

Bait Station Tests for Control of Mexican Fruit Fly (*Anastrepha ludens*) in South Texas

Daniel Garza¹, Hugh E. Conway, PhD², Christopher Vitek¹, PhD, Pedro Rendon³, PhD, Guadalupe Gracia⁴, Velia Chapman⁵, Velma Saenz⁵

¹*Department of Biology, University of Texas-Pan American, Edinburg, TX*

²*United States Department of Agriculture, Animal and Plant Health Inspection Services, Plant Protection and Quarantine, Mission Laboratory, Edinburg, TX*

³*IAEA Mexican Fruit Fly Station Leader Guatemala City, Guatemala*

⁴*United States Department of Agriculture, Animal and Plant Health Inspection Services, Plant Protection and Quarantine, Field Operations, Harlingen, TX*

⁵*United States Department of Agriculture, Animal and Plant Health Inspection Services, Plant Protection and Quarantine, Field Operations, McAllen, TX*

The Mexican fruit fly (*Anastrepha ludens*) (MFF) is an invasive, non-native insect pest that infests citrus groves in Central and South America and a reoccurring pest in South Texas. To prevent MFF from causing serious damage to citrus, the USDA and Texas Department of Agriculture established a MFF Preventive Release Program. A critical component of this program is providing a safe long term control method over small localized areas. Bait stations are ideal in providing continuous MFF control in dooryards, trailer parks, and organic groves. Bait stations consist of a biodegradable cardboard box covered by wax matrix containing Spinosad with fruit fly lures inside the box. Flies land and feed on the wax coating with Spinosad. This pilot study was the first in the United States using 500 bait stations (half containing Spinosad covered protective hats) strategically placed based on historic wild MFF capture data. Laboratory bioassays of fly mortality at 48h and 72h were conducted in observation cages with 50 MFF using bait stations (with/without hats). Results from 72h in cage fly mortality indicated fly control by bait station across 12 weeks but bait stations with the hat providing fly control after 20 weeks. Mortality testing is planned across the next 34 weeks of this pilot study. The 2-component lures from inside the bait stations were still effective in attracting flies after 18 weeks in the field with similar fly captures compared to torula yeast and 2-component cones and significantly higher capture than control based on week long field capture tests. Bait Stations have the potential to play an important role as a major defensive tool in providing long term control for MFF.