Abstract
The development of Varroa destructor Anderson & Trueman (Mesostigmata: Varroidae) population dynamics in Africanized honey bees, Apis mellifera L. (Hymenoptera: Apidae) colonies was monitored from February to July 2004 in Atenas, Costa Rica. A correlation between the mite infestation level and the colony condition was evaluated. For each colony, infestation of varroa in adult bees was measured twice a month. Sticky boards were placed on the bottom boards of each colony to collect fallen mites. The condition of the colonies was evaluated by measuring the amount of brood and adult bees. Our results consistently showed that mite infestation on adult bees increased significantly in the experimental colonies, rising to 10.0% by the end of the experiment. In addition, the mean mite fall increased significantly over the course of the study in the treated (R= 0.72, P<0.05) and untreated colonies (R= 0.74, P<0.05) to a level of 63.8 and 73.5 mites per day, respectively. The increase in varroa infestation coincided with a decrease in the amount of brood. Furthermore, adult bees with deformed wings or even without wings crawling in front of their hive occurred in highly infested colonies (mite infestation = 10.0% or more).

Keywords
Varroa destructor, Africanized honey bees, population dynamics, mite infestation, colony condition.