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# HIBISCUS HEDGES: A RESERVOIR FOR THE BAD (*Brevipalpus yothersi*) OR THE GOOD (PREDATORY MITES)?

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Citrus leprosis, caused by the citrus leprosis virus (CiLV), is considered one of the most destructive diseases of citrus. Fortunately, the disease can be managed by managing the vector flat mites, *Brevipalpus* spp. (Tenuipalpidae). However, both CiLV and the flat mites have a broad host range including non-citrus plants. The purpose of our study was to develop an immediate response should citrus leprosis become established in the U.S.A. We determined the host range and natural enemies of the known CiLV vector *Brevipalpus yothersi* (syn. *phoenicis*) in South Florida. A list with the potential host plants of *B. yothersi* was compiled by conducting monthly surveys of citrus groves, known non-citrus hosts and the surrounding environs. Only 36% of the reported plant species had reproducing mite populations in South Florida. The survey also revealed multiple predatory mites associated with the *B. yothersi*. In laboratory studies four commonly incountered predatory mites preyed upon *B. yothersi* and showed prey preferences to different developmental stages of *B. yothersi*. Tropical hibiscus, *Hibiscus rosa-sinensis* (Malvaceae) was selected for a long term population dynamic study because the plant is a known host to both CiLV and *B. yothersi* and because the plant is a common ornamental often planted at homes adjacent to citrus groves. Leaves and flowers were collected from two recently planted hedges (< 1 year old) and one established planting (>5 years old) each month. All *B. yothersi* and predatory mites were counted and slide mounts made to determine the mite species. The first 10 months of the study showed seasonal variation in the populations of *B. yothersi* but mite populations were consistently very low. The phytoseiid *Amblyseius largoensis* was the most commonly encountered predator on both new and established hibiscus hedges. The cheyletid *Hemicheyletia bakeri* was found on established hedges. The number of predator mites was consistently higher than the number of *B. yothersi* on both new and established hibiscus plantings. Other prey such as spider mites, scales and other arthropods present may keep populations of predators high. Although *B. yothersi* was always present, the hibiscus hedges may in fact serve as a reservoir for predators.

Keywords: biological control, native predator, landscape level pest management, population dynamics.