



Weevil Battalion Charges Water Hyacinth

FOUR years of intensive research in South America by state and federal agencies has isolated an insect for release in Florida to help control the pesky water hyacinth.

First release of the water hyacinth weevil (*Neochetina Cichhorniae*) scheduled for Fort Lauderdale in late August under the direction of the Agricultural Research Service of the USDA, the Florida Department of Natural Resources, the Florida Division of Plant Industries and the U. S. Army Corps of Engineers. Additional releases of the eggs of the insect will be made in Gainesville and at points throughout the state within the next few months.

Exhaustive study by USDA scientists in South America found that the insect is a natural enemy of the water hyacinth and is "host specific" — meaning that in the absence of the hyacinth the insect cannot reproduce and dies.

Starvation and plant preference tests proved conclusively that the aquatic insect is safe to be introduced in the Southeastern United States waters to help control hyacinths. To insure that only a pure strain of the weevil would be introduced, arthropods were selected, kept in isolation in Argentina, cultured in the laboratory in quantities for shipment to a California laboratory operated by USDA, bred under strict laboratory conditions and only the eggs were released initially in Florida. Scientists released 500 to 1,000 eggs in Fort Lauderdale.

Water hyacinth control is a multi-million dollar a year expense to Federal and state agencies. The plant is a scourge which blocks waterways, impedes navigation, pollutes water and causes greater evaporation of water through the leaves of the hyacinth. Hyacinths continue to cover more water surface each year and repeated applications of herbicides by Federal, state and local agencies are necessary to keep the waterways open.

The weevil, one of several species being considered for introduction, is about two-tenths of an inch long and mottled grey in color.

The insects belong to a group of aquatic weevils which have a waxy coating, adapting them for survival in water habitats. Water hyacinth weevils can submerge

for several minutes below the water surface and can swim clumsily, doing a type of breast stroke, scientists report.

In Argentina, when attack by this insect is severe, according to Dr. David Perkins of the USDA research staff, all leaves of the hyacinth bear a polka-dot pattern produced by the adult feeding. The adult insects feed mostly at night.

Dr. Perkins also noted that the immature stage of the insect is a small, white, grub-like worm which tunnels into the leaf stem. Damage caused by the worm tunneling into the stem often kills the hyacinth. As the grub stage grows larger, it forms an intermediate pupa stage. To do this, it leaves the leaf stem and enters the mass of roots, where it develops an underwater cocoon. The insect emerges from the cocoon and begins feeding on the leaves of the hyacinth immediately. Life span from egg to egg is about three months.

Damage by adults and weevil grubs is often helped by ever-present bacteria and scavenger insects which enter through the feeding spots. The secondary attack, according to Dr. Perkins, amplifies the effect of the weevils. The USDA scientists pointed out that in Argentina there is no control program against the hyacinth, and insect attack in conjunction with other conditions are apparently responsible for the lack of an aquatic weed problem in that country.

Federal and state scientists are optimistic over isolation of the new biological control agent, but temper their enthusiasm by pointing out that the new insect is not the ultimate answer to hyacinth control. "We believe it will be another tool to help control hyacinths," the scientists say.

Funds to support the four years of research on biological control for hyacinths was provided by the U. S. Army Corps of Engineers, and the Florida Department of Natural Resources has supported Dr. Perkins' continued research on the insect since the scientist returned to USDA headquarters in Fort Lauderdale. Further support is being given by the Florida Department of Natural Resources in the continuing program of rearing, release and dissemination of the weevils.

Release of the insects will be closely monitored by all participating agencies.