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INSECTICIDAL ACTIVITY OF *SALVIA OFFICINALIS* ON THE BLACK BEAN APHID, *APHIS FABAE* SCOPOLI (HEMIPTERA: APHIDIDAE) IN LABORATORY CONDITIONS

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In recent decades, using of chemical pesticides for pests control in a wide range has been caused adverse environmental consequences. Plant essential oils are aromatic connections obtained by steam distillation, medicinal aromatic plants [2]. These oils are rich source of bioactive compounds and in terms of biological are considerable decomposition and low risk is for mammals. Therefore use of essential oils is regarded by environmentalists due to very short-term persistence in the environment. In this research, susceptibility of adult of the black bean aphid to essential oil of *Salvia officinalis* (Lamiaceae) plant was studied under laboratory conditions, 25±2°C and 65±5% RH. For extraction of essential oil, a hydro distillation apparatus (Clevenger) was used and extracted essential oils were kept in a conventional refrigerator in 4°C and away from light until using in experiments. Mortality was evaluated at 5 different concentrations that ranging from 8.82 to 108.82 µL/L air, and with 6 replications at the interim of 24 hours. In each repetition 15 adult aphids of the black bean aphid was placed on acacia leaf with dimensions of 5×5 cm² for each concentration. The desired essential oil was released on the filter paper in the inner surface of containers. The influence of different concentration of *S. officinalis* on the mortality rate of adult of the black bean aphid was significant. Results showed the mortality rate at the highest concentration (108.82 µL/L air) for this oil was 75%. Also at the lowest concentration (8.82 µL/L air) the mortality of aphid was not observed for these essential oils. LC₅₀ value for *S. officinalis* after 24 h fumigation was 41.18 µL/L air. Throughout the world has increased tend to use of alternative compounds including essential oils of different plants that most are like poison common gas and has lethal effects on different stages of pests [1]. Therefore, the obtained results can be paved the way for use of non-chemical and environmentally friendly methods to management of *A. fabae*.

References

- [1] Papachristos, D. P.; Stamopoulos, D. C. *J. Stored Prod. Res.* **2002**, 38: 365-373.
[2] Yatagai, M. *Curr. Top. Phyto.* **1997**, 1: 87-97.