

## MEXICAN BROMELIAD WEEVIL REPORT

### JULY 2011

**Ronald D. Cave<sup>1</sup>, Teresa M. Cooper<sup>1</sup>, and J. Howard Frank<sup>2</sup>**

<sup>1</sup>Indian River Research & Education Center, UF, Ft. Pierce, FL

<sup>2</sup>Entomology & Nematology Department, UF, Gainesville, FL

The colony of *Lixadmontia franki* continues to slowly rebound after a severe decrease in the previous trimester. Environmental conditions are optimal for fly reproduction and development and no mechanical malfunctions have caused problems. In April, 22 pupae were produced, 111 pupae in May, and 27 pupae in June. During this colony rebuilding stage, wide variation between monthly harvests is expected but hopefully will stabilize soon. The trimestral total harvest was 160 pupae.

Tests of the weevil's temperature tolerance and developmental rate and survival rate at a range of temperatures are still in progress. Initial data show that the weevil egg, 3<sup>rd</sup> instar, pupa, and adult can tolerate freezing temperatures for short periods. Longevity seriously declines at higher temperatures (35° C). The weevil will develop at temperatures ranging from 18 to 30° C, with decreasing developmental time as temperature increases. Data collection for the temperature studies should be completed by the end of the next quarter.

We acquired four Florida forms of *Tillandsia utriculata* and seven Honduran forms of *T. utriculata*. We will begin testing the weevil's oviposition rate and egg and larval development on these two forms of *T. utriculata*.

During a field trip to the Enchanted Forest Sanctuary (26 April), a count of the bromeliad population and search for weevils was conducted. There were 45 mid-size to large bromeliads (down from 53 counted in the summer of 2009). One dead weevil was found in a fallen bromeliad.

Field trips were made to the Fakahatchee Strand State Preserve on 6 April, 4 May, 18 May, 31 May, and 15 June to monitor the developing weevil infestation. On 18 May, 14 weevils were collected from a large *T. utriculata*. Otherwise, there has been minimal weevil activity. Adult *L. franki* flies have been emerging since early May and were available for a release, but there was not enough of a weevil infestation at the Fakahatchee to warrant a release.

A field trip was made to Miami to meet with student Rene Cerezo who is surveying the arthropods inhabiting the water held in the leaf axils of *T. utriculata* plants. We visited Deering Estate, Matheson Park, and A.D. "Doug" Barnes Park as potential research sites. The first two sites had large, healthy *T. utriculata* populations suitable for his project. The weevil was not found at any of the sites.

Field trips have been made locally on several occasions to the Oxbow Eco Center, the Savannas Preserve State Park, White City Park, and the Florida Medical Entomology Laboratory. Weevil specimens and damaged plants were found on several of the trips.

Six people are actively involved in weevil and fly colony maintenance and research projects. Miscellaneous supplies were purchased with a minigrant of \$1,403 from the FCBS Weevil Fund.

#### Presentations:

Cooper, T. M. Chasing the evil weevil: From student to doctor. Caloosahatchee Bromeliad Society. Tampa, FL, 15 May.