

Effect of Neem (*Azadirachta indica*) oil on varroa mite development in field conditions

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Neem tree (*Azadirachta indica*) is a well-known source of natural extracts containing triterpenoids and other active substances with insecticides and miticides effects. In recent years, neem-derived products were tested for tolerability in honeybees and effects against varroa mites, with conflicting results due to the different characteristics of the extracts, dosages, test sites, and methods of application used for in vitro tests and in field trials (Melathopoulos et al., 2000; Gonzalez-Gomez et al., 2012; Anjum et al., 2015). The present study aimed to check, in suitable field conditions, the possible effects against varroa of a commercial preparation of neem oil for veterinary use (RP03™, Farmaneem, Italy). The tests were carried out in the years 2013-2014 in the same apiary. The product was applied prior or during the development cycle of the honeybee brood, and the following effects were evaluated: acaricide, repellent for the mite and / or disturbing the development of varroa. In addition, the tolerability of honeybee families to the product was assessed. This work allowed to verify in a meaningful way and in field conditions the interaction effects between neem oil and the Varroa mite developmental cycle. The results may encourage further studies in order to confirm the valuability of standardized neem oil preparations as additional tools in the current strategies for varroa control.

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