MMSL Military Medical Science Letters Since 1925

Mil. Med. Sci. Lett. (Voj. Zdrav. Listy) 2022, 91 (supplementum 1)
ISSN 0372-7025 (Print)
ISSN 2571-113X (Online)

MEETING ABSTRACTS

THE SUBLETHAL EFFECTS OF SYNTHETIC PYRETHROID TAU-FLUVALINATE ON ADULT HONEYBEES

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Nowadays, pyrethroids (e.g., flumethrin and tau-fluvalinate) are commonly used in apiculture as an active ingredient of several authorised veterinary medicinal products (acaricides) licensed worldwide. The beekeepers who regularly use synthetic acaricides throughout the year may potentially put the bee colonies at risk. Pyrethroids are frequently related to long half-life inside the hive matrices, which may adversely affect the health of bee colony. In this project we assessed potential harmful lethal and sublethal effects of synthetic acaricide tau-fluvalinate (tech.) on winter adult honeybees according to OECD 245 (2017). In vitro reared winter honeybees showed no dose-dependent mortality after the oral 10-days exposure to sucrose solution (50% w/w) spiked with a maximum concentration of 750 µg a.i./kg diet and its 1/10 value. The No Observed Effect Concentration (NOEC) appears to be higher than or equal 750 µg a.i./kg diet. The results of tau-fluvalinate testing for the potential sublethal genotoxic effects showed that that pyrethroid tau-fluvalinate at tested concentrations induced significant levels of DNA damage in bees, which may result in a potential genotoxic effect.

Funding was provided by the Slovak Grant Agency VEGA (grant No. 1/0166/21), and by the National Reference Laboratory for Pesticides of University of Veterinary Medicine and Pharmacy in Košice, Slovakia.

Keywords: Apis mellifera; tau-fluvalinate (tech.); exposure; toxicity; DNA damage

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