

## FUTURE OUTLOOK OF MOSQUITO CONTROL IN FLORIDA

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During the summer of 1951 the State of Florida was confronted by the worst salt marsh mosquito problem in a good many years. Not only were there more mosquitoes than ever, there were more summer tourists than ever. This caused a good deal of consternation, particularly in Chambers of Commerce. The simultaneous advent of mosquitoes and tourists occurred at a time when it was impossible to obtain DDT and BHC in quantities sufficient for even minimum control. As a result, mosquito control directors were subjected to abuse delivered in the press, over the telephone, and at public protest meetings.

Full moon tides apparently were the foremost factor in the tremendous production of salt marsh mosquitoes. These tides were higher than normal. They flooded the marshes longer and they occurred regularly from May through October.

In addition to high tides, heavy rainfall, DDT resistant mosquitoes and a shortage of chemicals contributed to the adverse mosquito conditions which prevailed in Florida during the 1951 season.

The trend in mosquito control in Florida is changing. And we think this is a healthy sign. For the past five years emphasis has been on chemical control. Now we are going back to fundamental control: elimination of breeding grounds.

It has been evident in Florida for the past three years that DDT was losing its punch as a larvicide and adulticide. For this reason, several counties, during 1951, bought draglines and began ditching and draining marsh areas.

Volusia, Indian River and Manatee Counties have gotten "fundamental control" projects underway. Others are

saving money towards purchase of draglines.

Florida controllers are convinced that chemicals—no matter how lavishly used—will prove unsatisfactory until marshlands have been neutralized by draining and circulation.

The Florida State Board of Health, in November, 1951, recommended a program for long range control after observing that:

- a. Counties were spending more money to fight mosquitoes than ever before.
- b. The State was contributing \$15,000.00 to each County for use, together with County funds, for mosquito control.
- c. Practically all of the funds were being spent for chemical control.  
and
- d. Mosquito control, instead of improving throughout the state, apparently was becoming worse.

The State Board of Health advised Mosquito Districts that the trend toward evermore chemical mosquito control must be stopped. The Board suggested, in addition, that steps be taken toward state encouragement of permanent mosquito control. It recommended passage of legislation whereby the state would contribute to a mosquito control district or Board of County Commissioners assessing a millage for mosquito control, funds equal to 75% of district-raised tax moneys. The Board further recommended that State funds be given only for financing well engineered, permanent mosquito control projects.

In such a plan lies Florida's only hope of ridding itself of its mosquito problem.

The chemical control still practiced so generally in Florida costs millions of dollars. When people demand more of this type of control, they fail to realize that fifty years and \$100,000,000.00 from now

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there will be just as many mosquitoes as there are today.

This can be predicted: If the State Legislature meeting in 1953 follows the recommendations of the State Board of Health, by 1960 a very marked reduction in salt marsh mosquito population should be evident along the coastal areas of the state.

Perhaps some new, effective and economical weapon for mosquito control will be found. We hope so. But, until it is, the State of Florida once again will em-

ploy fundamental control, supplemented by larviciding and adulticiding. Florida mosquito controllers don't want to be caught again uselessly using DDT against DDT resistant salt marsh mosquitoes.

The entire coastal area of Florida is covered by mosquito control districts, broken only in two places—one on the East Coast by Flagler County, and one on the West Coast by Charlotte County. It is believed that, by 1953, these two Counties will have voted to establish districts.

## THE MOSQUITO SOURCE REDUCTION PROGRAM OF THE MERCED COUNTY MOSQUITO ABATEMENT DISTRICT

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The Merced County Mosquito Abatement District was organized in 1923 as a 17-square-mile district to do malaria mosquito control in and around the city of Merced. In order to control the pest field mosquitoes (*Aedes dorsalis* and *Aedes nigromaculis*) the district was expanded to 90 square miles in 1940. As a result of a tremendous increase in the acreage of land under irrigation, particularly irrigated pastures, the *Aedes sp.* problem became increasingly severe throughout the county in the period from 1935 through 1945. The acreage of irrigated pasture increased in this same period from 300 acres to 28,000 acres. As a result of this increased mosquito problem combined with the threat of the introduction of mosquito-borne diseases by returning veterans from the tropics and the prospect of financial aid from the proposed California State Subvention program, the district was expanded to a county-wide basis of 1,995 square miles in 1945.

At the present time about 1,400 to 1,500 square miles of the county are under irrigation and hence pose a mosquito

problem. At least 70% of the problem results from irrigation water in one way or another. There is some mosquito production in the irrigation facilities such as canals, ditches and drains, but by far the largest source of mosquitoes is in the irrigated fields themselves. As indicated above, irrigated pasture is the most consistent producer of mosquitoes, but any irrigated crop can and does produce mosquitoes when and if water stands long enough (3 to 5 days in mid-summer heat). This would include 250,000 acres of wild pasture much of which is irrigated sporadically by uncontrolled flooding; 100,000 acres of alfalfa; 70,000 acres of barley; 40,000 acres of cotton, and 7,000 acres of rice as well as smaller acreages of tomatoes, beans, corn, sugar beets, orchards and vineyards.

In some cases mosquitoes are produced in irrigated fields as a result of carelessness or ignorance on the part of the farmer. However, in many cases excess water is left standing for a variety of reasons beyond the control of the farmer. This subject has been well covered by Lloyd Myers, who was assigned to Cali-