

March and April which infest citrus fruits and the second during August and September which infest guava, peach and mango fruits. Biological studies of peach fruit fly on natural hosts showed that shortest life cycle period was recorded for insects bred on peach (38.65 days), whereas the longest period was noticed on insects bred on balady orange. Use of prominal (degenerated protein) + Malathion 57% in addition to the blocks saturated with the sexual attractant (methyl Eugenol) + Malathion 98% reduced the population density of the pest by 88%. Studies showed also that the bio-product Vertemic reduced the infestation rate by 89.14%. The number of peach fruit fly trapped by six-pheromone traps was higher in areas cultivated by many kinds of its hosts than that cultivated by one host only. Balanced nutrition, fertilization specially with potassium, removal of weeds and controlled irrigation, also elimination of infested fruits may reduce the infestation by 21.44%.

E 5

SCARABAEOIDEA (COLEOPTERA) OF JORDAN.

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Specimens of Scarabaeoidea (Coleoptera) conserved at the University of Jordan Insects Museum which were collected from different localities in Jordan since 1973 till 2009 were studied. A total of 24 species were recorded for the first time from Jordan. A species list of Scarabaeoidea was prepared based on this study and on data from literature. For each species, the geographical distribution in Jordan, available biological or ecological data, taxonomical remarks and color photographs were assembled.

E 6

COLONIZATION OF *CERAMBYX DUX* FALDERMANN) IN STONE-FRUIT TREE ORCHARDS IN FUHEIS DIRECTORATE, JORDAN.

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A field study was conducted in five locations in Fuheis Directorate, Jordan, during the period from January 1, 2008 to June 30, 2009 to identify woodborers attacking stone-fruit trees based on damage symptoms, to determine the economic status of identified species based on their spatial and temporal distribution and their infestation rates, and to investigate the way woodborers colonize host trees. Three woodborers were identified: the roundheaded cerambycid borer, *Cerambyx dux* Faldermann (Coleoptera: Cerambycidae), the flatheaded buprestid borer, *Capnodis tenebrionis* L., and the peach tree borer, *Synanthedon exitosa* Say. Of these three species, *C. dux* was the most economically important borer as it damaged about one fourth (23.77 %) of cultivated trees in infested locations (Um-Na'ag; Hommar, and Ferdoos). *C. tenebrionis* attacked only 5 trees (0.07% infestation), and *S. exitosa*

infested only 3 trees (0.04% infestation). Trees infested by *C. dux* was not infested by *C. tenebrionis*. Both borers are strong competitors and can't co-exist together. *C. dux* and *S. exitosa* can be found in the same infested tree, but they partition their feeding guild. *S. exitosa* inhabit the lowest trunk while *C. dux* inhabit the upper trunk. Young trees less than 5-years old were not infested with woodborers, because their trunk diameter was not thick enough to accommodate the large grown larvae. *C. dux* overwinters as partial-grown larvae, pupae, and adults. Adults emerge at the time of blooming of each host, feed on nectar of herbaceous plants, disperse locally or migrate, sometimes aided by wind, to other sites. Adult males emerge first, wait for females to emerge, and then they mate. Mated females land on selected host trees and begin depositing eggs in bark crevices. Selection of preferred trees depends on bark color and structure and chemical defense system of the tree. Plums were more susceptible to infestation by *C. dux* than peaches. Almonds were the least susceptible host. Eggs develop in short time. Hatched larvae move downward, locate suitable entry point, and start boring in the bark. As they grow, they bore deep in sapwood and heartwood creating tunnels full of tight or loose sawdust. Tunnels resembled in shape and size their own larval instars. Full-grown larvae pupate in cells below bark surface. Adults emerge when favorable environmental conditions prevail, and the life cycle was repeated. Recommendations for management of *C. dux* will be presented.

E 7

THE INFLUENCE OF CLIMATIC FACTORS ON THE RECENT SPREAD OF DUBASS BUG *OMMATISSUE LYBICUS* (DEBERGEVIN) ON DATE PALM TREES IN SOME UPPER EUPHRATES REGIONS OF AL-ANBAR PROVINCE IN IRAQ.

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The dubass bug *Ommatissus lybicus* (Debergevin) (Homoptera: Tropiduchidae) is considered as one of the most important pests on date palm trees mostly in the middle of Iraq. This pest was almost absent in Al-Anbar province during the past years, however, field survey conducted in different regions of the province during 2007 indicated the presence of dubass bug on date palm trees in some orchards toward the east of Hit city. Infestation was too high in term of affected trees and accumulation of honey dew. Scattered infestations were also observed in some orchards west of Hit city and around the cities of Haditha, Rawa, and Al-Kaim. The severe winter of 2008 in which the minimum temperature dropped below the zero for several days caused the complete or partial death for the date palm leaves in many orchards and resulted in harmful effects on dubass eggs inserted in the tissue of these leaves. The continuous occurrence of dust storms during spring and autumn was another harmful factor causing reduction of moving stages. Infestation was reduced to about 1–5 nymphs/leaflet at the third week of May 2008 compared to

an average of 40 nymphs/leaflet recorded during the last week of April and early May. Results also indicated that the spread of the pest occurred in a discontinuous manner with no correlation to infestation in close-by provinces indicating that pest spread happened in a way other than the normal spread. Therefore, this pest may not persist in date palm orchards in Al-Anbar province. The population might be reduced to non damaging levels or even disappear from the region during the next generation or at least during the few coming years.

