Sudex Borders have Great Impact on Fruit Flies
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It has been a little more than a year since the fruit fly management program was launched at central Oahu. Male annihilation with cuelure, field sanitation by plowing the crop residues immediately after harvest, and bait application of GF-120 (on the castor bean plants and seed corn) around the melon/squash fields were the main techniques implemented. Last year, the program had an excellent impact until August, when the fly population and the fruit infestation rates began to climb. The increase in the fly population and subsequent increase in fruit infestation were blamed for the lack of sufficient melon fly roosting hosts where GF-120 could be applied (see HAWFLYPM Newsletter October 2002).

During the current year crop cycle, the farmer started planting sudex (Sorghum x Sudan hybrid) grass along the melon field as a windbreak. Their initial practice was to plow down the sudex borders along with the crop residue after crop harvest. In the month of June, melon fly infestation in one of the fields suddenly increased to >60%. This field was located next to a field where a previous melon crop was harvested during early April. Because the previous melon field did not have any standing border (they were either not planted or were plowed along with the crop residue), there were not enough places where GF-120 could be applied. Also, a very interesting and consistent relationship was observed between the fruit fly population surge and the crop harvest. Based on these observations, farmers were encouraged to plow the field to remove the crop residue after crop harvest but maintain the sudex border for at least another 6-8 weeks and continue to apply bait spray on the border rows (Figure 1). In doing so, the flies that bred in the residual melon fruit could be targeted and killed before they migrate to the nearby fields. The modified practices included male annihilation, plowing of the crop residue immediately after crop harvest, leaving the sudex border alive and continue spray GF-120 on these borders for another 8 weeks after the field plowing which was adopted since July 2003. (Continued)

The results were incredibly encouraging. Melon fly catch on the protein bait declined and maintained at the lowest levels since the program initiation (Figure 2). Except for the one-time increase in fly population at the end of July (Figure 3), the melon fly population has dramatically declined. The fly monitoring station located near the plot where infestation level was >60% caught 133 flies per day in June and was responsible for this spike. Fruit infestation has declined and is being maintained below 1% in all the melon/squash crops throughout the farm.
Beautifully colored Halloween pumpkins constitute another attraction of the Ewa farm. Last year 12.2% of the pumpkins were found infested with live eggs or maggots and another 9.1% were stung by fruit flies but without any living fruit fly stages leaving only about 79% of the fruit healthy. Despite such high fruit fly damage, farmer had realized a great increase in the production of Halloween pumpkins when compared to the previous years. In the current season, the Halloween pumpkins are receiving the full benefit of the melon fly suppression techniques including sudex borders and continued bait spray of GF-120 in addition to the male annihilation and field sanitation. The low fly density in the field has led to a negligible fruit infestation. In fact, the melon fly damage to Halloween pumpkins (both infested and stung only combined) are below 1%, and 99% fruit was found healthy.

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