study is the first report of Fomg isolated from weeds in eggplant fields in Turkey. None of the weed species tested showed symptoms of wilting in pot experiments, and *F. oxysporum* was isolated with greater frequency from all inoculated weeds. The results of this study indicate that several weed plants may serve as alternative sources of inoculum for Fomg, during the growing season. [Hacer Handan Altinok (Turkey). Journal of Phytopathology, 161(5): 335-340, 2013].

Determination of susceptibility levels of *Helicoverpa armigera* (Hübner) (Noctuidae: Lepidoptera) strains collected from different regions to some insecticides in Turkey. Cotton bollworm, *Helicoverpa armigera*, is the main insect pest of cotton plant in Turkey and most part of the world. The aims of this study was to determine susceptibility levels of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae) strains collected from cotton fields in Adana and Mardin provinces to registered seven insecticides in Turkey. Third instar larvae of *H. armigera* were used to determine the LD_{50} values by using topical application method with active substances of commonly used insecticides for controlling *H. armigera* in cotton fields. The active substances were azinphos-methyl, bifenthrin, beta-cyfluthrin, esfenvalerate, indoxacarb, lambda-cyhalothrin and methomyl. Insects were treated on the region of the body between the head and the abdomen, thorax, with 1 µl aliquots of insecticides in acetone for all treatments and acetone alone for control. Results showed that Adana and Mardin strains had high resistance ratios to pyrethroid insecticides such as beta-cyfluthrin, bifenthrin and esfenvalerate, whereas they did not have significant resistance for indoxacarb and methomyl. These results can be used in the resistance management programs for the control of *H. armigera*in the region. [Sakine Ugurlu Karaağaç, Metin Konuş and Musa Büyük (Turkey). Journal of the Entomological Research Society, 15(1): 37-45, 2013].

❖ Some Plant Protection Activities of FAO and Other Organizations

DESERT LOCUST SITUATION

General Situation of the Desert Locust during July 2013 -Forecast until mid-September 2013,

[Provided by the FAO Emergency Center for Desert Locust (ECLO)].

The Desert Locust situation improved during June as locust infestations declined in the northern part of the Central Region and in the spring breeding areas of Northwest Africa. Nevertheless, the situation remained serious in the interior of Yemen where breeding occurred, causing locust numbers to increase. Control operations were not possible due to insecurity. Low numbers of solitarious adults appeared in the summer breeding areas of the Sahel in West Africa and Sudan, and along both sides of the Indo-Pakistan border. During the forecast period, small-scale breeding will cause locust numbers to increase in all of these areas.

Western Region - The locust situation remained calm in the Region during July. Locust numbers declined in the spring breeding areas of Morocco and Algeria due to hot, dry conditions and earlier control operations. On the other hand, solitarious adults appeared in the summer breeding areas of the northern Sahel in Mauritania, Chad, and probably in Mali and Niger as well but this could not be confirmed in the absence of surveys. Local breeding continued in the southeastern Air Mountains in northern Niger. During the forecast period, small-scale breeding will occur in the summer breeding areas of Mauritania, Mali, Niger and Chad, causing locust numbers to increase.

Central Region - The situation remained calm in the Region during July except in Yemen where one swarm reached Wadi Hadhramaut in the eastern part of the summer breeding area in the interior. Breeding during June and July caused locust numbers to increase in Yemen, and solitarious and

transiens hoppers and adults were present. Control operations were not possible due to insecurity. Locust infestations declined in the spring breeding areas of Saudi Arabia where only a few adult groups were reported. Scattered adults persisted in the Nile Valley in northern Sudan and low numbers of solitarious adults appeared in parts of the summer breeding area but vegetation was slow to become green due to intermittent rains. In northern Somalia, there was an unconfirmed report of hoppers. No locusts were reported elsewhere in the Region. During the forecast period, locust numbers will increase in the summer breeding areas, mainly in Yemen and, to a lesser extent, in Sudan and western Eritrea. In Yemen, there is a risk that hopper and adult groups will form and perhaps a few small hopper bands and adult swarms.

