Melon Fly SIT on Maui: Successful Test Ending Soon

D. McInnis

Since March of this year, the new genetic sexing strain of the melon fly has been released in lower Kula, Maui, as part of the ongoing area-wide fruit fly program in Hawaii. This fly release program followed a successful SIT program with the same fly strain on the Big Island of Hawaii in the Kamuela area during 2002. During that initial program, up to 200,000 adult males were released, first into non-commercial residential areas, then later directly into the Lalamilo commercial growing area. The wild melon fly population was initially quite low, and with the concerted effort of several IPM technologies, including the SIT, was reduced even much lower (below 0.1 flies/trap-day). The SIT program was monitored independently from the other IPM technologies through the measurement of induced sterility based on eggs dissected from host fruit collected in the field. Induced sterility reached 65-75% after 9 months of sterile fly releases. This means that the reproductive output of the wild population was reduced ca. 75% due to the sterile fly program alone. Encouraged by this result, efforts of the combined USDA and University of Hawaii team were directed to lower Kula, Maui and the high resident melon fly population there. Also, rearing changes were instituted at this time at the USDA laboratory in Honolulu. A new filter rearing system was set in place that provided a highly genetically purified strain and release population of virtually 100% males, continuously.

During the past 6 months, sterile melon fly males have been released in up to 15 farm sites throughout Lower Kula. Wild melon fly populations were very high to begin the program, resulting in sterile:wild (S:W) fly ratios of only ca. 1:1 for several months (until June). Then, the S:W ratio increased steadily to between 10-20:1 as wild flies levels dropped and sterile fly production reached, or neared, 1 million pupae (ca. 800,000 adults) shipped per week. Induced egg sterility, as measured from eggs dissected out of host fruit, increased in tandem with the S:W ratio to between 50-80% in recent months. In addition, trapping results indicate that the strain dispersed widely over the target area with the aid of effective roving ground releases, and some males even dispersed outside of the treatment area into the designated control site up to several kilometers away from the closest release sites. The success of the Maui sterile fly releases has been directly due to the hard work and close collaboration between the USDA Honolulu staff involved in the melon fly project and the University of Hawaii extension staff assigned to the project on Maui.

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Upper Kula Update
E. Fujitani

The beginning of persimmon season has begun for those few growers and community cooperators who usually have an early crop every year. As October approaches, more persimmon orchards will be displaying their orange, sweet flesh fruits to satisfy the taste buds of family, friends and customers. Growers and community cooperators have commented that there is zero to slight infestation this season and that they’re looking forward to a good season of “Local Kula Persimmon.” Now is the time that the cooperators get busier with harvesting, processing, packaging, as well as maintaining their orchard and continued suppression of medfly via Bio-Lure® mass trapping and weekly application of GF-120 protein bait spray. Continued suppression tactics of sanitation, mass trapping and spraying of GF-120® are important as the fruits ripen during the season. Monitoring trap data for medfly populations range from 0 to 1 CPTD with averages under 0.265.

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Maui: Medfly Catch Per Trap Day
9-05-03 & 9-22-03
Lower Kula Update
E. Fujitani

The Sterile Insect Technique release program has gone by 28 weeks with positive impact. The Kula Area Wide Crew conduct weekly fruit collections for egging surveys to test sterility, and everyone agrees that it’s getting more difficult to find melon fly-infested fruits and vegetables. Male melon fly monitoring trap data average CPTD (catch per trap day) is less than 1.35. Cooperators comment that infestation level is fewer than 5%. A zucchini grower commented that since he started harvesting a week ago, he has only seen one stung fruit so far.

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