SUCCESSFUL BEEKEEPING

By Bill Ruzicka Inventor of **MiteGone®**
Commercial Bee Breeder in BC.

MiteGone FORMIC ACID TREATMENT DOES NOT CONTAMINATE HONEY There for can be used in honey flow.

Lab contamination tests Abstract:
From 8 pairs of samples 6 had 5%-33% more acid in controls than in treatment hives, one pair was equal, and one had 19% higher content in treatment than in control hive.
It can be observed, that based on the measurement of the submitted samples, there is no significant difference in the formic acid concentration between the control and the test samples which were undergoing Formic acid treatment. The average acid content of treatment hives is 181 mg/kg, control hives 202 mg/kg. Average content in honeys being from 15-800 mg/kg.

In 2014 registration process I was claiming that MiteGone patented Dispenser “PAD” is made of special foam having elongated cell structure acting like capillary tubes holding the acid in without dripping when installed vertically, and as acid evaporate from bottom of pads, gravity pulls the acid down having evaporating surface constantly wet. Under bees maintaining brood temperature and 55% humidity it results in steady evaporation. Which is not outside weather dependent. Pad vas designed to emit 6g a day 2-pads will emit 12g day or 1/2g an hour 8mg a minute. Such low dose continuous release: makes mites sic, infertile, and die. 80% will not reproduce. It does not cause any bad side effects, los of queens, brood mortality or sterility of drones. It cannot contaminate honey.

I was ordered by PMRA to provide proof if I want to remove the contamination restriction.
For 3 years I try to collect samples: In 2016 year, I finally succeeded in getting 16 samples to proof that MiteGone will not contaminate honey or wax.

All my hives goes into pollination with one brood chamber queen excluder and 9 frame dadant on top. 2- MiteGone pads with 240g of 65% acid are in top box between outmost comb and wall of box
16 of my hives went in 4 packs into same Cherries and apple Orchards, two and two facing opposite direction
When you stand in front of entrances the left hive had acid treatment in top box between the last comb and wall of box. Right one was control no treatment. To overcome a problem of old comb, I spread two combs in lower brood chamber, two spaces from pad half inch apart from each other giving bees a space to build burr comb complete with new wax and filled with honey on all 16.

For 3 years I was searching for labs who cod do such tests giving them this info:
Do you have ability or cod you recommend one to send the samples to, for analysis of contamination by Formic acid, on treated hives above normal content of acid in control units?
Honey is now solid in 4 oz glass jars but it will melt. Honey is beautiful an edible after tests most likely BOTANICAL HONEY SOURCE in pollination of fruit trees are DANDILIONS.

Finally, in march of 2019 I found the lab capable of such tests. Below ARE LAB RESULTS:

April 17, 2019

Adamson Analytical Laboratories
A Tentamus Company

220 Crouse Dr. Corona, CA 92879 Phone#951-549-9657

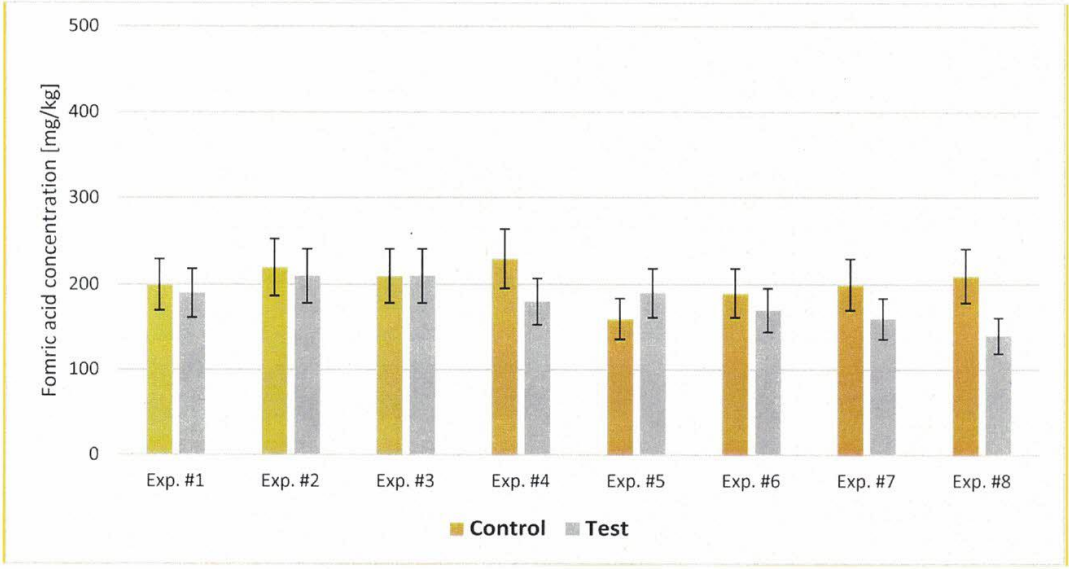
Scientific Interpretation of the results of formic acid measurement for MiteGone Int.

The client MiteGone Int. (Bill Ruzicka) sent honey samples to Adamson Analytical Laboratories which arrived on 03/28/2019. Samples were labeled in pairs of experiments – each set with a honey control sample and a honey test sample which were treated with formic acid (formulation by two pads of MiteGone method using 125 g of 65% formic acid).

Following results were obtained (formic acid concentration in mg/kg)

	Control	Test	Difference
Exp. #1	200	190	-5%
Exp. #2	220	210	-5%
Exp. #3	210	210	0%
Exp. #4	230	180	-22%
Exp. #5	160	190	19%
Exp. #6	190	170	-11%
Exp. #7	200	160	-20%
Exp. #8	210	140	-33%

For an easier overview the results are displayed here graphically:



It can be observed, that based on the measurement of the submitted samples, there is no significant difference in the formic acid concentration between the control and the test samples which were undergoing formic acid treatment. The differences between the concentrations are

Approved by:_____Peter VanCouvering, General Manager

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within the measurement uncertainty of the method. The level of acid normally found in honey is in natural values for formic acid are depending on the botanical origin in a range between 15 mg/kg up to 800 mg/kg. Here are some concentrations listed (source: statistical evaluation of measured data of QSI):

Botanical Honey Source	Fomic Acid Concentration (mg/kg)
False Acacia/Robinia	15.2±3.2
Canola	34.2±13.3
Clover	18.9±8.3
Tilia	75.9±13.3
Honeydew	89.3±40.5
Chestnut	533.9±334.6