Eastern Region - Low numbers of solitarious adults appeared in the summer breeding areas along both sides of the Indo-Pakistan border during July. As ecological conditions improved due to good monsoon rains, small-scale breeding will occur in India and Pakistan during the forecast period and cause locust numbers to increase slightly.

For more up to date information about the Desert Locust situation and forecasts, visit the FAO's Desert Locust website:
http://www.fao.org/ag/locusts/en/info/info/index.html
Source: The FAO Desert Locust Bulletin issued monthly in English and French by the Desert Locust Information Service, AGP Division (Rome, Italy; and Arabic version by the Commission for Controlling the Desert Locust in the Central Region (FAO Regional Office for Near East, Cairo, Egypt, http://crc-empres.org

❖GENERAL NEWS

A Look Behind the Cancellation of 12 D-Con Brand Mouse and Rat Poison Products

The United States Environmental Protection Agency (EPA) outlines the rationale behind the cancellation of the 12 D-Con brand mouse and rat poisons: Approximately 10,000 children a year are accidentally exposed to mouse and rat baits, and rodenticide poisonings have been well documented in a wide variety of wildlife species, including some that are listed as threatened or endangered. In an effort to address these problems, the EPA set risk reduction standards for rodenticides to protect health and the environment better. In early 2013, the EPA moved to cancel 12 D-Con brand mouse and rat poison products that do not meet safety standards and cause unreasonable and unnecessary risks to children's health and the environment. The manufacturer of these 12 D-Con products, Reckitt Benckiser, Inc, refused to adopt the necessary risk mitigation measures for these products, which included adding protective bait stations to prevent children and pets from accessing the poison, and reformulating products that contain second-generation anti-coagulants. Without these important safety measures, the 12 D-Con products do not meet the statutory standard for registration in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).
Source: *Outlooks on Pest Management, Volume 24, Number 3, June 2013, pp. 127-127.*

Best Management Practices to Prevent, Delay or Manage Herbicide Resistance

David R. Shaw, Jason K. Norsworthy & Sarah M. Ward summarise the approaches that can be taken to avoid the onset of herbicide resistance.....**read more**
Source: *Outlooks on Pest Management, Volume 24, Number 3, June 2013, pp. 132-135.*

Announcing New Journal and Call for Papers

The Faculty of Agriculture & Veterinary medicine announces the launch of "The Yemen Journal of Agriculture & Veterinary Sciences (YJAVS)". YJAVS is a new interdisciplinary peer-reviewed research journal that will publish the highest quality articles on Agriculture, Veterinary Sciences, biology and related disciplines. The publication will be in both Arabic and English languages. The debut issue of YJAV will appear in December 2013. To this end, the editorial board invites Eminent Scientists, Academicians and Researchers to submit original article manuscripts accompanied by an abstract that summarizes the argument and significance of the work. Manuscripts should be submitted electronically online.
For further information, Please contact the following:
The Yemeni Journal of Agriculture &Veterinary Sciences, Faculty of Agriculture &Veterinary Medicine, University of Thamar, Dhamar, P.O.POX 87187, Yemen, E-mail: YJAVS2013@gmail.com

❖ Arab Society for Plant Protection News

11TH ARAB CONGRESS OF PLANT PROTECTION 2014

The eleventh Arab Congress of Plant Protection will be organized by the Arab Society for Plant Protection in collaboration with the Faculty of Agricultural Technology, Al-Balqa' Applied University and will be held in Al Salt, Jordan during the period, 9-13 November 2014. The congress will include symposia where internationally known scientists will be invited to give presentations of general interest to plant protectionists. In addition, there will be paper presentation session where scientific workers in plant protection in the Arab countries can present and discuss their work either as oral presentations or as posters.

