

Testing for carriers of *Yersinia ruckeri* in fish

Atlantic salmon and rainbow trout can become asymptomatic carriers of *Yersinia ruckeri* during the hatchery phase of production. When fish are transferred to sea cages, carriers can develop Yersiniosis due to seawater adaptation stress reactivating the pathogen.

PURPOSE

Carriage levels of *Yersinia ruckeri* in asymptomatic fish can be determined using a selective enrichment-PCR test (SEC-PCR).

TEST FORMAT

Faecal material is collected from live fish and placed in a selective enrichment medium designed to encourage the growth of *Y. ruckeri*. The inoculated medium is incubated and tested for the presence of *Y. ruckeri* by PCR, a DNA molecular detection test.

MATERIALS REQUIRED

- The selective enrichment medium for *Y. ruckeri* is supplied by the Animal Health Laboratory in 10 ml volumes. On receipt, keep the medium refrigerated between 2-8°C. The medium must be used within 7 days of receipt.
- Sterile cotton swabs.

SELECTION AND HANDLING OF FISH

Sampling can be undertaken with fish from which faecal samples are collected. For small fish, consider euthanasia; for larger fish sedation and returning them to the holding tank may be preferred. If fish are sedated, sampling must be undertaken with veterinary supervision. The choice of euthanasia, or sedation and revival, must be made by a supervising veterinarian and must consider factors of size of fish, feeding habits, water temperature and health status of the stock.

NUMBER OF ANIMALS TO BE TESTED

The number of fish to be tested is determined by known carriage levels previously determined for the population under test, the size of population and the number of tanks under investigation. The Fish Health Unit can provide advice about sample size requirements for a particular investigation.

SAMPLING COLLECTION

Euthanase, or sedate the fish to a level where they can be handled.

Gently massage the ventral surface of the fish from the pectoral fins towards the anus to express a small quantity of faeces. A strand of 5-10 mm in length is sufficient. **Do not exceed this amount.**



If a faecal mass is not expressed immediately, make no further attempts to expel faeces from the fish.

Using a sterile swab, pick up the faeces and transfer the sample to the bottle of enrichment medium.

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SUBMITTING SAMPLES

Submit samples to:

Animal Health Laboratory
NRE Tas
165 Westbury Road
Prospect TAS 7250

P: 03 6777 2111

E: specimenreception@nre.tas.gov.au

After the faecal sample has been collected, the fish can be revived and returned to its holding tank.

Depending on the purpose of testing, samples from several fish can be pooled with a **maximum of 5** in the one volume of enrichment medium. If pooled samples are being collected, the same swab can be used for each fish within the pool

TRANSPORTING SAMPLES

After inoculation, keep the samples cool but do not refrigerate. Holding at room temperature of 22°C or less is acceptable.

Make sure the date of inoculation is recorded and arrange to return the inoculated media to the laboratory as soon as possible. Samples must arrive at the laboratory within 5 days of inoculation