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Project Title: Developing an IPM Program to Control Frit Fly, a Challenging Turfgrass Pest in Hawaii

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Start Date: 2017

Project Duration: Two years

Summary Text:
Frit fly (*Oscinella frit*) is a relatively new and less studied turfgrass insect pest in Hawaii (Brennan, et al., 2002). This pest mainly develops on bermudagrass varieties in Hawaii. Larva stage is the life stage when frit fly causes actual damages to turfgrass. The larvae feed at the base of the succulent young leaves, causing the tips to yellow and wilt. The older leaves, however, usually remain green. As the larvae continue to feed, the stem is severely damaged, causing the tip to wither. The pest's small, white eggs are laid in leaf sheaths. They hatch in 3-4 days. Mature larvae are about 1/8 inch long. The adult fly is small, 3/16 inch long, and black with yellow on the legs. Three to four generations a year have been reported in temperate regions. The warmer conditions in Hawaii will likely produce more generations per year (Brennan, et al., 2002). Adults can be found in grass clippings, on freshly mowed grass, and on white objects such as golf balls and white shirts and towels. Therefore, frit fly is oftentimes considered as a nuisance pest in golf courses as well.

Since its introduction, frit fly continues to be a management challenge to many golf courses in Hawaii. The turf/golf industry in Hawaii has been using trial and error methods of treatment. This is inefficient and costly at best and possibly harmful to the environment at worst. To address this urgent need from local turf/golf industry, we started this project to develop an IPM program to control frit fly in turfgrass systems in Hawaii.

In October 2017, PI Z. Cheng visited two golf courses on Maui and located research trial sites on both courses. Figure 1 shows the trial site at one golf course. These two courses were chosen for this research because they have history of repeated frit fly infestation on their Bermudagrass putting greens and fairways. Our plan is to wait for frit fly activities and then apply the treatments in spring 2018. There will be 5 treatments and a control, with 4 replications for each, arranged into a Randomized Complete Block Design. Each plot will be 7 ft x 7 ft. Each treatment will be applied 3 times, with 21 days between consecutive applications. Data on % Control, Turf Color and Quality will be collected after each application.

Reference

Brennan, BM, SF Swift, and CM Nagamine. 2002. Turf and Ornamental Pest Control - A Guide for Commercial Pesticide Applicators. University of Hawaii at Manoa Cooperative Extension Service. http://www.ctahr.hawaii.edu/oc/freepubs/pdf/PRRE-3_rev2016.pdf (link verified on January 25, 2018).

Figure 1. Trial site at one golf course on Maui.