The Organizing Committee

The Congress Organizing Committee is composed of Dr Samih Abu Baker (Chairman), Dr Hazem Hasan (Secretary), Prof Dr. Mazen Ateyyat, Dr. Mohmad Al Alwi, Prof Dr. Ahmad Katbeh, Prof Dr. Ibraem AL Jboory, Prof Dr. Barakat AbuIrmaleh, Mr Mustafa Meqdadi, Mr Khaled Al Jaafreh.

CONGRESS LANGUAGE

Paper presentation sessions will be in Arabic as much as possible, whereas Symposia presentations will be in English, as the majority of the Symposia speakers are from non-Arabic speaking countries.

CONGRESS PROGRAM

The congress program will cover most of the general areas of Plant Protection, which includes:

- Economic insect and animal pests.
- Fungal, bacterial and viral plant diseases.
- Nematodes.
- Weeds and parasitic flowering plants.
- Pesticides and safe use of agrochemicals in the Arab countries.
- Spiders and mites.
- Rodents.
- Use of biotechniques for pest control.
- Integrated pest management.
- Geographical distribution of diseases and insects of quarantine significance in the Arab countries.

The program will also include one-day field trip to important agricultural and touristic regions of Jordan.

Congress registration

Participants should registrar electronically by using the congress website (http://acpp.bau.edu.jo), paper title and abstract will be submitted electronically to the congress website, likewise all congress announcements will be available at the congress website.

Registration Fees

The Congress registration fees are:

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

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

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

Correspondence and Inquiries

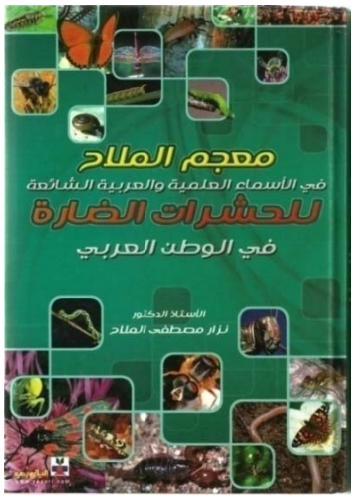
Correspondence should be addressed to:

Eleventh Arab Congress of Plant Protection Secretariat
Faculty of Agricultural Technology
Al-Balqa' Applied University
Salt, 19117Jordan
Telephone: (+962-5) 34911111
Tele-fax: (+962-5) 3530469
E-mail: acpp@bau.edu.jo

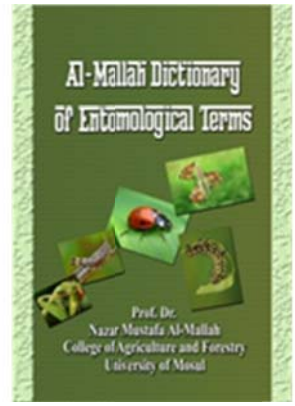
❖Publications

NEW BOOKS

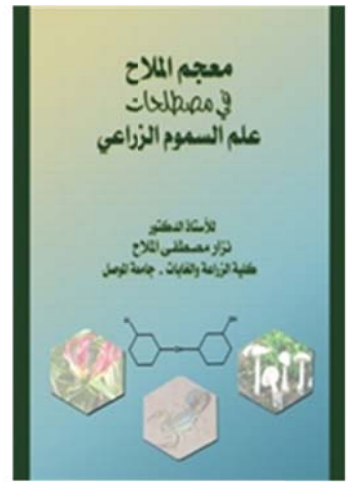
Al-Mallah Dictionary of Scientific and Common Names of Injurious Insects In Arab World
Author: Nezar Mustafa Al Mallah
A new Dictionary entitled "Al-Mallah Dictionary of Scientific and Common Names of Injurious Insects In Arab World" has been published by Dar Al-Yazouri, Amman, Jordan. The content of the dictionary comprises four chapter. The first one contain the injurious insect Arabic common names arranged in alphabetical orders and their scientific names . The second chapter includes the injurious insects scientific names arranged in alphabetical orders and their Arabic common names . The 3rd chapter arranged the injurious insects scientific names according to their families and orders to which belongs. The last chapter deals with the position of the injurious insect scientific names in Arthropoda phylum.



