NOTE

# Confirmation of *Neoparamoeba perurans* on the gills of Atlantic salmon during the earliest outbreaks of amoebic gill disease in Ireland

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**Abstract**
Molecular diagnostics have made it possible to identify *Neoparamoeba perurans* as the causative agent involved in the earliest AGD outbreaks in Ireland. A range of other putative pathogens, associated with gill disease were also detected indicating that they have been present in Irish aquaculture for over 20 years.

Gill diseases pose a significant challenge for Atlantic salmon, *Salmo salar*, aquaculture globally. The most significant of these is amoebic gill disease (AGD) caused by *Neoparamoeba perurans* (Young et al., 2008). While AGD has been endemic in the Australian industry since the 1980s, the disease has since become a significant problem for European salmon aquaculture since its re-emergence in 2011 with Ireland, Norway, France, Scotland and the Faroe Islands all affected (Rodger, 2014; Oldham et al., 2016). The first case of AGD in Ireland was described in the Autumn of 1995 in S1 Atlantic salmon transferred to sea in the spring of that year, with a total of 10 sites showing pathology and associated amoebae (Palmer et al., 1997; Rodger and McArdle, 1996). The case history of these outbreaks (Palmer et al., 1997; Rodger and McArdle, 1996) reveals the typical clinical signs associated with AGD; lethargy, respiratory distress and congregation at the surface of the water. Gill smears taken at the time revealed high mucus levels as well as numerous amoebae. Of 10 sites with confirmed AGD, two recorded mortality exceeding 10%, while three others had < 5% mortality, with the remaining sites experiencing no significant mortality (Rodger and McArdle, 1996). Between the years 1995 to 2010, there were sporadic and relatively minor outbreaks of AGD (Rodger,

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