

A MORPHOMETRIC ANALYSIS OF *VARROA* AND *TROPILAEELAPS* MITES ON ISOLATED ISLANDS IN THAILAND

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Abstract

Varroa and *Tropilaelaps* parasitism are the most serious threats to honey bee health and are ubiquitous across Thailand, including the mainland and the island areas. Whether the geographic barrier, isolating the islands from the mainland by the Gulf of Thailand, affects the morphological variation of these mites is unknown. The morphometric analyses of *Varroa* and *Tropilaelaps* mites were performed to study the morphological variation across isolated mite populations in Thailand. *Varroa* specimens were sampled on *Apis mellifera* and *A. cerana* in the eastern and southern regions of the mainland and islands. *Tropilaelaps* specimens were sampled on *A. mellifera* and *A. dorsata* in the eastern and southern regions of the mainland, including Samui Island. Morphometric measurements of *Varroa* and *Tropilaelaps* were made on 19 and 17 characteristics, respectively. Despite geographic isolation by the ocean, *Varroa* mites from *A. cerana* on the Chang, Samui, and Pha-Ngan islands did not show separation from *A. cerana* mites, but *A. cerana* mites on both the mainland and islands were separated from *A. mellifera* mites on the mainland. *Tropilaelaps* mites from Samui Island exhibited some morphometric differences from mainland populations; however, they showed partial overlap with the mainland. These findings support the idea that the potential influence of host species is a dominant factor in *Varroa* morphology, whereas *Tropilaelaps* morphology appears to respond to geographic factors rather than to hosts.