

Methods for investigating patterns of mortality and quantifying cause-specific mortality in sea-farmed Atlantic salmon

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Methods for investigating patterns of mortality and quantifying cause-specific mortality in Atlantic salmon farming were developed (Aunsmo et al., 2008). The methods were further used to investigate mortality and patterns of mortality for the first 3 months after sea transfer in the 2006 year-class autumn smolts (S0) of Norwegian farmed Atlantic salmon. In the study population, which consisted of 20 pens at 10 sites, cause-specific mortality was examined by 11 fish health professionals during 8 visits to each pen. Cause-specific mortality proportions were used to convert crude mortality into cause-specific mortality. Cumulative mortality in the study period was 2.1% in the study population compared with 3.7% for the 2006 year-class S0s in the national database. Of this cumulative mortality, 73 and 59% took place in 20% of the pens in the study and the reference population, respectively. Daily mortality rates in the study population showed a variation from 0 to 2376 per 100000 fish where the majority of mortality was observed during disease outbreaks. All study pens had periods of low baseline mortality and some pens had no increased mortality during the study period. Of 2088 dead fish examined, 92% (1929 fish) were assigned a specific cause of death, and in 97% of these 1929 fish the investigators reported the given cause of death to be likely or very likely. Ulcers were the main cause of mortality, accounting for 43% of the assigned mortality, and infectious agents were involved in 64% of the total mortality. The study shows that probable causes of death can be established in Atlantic salmon farming and their contribution to total mortality measured.

References

Aunsmo, A., Bruheim, T., Sandberg, M., Skjerve, E., Romstad, S., Larssen, R.B., 2008. Methods for investigating patterns of mortality and quantifying cause-specific mortality in sea farmed Atlantic salmon *Salmo salar*. Dis. Aquat. Org. 81, 99-107.