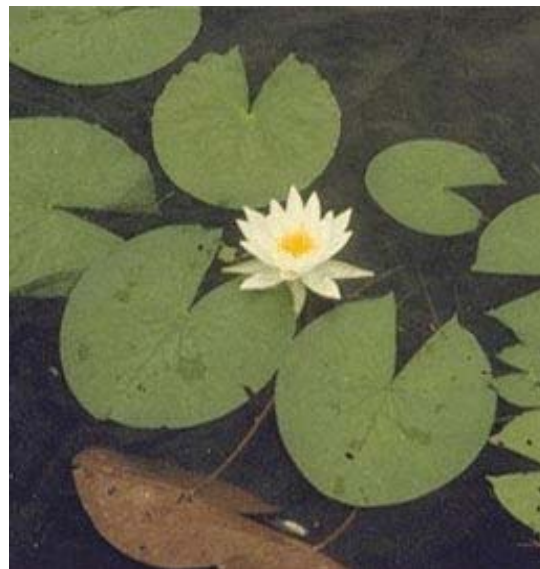


**Evaluation of 2-4,D
on White Water Lilly In Local Farm Ponds**
Cooperator - Jack Baldwin - Marshall, Texas
Authors - Randy Reeves*
Year - 2012
Harrison County

Summary:

Recreation plays a huge part in the total agricultural income for Harrison County, with recreation contributing 3.6 million dollars toward this figure every year. Farm ponds are an integral part of the recreational picture that many county residents depend on for their recreational needs. Aquatic pond weed infestations are the number one pond problem identified by Texas pond owners because they can interfere with livestock watering and/or recreational fishing. Furthermore, severe infestations of certain species can degrade water quality for aquatic life in local farm ponds by limiting fish production and contributing to reduced oxygen levels.



The white water lily is a perennial plant that often form dense colonies. The leaves arise on flexible stalks from large thick rhizomes. The leaves are more round than heart-shaped, bright green, 6 to 12 inches in diameter with the slit about 1/3 the length of the leaf. Leaves usually float on the water's surface. Flowers arise on separate stalks, have brilliant white petals (25 or more per flower) with yellow centers. The flowers may float or stick above the water and each opens in the morning and closes in the afternoon. The flowers are very fragrant. White water lily can spread from seeds or the rhizomes.

Submerged portions of all aquatic plants provide habitats for many micro and macro invertebrates. These invertebrates, in turn, are used as food by fish and other wildlife species (e.g. amphibians, reptiles, ducks, etc). After aquatic plants die, their decomposition by bacteria and fungi provides food (called "detritus") for many aquatic invertebrates. Deer, beaver, muskrat, nutria and other rodents will consume the leaves and rhizomes of white water lily, while the seeds are eaten by ducks.

Objective:

To evaluate the performance of a 66.2% 2-4,D herbicide to control White Water Lily, *Nymphaea odorata* spp., etc., in local recreational ponds and small lakes. 2-4,D is available locally in quart, gallon and two gallon containers for ponds. If landowners purchase any container larger than a quart, you will need a applicators license, in this case, a two and a half gallon container was purchased and used for this demonstration, as well as a good quality non-ionic surfactant.

Materials & Methods:

The date of the application was June 2, 2012, the weather was cloudy, overcast day, low to mid 80 degree air temperature and a light breeze was blowing. The water was clear and estimated lily coverage was estimated to be 20% of the water surface and was growing in marginal areas along the banks of the pond and was reaching out toward the center.

The pond was treated at approximately 9:00 AM and was applied with a five gallon bucket and a gas powered sprayer and a small boat. The application rate was 8 ounces (one cup) per five gallons of water (1% solution). The surfactant was also added to the solution at the same rate (1% solution).

Results & Discussion:

Evaluations were made on **July 5th** and **July 9th**, 4 days and 7 days after treatment respectfully. The following photos from the demonstration site will show the results of the treatments;



Pond Before Treatment 7-2-12



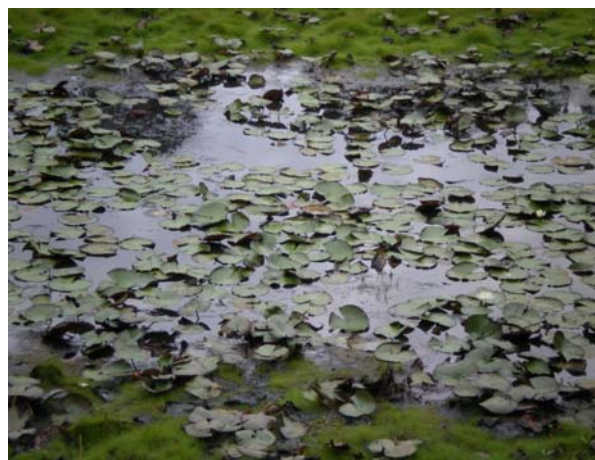
Pond After Treatment 7-5-12



After Treatment 7-5-12



After Treatment 7-9-12



Control Plot 7-9-12

Results of this demonstration show that control of white water lily can be achieved through the use of a 2,4,D herbicide. In this demonstration, 100% control was achieved. Follow-up applications will be made in the weeks ahead to finish cleaning out the lake of white water lily.

Pond owners experiencing aquatic weed problems in their farm ponds are advised to obtain positive identification of the species before adopting chemical, biological or mechanical control options. Assistance can be obtained by contacting the Harrison County Extension office and/or by consulting Texas AgriLife Extension's aquatic plant website (Aquaplant) at <http://aquaplant.tamu.edu>.

Conclusions:

Texas AgriLife Extension Service demonstrations have shown that small farm ponds are capable of producing 1000 pounds of edible size fish per surface acre per year at a retail value of \$1.60 per pound live-weight or \$1600.00 per acre. Complete aquatic weed coverage decreases pond unuseable for fish production. However, control could result in fish production of catfish valued at \$4800.00 annually (based on the size of this pond). This pond is used for recreation and irrigation purposes.

The cost for this demonstration was as follows; chemical cost was \$50.00 per two and a half gallon jug and 1 gallon was used in this demonstration for a total herbicide cost of \$20.00.

Acknowledgments:

We would like to thank Dr. Billy Higginbotham, Extension Wildlife & Fisheries Specialist from Overton, Texas for letting use the spraying equipment used in conducting this demonstration. Also, thank you to Jack Baldwin and W.C. Williams (Ranch Manager) for supplying the materials and pond used in the demonstration, for his help in the evaluation of this project and hosting the 2012 Pond Field Day.

Disclaimer Clause:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

**County Extension Agent-Agriculture, Harrison County, Marshall, Texas, East District 5*