



AQUAPLAN DISEASE INFORMATION LEAFLET

AMOEBIC GILL DISEASE (AGD)

BACKGROUND

- Amoebic Gill Disease (AGD) is a proliferative gill disease caused by the protozoan parasite *Paramoeba perurans* which is free living in the marine environment.
- The parasite primarily affects farmed salmonid species but it has also been described in turbot, sea bass and ballan wrasse.
- AGD has been endemic in Tasmania since the 1980's and has also been reported in Chile, Norway, Scotland, Ireland and France in recent years.
- The re-emergence of AGD has presented a significant challenge for the salmonid farming industry in terms of the logistics of treatment, as well as economic impact.

CLINICAL SIGNS

- Initial behavioural signs of the disease include rapid movement of the opercula, lethargy, anorexia and elevated position in the water column.
- Gross inspection of the gills reveals excess mucus production, multifocal white patches and swollen gill tissue.
- The disease is characterised by localised gill tissue responses which include epithelial oedema, hyperplasia of epithelial and mucous cells; fusion of the lamellae and the development of interlamellar vesicles.

DIAGNOSIS

- Currently the most cost effective non-destructive means of diagnosis of AGD on a commercial scale is through gross pathological assessment via gill scoring (Taylor *et al* 2009).
- It is however, a presumptive means by which to confirm the presence of AGD and is open to misinterpretation as the reactions of the gill tissue to different stimuli are limited. Lesions created by the amoeba are difficult to distinguish from other pathogens or irritants and the technique and experience of the observer can also influence the outcome.
- Diagnosis is generally confirmed by microscopically observing amoeba in fresh preparations of gill tissue or by histopathology where hyperplasia and fusion of the lamellae, as well as the presence of amoeba are observed.
- The presence of *Paramoeba perurans* can only be confirmed by molecular methods.

CONTROL

- A freshwater bath for 2-4 hours will provide immediate relief and recovery from AGD. Several baths may be required over a production cycle.
- Access to a suitable source of freshwater is vital both in terms of disease management and fish welfare. Expedient treatments must be carried out once the threat of AGD is identified. Any delay in treatment will severely compromise the health and welfare of the affected fish and significant mortality can be expected in such situations.
- Hydrogen peroxide may also be used to treat AGD, however there is a narrow safety margin particularly at elevated temperatures. Manufacturers' instructions should always be followed.

WHAT SHOULD I DO?

- Early detection and ongoing monitoring of the disease throughout the production cycle is critically important in informing the timing of treatments.
- Good husbandry and health management practices such as those outlined below can aid in improving survival of AGD affected fish:
 - o Reduced stocking density
 - o Good net changing management
 - o Frequent mortality removal
 - o Site following
- Avoid or minimise any potentially stressful procedures such as handling or grading when AGD is suspected or confirmed.
- As AGD is not listed under Council Directive 2006/88/EC, control of the disease is a matter for the operator and the retained veterinary practitioner.
- 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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