

Acaricidal Compounds and Methods Thereof

Acaricidal compounds that are effective in killing Varroa destructor mites, while being harmless to honey bees



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Reference: 2013-017

Please note, header image is purely illustrative. Source: pexels, CC0

IP Status

Patented

Seeking

Seeking investment, Commercial partner, Development partner, University spin out

Background

The ectoparasitic mite *Varroa destructor* is at the top of the list of risk factors for honey bee (*Apis mellifera*) colony losses. Failure of conventional chemical acaricides in Varroa control is due to widespread resistance to existing miticides. Also, negative effects of widely used acaricides on bees are driving the search for more sustainable and environmentally compatible methods of Varroa control.

Tech Overview

SFU researchers have developed a method of killing *Varroa destructor* by applying an effective amount of an acaricidal compound to a Varroa destructor-infected honey bee population. The effect of the elected compound on Varroa mites was evaluated by laboratory bioassays. The compound paralyzes and eventually kills the mites after a few hours of exposure. Furthermore, honey bees can ingest the compound without harm and without increase in mortality. Field trials done in Canada during the fall show that the compound applied to a colony of honey bees causes mites to start dropping dead onto the bottom board within 24 hours of application. A 4-week treatment with the compound resulted in significant decreases in mite populations and in mite occupancy of brood cells. The compound prevented the bloom of the mite population normally seen in autumn in Canada. Test colonies survived the winter better than control colonies.

Benefits

- The compound is a solid that evaporates and thereby exerts a fumigant effect on nearby areas of the comb within the hive.
- The compound does not show toxicity or irritation to bees or vertebrates.
- Can be used in conjunction with a second acaricide comprising an organic acid.
- The compound is also a moth feeding deterrent, so an additional use of our compound in beekeeping is protection of wax comb (the second largest investment of a beekeeper and the bees themselves) from degradation by wax moth. The other treatments do not have this effect.

Patents

- IP Filed: PCT/CA2019/050908 (Priority Date: June 29, 2018)

Learn more about this opportunity

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