

Mexican Bromeliad Weevil Report

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The production of *Lixadmontia franki* pupae improved significantly after the down period of the previous six months. Average weekly production of pupae was 118, with a maximum of 210. In January, 546 pupae were produced, in February 430 pupae, and in March 533 pupae. The trimestral total was 1,419, up 56% from the previous trimester.

Field releases of *L. franki* are now being scheduled at more frequent and regular intervals than in 2008. Field release information from the reporting period is:

| | | | |
|--------------------------------|-------------|--------|--------|
| Fakahatchee Strand Preserve SP | 16 January | 19 ? ? | 18 ? ? |
| Collier-Seminole SP | 13 February | 23 ? ? | 25 ? ? |
| Collier-Seminole SP | 5 March | 29 ? ? | 26 ? ? |
| Lake Rogers SP | 24 March | 22 ? ? | 19 ? ? |
| TOTAL | | 93 ? ? | 88 ? ? |

The sentinel pineapple crowns were put out at the Fakahatchee Strand Preserve SP site on 20 February and retrieved on 5 March. From these, 97 weevil larvae were removed and held in the laboratory. None were parasitized by *L. franki*.

Field trips were made to the Enchanted Forest Sanctuary in January, February, and March. Only a few bromeliads were found fallen from the canopy and killed by the Mexican bromeliad weevil and no weevil specimens were found. In March, the living medium-size and large-size bromeliad populations remaining in the canopy were counted and totaled 64; this is 3% of the population that was censused in March 2007.

LABORATORY RESEARCH:

The *L. franki* colony in Gainesville was systematically exposed to Petri dishes with 6 different host larval densities to assess whether the female fly is able to distinguish between host larval densities. Early results indicate that the female may be able to distinguish between host larval densities and can deposit a variable number of maggots relative to the assessed density. To determine whether the outcome is a result of female choice or maggot mortality (after larviposition but before parasitism), maggots were artificially larviposited in Petri dishes prepared in the same manner as they were for exposure to the fly colony. Results from this study are pending.

Several upcoming studies will require artificial larviposition so attempts were made to isolate females once mated in order to dissect them when the maggots are mature. Females did not survive well in isolation. A new method was devised by marking mated females on the back of the thorax with non-toxic paint and allowing them to remain in the population. This method works well and will be used.

Studies on fly mating behavior, development time, effects of multiple maggots per host, and fly survivorship in the field are under analysis or being prepared in Ft. Pierce.