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Managing disease and parasites

Aquaculture finfish are free of clinical signs of disease when introduced into the marine environment, but cultured fish can be exposed to aquatic animal pathogens (such as bacteria and viruses) and parasites (such as sea lice) from wild fish. If left untreated, diseases and parasites can affect the health of farmed fish and may be transferred back to wild populations. Fish farmers take a variety of measures to ensure that the health of wild and farmed populations is protected. Some of these measures include:

- Biosecurity practices to prevent the spread of pathogens
- Practices to reduce stress related to handling and predator interactions
- Vaccination
- Year-class separation on a farm or in groups of farms
- Site fallowing
- Monitoring for signs of disease
- Rapid intervention in disease events through diagnosis, treatment, and additional measures (e.g., depopulation of infected stock, quarantine).

In British Columbia (BC), licence conditions dictate sea lice management measures to minimize the risk of sea lice transfer between wild and farmed fish. During the outmigration of wild juvenile salmon in the spring from the rivers to the ocean, farm operators increase sea lice abundance monitoring. When the regulatory threshold of three motile (lice in the free-moving stage of their lifecycle) salmon lice (*L. salmonis)* per fish is exceeded, licence holders must initiate appropriate management measures to reduce lice levels which may include harvesting farmed salmon, use of in-feed medication or topical bath treatments.

Regulatory measures aimed at controlling sea lice levels on salmon farms are set by Fisheries and Oceans Canada (DFO) in BC and by coastal provincial governments elsewhere. Typically, sea lice are managed through harvesting, topical pesticides and in-feed medications. The development of alternate methods for controlling and treating sea lice is also being encouraged through integrated pest-management strategies as well as through investment in research.

Canadian researchers at DFO and elsewhere have provided scientific advice on sea-lice dynamics, transmission routes between wild and farmed fish, impacts, effective monitoring program design, important considerations for setting treatment thresholds and other related management measures. This advice and on-going research increases our understanding of the potential dynamics of sea-lice infections and characterization of the impacts of sea-lice control methods on the environment.

Reporting

- Sea lice mitigation events at BC marine finfish aquaculture sites
  - Sea lice mitigation events graph
- Industry sea lice counts at British Columbia marine finfish aquaculture sites
- DFO sea lice audits of British Columbia marine finfish aquaculture sites
- Average number of lice per fish on British Columbia salmon farms
- DFO marine finfish aquaculture audit activities in British Columbia

Related links

- Sea lice management at BC salmon farms
- National Contaminants Advisory Group
- Scientific advice on sea lice drugs
- Scientific advice on sea lice pesticides
- Scientific research on sea lice

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