

Seasonal habitat use by immature *Aedes aegypti* (LINNAEUS) (Diptera: Culicidae) in the Florida Keys, USA

[Saisonale Habitatnutzung bei immaturren *Aedes aegypti* (LINNAEUS) (Diptera: Culicidae) in den Florida Keys, USA]

by

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Abstract

Aedes aegypti (LINNAEUS, 1762) is a common mosquito in the Florida Keys. A survey was undertaken to determine what kinds of containers were used as larval and pupal habitats, and whether there were differences among census tracts and between dry (February) and wet (July) seasons of 2010. The percentage of containers holding water did not differ from dry to wet season. House, container, and Breteau indices, as well as the total number of pupae, increased from dry to wet season. Larval habitats were relatively stable from dry to wet season, whereas the habitats producing pupae changed from dry to wet season. The Breteau index was most strongly associated with the total number of pupae.

Key words

Culicidae, *Aedes*, Nearctic Region, USA, Florida, larval habitat, container

Zusammenfassung

Aedes aegypti (LINNAEUS, 1762) ist eine häufige Stechmücken-Art der Florida Keys. Eine Studie sollte feststellen, was für Wasserbehältnisse als Larven- und Puppenhabitate genutzt werden und ob es Unterschiede gibt zwischen Gebieten zur Erhebung von Bevölkerungsstatistiken („census tracts“) einerseits und zwischen Trockenzeit (Februar) und Regenzeit (Juli) andererseits. Der prozentuale Anteil wassergefüllter Behältnisse zur Trockenzeit unterschied sich nicht von dem zur Regenzeit. Die Haus-, Container- und Breteau-Indizes nahmen von der Trocken- zur Regenzeit zu, ebenso die Gesamtzahl der Puppen. Die Larven-Habitate in Trocken- und Regenzeiten waren relativ stabil, wohingegen sich die Puppenhabitate mit der Saison änderten. Der Breteau-Index war am stärksten mit der Gesamtpuppenzahl assoziiert.

Stichwörter

Culicidae, *Aedes*, nearktische Region, USA, Florida, Larvenhabitat, Wasserbehältnis

Introduction

Aedes aegypti (LINNAEUS) is a cosmopolitan mosquito that uses both artificial and natural containers as larval and pupal habitat. Populations of *Ae. aegypti* are influenced by number and type of containers available for oviposition (TINKER 1964). BARRERA et al. (2006b) suggested that improved yard maintenance, including removal of containers, i. e., source reduction, would reduce the number of larval habitats for *Ae. aegypti*. Limited surveys for mosquito larvae have been made in the Florida Keys previously (HRIBAR et al. 2001, 2004). However, neither of those surveys presented detailed data on seasonality or larval indices. The previous surveys enumerated the number and kinds of containers used by *Ae. aegypti* in the Florida Keys, but did not evaluate productivity of various container types. This study was undertaken to accumulate more detailed data on the distribution of *Ae. aegypti* in the Florida Keys.

Materials and methods

Study area. The Florida Keys form an archipelago that surrounds the southeastern and southern peninsula of Florida, extending from Soldier Key in the northeast to Key West in the southwest.