Al-Mallah Dictionary of Entomological Terms
Author: Nazar Mustafa Al Mallah
A new Dictionary entitled "Al-Mallah Dictionary of Entomological Terms " has been published by Dar Ibin Al-Atheer / Mosul University, Ministry of Higher Education and Scientific Research. The content of the Dictionary includes more than 25 thousands terms in Entomology , in addition to three Annexes . The first one deals with the abbreviations and signals used in Entomology, The second Annex includes 62 plates, each plate contain number of illustrating figures. The last Annex list all the scientific names of Arthropods mentioned in the Dictionary alphabetically with their English common names .



Al-Mallah Dictionary of Agricultural Toxicology Terms
Author: Nazar Mustafa Al Mallah
A new Dictionary entitled "Al-Mallah Dictionary of Agricultural Toxicology Terms" has been published by Dar Ibin Al-Atheer , University of Mosul, Ministry of higher Education and Scientific Research. The content of the dictionary comprise from about six thousand terms in the field of Agricultural Toxicology. The dictionary also includes four supplements or Annexes, the first one deal with the abbreviations used in toxicology with reference to its origin and meaning. Annex II deals with the abbreviation of the entities names and legislation and their origin and meaning, the 3rd Annex includes the pesticides formulation abbreviations and their origin and meaning , the last annex described the measurements abbreviations.



SELECTED RESEARCH PAPERS

Acarology

Reproductive parameters and life expectancy of *Tetranychus urticae* (Acari: Tetranychidae) on 12 genotypes of melon and cucumber in laboratory condition. Negin Ghazazani, Katayoon Kheradmand, Mahmoud Lotfi & Ali Asghar Talebi (Iran). Archives of Phytopathology and Plant Protection, 46(8): 971-979, 2013.

Studies on the wheat curl mite, *Aceria tulipae* Keifer (Eriophyidae), in Egypt. M.M. Al-Azzazy, A.A. Abdallah and H.M.G. El-Kawas (Egypt). Archives of Phytopathology and Plant Protection, 46(10):1150-1158, 2013.

Entomology

Analysis of the number of sensilla on the labrum and the diet of grasshoppers belonging to the family Pamphagidae (Orthoptera). Benkenana N., Harrat A. & D. Petit (Algeria). European Journal of Entomology, 110(2): 355-364, 2013.

New Records of Crabronidae (Insecta: Hymenoptera) from Turkey. Faruk Tolga Çubuk and Yaşar Gülmez (Turkey). Journal of the Entomological Research Society, 15(1): 33-36, 2013].

Oviposition deterrent effect of *Spodoptera littoralis* (Boisd.) larval frass to adult females of two major noctuid insect pests. M.Y. Hashem, A.A.I. Ahmed, S.M. Mohamed, G.H. Sewify & S.H. Khalil (Egypt). Archives of Phytopathology and Plant Protection, 46(8): 911-916, 2013.

Rearing larval stages of *Hippodamia variegate* Goeze (Col.: Coccinellidae) on artificial diet. Ramin Ershadi Mirkhalilzadeh, Hossein Allahyari, Jamasb Nozari & Farhad Farhoudi (Iran). Archives of Phytopathology and Plant Protection, 46(7): 755-765, 2013.

Bacteria

Activationof tomato plant defence responses against bacterial wilt caused by *Ralstonia solanacearum* using DL-3-aminobutyric acid (BABA). Moahmed A. E. Hassan and Kamal A. M. Abo-Elyousr (Egypt). European Journal of Plant Pathology, 136(1): 145-157, 2013.

Fungi

Acremonium as an endophytic bioagent against date palm Fusarium wilt. H.M. El-Deeb and Y.A. Arab (Egypt). Archives of Phytopathology and Plant Protection, 46(10):1213-1221, 2013.

