



Marine Institute
Foras na Mara

COUNCIL DIRECTIVE 2006/88/EC DISEASE INFORMATION LEAFLET

INFECTIOUS SALMON ANAEMIA

BACKGROUND

- Infectious salmon anaemia is caused by a single stranded RNA virus of the family *Orthomyxoviridae*. ISA is listed as a non-exotic disease under EU Directive 2006/88/EC, and is notifiable in Ireland, according to S.I. No. 261 of 2008.
- ISA was first reported in Norway in 1984 and has since been reported in Scotland, Ireland, Canada, USA, Faroe Islands and Chile.
- ISA primarily affects fish held in seawater or fish exposed to seawater.
- Natural outbreaks of ISA have only been recorded in farmed Atlantic salmon, however the virus has been detected in a range of farmed and wild salmonid species.
- Ireland has been officially declared free of ISA, by Commission Decision 2009/177/EC.

CLINICAL SIGNS

- ISA is a systemic disease affecting the circulatory system.
- Infected fish are often lethargic, do not feed and swim at the water surface.
- Internally, a dark coloured liver and gut can be observed due to haemorrhaging, the kidney appears swollen and pale gills can be observed due to the anaemia.
- Fish often present with pop-eye, distended abdomen and blood spots in the eye chamber.
- Haemorrhaging, circulatory collapse and extreme anaemia are often observed in the final stages of infection.
- Cumulative mortality ranges from moderate to high and may exceed 90% in some cases.



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DIAGNOSIS

- Diagnosis of ISA is based on clinical signs, histopathological changes and laboratory investigations.
- The ISA virus can be cultured from infected tissue on a range of salmonid cell lines however there is no specific cell line suitable for all virus strains.
- The virus can be identified by a range of immunological and molecular based methods (e.g. IFAT, RT-PCR and real-time RT-PCR).

CONTROL

- There is no treatment available for ISA.
- Vaccination against ISA is not permitted in areas of the EU which have been declared disease free although vaccines have been used with mixed results in the USA, Chile and the Faroe Islands.
- Horizontal transmission of the virus is the main cause of disease spread.
- Wellboats have been associated with the spread of the disease in Norway and elsewhere.
- A range of disinfectants are effective against the ISA virus e.g. sodium hypochlorite, formic acid, ozone, UV.

WHAT SHOULD I DO?

- The Marine Institute must be notified in the event of unexplained mortality or the suspicion of a notifiable disease.
- Strict biosecurity measures should be implemented at and around the infected site, in collaboration with the Marine Institute and the retained veterinary practitioner.

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