

## **Plant Extracts**

### EX 1

**IMPORTANCE OF PLANT EXTRACTS IN MANAGING *APHIS FABAE*.** Randa Suliman<sup>1</sup>, Ibrahim Saker<sup>1</sup>, Dommar Namora<sup>3</sup>. (1) Plant Production Department, Faculty of Agriculture, Tishreen University, Lattakia, Syria; (2) Plant Production Department, Faculty of Agriculture, Albaas University, Homs, Syria.

Aphids are visitors to the majority of plants. These insects multiply rapidly and they secrete lots of reduces. They cause huge direct and indirect damages especially to vegetables that are used fresh, where pesticides cannot be used. Experiments carried out with some plant extracts on *Aphis fabae* showed that these extracts were effective in controlling aphid multiplication without the use of chemicals. The percentage of aphid mortality reached 90% when plants were treated with extracts of *Cyclamen persicum*, *Styrax officinalis* and *Smilax aspera*. A decrease in the number of nymphs after treatment with *Carex hispida* and *S. officinalis* extracts was noticed. Additional negative effects were recorded on aphid females.

### EX 2

**PRELIMINARY EFFECTIVENESS OF SOME PLANT EXTRACTS ON RED ACARIDS.** Randa Suliman<sup>1</sup>, Ibrahim Saker<sup>1</sup>, Dommar Namora<sup>3</sup>. (1) Plant Production Department, Faculty of Agriculture, Tishreen University, Lattakia, Syria; (2) Plant Production Department, Faculty of Agriculture, Albaas University, Homs, Syria.

In an attempt of managing red acarids on crops, some plants extracts were used to control the increasing number and resistance of these insects. Preliminary results of using extracts from *Lycopersicm esculentum*, *Datura stramonium* and *Solanum nigrium* were promising. The aphid mortality rate reached 88% when plants were treated with water extract of *Thymns serphllum* leaves and 100% when treated with fruit extracts of *Styrax officinalis*. Stem extracts of garden uoka was also effective.

### EX 3

**IMPORTANCE OF PLANT EXTRACTS IN MANAGING ACARIDS DAMAGING TO CROPS.** Randa Suliman<sup>1</sup>, Ibrahim Saker<sup>1</sup>, Dommar Namora<sup>3</sup>. (1) Plant Production Department, Faculty of Agriculture, Tishreen University, Lattakia, Syria; (2) Plant Production Department, Faculty of Agriculture, Albaas University, Homs, Syria.

Acarids control is important especially because they can quickly develop resistance to the chemical pesticides used for their control. Most of the available chemicals did not prove to be adequate, and consequently more attention is now placed on natural products. Some plant extracts showed good results for the control

of *Tetranychus urticae*, and could prove to be an effective component for the management of these pests in the future. Extracts of *Lantana camara* and *Styrax officinalis* caused high mortality rate, and those of *Solanum nigrium* and *L. camara* reduced the number of eggs produced by females and an increased ratio of unhatched eggs.

#### EX 4

**EFFECT OF PLANT EXTRACTS ON THE GROWTH AND SCLEROTIA FORMATION OF *SCLEROTINIA* SPP. CAUSING COTTONY ROT OF VEGETABLES.** Mona N. Ekreem and Issa S. Faraj, Plant Protection Department, Faculty of Agriculture, El-Fateh University, Tripoli, Libya.

This study was conducted to test the effect of plant extracts of ten different plant species, belonging to different plant families, on the growth and sclerotia production *in vitro*. Three isolates of *Sclerotinia* species causing cottony rot disease of vegetables, were isolated from *Brassica oleraceae var capitata*, *Capsicum annuum* L., *lactuca sativa* L. and marked Ca<sub>1</sub>, Pp<sub>2</sub> and Lu<sub>3</sub> respectively. The results showed that, plant extracts had a variable effect on mycelial growth, to all tested isolates, one week after incubation at 19±1 C. The results indicated that some cold extracts inhibited mycelial growth, two weeks after incubation, The results also showed that some plant extracts had induced the growth of the three isolates, and significantly affected the production of sclerotia of the three tested isolates.

#### EX 5

**EFFECT OF NEEM OIL (*AZADIRACHTA INDICA*) ON SOME PHYSIOLOGICAL PARAMETERS OF *LOCUSTA MIGRATORIA MIGRATORIA* (LINNÉ, 1758) AND *LOCUSTA MIGRATORIA MIGRATORIOIDES* (R. & F., 1850) (ORTHOPTERA, ACRIDIDAE).** Bahia Doumandji-Mitiche and Moussa Abdoulaye, National agricultural Institute, El-Harrach, Algeria, E-mail: doumandjimitiche@yahoo.fr

Neem oil extracted from *Azadirachta indica* was tested in laboratory on some physiological parameters of *Locusta migratoria migratoria* and *Locusta migratoria migratorioides* (Orthoptera: Acrididae). Five days after treatment, haemocytes count of larvae's and adults was significantly reduced compared to the control. The treated insects showed a low count of the two haemocyte categories identified (prohaemocyte and plasmatocyte). Total haemocytes count for untreated larvae's was 406.33 haemocytes/μl, whereas treated larvae showed 281.33 haemocytes/μl for *Locusta migratoria migratoria*. Haemolymph and cuticular proteins were also significantly reduced in treated insects of the two species. Some of the neem oil treated adults showed slow down of heart pulse and respiratory rhythm. Results of these assays will be reported in the congress.