Antifungal activity of prenylated flavonoids isolated from *Tephrosia apollinea* L. against four phytopathogenic fungi. Mohamed I. Ammar,Gomah E. Nenaah,Abul Hamed H. Mohamed (Egypt). Crop Protection, 49: 21-25, 2013.

Detection, identification and morphological characteristic of *Macrophomina phaseolina*: the charcoal rot disease pathogens isolated from infected plants in Northern Jordan. F. Almomani, M. Alhawatema and K. Hameed (Jordan). Archives of Phytopathology and Plant Protection, 46(9):1005-1014, 2013.

Effect of mycorrhiza and biofertilisers on reducing the incidence of Fusarium root and pod rot diseases of peanut. Mosherif S. Ahmed, Nashwa M.A. Sallam, AbdElal A. Mohamed & Mohamed H.A. Hassan (Egypt). Archives of Phytopathology and Plant Protection, 46(7): 868-881, 2013.

High diversity, low spatial structure and rapid pathotype evolution in Moroccan populations of *Blumeria graminis* f. sp. *hordei*.Helen R. Jensen, Antonín Dreiseitl, Mohammed Sadiki, Daniel J. Schoen (Morocco). European Journal of Plant Pathology, 136(2): 323-336, 2013.

In *vitro* inhibitory effects of rosemary and sage extracts on mycelial growth and sclerotial formation and germination of *Sclerotinia sclerotiorum*. S.J. Goussous, I.S. Mas'ad, F.M. Abu El-Samen & R.A. Tahhan (Jordan). Archives of Phytopathology and Plant Protection, 46(8): 890-902, 2013.

Management of chili pepper root rot and wilt (caused by Phytophthora nicotianae) by grafting onto resistant rootstock. M. Saadoun, M. Bechir Allagui (Tunisia). Phytopathologia Mediterranea, 52(1):141-147, 2013].

Microsatellite-based assessment of genetic diversity in stripe rust resistant NUWYT candidate lines. S. Farrakh, S. Liaqat, M. Sadiq, N. Riaz, M. Fayyaz and F. Mehboob (Pakistan). Archives of Phytopathology and Plant Protection, 46(9):1036-1046, 2013.

Molecular characterization of *Rhizoctonia solani* isolates the incitant of soybean root rot. W. Zein El-Abdean, K.A.M. Abo-Elyousr, M.H.A. Hassan and M.M. El-Sheakh (Egypt). Archives of Phytopathology and Plant Protection, 46(9):1108-1117, 2013.

Morphological and molecular characterization of *Diplodia seriata*, the causal agent of canker and twig dieback disease on mulberry in Iran. M. Arzanlou & H. Dokhanchi (Iran). Archives of Phytopathology and Plant Protection, 46(6): 682-694, 2013.

Occurrence of Crown Gall of the Grapevine in Tunisia and Characterization of Tunisian Agrobacterium Vitis and Tumefaciens Strains. E. Abdellatif, F. Valentini, J.D. Janse, M. Bouri, A. Rhouma, S. Chebil, A.M. D'Onghia (Tunisia). Journal of Plant Pathology, 95(1): 115-126, 2013.

Phylogenetic and Populaion Genetic Analysis of *Ceratocystis radicicola* Infecting Date Palm. A.M. Al-Sadi (Oman). Journal of Plant Pathology, 95(1): 49-57, 2013

Reaction of Melon (*Cucumis melo*L.) Cultivars to *Monosporascus cannonballus*(Pollack & Uecker) and their Effect on Total Phenol, Total Protein and Peroxidase Activities. Mohammad Salari, Naser Panjehkeh, Zahra Nasirpoor and Javad Abkhoo (Iran). Journal of Phytopathology, 161(5): 363-368, 2013.

Viruses

First Report of *Agrobacterium vitis* as Causal Agent of Crown Gall Disease of Grapevine in Tunisia. S. Chebil, R. Fersi, S. Chenenaoui, E. Abdellatif, G. Durante, E. Zacchi, A. Rhouma, and A. Mliki (Tunisia). Plant disease, 97(6):836, 2013.

