The Food Preference of the Sri Lankan Weevil, Myllocerus undecimpustulatus undatus Marshall (Coleoptera: Curculionidae: Entiminae)

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Little is known about Myllocerus undecimpustulatus undatus Marshall, (detected in Florida in 2000). However, it is known to infest >150 different plant species with the potential to cause severe damage. The objectives of this study were to 1) investigate the host preference of Sri Lankan weevils among local plants of economic or ornamental value by implementing a choice assay and a no choice assay, and 2) gauge the possible economic impact of Sri Lankan weevils. Weevils were caged with leaves of cocoplum (Chrysobalanus icaco "Red Tip"), lychee (Litchi chinensis Sonnerate "Kaimana"), peach (Prunus persica), avocado (Persea Americana "Lula"), Bengal clock vine (Thunbergia grandiflora), alemow (Citrus macrophylla), organic orange (Citrus sinensis "Valencia"), and insecticide-treated orange (Citrus sinensis "Valencia") in the choice and no choice assays. The surface area of each leaf was digitally scanned before and after 5 days and measured with ImageJ software to measure weevil feeding. In both choice and no choice situations, peach emerged as the most preferred host plant with a mean consumed surface area of 36.4 cm2 in the choice assay and 21.0 cm2 in the no choice assay ($p = 0.002$ and $p = 0.0058$) supporting my alternative hypothesis. GC/MS revealed low concentrations of terpene hydrocarbons in peach compared to Valencia, and peach flush had high concentrations of benzaldehyde absent in mature peach. Antennectomized weevils had no food preference, indicating the antennae are the olfactory organs needed for food detection. This study indicates the Sri Lankan weevil uses its antennae for olfaction for food detection and is a major pest of peach; plant breeders are highly recommended to take this into consideration as they select their varieties.

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