

# RESULTS OF 50% FORMIC ACID FUMIGATION OF HONEY BEE HIVES [*APIS MELLIFERA LIGUSTICA* (HYMENOPTERA: APIDAE)] TO CONTROL VARROA MITES (ACARI: VARROIDAE) IN BROOD COMBS IN FLORIDA, U.S.A.

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**ABSTRACT** - We used the 50% formic acid fumigator to treat 51 honey bee colonies in Florida on April 2, August 16 and October 23, 2006 and January 2, 2007, to control varroa mites. Treatments consisted of 90 to 110 ml of 50% formic acid mixed with 15 ml of Honey-B-Healthy™ essential oil concentrate to prevent queen losses. The fumigator was applied during daylight hours to each hive, screened bottoms were covered, openings taped over, and the entrance reduced to 3/8" by 3 1/2" (0.95 cm x 8.9 cm) and removed the next day after from 17 to 23.3 hours. Average mortality of varroa mites in capped drone cells was 93% (92.8% to 98.8%) (after adjustment for Abbott's correction for control mortality). Capped drone cells in old black comb had the lowest mortalities (66% to 84%): less of the 50% formic acid vapor was able to penetrate the thicker cappings.

**Key words** - Acari, Varroidae, varroa mites, *Apis mellifera*, formic acid fumigation, control, U.S.A.

Abstract # 1

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