

## INFLUENCE OF THREE SAP-SUCKING INSECT PESTS' INFESTATIONS ON ESSENTIAL OIL OF SWEET MARJORAM (*ORIGANUM MAJORANA* L.)

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### Abstract

Effects of the levels of infestations with three different sap-sucking insect pests, *Aphis gossypii*, *Empoasca descipiens* and *Thrips tabaci* on quantity and quality of Sweet marjoram essential oil planted at the Applied Research Center for Medicinal Plants (N.O.D.C.A.R.) Kafr El-Gable, Giza Governorate. From December, 2006 to June, 2007, were evaluated at Experimental farm of the Medicinal and Aromatic Plant Research Department, Horticulture Research Institute, Agriculture Research Center, Dokky, Cairo. Statistical analysis revealed that there is a highly negative significant correlation coefficient between the infestation with each insect pest and the quantity and quality of Sweet marjoram essential oil, where the correlation coefficients were -0.8, -0.7 and -0.8 for *A. gossypii*, *E. descipiens* and *T. tabaci*, respectively. In addition, there is a highly negative significant correlation between the level of infestation of these insect pests and both quantity and quality of the extracted Sweet marjoram essential oil where correlation coefficients were -0.8 and E.V. % was 72%. Also, all of the detected components of essential oil were sharply and negatively affected with different infestation levels with the three sap-sucking insects in compare with the control.

**Key Words:** Sweet marjoram, *Origanum majorana* L., Essential Oil, Sap-Sucking Insects, *Aphis gossypii*, *Empoasca descipiens*, *Thrips tabaci*, Infestation.

### INTRODUCTION

In Egypt, medicinal & aromatic plants represent a significant source of national income. They have an economic value for local & exterior markets. The cultivated area of such plants reached about 63500 feddans, (presents less than 0.8% of total cultivated area). About 80% of the calculated areas are concentrated in EL-Fayom, Beni Sweif, El-Menia and Assiut Governorates. The total exported quantity attained about 35000 tons of dry herb and spices in 2006 (M.A.G.L.R., 2006).