

EFFICACY OF DIFFERENT ECOLOGICAL METHODS FOR HONEYBEE (*APIS MELLIFERA*) VARROA PREVENTION IN SPRING

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Abstract. The study was carried out with the aim to examine the efficacy of naturally occurring chemicals and mechanical methods for honeybee (*Apis mellifera*) varroa prevention in spring and infestation dynamics during the active season in the treated and untreated colonies under practical Lithuanian beekeeping conditions. Forty colonies were used for formic and oxalic acid, sugar syrup, drone comb trapping treatments and monitoring of the dynamics of varroa infestation. The effect of the oxalic acid treatment was higher than that of the formic acid. However, the formic acid treatment showed higher negative effect on honeybee mortality than the oxalic acid treatment. The honeybee drop after the first and second applications was, respectively, 15 times and 16.8 times higher compared with the oxalic acid treatment. Honeybee sprinkling with sugar syrup increased mite drop 2.5-2.7 times compared with the natural mite drop. However, it also increased the attraction of honeybees to rob foragers. Drone comb trapping significantly reduced infestation of honeybee colonies and it also increased aggressiveness and disorientation of honeybees.

Monitoring of infestation dynamics in the treated and untreated colonies showed that during the summer the infestation of untreated honeybees increased 1.7 times. Oxalic acid treatment in spring did not protect from varroa spread. Although after a week in the oxalic acid treated colonies the infestation of honeybees decreased 5.6 times, afterwards the infestation of monitored honeybee colonies had been constantly increasing and in autumn exceeded the initial level of infestation.

Keywords: *Varroa destructor*, *Apis mellifera*, oxalic acid, formic acid, sugar syrup, drone comb trapping.