PP-044 [Bee Health]
Prevalence of diseases and pests in African honeybee Apis mellifera scutellata swarms in Costa Rica

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In Costa Rica beekeepers often lure or capture swarms of African honeybees Apis mellifera scutellata as a natural resource to establish or increase their apiaries without considering the risks of introducing pathogens. In order to assess this risk we studied the prevalence of Nosema sp, small hive beetles Aethina tumida, Varroa destructor and tracheal mites Acarapis woodi, during 2024 and 2025.

Reproductive swarms are abundant during the dry season between January and May, when major flowering occurs, and absconding swarms occur occasionally during the rainy season which lasts from June through December. In our study we sampled 27 swarms (sample size 153 ± 92), between January 18th and August 19th, 17 considered reproductive and 10 absconding swarms. Some interesting differences were observed regarding Nosema sp. infection levels, being very low in the reproductive swarms, 12 had less than 10,000 spores per count and the other five samples on average 365,000 ± 327,719 (30 bees taken from the samples and spores counted at 400X using a hemocymeter grid according to Cantwell) and the absconding swarms, where on average 1,263,000 ± 2,153,801 spores were counted per bee (prevalence 45%).

Varroa destructor infestation levels were low for most swarms, and no infestation was observed in 12 swarms and on average 3.6% ± 3.2 for the remaining 15 swarms (prevalence 60%).

In one swarm one small hive beetle Aethina tumida was observed within one week after being lured into an empty and new nuc hive at an isolated quarantine stand without any other hives, which might be an indication that small hive beetles can possibly migrate with swarms.

All samples were negative for Acarapis woodi.
It can be concluded from these preliminary data (our study continues during 2025) that capturing swarms in Costa Rica is of low to moderate risk for introducing diseases and pests in existing apiaries since Varroa and Nosema prevalence were moderate, but infestation levels were on average low or completely absent, especially for reproductive swarms.

Some interesting additional information about substrates where swarms were captured and their location will be presented.