Australian Government
Department of Agriculture, Water and the Environment

Barramundi Disease Surveillance Project

Summary of results

November 2021

Key points

- A survey of Australian barramundi hatcheries for three significant exotic pathogens and one endemic pathogen was conducted from 2019 to 2021.
- **All barramundi samples tested NEGATIVE for the targeted disease agents.**

What did we do?

- Six Australian barramundi hatcheries participated in a voluntary survey for three significant barramundi (*Lates calcarifer*) disease agents from 2019 to 2021.
- The disease agents targeted included:
    - two closely related exotic megalocytiviruses; red sea bream iridovirus (RSIV) and infectious spleen and kidney necrosis virus (ISKNV).
    - a more divergent exotic megalocytivirus, scale drop disease virus (SDDV).
    - a nodavirus that occurs in parts of Australia; nervous necrosis virus (NNV).

What did we want to know?

- The project aimed to strengthen Australia's animal health status claims for barramundi diseases of national and trade significance.

How did we test samples?

- The survey involved nationally consistent sampling design, case definitions, diagnostic methods and evaluation of laboratory performance.
- Quantitative polymerase chain reaction and conventional PCR (as appropriate) were used to detect the targeted disease agents.
- The following tissue samples were collected:
    - For megalocytiviruses (RSIV, ISKNV, SDDV) – fish body with both head and tail removed (containing spleen and kidney)
    - For NNV – fish head separated from the body (containing brain and eyes).
- Government aquatic animal health officers collected samples from November 2019 to June 2021 in the Northern Territory, Queensland, Victoria and Western Australia.

- For megalocytiviruses and NNV, testing was conducted at the CSIRO Australian Centre for Disease Preparedness (ACDP), or state/territory laboratories that met testing performance criteria.
- All testing for SDDV was conducted at ACDP.

What did we find out?

- A total of 745 barramundi fingerlings were sampled from participating barramundi hatcheries in the Northern Territory, Queensland, Victoria and Western Australia.
- **All samples tested negative for RSIV, ISKNV, SDDV and NNV.**
- The negative test results for megalocytiviruses can also be interpreted as negative for turbot reddish body iridovirus (TRBIV, a megalocytivirus).
- The data supports Australia's current disease-free status from the exotic disease agents RSIV, ISKNV, SDDV and TRBIV; and provides information on distribution for the endemic trade-significant disease agent, NNV.

What were the benefits?

- The survey provided evidence of Australia's freedom from important pathogens of barramundi—RSIV, ISKNV, SDDV and TRBIV. This evidence is important for maintenance and improvement of market access and to justify our border biosecurity measures for these pathogens.
- The survey did not detect an important endemic pathogen—NNV.
- Participating state and territory government laboratories demonstrated their diagnostic capability through inter-laboratory comparability testing for megalocytiviruses and NNV.
- Survey participants (barramundi hatcheries; governments of the Northern Territory, Queensland, Victoria, Western Australia, and the Commonwealth; and CSIRO ACDP) had an opportunity to strengthen working relationships on aquatic animal health.

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