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CONTROLLING VARROA MITES USING NATURAL OIL EXTRACTS

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ABSTRACT:

The efficacy percentages of both pumpkin oil and clove oil against varroa mites are equal recording 72.25 and 74.93 %, followed bycassia oil and cardamom oil resulting 70.37 and 66.62, respectively, compared with the control 40.47. The reduction percentages of mites attached to honey bee workers as affected by the application of pumpkin oil, cardamom oil and cassia oil are approximately the same recording 81.58, 80.04 and 83.01%, respectively, compared with the clove oil ,which reduced only 67.65 %. The reduction percentage of mite infestation levels inside worker brood for cardamom oil was the highest recording 94.52 %, followed by pumpkin oil, clove oil and cassia oil, which gave 74.03, 84.18 and 84.4 %, respectively, in comparison with the control, which increased more than 100%.

Key words: honeybee, Apis mellifera, Varroa destructor control, essential oils

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ASSESSING THE EFFICACY OF SOME PLANT EXTRACTS APPLIED TO HONEYBEE WAX IN THE BIOLOGICAL CONTROL OF GALLERIA MELLONELLA (Lepidoptera: Pyralidae)

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ABSTRACT:

Experiments in this study were conducted in the apiary and laboratory of Economic Entomology Dept., Faculty of Agriculture, Minoufiya University to study the toxicological effects of three plant extracts in controlling Galleria mellonella. The statistical analysis of the obtained results indicated that there were significant differences in the weights of larvae and pupae as well as the emerged adults between sprayed treatments and control treatment. Results indicated that the mortality percentages of wax moth larvae were 33.3, 36.6 and 50 % for the 0.2, 0.3 and 0.4 % neem concentrations, respectively, compared with control 0.0 % . Mortality percentages of pupae were 100 % at the three neem concentrations, while it was only 10 % at control treatment. The emergency percentages of adult moths were 90 % at control treatment, while no emerged adults were registered at all neem concentrations. The mortality percentages of wax moth larvae were 23.3, 36.6 and 50 % for the 0.2, 0.3 and 0.4 % of Chenopodium concentrations, respectively, compared with control , which was 0.0 % . Mortality percentages of pupae were 100 % at the three Chenopodium concentrations, while it was only 16.6 % at control treatment. The emergency percentages of adult moths were 83.3 % at control treatment, while no emerged adults were registered at all Chenopodium concentrations. The mortalities of wax moth larvae were 26.3, 33.3 and 46.6 % for the 0.2, 0.3 and 0.4 % of Camphor concentrations, respectively, compared with control, which was 0.0 %. Mortality of pupae were 93.3, 96.6 and 100 % at the three of Camphor concentrations, respectively, while it was only 13.3 % at control treatment. The emergency percentages of adult moths were 86.6 % at control treatment, while it were 6.6, 3.3, and 0.0 % at 0.2, 0.3, and 0.4 % of Camphor concentrations, respectively.

Key words: Honeybee wax, plant extracts, biological control, the greater wax moth, Galleria mellonella.