

Abstract

The devastating effects of *Varroa destructor* Anderson and Trueman on Western honeybee colonies (*Apis mellifera* L.) have been well documented. Not only do these mites cause physical damage to parasitized individuals when they feed on them, but they also transmit viruses and other pathogens, weaken colonies and ultimately may cause their death. Unlike the subspecies of European origin, the honeybees of African origin suffer less from mite infestations. Absconding is one of the factors contributing to low *V. destructor* population in honeybee colonies as it creates a brood-free period. For a long time, researchers hypothesized that absconding was the main mechanism to control the parasite. The effects of *V. destructor* are well documented under temperate climatic conditions with a break during winter. Therefore, our study aimed at investigating the impact of *V. destructor* population growth on colony size, absconding and productivity under natural infestation levels of a tropical/subtropical climate with continuous brood production. We measured several characteristics related to the mite populations, the bee colonies and the resources of the bee colonies for a period of 8 months. The seven colonies that absconded during the study period were not influenced by densities of *V. destructor*. Absconding of the colonies occurred as a result of low numbers of capped brood. Mite densities were generally low throughout the study period (ranged between 26.9 and 59.8 mites per month) but were positively associated with adult bee densities. The amount of open and capped brood was positively associated with densities of *V. destructor* in the brood and negatively associated with densities of *V. destructor* on screen boards, which appeared as extremely important factors that should be monitored regularly alongside colony stores and availability of pollen.