



## Technology & Innovation

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### New Innovation Brings Success For Honey Producers

By EduTransfer Design Associates Inc. & Haywire Creative

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For honey producers across Canada, the biggest and most costly challenges they face are parasitic mites. Since the mid-nineties, varroa mites (*Varroa destructor*) have spread their way across Canada, killing honey bee colonies and threatening to destroy the viability of the honey industry.

David VanderDussen of Frankford, Ontario, a honey producer with over 400 hives and CEO of NOD Apiary Products Ltd., began looking for an organic solution to controlling parasitic mites in honeybee colonies in 1997. "Varroa mites are a very destructive pest, attacking adult honey bees and using developing honey bee larvae for reproduction," explains VanderDussen. As the varroa mites feed off developing honey bee larvae, they inject viruses and bacteria into the cells, resulting in deformed baby bees. If this parasite was on an adult size human body, it would be about the size of the dinner plate.

"Working with scientists and industry, we completed our research work in 2003 and applied for product registration in both Canada and the US," says VanderDussen. "In the spring of 2005 we received registration for our new product, Miteaway II in both countries." The active ingredient of Miteaway II is formic acid, an organic acid naturally occurring in honey and the environment. Bees have a higher tolerance to formic acid than the parasites, so aren't affected by the control product. "We use food grade formic acid in the manufacture, which ensures a residue free quality end product and pure honey."

Miteaway II is a presoaked formic acid pad that controls varroa and tracheal mites. The pad includes a specially designed slow release generator that releases formic acid over a three-week period. The vapor from the formic acid burns the tissue of the mites killing them, however the bees aren't affected. Miteaway II research trials showed a 90 to 95 percent control of both varroa and tracheal mites.

The Miteaway II pad, which is placed in the hive above the honey bee colony brood chamber, is applied twice a year. "Producers apply one pad usually in May when they pull the bees out of their overwintering location and prior to the honey crop," explains VanderDussen. "The second application occurs in the fall after the honey is harvested, which is generally at the end of August or the beginning of September in the colder regions of Canada, and the last half of September in warmer regions. The two treatments per year cost producers around \$7 per hive. The pads are manufactured in Ontario, and distributed throughout Canada and the US.

"We're pleased to find a product that not only controls the problem, but is also environmentally safe and residue free," says VanderDussen. Formic acid is also recognized as a permitted substance for apicultural use to control parasitic mites

"I believe there is a great future for beekeeping and the honey industry," says VanderDussen. "As well, consumers are demanding more pure foods, including pure honey, and Miteaway II is a product that can deliver that."

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under the new Canadian Organic Standards. "Another reason the development of this product is so important is that some of the historical active ingredients that have been developed and registered to control mites are failing. The mites are developing resistance to products such as synthetic pyrethroids and organophosphates. However, no resistance is expected with Miteaway II."

VanderDussen sees a positive future for beekeeping and his company continues to find ways to add to their line of bee protection products. The first product was a winter wrap, a sleeping bag for hives designed for northern climates to bring bees through the winter. A new product just released is the bee brief, which is a miniature hive used for rapid colony production. "As bee producers and manufacturers of bee protection products, our goal is to offer products that improve profitability and meet the challenges of sustainability in the honey production business across Canada."

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