

Vaccines could help what's ailing fish

October 22 2010

U.S. Department of Agriculture (USDA) scientists are developing vaccines to help protect healthy farm-raised catfish against key diseases.

Working as a team, microbiologist Phillip H. Klesius and molecular biologists Julia Pridgeon and Craig Shoemaker with USDA's Agricultural Research Service (ARS) at the agency's Aquatic Animal Health Research Unit in Auburn, Ala., and Joyce J. Evans, aquatic pathologist at the Auburn unit's lab in Chestertown, Md., are developing vaccines against *Streptococcus iniae*, *S. agalactiae* and other pathogens.

ARS is USDA's principal intramural scientific research agency. This research supports the USDA priority of promoting international food security.

The scientists modify the [genetic makeup](#) of pathogens to make them nonvirulent, and then develop vaccines that expose fish to low doses of the modified forms of the pathogens.

Klesius and Pridgeon have developed a modified live *S. iniae* [vaccine](#) that appears to be superior to inactivated or killed vaccines. The live modified vaccine has enough similarity with the pathogen to create a lifelong immunity in fish, according to Klesius.

Scientists are looking at new methods to vaccinate fish. But for now, the vaccination process consists of immersing the fish in water that contains the modified pathogen.

Previous research breakthroughs have benefited the catfish industry. For example, a ARS-developed vaccine against the pathogen *Edwardsiella ictaluri*, which causes enteric septicemia, has been widely adopted by fish growers.

In an earlier trial, the vaccine against enteric septicemia of catfish was tested by Mississippi State University researchers. Results showed a 12 percent increase in the survival rate of [fish](#) that were given the vaccine, and a substantial increase in returns for producers who used the vaccine in their ponds.

More information: Read more about this and other research on aquaculture in the October 2010 issue of Agricultural Research magazine, available online at: www.ars.usda.gov/is/AR/archive/oct10/fish1010.htm .

Provided by United States Department of Agriculture

Citation: Vaccines could help what's ailing fish (2010, October 22) retrieved 20 April 2024 from <https://phys.org/news/2010-10-vaccines-ailing-fish.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--