Minutes from the Kamuela Growers Meeting
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A meeting of USDA-ARS and UH-CES staff and program cooperators was held in Kamuela on March 5th. The purpose of the meeting was to refresh and update its attendees of Waimea-area HAW-FLYPM activities, and to give the growers an opportunity to raise any concerns. Topics covered during the meeting were: Impacts of Biological Controls (sterile insect technique & parasitoid releases), male annihilation, and transfer of practices to growers.

Impact of Sterile Insect Technique:
Sterile fly releases began in February of 2002 and expanded to the entire grid in October of 2003. The results were striking, with summer of 2002 fly populations at a maximum daily average of over 0.3 flies/trap/day, then declining to less than 0.01 flies/trap/day within the same period.

Sterile fly releases ended in mid-December due to production problems within the rearing facility. The decision was made to move the fly releases to Kula, Maui, as soon as the male-only fruit fly strain was back in production. When the strain can be increased to sufficient numbers to supply both Kula and Kamuela, releases will begin again in Kamuela.

Impact of SIT & Parasitoids:
April 2002 marked the beginning of parasitoid releases. Release sites were based on the availability of melon fly hosts and suitable plant habitat for the wasps. *Psyttalia fletcheri* was almost nonexistent in fruit collections made before the parasitoid releases, and since the releases we have detected in parasitism in the fruit samples and in test rings that were deployed in release areas. An additional tool in helping to drive down the fly population, parasitism over the whole grid remains under 1%, but can range up to 10%.

Conclusions on Biological Control:
The impact of the biological control techniques cannot easily be separated from the effects of trapping, sanitation, and bait spraying. Nevertheless, the combined techniques have clearly led to a large reduction in fly populations throughout the Kamuela grid. Even when measuring fly populations on the host crops, as we do with block monitoring, the fly population is clearly on the decline between periods of population outbreak, maintaining less than 0.2 flies/trap/day and now approaching less than 0.1 flies/trap/day.

Male Annihilation and How it Works:
The purpose of male annihilation is to deploy sufficient numbers of male lure traps to negatively impact fruit fly breeding by severely reducing the number of males. With efficient female control techniques like GF-120®, it becomes easier to impact breeding with male annihilation. Fewer males and females lead to less frequent successful breeding.

Currently we have deployed over 700 traps in the Kamuela grid. For melon fly traps, that averages out to 29 traps per acre, although the distribution is concentrated around areas with melon fly host crops. We will maintain trap deployments and recharge lures outside the Lalamilo Farm Lots. However, we hope to help the Lalamilo growers take over the service of their own male annihilation traps.

Transfer of Practices to Cooperators:
Why is it important for the growers to assume the responsibility for the male annihilation in Lalamilo farm lots? The objective of gradually transferring this technology to the growers is to determine if growers can maintain low fly populations on their individual farms. The growers have done a good job of keeping their fields clean, and have applied GF-120® regularly. By assuming the male annihilation responsibilities, the growers come one step closer to becoming self-sufficient in melon fly management.