



AQUAPLAN DISEASE INFORMATION LEAFLET

FRANCISELLOSIS

BACKGROUND

- Francisellosis is caused by a non-motile, gram negative coccobacillus which is strictly aerobic and facultatively intracellular. The causative organism is, *Francisella philomiragia* subspecies *noatunensis*.
- The bacterium is widespread in the environment and affects wild freshwater and marine species.
- Francisellosis was first reported in Norway in 2006 and has since been diagnosed in farmed and wild Atlantic cod in Scandinavia and farmed freshwater salmon in Chile.
- A related species (*F. asiatica* or *F. orientalis*) causes francisellosis in tilapia.
- In Ireland, francisellosis was first diagnosed in farmed Atlantic cod in 2009.
- The disease affects Atlantic cod of all age groups and can result in significant mortalities.

CLINICAL SIGNS

- In severe outbreaks, mortalities often occur without any obvious clinical signs of disease.
- Affected fish are generally lethargic, inappetant and appear emaciated due to reduced feeding.
- Occasionally opaque eyes and white nodules may be observed in the skin.
- The internal organs (heart, spleen, kidney and liver) are often enlarged and exhibit typical white protruding nodules of various size.



DIAGNOSIS

- Diagnosis of francisellosis is based on clinical signs, histopathological changes and laboratory investigations.
- Confirmation of the diagnosis requires isolation of the bacterium on selective media (cysteine heart agar with 5% sheep blood) with serological or molecular identification of the causative agent.
- The bacterium grows within the temperature range of 10 – 30°C, with an optimal growth temperature of 22°C.
- Histopathologically, affected organs show extensive inflammation with multiple granulomas.

CONTROL

- There is currently no effective vaccine treatment for francisellosis.
- Although the bacterium has been reported to be sensitive to tetracyclines, treatments to date have been unsuccessful.
- The bacterium is present in the skin and mucus of infected fish and can survive for long periods outside the host suggesting that horizontal transmission plays an important role in the spread of disease.
- Strict on-site biosecurity measures and screening of incoming stocks should form part of a control strategy.

WHAT SHOULD I DO?

- Minimise potentially stressful procedures such as handling and grading when francisellosis is suspected or confirmed.
- As francisellosis is not listed under Council Directive 2006/88/EC, control of the disease is a matter for the operator and the retained veterinary practitioner.
- Strict biosecurity measures should be implemented around the infected site.
- Remove moribund and dead fish from infected pens/tanks daily. Mortalities should be disposed of in accordance with current Animal By-Products Regulations.
- If the vet notices a change in the nature of the infection and suspects a more virulent disease is emerging or alternatively, if the disease is suspected in a new host species, you should contact the Fish Health Unit of the Marine Institute. If you suspect the presence of a listed disease you should also notify the Marine Institute.

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