Identification and Characterization of Cowpea Aphid-Borne Mosaic Virus Isolates in Saudi Arabia. B.V. Damiri, I.M. Al-Shahwan, M.A. Al-Saleh, O.A. Abdalla, M.A. Amer (Saudi Arabia). Journal of Plant Pathology, 95(1): 79-85, 2013

Viroids

First Report of Hop Stunt Viroid in Lebanese Fig Trees. T. Elbeaino, E. Choueiri and M. Digiaro (lebaonon and Italy). *Journal of Plant Pathology* 95 (1): 217-218, 2013

Potential of citrus budlings originating in the Middle East as sources of citrus viroids. S.A. Al-Harthi, A.M. Al-Sadi, A.A. Al-Saady (Oman). Crop Protection, 48: 13-15, 2013

Pesticides

Effects of an inorganic insecticide (boric acid) against *Blattella germanica*: Morphometric measurements and biochemical composition of ovaries. Dahbia Habes, Rouhia Messiad, Samia Gouasmia and Lilia Grib (Algeria). African Journal of Biotechnology, 12(18): 2492-2497, 2013

Investigation on the insecticidal efficacy of novel pellet formulation against *Callosobruchus maculates* (F.) (Col.: Bruchidae) in three different heights and compared with phosphine. Jamshid Marzanghi , Mohammad Hassan SafarAlizadeh & Peyman Najafi Moghaddam (Iran). Archives of Phytopathology and Plant Protection, 46(6): 704-709, 2013.

Weeds

First Report of *Orobanche purpurea* on *Achillea wilhelmsii* in Iran. R. Yousefi and K. Jamshidi (Iran). Plant Disease, 97(5): 694, 2013.

CONTENTS OF THE ARAB JOURNAL OF PLANT PROTECTION (AJPP)
Volume 31, Issue 2, August 2013

and onion (*Allium cepa* L.) yield. A.A. Bawazir and O. Salem Bin Shuaib (Yemen).

- **Induction of systemic acquired resistance in tomato plants against diseases caused by some *Alternaria* species.** O. Atik, A. El-Ahmed, M. Abou Shaar, M.M. Yabrak and M. Khatib (Syria)
- **Use of Oxos, a Complex of Hydrogen Peroxide, Acetic Acid and Silver Ions to Control Scab of Potato.** Khaled Tawel and Mubarak AL Fatmi (Syria and Morocco).
- **Effect of seed treatment with plant extracts، biological and chemical agents in controlling fungi causing cowpeas damping – off and root rot.** E.D. Sulaiman and N.H. Abdulhafedh (Iraq).
- **Susceptibility of some lentil genotypes to the infestation with the cowpea weevil *Callosobruchus maculatus* (F.).** F.H. Hallak (Syria).
- **Efficacy of some traps and baits in reducingthe** red wasp (***Vespa orientalis* L.) damage against honeybees in Asswaida, South Syria.** M. Dawara and A. Hatoom (Syria).
- **Host suitability of some Syrian cotton cultivars to root-knot nematode (*Meloidogyne incognita* race 3).** M. Al-Masri, K. Al-Assas and T. Abou Al Fadil (Syria).
- **A survey of mealy bugs *Porphyrophoratritici* and *P. polonica*in wheat and barley fields in Al-Hassakah Governorate, North East Syria, and studying the ground pearls *P. tritici* Bod. life cycle on the wheat crop.** G.A. Hassanand S. Sheikhmoss (Syria).
- **Susceptibility of some potato cultivars to common scab disease caused by *Streptomyces scabies* and the effect of planting date on disease development in Syria.** K. Taweel, Y. Taksh, A. Murra and T. Aathar (Syria).
- **Effect of temperature and humidity on egg stage of *Capnodis tenebrionis* L. in Syria.** A. Al-Menofy, R. Al-Muallem and M. Al-Alan (Syria).**Efficacy of Some Bio-control agents in controlling Citrus Nematode(*Tylenchulus semipenetrans*) under Syrian field conditions.** A. Eskander, M. Al-Abed Al-Kader and K. Al-Assas (Syria).
- **Biological characteristics of *Chrysoperla carnea* Steph. fed on two prey hosts under laboratory conditions.** A. Jaloud, N. Kakah, M. Al-Nabhan and M.W. Idraw (Syria).

