

**USE OF PLANT EXTRACTS AND BIOCONTROL  
AGENTS FOR THE MANAGEMENT OF SOME  
INSECT PESTS IN SOME MEDICINAL AND  
AROMATIC PLANTS IN EGYPT AND KENYA**

**By**

**HUSSEIN IBRAHEM HUSSANEIN IBRAHEM**

**B.Sc. Agric. Sci. (Agricultural Pests), Fac. Agric., Cairo Univ., 2007**

**M.Sc. Agric. Sci. Zoology(Nematology), Fac. Agric., Cairo Univ., (2015)**

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**Name of Candidate:** Hussein Ibrahim Hassanein Ibrahim

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**Supervisors:** Dr. HASSAN MOHAMED SOBHY

Dr. Nagwa Abdel-Hamid Abdel-Bary

Dr. FARID ABDULRAHEEM HARRAS

Dr. FARHA HOSNY HASSAN FARAGLLA

**Department:** Natural Resources

**Branch:** Animal Resources.

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### ABSTRACT

Medicinal and Aromatic plants (MAPs) belong to a large group of plants with a great interest due to its cosmetic, pharmaceutical and nutritional values. *Origanum majorana* L., *Ocimum basilicum* L., *Foeniculum vulgare* Mill. and *Coriandrum sativum* L are the most important medicinal and aromatic plants belonging to families Lamiaceae and Apiaceae in Egypt and Kenya. These plants are desirable host plants to many insect pests. Therefore, this study was included the following: 1-Survey of some pests that were infesting Medicinal and Aromatic plants (MAPs) belonging to Lamiaceae and Apiaceae families in the field during 2018-2019 seasons at Fayom governorate and Kenya. 2-Relation between population fluctuation and Evaluated effects of weather factors of some pests that were infesting families Lamiaceae and Apiaceae during the two successive seasons (2018-2019) at Fayum governorate. 3- Effect of sap-sucking insects on the quantity and quality of some Medicinal and Aromatic plants (MAPs) essential oil. 4- Efficacy of entomopathogenic nematodes against *Spodoptera littoralis* (Boisd.) and *Agrotis ipsilon* (H.) (Lepidoptera: Noctuidae). 5- The efficiency of some treatments on the population density of some pests infesting family Apiaceae. Bioassays were conducted to evaluate the nematode's efficiency in the laboratory to kill the insect larvae. The nematode, *Steinernema monticolum* has killed >90% of the *Spodoptera littoralis* & *Agrotis ipsilon* larvae at 400 (IJs)/dish. While mortality percent was 80 and 100% with 100 IJs/dish of *Heterorhabditis bacteriophora* (HP88) were used against *A. ipsilon* and of *S. littoralis* instar insect larvae respectively. These results indicate that the nematode *H. bacteriophora* (HP88) was more virulent than *S. monticolum* against *S. littoralis* & *A. ipsilon* in the laboratory. Field trial was conducted during 2 seasons at Fayum Governorate. Studied the insecticidal activities of Oikos (Azadiractin 3.2% EC), KZ Oil+Potassium Soap, BREV-AM (Orang oil 9% SL), Mospilan sp20%, Extract of Piper nigrum, Extract of Camphor and control (without treatment) were evaluated against *Brevicoryne brassicae*, *Aphis gossypii* and *Hyadaphis coriandri*. The results indicated that the efficient treatments are Mospilan sp 20%, Extract of Camphor 4&6 cm<sup>3</sup>, SAIF oil, Extract of Camphor 4 cm, Extract of Piper nigrum 4& 6 cm<sup>3</sup>, BREV-AM, Potassium Soap, mortality percent varied to 100% for all trials. These results indicate the possibility of using all these biological extracts interchangeably instead of the chemical pesticide (Mospilan sp20%) because it will be economical and safe for the environment.

**Key words:** *Origanum majorana*, marjoram, Fennel, basil, Coriander, *Coriandrum sativum*, *Foeniculum vulgare*, *Ocimum basilicum*, Entomopathogenic nematodes, *Heterorhabditis bacteriophora* (HP88), *Steinernema monticolum*, medicinal and aromatic plants, *Agrotis ipsilon*, *Spodoptera littoralis*.

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