E 8

A NEW RECORD OF *ELACHISTA* SP. (LEPIDOPTERA: ELACHISTIDAE) ON SUGARCANE IN EGYPT. Samir A. El-Serwy, Ministry of Agriculture, Plant Protection Research Institute, 7 Nadi El-Seid Street, Dokki, P.O. Box 12618, Giza, Egypt, Email: samirelserwy@hotmail.com.

The leafminer *Elachista* sp. (Lepidoptera: Elachistidae) is a new record pest species inhabiting sugarcane, *Saccharum officinarum* L., and stain tail, *Impertea cylindrica* L., in Egypt. Samples were collected weekly from untreated sugarcane fields at Al-Aiat region in Giza governorate from February 2001 to August 2003. Eggs were laid singly on the leaf upper surface near the margin. The initial mine was longitudinal and narrow and became a blotch by feeding larvae. Pupation took place outside the mine. Infestation levels were 1- 46% (mean, 18.4%) in 2001, 2-45% (mean, 14.1%) in 2002 and 1-54% (mean, 20.4%) in 2003 with a general mean of 17.8%. Number of mines were 1-4 per infested leaf and majority (> 91%) of infested leaves had a single mine. Generally, occurrence of live larvae started in November and continued until August and peaked in February, whereas the emergence of adults was from December to July and peaked in March during the period of this study. Larval parasitism by the abundant parasitoid *Chrysocharis* sp. and *Pnigalio* sp. (Hymenoptera: Eulophidae) varied between 13.2% in 2003 and 19.2% in 2002 with a peak about 30% recorded in 2001, with a general mean of 20.7%. Parasitoids activity started with low rates about 17 and 14% in January and February and continued until December and reached the highest rate of about 38 and 42% in May and July 2002 and 2001, respectively. In 2003, parasitism ranged from about 9% in January to 25% in May, but declined to about 4% in July. Parasitoids generally emerged from December to July with a population peak in occurred in April.

E 9

RED PALM WEEVIL IN 60 SECONDS. Khalid Alhudaib¹, Abdulaziz Al-Ajlan¹, Romeno Faleiro² and Khaled Al-Abdulsalam¹. (1) Department of Arid Land Agriculture (Plant Protection Science Program), College of Agricultural and Food Sciences; (2) Date Palm Center, King Faisal University, King Faisal University, Al Hasa, Saudi Arabia, Email: aajlan@hotmail.com

The red palm weevil, *Rhynchophorus ferrugineus*, is one of the most important insect pests that destroy palm and lead to its death. In the mid eighties, it entered to the Gulf area and began to spread to other countries. In 1998,

the red palm weevil web site was created to cover the information needed for interested researchers in red palm weevil (www.redpalmweevil.com). This site focuses on the red palm weevil in both Arabic and English languages describing the seriousness, the infestation parts of the palm and RPW geographical distribution. On the global level, it became a source of information to interested workers around the world. Through the site the infestation of red palm weevil was confirmed in Japan, Turkey, Cyprus, Italy and others. The RPW site held together with the ESA in 2008 the first symposium on the RPW during ESA 56th annual meeting in USA. Anyone interested in the red palm weevil can find information during his visit to the site in 60 seconds.

E 10

THE EFFECT OF SOME OLIVE FRUIT CHARACTERISTICS ON INFESTATION RATE OF OLIVE FRUIT FLY *BACTROCERA OLEAE* GEMLIN. Dummar Namoor¹, Osama Edriss¹ and Moin Alali². (1) Department of plant protection, Faculty of agriculture, University of Albbath; Homs, Syria; (2) Plant Protection Department, Ministry of Agriculture, Homs, Syria, Email: osamaedriss@hotmail.com

The results of two season (2007 and 2008) showed that olive fruit qualities (weight, oil content) had an influence on the infestation date and rate with *Bactrocera oleae* (Diptera:Tephritidae). Eggs were laid on Aldebly olive variety when the average fruit weight was over 0.8 g, and on Aljalt variety when the average fruit weight was over 2.4 g. Whereas, it layed eggs on Kudieri variety fruit when the average fruit weight was 1.22 g. The correlation coefficient between infestation rate and both fruit weight and oil content was positive and high in the studied varieties. Infestation appeared first on Aldebly variety then on Aljalt variety in June in both seasons, and the average fruit weight of Aljalt variety was larger than that of Aldebly variety. The infestation rate was higher on Aldebly variety than on Aljalt variety, which was associated with a higher oil content in the Aldebly variety fruit compared to Aljalt variety. The average weight of Kudieri variety fruit was very low at the beginning of the two seasons, and infestation was only noticed in September when fruit weight and oil content increased.

E 11

EFFICIENCY OF THE EGG PARASITOID, *TRICHOGRAMMA EVANESCENS* WEST. IN COMPARISON WITH THE INSECTICIDAL APPLICATIONS AGAINST THE COTTON BOLLWORMS IN EGYPTIAN COTTON FIELDS. A.A. Khidr, A.H. El-Heneidy, A. Abdel-Halim, M.A. Eissa and Ali M. Matter, Plant Protection Research Institute, Agricultural Research Center, Giza, Egypt, Email: prof.abdelaziz.abouelela@gmail.com

Experimental trials to compare the efficiency of the egg parasitoid, *Trichogramma evanescens* West with the insecticidal applications on the infestation with the pink bollworm, *pectinophora gossypiella* (Saund.) and the spiny bollworm, *Earias insulana* (Boisd.) in cotton fields were carried out at Quesna district, Menoufia Governorate for