

Breakthrough to tackle disease threatening Australia's barramundi industry

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The University of Sydney will lead a new project to improve existing methods of detecting a fish disease which is causing substantial setbacks to the barramundi industry.

Thanks to a quantum leap in DNA-detection technology in 2009, a new test is available for the nervous necrosis virus—a serious disease affecting more than 35 species of fish worldwide. In Australia, the disease has primarily affected the production of barramundi, with losses of up to 100 per cent occurring in some hatcheries.

Principal Investigator [Professor Richard Whittington](#), Chair of [Farm Animal Health](#) in the Faculty of Veterinary Science at the University of Sydney, says the disease has prevented the expansion of the industry and hampered productivity. It has also reduced options for restocking wild fisheries due to fears the disease may spread.

In the past, the gel-based polymerase chain reaction (PCR) method was the validated test used in laboratories to find signs of the nervous necrosis virus.

"The old test was not very sensitive, and in many cases, infection was present yet still turned up negative," Professor Whittington explains.

"For that reason, the result of the test did not really predict the likelihood of an outbreak occurring."

The new PCR method was first achieved at the University of Sydney through research and development funded by the Australian Research Council, and will allow researchers to concentrate the genome from the virus so that it can be detected in a very sensitive laboratory procedure.

The new study will also improve detection by developing and applying serological tests to complement the PCR method. This will provide the information as to whether the antibody status should be used as an indicator of infection in a fish population.

Launched after the largest consultative meeting in Australia in 2007, the project is a major national collaborative research program to control the disease. The meeting included State Departments of Primary Industries, CSIRO, representatives from the Australian Barramundi Farmers Association as well as the [Department of Agriculture, Fisheries and Forestry](#).

Working with Professor Whittington, will be [Dr Joy Becker](#) and Alison Tweedie at the University of Sydney as well as team members listed below:

- Mark Crane, the fish health project leader, from the Australian Animal Health Laboratory at CSIRO;
- Jane Frances, Manager of Aquatic Biosecurity & Risk Management at the New South Wales Industry and Investment;
- Dr Peter Kirkland at Elizabeth Macarthur Agricultural Institute, New South Wales Industry and Investment;
- Dr Edla Arzey, at Elizabeth Macarthur Agricultural Institute, New South Wales Industry and Investment;
- Dr Kitman Dryting, from Aquatic Animal Health Northern Territory State Government;
- Dr Ian Anderson, the principal Veterinary Pathologist (Fish Disease) at the Queensland Department of Primary Industries.

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