EVENTS OF INTEREST

2013

*** 3-6 September**

2nd International Symposium on Plum Pox Virus (continuation of Middle European Meetings on Plum Pox Virus), Olomouc, Czech Republic. See: http://isppv2013.upol.cz

*** 22-27 September**

9th European Vertebrate Pest Management Conference (EVPMC9), Turku, Finland.
For more details Please visit: www.evpmc.org, or contact Dr. Otso Huitu,
Email: otso.huitu@metla.fi

*** 3-5 November**

5th Symposium on Date Palm, Alahsa, Saudi Arabia. Email: 5thpalm@kfu.edu.sa
See: www.5thpalm.org

*** 8-12 November**

2nd Global Conference on Entomology, Kuching, Malaysis. Email: info@gce2013.com
See: http://www.gce2013.com/

*** 10-13 November 2013**

61st Annual Meeting of the Entomological Society of America (ESA), Member Symposium **"The Menace of Palm Weevils: Challenges and Strategies"**, Austin, TX, USA. Email: redpalmweevil@gmail.com
http://www.entsoc.org/entomology2013/symposia

*** 19-20 November**

II International Plant Protection Conference. Al-Mousel University, Iraq.
Email: ppconf2013@gmail.com
See: http://agriculture.uomosul.edu.iq/

*** 25-28 November**

19th Australasian Plant Pathology Society Conference, Auckland, New Zealand.
See: http://www.apps2013.co.nz/

2014

*** 6-9 February**

1st African International Allelopathy Congress, Souiss, Tunisia. Email: rabiahaouala@yahoo.fr

*** 1-3 April**

17th International Conference on Biopesticides: Current Status and Future, Prospects, Alexandria, Egypt.
See: http://www.icb.alexu.edu.eg/

*** 16-18 March**

5th International Date Palm Conference. Abu Dhabi, UAE. Contact: Prof. Abdelouahhab Zaid (zaid@uaeu.ac.ae)

*** 14-18 April**

21st Biennial International Plant Resistance to Insects Workshop, Marrakech, Morocco.
http://www.ars.usda.gov/Research/docs.htm?docid=22994

*** 4-9 May**

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

*** 7-9 May**

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

*** 6-10 July**

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

*** 13-18 July**

8th International Symposium on Chemical and Non-Chemical Soil and Substrate Disinfestation, Torino, Italy
See: www.sd2014.org

*** 27 July-1 August**

XIVth International Congress of Mycology, the XIVth International Congress of Bacteriology and Applied Microbiology and the XIVth International Congress of Virology, Montreal, Canada. See: http://www.montrealiums2014.org/
Email: iums2014@nrc-cnrc.gc.ca

*** 3-8 August**

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

*** 9-13 August**

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

*** 10-14 August**

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

*** 17–24 August**

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

9-13 November

11th Arab Congress of Plant Protection. Amman, Jordan. Contact: acpp@bau.edu.jo
See: http://acpp.bau.edu.jo

2015

*** 24–27 August**

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

ACKNOWLEDGMENT

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

Abd El Nabi Basheer (Syria), Marwa Al-Ahmad (Syria), Bashar Helal (Syria), Abdullah Mohammed Al-Sadi (Oman), Faiz Ismael (Syria), Mariam Bohadida (Tunisia), Naceur Djébali (Tunisia), Mahmoud Youssef (Egypt), Jamal Mando (Syria), Mahaba Ghannam (Syria), Nour-Aldeen Hjaij (Syria), Omar Atik (Syria), Desert locust team (FAO).