

Low-level Maintenance Control of Water Hyacinth

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Introduction

Managing water hyacinth is critical for protecting Florida's waterways. Water hyacinth management relies on chemical solutions; however, the public is very concerned with herbicide use.

Previous Research

A significant study done by UF researcher, Joe Joyce, was published in *Aquatics* magazine's 1985 winter issue. Joyce (1985)* addressed the three main public concerns of using herbicides to control water hyacinth which included: (1) the quantity of herbicide used, (2) herbicide affects on water quality, and (3) muck accumulation in lake bottoms created by dying plant matter.

In order to quantify the predicted benefits of maintaining low levels of water hyacinth, Joyce explored the relationship between all three components of water hyacinth management (herbicide quantity, water quality, and muck accumulation).

So What?

Low-level maintenance control can help applicators and scientists bring invasive plant populations down to manageable levels through more frequent application ultimately using **half** as much herbicide.



WATER HYACINTH

HAS BEEN A
**MANAGEMENT
CHALLENGE**
FOR OVER
130 YEARS.

It impedes navigation, irrigation, and recreation while reducing water quality and sheltering mosquitoes.

1985:

Joyce found that low-level maintenance control, spraying herbicide more often with less overall chemical solution used over time, can:

1

REDUCE THE AMOUNT OF
CHEMICAL SOLUTION, OR
HERBICIDE USED ANNUALLY.

2

PREVENT A DECREASE
IN DISSOLVED OXYGEN
CONCENTRATIONS.

3

REDUCE PLANT MATTER
ACCUMULATION IN LAKE
BOTTOMS.

2021:

The UF/IFAS Center for Aquatic and Invasive Plants (CAIP) researchers are excited to scientifically recognize these results by validating findings Joyce's (1985) findings.

*Joyce, J.C. (1985, December) Benefits of Maintenance Control of Waterhyacinth. *Aquatics*, 7(4), 11-13.

Experiment

CAIP researchers are currently running similar trials to observe and quantify the relationship between herbicide quantity, water quality (dissolved oxygen levels), and muck accumulation.

2 LOCATIONS
GAINESVILLE, FL &
FT. LAUDERDALE, FL

8 TREATMENT LEVELS

The plants were managed based on the percent of area covered (PAC). The PAC is the amount of surface area the water hyacinth covers in the tank. The treatment levels were: zero, 5%, 25%, 50%, 100%, and 100% (unsprayed).

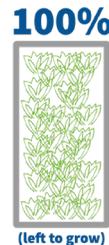
UF/IFAS CAIP researchers included two additional treatments. One demonstrating mechanical harvest at 100% PAC (shovel) and another serving as a control for muck accumulation measurements near the end of the study (shade cloth).

As the original water hyacinth plants grow to their tank's predetermined PAC, researchers chemically treat the plants with 2,4-D back to 5%.

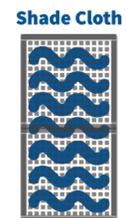
Data collection is currently underway, with trials ending in September 2021.



For more insight into the details of this study, scan the QR code



(left to grow)



FOR MORE
INFORMATION
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TURNING SCIENCE INTO SOLUTIONS