

It's in the water: Scientists patent fish disease vaccine

December 9 2010, By Sue McMurray

Tainted water is one of the most deadly conduits for disease known to man – and fish.

Bacterial coldwater disease (CWD), caused by the bacterium *Flavobacterium psychrophilum*, is a lethal infection that causes significant losses of hatchery-reared salmonids worldwide. The disease is regarded as the No. 1 problem for Idaho's trout industry, resulting in \$9-10 million annual losses and up to a 30 percent reduction in yield.

University of Idaho fisheries scientist Ken Cain; Benjamin R. LaFrentz, research molecular biologist, U.S. Department of Agriculture-Agricultural Research Service; and Scott LaPatra, director of research and farm services at Clear Springs Foods, Inc. Buhl; collaboratively developed a CWD vaccine that was recently patented by the University of Idaho.

"Cain's innovative, collaborative research promises millions in savings for Idaho's commercial trout industry – the third largest animal food industry in the state and the nation's largest producer," said Duane Nellis, University of Idaho president. "Solutions like this are in keeping with our mission as a 21st century land-grant institution with global impact."

CWD also is problematic at hatcheries rearing fish for sport or restoration, and although present in the wild, stress in the hatchery environment may induce disease outbreaks.

“Practical delivery of a vaccine in aquaculture is extremely important,” said Cain. “This is the first time we have been able to show that immersing [fish](#) into an experimental CWD vaccine will provide disease protection.”

Cain explains that while most vaccines work using killed bacteria, CWD only responds to live bacteria. He and his colleagues developed a strain of the live *Flavobacterium psychrophilum* bacterium, which works as an injection or as an immersion vaccine.

This product currently is being tested in field trials at northwest hatcheries. If the field trials prove successful, the company Aquatic Life Sciences will have first option to license the patent from the university and commercialize the [vaccine](#) for sale to both public and private aquaculture operations.

Provided by University of Idaho

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