COMPARISON OF SPECIES & NUMBERS CAUGHT IN SEVERAL COMMERCIAL & CONVENTIONAL MOSQUITO TRAPS

John P. Smith, Jimmy D. Walsh, and Eric H. Cope

ABSTRACT: The Mosquito Magnet X trap with octenol captured significantly ($p<0.05$) more mosquitoes than any of the other traps tested. In a separate study, the Mosquitoll trap collected 2X more mosquitoes than the Mosquito Magnet Liberty. Species diversity was similar for most of the traps studied.

INTRODUCTION: Mosquito traps have long been considered important tools for surveillance and collecting mosquitoes for virus isolation studies. More recently, they have also been exploited for control. The purpose of these studies was to evaluate numbers and species caught in several popular traps.

MATERIALS & METHODS: Two studies evaluating nine trap configurations were conducted during 2004 and 2005 on the 10-acre campus of the John A. Mulrennan Sr., Public Health Entomology Research & Education Center (PHEREC) of Florida A&M University. PHEREC resides on a peninsula surrounded by salt marsh on the St. Andrews Bay of the NW Florida Gulf Coast.

STUDY I: ***Mosquito Magnet X (MMX) (with & without octenol), Mosquito Magnet Pro (MM Pro), Mosquito Magnet Liberty (MM Liberty), CDC 1012, CDC 512 and ABC Light Trap (Fig. 3).*** All traps were provided or generated CO_2. Traps were positioned at least 100 meters apart and operated from about 3 p.m. until 8 a.m. the following morning, whereupon trap contents were removed. MM Pro and MM Liberty traps were allowed to operate continuously 24/7 according to manufacturer directions with a new collection bag installed specifically for the 3 a.m. to 8 p.m. study interval. Traps were rotated clockwise to the next adjacent site after each night of trapping until each trap had occupied all locations in a 7X7 Latin-square design. The study was repeated three times so each trap ran a total of 21 days, three times at seven locations. Traps were re-run in the same site when mechanical failures, inclement weather, or very low mosquito populations were encountered.

STUDY II: ***Mosquitoll and MM Liberty (Fig. 3).*** This study was conducted as a 2X2 Latin-square following the same protocol listed in Study I. Both traps emitted CO_2 by either compressed gas (Mosquitoll) or through propane conversion (MM Liberty).

RESULTS: STUDY I: The MMX with octenol captured significantly more ($p<0.05$) mosquitoes than all of the other traps (Fig. 1). It trapped on average over 6X more mosquitoes than the conventional CDC miniature light trap (CDC 512). Even without octenol, it captured significantly more ($p<0.05$) mosquitoes than all but the MM Pro trap. The CDC 512 collected significantly fewer ($p<0.05$) mosquitoes than all other traps except the ABC Light Trap. Species diversity was relatively equivalent for most of the traps.

STUDY II: The Mosquitoll trap captured on average 2X more mosquitoes than did the MM Liberty (Fig. 2). This ratio was equivalent in performance to the Mosquito Magnet X trap without octenol. Species diversity was noticeably less; however, this study was performed in a much shorter time period at the end of the mosquito season.

Fig. 1. Average number of mosquitoes captured by trap/day (n=21).