#### **EX 6**

**EFFICACY OF MELIA AZEDARACH L. EXTRACTS AGAINST LIRIOMYZA CICERINA (DIPTERA: AGROMYZIDAE).** F.Al-Housari<sup>1</sup>, M. El-Bohssini<sup>2</sup>, J. Ibrahim<sup>1</sup> and M.N. Al-Salty<sup>1</sup>. (1) Faculty of Agriculture, Department of Plant Protection, Aleppo University, Aleppo, Syria, E-mail: housarif@hotmail.com; (2) International Center for Agricultural Research in the Dry Areas (ICARDA), P.O. Box 5466, Aleppo, Syria, E-mail: M.Bohssini@cgiar.org

A study was carried out in a plastic house under artificial infestation to test the efficacy of aqueous and methanol extracts from fruits of the Chinaberry tree, *Melia azedarach* L. were tested for their efficacy against the chickpea leaf miner, *Liriomyza cicerina* R. The results revealed that methanol and aqueous extracts significantly reduced the mean percent of the leaflet damage and feeding punctures caused by *L. cicerina* at all concentrations compared with the check. The highest concentration of methanol extract (2%) gave the highest reduction in percent leaflets damage. No phytotoxicity was observed on treated plants.

#### **EX 7**

**ALLELOPATHIC POTENTIAL OF SOIL EXTRACTS THAT CONTAINED RESIDUES OF RAPHANUS RAPHANISTRUM AND AVENA FATUA ON GERMIATION AND GROWTH OF BREAD AND DURUM WHEAT CULTIVARS.** Salah M. Al-Tai and Eman R.J.M. Al-Rawi, Biology Department, College of Science, University of Mosul, Iraq.

The effect of soil extracts contained wild radish and wild oat residues (added at 2% w:w) with incubation for 0, 1 and 2 weeks, on the growth and germination of wheat cultivars (Em rabii, Caronia, Ebaa-99, Abu-graib) was evaluated. The inhibitory effect of these residues was evident during the first week of decomposition and reduced the plumule and radicle growth of Wheat cultivars as compared with the seedlings grown in 2% (w:w) peatmoss and in the control soil treatment (without residues). Statistical analysis showed a significant difference among the wheat cvs., and "Em rabii" was a superior cultivar in terms of seed germination and growth.

#### **EX 8**

**EFFECT OF PLANT EXTRACTS ON THE CONTROL OF SOME IMPORTANT AGRICULTURAL PESTS.** Abdul Sattar Al-Khafaji, Omar Al-Duri and Tadamun Eskander. Ministry of Agriculture State-Board of Agricultural Researches Baghdad, Iraq.

A study was conducted during 1998, 1999, 2000 to evaluate the effectiveness of alcohol and water extracts of several wild and cultivated plants,

such as *Zea mays* (male flowers), *Melia azedarach* (leaves), *Lycopersicum esculentum* (leaves), *Phragmites australis* (flower), *Ficus* sp. (leaves), *Diplotoxis harra* (leaves), *Artemisia campestris* (all plant), *Schanginia aegyptiaca* (leaves and flowers), *Euphorbia tinctoria* (leaves) to control some agricultural pests. Results showed that alcohol and water extracts of *Zea mays* male flowers and leaves of *Melia azedarach* were effective against *Tetranychus turkestanii*, *Aphis fabae*, *Aphis gossypii*. Alcohol extracts of *Artemisia campestris* (conc. 125 ppm) gave good results (efficacy 100%) as compared with water extracts and hexane extracts that were not effective (0.0%). The water extracts of several plants (at concentration of 300 and 500PPm) showed low activity against adults of *Tribolium castaneum*.

#### EX 9

**ANTIBACTERIAL EFFECTS OF BENZENE AND CHLOROFORM EXTRACTS OF AMMI MAIJUS (KHILLAH) PLANT.** B.A. Abdulla, Biology Department, College of Science, Mosul University, Mosul, Iraq.

This study includes the inhibitory effects of benzene and chloroform extracts of herb Ammi majus (Khillah) on some pathogenic and opportunistic gram positive and negative bacterial species. The results indicated that benzene fractions (F3 & F4) were more effective than chloroform fractions (F4 & F5). The resistant bacterial strains were *Escherichia coli*, *Proteus vulgaris* and *Acinetobacter baumannii*. With these fractions *Bacillus subtilis*, *Staphylococcus aureus*, *Haemophilus influenzae* and *Proteus mirabilis* exhibited MIC values several times higher than that of the antibiotic ampicillin.

#### EX 10

**EFFECT OF SOME PHENOLIC COMPOUNDS ON THE GROWTH OF THE BEAN *BRUCHUS ACANTHOSCELIDES OBTECTUS* SAY (COLEOPTERA: BRUCHIDAE).** Mohamed Anouar Khalil, Faculty of Sciences, Department of Biology, University of Aboubakr Belkaid, Tlemcen, B.P. 119, Tlemcen, Algeria.

All the tested phenolic compounds, at different levels, had a detrimental effect on the eggs and larva of the Bruchus bean "beetles". The use of these compounds, may be considered as means to fight against this important insect. At low doses of 10 mg of product for a hundred grains of bean, it did not lead to any significant effect on eggs mortality. Starting from 100 mg, more than 90% of eggs were destroyed by the "vanilic and cinamique" acids. The new emerging larva were more susceptible to phenolic acids, and starting from 10 mg of products, a significant death rate were noted, where more than 80% of the larva population was destroyed by the cafeique and vanilique acids.