The drop in the density of thrips at the beginning of December seemed to be the result of increased precipitation and the termination of chemical treatment at the middle of November.

REFERENCES CITED


MEDITERRANEAN FRUIT FLY, CERATITIS CAPITATA, ERADICATED FROM BERMUDA

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Mediterranean fruit fly (medfly), Ceratitis capitata (Wiedemann), reached Bermuda between 1858 and 1865 (Heyl 1892, Bacter 1919) and was established in Bermuda for the next 100 years until 1962.

Organized efforts to control this pest began in 1905 with the introduction of Anolis grahami Gray, a lizard from Jamaica thought at that time to be responsible for control of various fruit flies. The lizard quickly became abundant, but it is doubtful if it had any impact on the medfly population (Bennett et al. 1985).

An eradication program was initiated in 1967. For four years inspectors in each parish cut down surinam cherry, orange, and peach trees, and stripped unripe fruit from other hosts (Johnson 1913). The number of flies was greatly reduced, but the pest was not eradicated and returned to its former abundance within a few years. Failure stemmed from a lack of support from residents who concealed trees from inspectors (Johnson 1913) and because it was propagating on banana, Musa cavendishii, and broad bean, Vicia faba (Ogilvie 1928).

Two consignments of a braconid parasite, Opius concolor Szepligeti, were received (as O. humilis Silv.) from Hawaii in 1926-27. The parasite was recovered in 1936, but not subsequently (Bennett et al. 1985).

A second campaign against medfly was initiated in 1957, though at this time eradication was not considered possible. Steiner-type traps using angelica seed oil as an attractant and DDVP as a toxicant were used to monitor the medfly population. Peak populations occurred in the middle of June. An average of 936 flies were caught per trap during 1957 (Hughes 1957, unpublished data). Eighteen orchards with high levels of medfly were sprayed on an eight to ten day schedule for 4-5 months with a mixture of malathon and a protein attractant (Staley's sauce bait No. 2).

In 1958 trapping and foliar sprays were augmented with ground sprays of dieldrin (50% wp, 5 lb./acre). Trap catches indicated a great reduction in the medfly population.
Two thirds of the flies trapped in 1968 came from a single site, 'Sleepy Hollow' in Warwick Parish. Trapping and spraying continued until 1961 when a total of only 610 medflies were caught—almost all (90%) at 'Sleepy Hollow' (Hughes 1961, unpublished data).

This dramatic lowering of the medfly population prompted the Dept. of Agriculture and Fisheries to plan another eradication program, this time using sterilized males. In 1962 trapping was intensified in preparation for the eradication campaign planned for the following year. A minimum of 17 traps baited with trimedlure and DDVP were monitored throughout 1962; 50 traps were used during the peak months of May, June, and July. To the surprise of those involved, only 1 medfly was recovered during all of 1962 and no additional flies were detected from 1963 to 1972. Eradication (declared in 1963) was achieved before the actual program was implemented (Groves 1962, 1963).

In December 1975, a single medfly was trapped at Hog Bay Level in Sandy's Parish. No additional specimens were found, and it is assumed that this fly was an isolated introduction.

An eighteen month intensive trapping program, sponsored by the U.S. Dept. of Agriculture (USDA) was completed in December 1987. Sixty-eight Jackson and sixty-eight McPhail traps were located throughout Bermuda's 55 km², based on the USDA's recommended survey procedures (Stubbs 1985, unpublished data) with 1 trap/km² plus additional traps in high risk areas, such as 'Sleepy Hollow', ports of entry, produce importers and the dumps. Jackson traps were baited with trimedlure for C. capitata and McPhail traps were baited with torula yeast for Anastrepha spp. Ten sites had an additional Jackson trap baited with a mixture of methyl eugenol (70%), cuefure (30%), and dibrom (1%) for Dacus spp. Although Anastrepha and Dacus species had never been established in Bermuda, trapping for these genera was included in the survey. All traps were monitored weekly. No fruit flies were caught during the program and Bermuda has now been declared fruit fly free (USDA, APHIS communication). A maintenance trapping program with 25-30 traps concentrated at points of entry will be maintained indefinitely to detect possible new introductions.

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