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COMPARISON OF NYMPH PRODUCTION DETERRENT EFFECT OF
ESSENTIAL OIL OF *FONICULUM VULGARE* MILL. ON THE
CABBAGE APHID, *BREVICORYNE BRASSICAE* L. AND THE BLACK
BEAN APHID, *APHIS FABAE SCOPOLI* (HEMIPTERA: APHIDIDAE)

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Danger of the use of chemical pesticides on the environment and the possibility of residual pesticides in plant products such as cruciferous plants (*Brassicaceae*), also attention to aphids as major pest which are vectors of virus infections and the other hand diversity of essential oils against the pests and their less persistence in the environment was provided suitable conditions for this study. This research was aims to study the deterrent effect of essential oil of *Foeniculum vulgare* (*Apiaceae*) on the cabbage aphid, *Brevicoryne brassicae* and the black bean aphid, *Aphis scopoli*. The plant materials used in this study were collected from medicinal plants field of Shahed University in 2011. The plant essential oils were obtained using a modified Clevenger-type apparatus through hydro distillation [1]. For extraction of essential oils, 100 g of powdered plant with one liter of water was poured in the apparatus and extraction of essential oils was done at three hours. Experiments were tested at different concentrations of *F. vulgare* on the cabbage aphid ($LC_{10}=3.41$ and $LC_{25}= 7.29 \mu\text{L/L air}$) and the black bean aphid ($LC_{10}=1.12$ and $LC_{25}= 1.94 \mu\text{L/L air}$) in the laboratory conditions: $25\pm 2^\circ\text{C}$ and $65\pm 5\%$ RH and at the interim of 24 hours in ten replications with four adult aphids and in a completely randomized design. The results showed that there is significant difference between deterrent effects of these two pests at LC_{10} and LC_{25} concentrations. So that the maximum deterrence percentage was related to LC_{25} of *F. vulgare* on the cabbage aphid (84.83%) and the lowest belonged to LC_{10} of *F. vulgare* on the black bean aphid (28.24%). Also deterrent effect of *F. vulgare* on these two pests in LC_{25} concentrations group was greater than LC_{10} . These results showed that toxicity of *F. vulgare* on the cabbage aphid is more than toxicity of *F. vulgare* on the black bean aphid.

References

[1] Cavalcanti, E.S.B.; Morais, S.M.; Lima, M.A.A.; Santana, E.W.P. *Memorias do Instituto Oswaldo Cruz*. 2004, 99: 541-544.