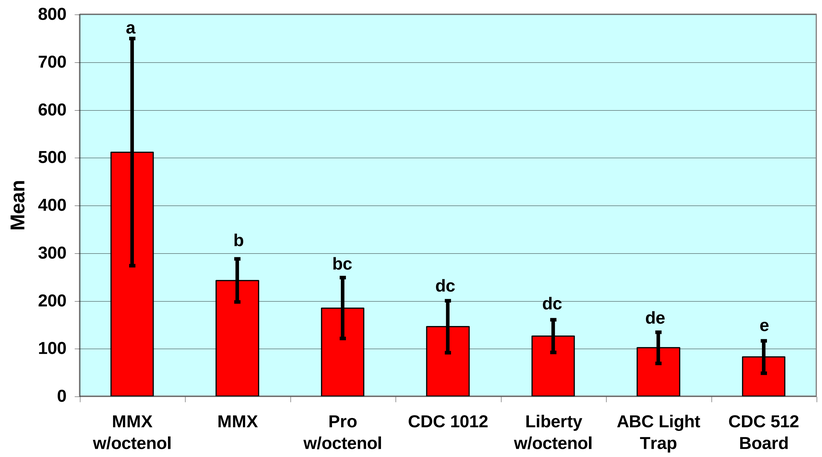
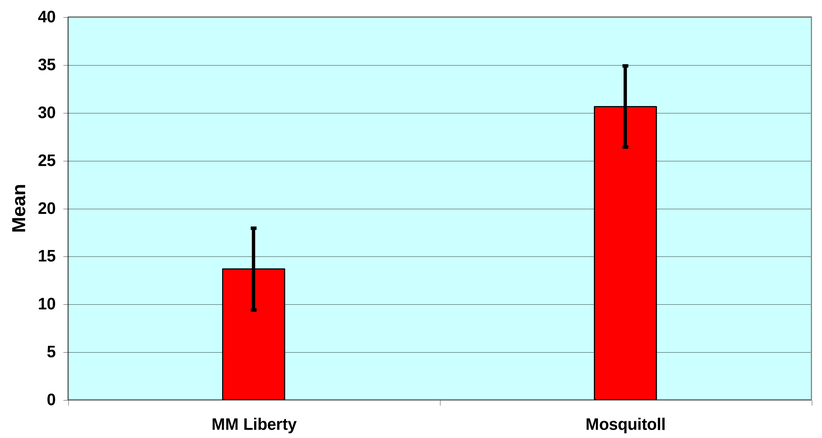
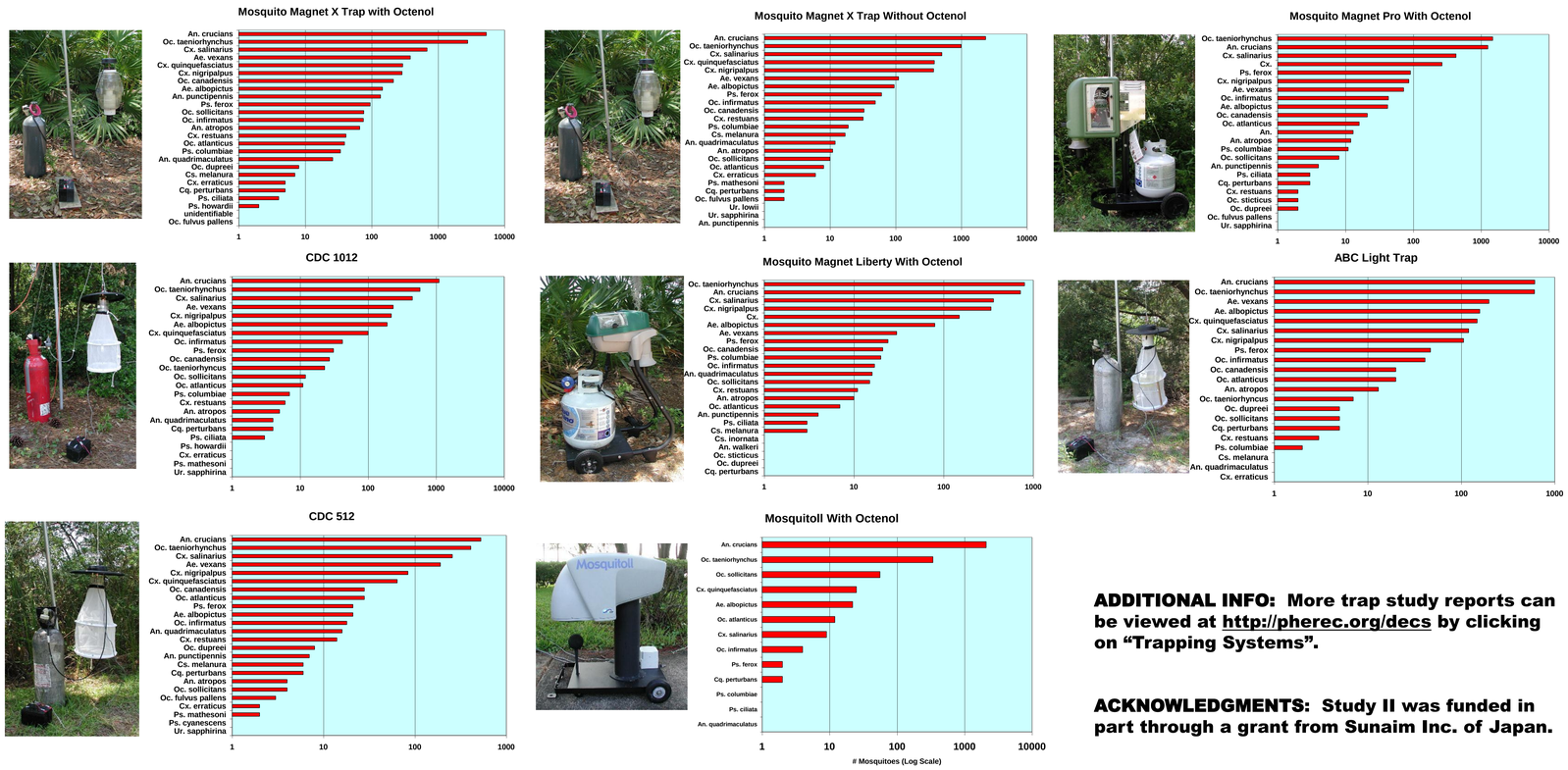


Fig. 2. Average number of mosquitoes captured by trap/day (n=6).



Note: Means followed by the same letter are not significantly different (p=0.05) by Waller-Duncan K-ratio T-test and by Duncan's Multiple Range Test. Lines indicate 95% C.I.

Fig. 3. Traps tested and associated species collected by trap.



ADDITIONAL INFO: More trap study reports can be viewed at http://pherec.org/decs by clicking on "Trapping Systems".

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