Weed Control Problems In The East Volusia Mosquito Control District

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In past years the East Volusia Mosquito Control District has cleaned its drainage ditches of vegetation by hand labor or mechanical equipment. The continued mechanical removal of the vegetation has become impractical due to the increase in the accumulated miles and size of drainage ditches constructed during the past few years.

Three years ago granular simazine (2, chloro-4,6 bis-(ethylamino)s-triazine) was first used as a pre-emergence treatment in recently cleaned small ditches. Results showed some species of plants did not satisfactorily respond to this material. Treatments were most successful when followed by rainfall immediately after application.

Granular 2,4-D has been used successfully on parrotsfeather (*Myriophyllum brasiliense*). Control with the granular herbicide usually lasted for one year or longer.

Water hyacinth (*Eichhornia crassipes*) is easily controlled in the District ditches with 4 lb/A of the amine of 2,4-D. A plant found in some of the ditches which looked similar to water hyacinth was found to be resistant to 2,4-D. The resistant plant was identified as frogbit (*Limnobium spongia*). A combination of emulsified fuel oil (10 gal number 2 fuel oil and 2 qt. of emulsifier mixed in 150 gal of spray solution with 2,4-D gave excellent control of frogbit. This same combination also gave good control of *Sagittaria* sp and *Pontederia* sp. Recent treatments have shown that the emulsified fuel oil must be thoroughly mixed in the spray solution or control will not be satisfactory.

In one area where water hyacinth were removed from a canal by spraying with 2,4-D, algae and submersed plants became a serious problem. The algae and submersed plants in the canal were controlled with a treatment of copper sulfate followed by a treatment of diquat (6,7-dihydrodipyrido rido [1,2-a:2',1'-c]-pyrazidiinium salt).

Dowpon (2,2-dichloropropionic Acid, sodium salt) has been used, in combination with emulsified fuel oil as a spreader-sticker, successfully on cattails *(Typha latifolia)* and other grasses.

Aquatic weeds present a serious problem in the East Volusia Mosquito Control District. Many of the canals constructed 30 years ago, by Drainage Districts no longer active, must be maintained, since they serve as outfall canals for much of the drainage in the county. The East Volusia Mosquito Control District depends upon the continued use of these canals to receive much of its drainage. There is therefore cooperation with the county wherein the county furnishes weed control chemicals and the District furnishes its equipment and trained personnel to apply the herbicides.

The District has the responsibility for maintenance of its many miles of ditches and canals, and it is certain that the use of herbicides for this purpose will continue and will increase. Plans have been made to equip the District's Bell 47G-2 helicopter with tanks and appropriate spray apparatus to allow rapid spraying of ditches not easily accessible to ground equipment.

Some of the problems which have been recognized in our aquatic weed control program in the District are:

1. Identification of weeds
2. Training of spray personnel in herbicide application
3. Adequate pre- and post-spray inspections
4. Keeping of records on all spray applications

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