

Microorganism may provide key to combating giant salvinia throughout Louisiana

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This image displays the effect of a bioherbicide on giant salvinia just ten days after a single treatment was applied. Credit: Louisiana Tech University

A team of researchers at Louisiana Tech University has found that a naturally occurring microorganism acts as a natural herbicide against giant salvinia.

Giant salvinia is a noxious and invasive aquatic weed that can block all sunlight penetration into bodies of water, altering entire ecosystems. Under ideal conditions, it's been reported that giant salvinia can double in size every three days.

Dr. H. Lynn Walker, professor of biological sciences at Louisiana Tech, says studies are underway to evaluate the potential for using the microbe as a bioherbicide for control of giant salvinia.

"In view of the preliminary results, we remain optimistic that this research will lead to the development of an additional management tool that can be used to help manage giant salvinia."

Even though the research at Louisiana Tech could have applications for controlling other problematic types of salvinia, Walker says the primary objective is to evaluate the naturally occurring microbe as a potential bioherbicide for control of giant salvinia.

Research results indicate that the microbe can be grown under laboratory conditions and then sprayed onto the foliage of giant salvinia.

"Dr. Walker and his students in the School of Biological Sciences have been very successful in isolating naturally occurring organisms that can be used to control the growth of [plant species](#), including giant salvinia," said Dr. James Liberatos, dean of Louisiana Tech's College of Applied and Natural Sciences.

"As his research progresses, we hope the microorganism can be used successfully to control giant salvinia in places like Lake Bistineau. We have witnessed the devastating environmental effects a rapid growing, invasive plant like giant salvinia can cause. The ability to control its growth with a natural agent is very much needed."

The impact of giant salvinia has not been limited to the waters of north Louisiana. It has had a significant impact the property and safety of residents in low-lying or shoreline areas as well. An unusually wet summer and early fall in north Louisiana has produced flooding and new breeding grounds for giant salvinia.

Preliminary tests show that even one application of the bioherbicide with an adjuvant can drastically reduce the scourge in as few as ten days.

"Dr. Walker has been one of our most prolific inventors," said Dr. Les Guice, Louisiana Tech's vice president for research and development. "This discovery is great evidence of how his innovative research is addressing a major problem in the State but has potential for much broader applications."

Pilot-scale studies are planned at Lake Bistineau to assess the feasibility for development of the microbe as a bioherbicide. These studies will be focused on maximizing herbicidal activity, determination of the long-term effectiveness of treatments, production costs, and integration of the microbe with other control measures.

While the initial results of the research are encouraging, project leaders say the study is still in the early stages of development.

Source: Louisiana Tech University

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