

THE MEDITERRANEAN FRUIT FLY IN FLORIDA— PAST, PRESENT, AND FUTURE ¹

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The Mediterranean fruit fly, a serious pest of peaches, citrus, and other tropical fruits, and a limited number of vegetables, has twice invaded the State of Florida. So far as is known the only area in the world from which this pest has been eradicated has been Florida. The present program can not be considered completed at this time insofar as eradication is concerned; however, there is every reason to believe that eradication will be accomplished. No specimens have been found in Florida since the recovery of a single adult fly on August 7, 1957, in Hillsborough County, 37 days after the last previous capture. This is the longest fly-free period since the program began last year.

The insect assuredly was eradicated in its first invasion in 1929, with specimens being found for a period of a little over 15 months and eradication declared complete in the 18th month.

There are some similarities between the 1929-30 campaign and the 1956-57 campaign. The first invasion was noted when maggots were discovered in grapefruit in April, 1929. Likewise, the second invasion came to light with the discovery of "Medflies", again in grapefruit, and also in April, but in 1956. One big difference between the two invasions was that the first was found in Orlando and throughout predominately rural sections of central Florida; whereas, the second infestation was found in Miami and in other heavily populated metropolitan areas, such as St. Petersburg and Tampa, as well as in rural citrus-growing areas. It is believed that the Medfly, regardless of the means of control used, would be more difficult to eradicate from urban than from rural areas due to the many problems encountered in eradication treatments in heavily populated sections.

Federal and State appropriations in the first campaign amounted to approximately \$7,000,000; whereas, approximately \$10,000,000 had been expended by the end of June, 1957, on the second eradication attempt. At the peak of the eradication campaign, there were approximately 6,000 employees engaged in the first fight as compared with less than 800 on the state and federal payrolls in the 1956-57 campaign.

During the first campaign a maximum of 12,645 traps was used as compared with 50,267 in 1957. Much more effort was devoted to fruit cutting as a means of detection in the first campaign than in the second. The fruit fly was found in 20 counties in 1929 and in 28 counties in 1956.

Road blocks were used in both campaigns; however, they were much more stringent in the 1929 outbreak and were manned by the National Guard, which, as far as is known, is the only instance wherein the National Guard participated in enforcing plant quarantines. The road blocks in the 1956-57 campaign were discontinued as soon as heavy infestations had been cleaned up in the metropolitan areas, and in lieu thereof a patrol system

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was used to regulate the movement of host material from infestations in rural areas.

During the first campaign, large quantities of citrus fruit were destroyed. Despite the restrictions placed on the movement of all Florida host material to other states, and to at least 13 foreign countries, the insect managed to get out of Florida and was found in 17 shipments in seven different states. In one case in North Carolina the fly apparently had gone through the various stages of development and an adult was taken in a small grocery store. During the present campaign, on the other hand, no Medflies have been found in other states and the movement of most of the Medfly hosts was provided for through the use of authorized fumigation and/or insecticidal treatments so that crops could be shipped to any point in the United States and to a number of foreign countries under proper certification.

In the 1929 campaign the principal means of eradication consisted of host fruit removal; whereas, in the present campaign host fruits were not destroyed, but instead insecticidal bait sprays with supplemental surface treatments were the principal eradication tools. It is true, however, that bait sprays of a different type were applied by ground sprayers to a limited extent in the 1929 fight. In the 1956-57 campaign principal emphasis was placed on aircraft applying the eradication treatments, and bait sprays were applied one or more times to 799,757 acres. The repeat treatments to this acreage to date has totaled in excess of 6,727,887 acres. At the present time one single engine aircraft is carrying on the entire spray program covering 2,200 acres in Polk and Hillsborough Counties in comparison to the 350,000 acres treated during a single week at the peak of the campaign. It is anticipated at this time, barring further finds, that the last aerial bait sprays will be applied in Polk County on September 23 and in Hillsborough County on October 8. The last area under quarantine, barring further finds, will be released from all regulations on November 5 with regulations only being in effect in limited areas in Polk and Hillsborough Counties after the 26th of this month.

In looking toward the future we first should recognize the fact that Mediterranean fruit flies, as well as other species of fruit flies, are continually being intercepted at air and ship ports of entry by Plant Quarantine inspectors. For that reason the State of Florida is continually being exposed to possibility of infestations slipping by this first line of defense. It is absolutely essential, therefore, that an adequate detection program be continued on a permanent basis in order to locate any infestations that may be introduced in their incipient stage. This detection program should, of course, give primary consideration to areas where specimens will most likely be introduced such as ship ports, international air ports, and military installations. Fortunately, on the basis of current research data, it will be possible in such a continuing trapping program to use a single trap with a multiple lure and be on the lookout for the melon, Oriental, and Mediterranean fruit flies. To date a different type of trap would have to be used in inspections for the Mexican fruit fly.

The advancements possible in the eradication treatments between the 1929 and the 1956 campaign were brought about through an intensive research program. Eradication of the 1956-57 infestation would have been all but impossible if the 1929-30 procedures were all that were available.

It is believed to be imperative that research work be continued in efforts to still further increase the efficiency of survey and control techniques as well as commodity treatment procedures. There should be a continued, close, working relationship between research personnel and the agencies responsible for detection in order that the most effective procedures would be used in the survey work.

In addition to a continued research program on the Medfly, a similar program should be continued in connection with research on the other fruit flies as well as other foreign pests. It is only in this way that we will be able to cope with them if and when they arrive.

We should expand to the fullest extent possible our cooperative working arrangements with foreign countries in order that introductions of the Medfly to additional areas would come to our attention promptly. Likewise, we should give foreign countries technical assistance in dealing with current infestations.