COMPARISON OF NYMPH PRODUCTION DETERRENT EFFECT OF TWO ESSENTIAL OILS OF *SATUREJA ISOPHYLLA* RRCH. AND *ELETTARIA CARDMOMUM* MATON ON THE CABBAGE APHID, *BREVICORYNE BRASSICAE* L. (HEMIPTERA: APHIDIDAE)

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The cabbage aphid, *Brevicoryne brassicae* is one of the important pests with broad host range that does damage to cruciferous (*Brassicaceae*) plants. This pest in addition to reducing market value of *Brassica* products is able to transmit a number of plant viruses [1]. Effects of certain plant essential oils have an old reputation as a natural deodorant and flavors in the perfumery industry and food storage and also have been proven in pest control. Recent researches in different countries has confirms that plant essential oils are not only used in pest control, but their insecticidal effects have been seen as contact and fumigation in combat with certain pests. Antibiosis activity of essential oils and their effects on insect growth parameters has been proved [2]. In this research, nymph production detergency activity of *Satureja isophylla* (Lamiaceae) and *Elettaria cardamomum* (Zingiberaceae) was studied on the cabbage aphid in the 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. The desired essential oil was released on the filter paper in the inner surface of containers. In each of tested container (with dimensions of 5 × 5 cm^2), four adult aphids were placed on the cauliflower leaf. Detergency effect was tested at LC_{10} and LC_{25} concentrations for *S. isophylla* (1.47 and 13.53µL/L air) and for *E. cardamomum* (4.18 and 9.18 µL/L air) at 72 hours intervals and was daily checked. 10 replications were used for each experiment. After counting, produced nymphs were removed from test containers. Statistical analysis showed that there is a significant difference between LC_{10} and LC_{25} of *E. cardamomum* and *S. isophylla*. So that the deterrence percentage were recorded for *E. cardamomum* (93.03% and 92.62%) and for *S. isophylla* (29.09% and 90.57%) in LC_{10} and LC_{25} concentrations, respectively. These results showed that toxicity of *E. cardamomum* is more than *S. isophylla* on the cabbage aphid.

References

[1] Chivasa, S.; Ekpo, E.; Hicks, R. *J. P. Pathol*. **2002**, *51*(3): 386.
[2] Işık, M.; Gazi, G. *Munis. Entomol. Zool*. **2009**, *4*(2): 424-431.