

DETECTION OF THE MITE ALARM PHEROMONE NERYL FORMATE IN THE VELVET MITE, *BALAUSTIUM* SP. (PARASITENGONA: ERYTHRAEIDAE)

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ABSTRACT - When disturbed, *Balaustium* sp. mites release an alarm pheromone from their urnulae. Analysis by gas chromatography-mass spectroscopy (GC/MS) in this study shows the presence of neryl formate. Subsequent behavioral testing indicates that neryl formate is an ingredient of their alarm pheromone, causing mites to retreat upon contacting surfaces treated with the compound. Mites elicited diminished responses to neryl formate in comparison to a natural mite extract, indicating that neryl formate is not the only component of the alarm pheromone. Furthermore, the efficacy of neryl formate at causing mites to scatter is dose-dependent. None of the test concentrations prompted mites to halt their rapid movements or form clusters, suggesting that neryl formate acts exclusively as a dispersal agent with no apparent functional overlap to other pheromones. These observations are consistent with mite alarm pheromone that characterize Oribatida and Astigmata, which comprise a separate lineage from *Balaustium* sp. (Prostigmata).

Key words - Acari, Erythraeidae, *Balaustium* sp., alarm pheromone, neryl formate.

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