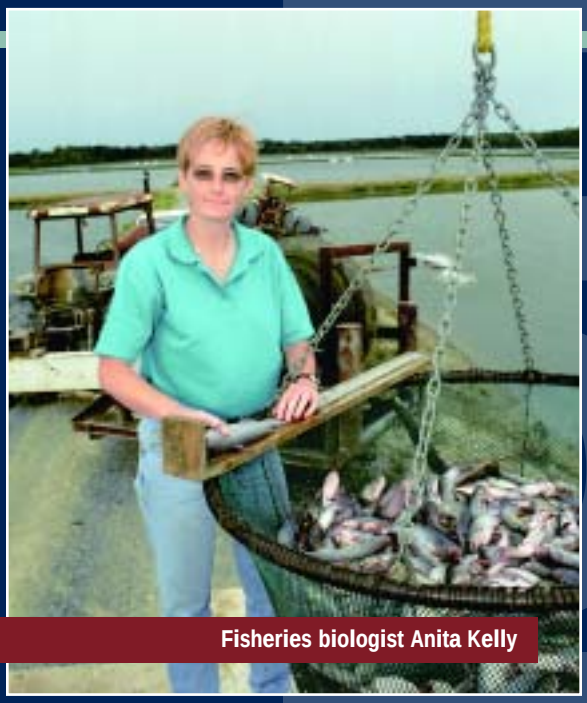

Fisheries biologist Anita Kelly

Jim Lytle

Scientists tackle "off-flavor" catfish

By Bob Ratliff

Three scientists in a variety of disciplines are teamed at Mississippi State University to find a solution to one of the catfish industry's costliest problems.

Anita Kelly, a fisheries biologist in wildlife and fisheries, William Holmes, a research scientist with the Mississippi State Chemical Laboratory, and Tor Schultz, a wood chemist in forest products, are investigating new ways to prevent occurrences of "off-flavor" in farm-raised catfish. Their findings to date suggest some common products may offer immediate help in controlling a problem that costs catfish producers nearly $60 million annually.

"Compounds produced by blue-green alga in ponds can cause channel catfish to develop an undesirable musty or muddy taste known in the industry as off-flavor," said Kelly. "Producers must hold fish with this condition off the market until the flavor quality improves."

Because of lost sales and the high cost of current control methods, the condition has been identified by catfish farmers as one of the most serious problems facing the predominately Southern industry.

MAFES, the Forest and Wildlife Research Center and the Mississippi State Chemical Laboratory fund the project.

Because compounds similar to those produced by pine trees were determined to be the root of the problem, Schultz was a logical partner for the research effort.

"The blue-green alga produces two chemicals that accumulate in catfish tissue and result in a musty or muddy flavor," Schultz said. "The alga can be controlled with copper sulfate, but there is an environmental concern about the use of copper in lakes and ponds."

Producers also can eliminate off-flavor by transferring affected fish to ponds with clean water, but Schultz said that solution takes significant time and labor. Additionally, stress resulting from the move usually kills precious numbers of the fish.

Kelly and Schultz said their study involves the use of hydrophobic compounds that have the ability to absorb various chemicals but are insoluble in water. The compounds, including paraffin wax, common plastics, rubber, and corn oil, have the additional cost and environmental benefits.

"We found that 85 percent of the chemicals that cause off-flavor can be absorbed in 24 hours by adding a small amount of an organic substance to pond water," Schultz said. "The process is both environmentally friendly and cost - effective."

As the university applies to patent the process, the scientists are continuing their work.

"Several hydrophobic compounds have proven effective in tests, and we presently are concentrating on the right formulation," Kelly said. "We want the final product to be in a solid form, such as wax, that can be easily handled by catfish producers and also be easily removed from ponds once the off-flavor compound has been absorbed."