



Group Policy

Sustainable Farming

SEA LICE CONTROL

Policy owner: COOs
Approver: CEO

Valid from: 4 January 2021
Last updated: 27 June 2021

Sea lice control

1 The purpose of this policy is

To set out Grieg Seafood’s principles to control sea lice levels to avoid negative impact on wild and farmed salmonids, and also on biodiversity and the ecosystem.

2 Policy Statement

Grieg Seafood has an ethical responsibility to protect our salmon against health issues caused by sea lice.

Grieg Seafood has an ethical responsibility to reduce the risk of sea lice from salmon farms to contaminating wild salmonids, especially during the smolt migration period.

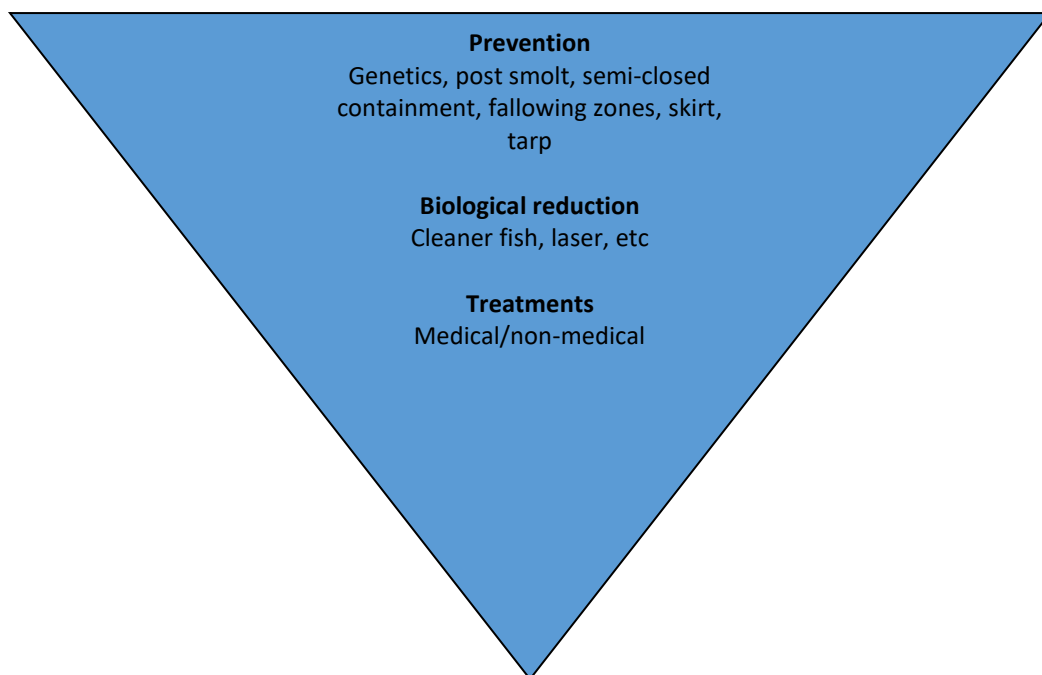
Grieg Seafood has an ethical responsibility to protect biodiversity and the ecosystem around our farms, and to minimize impact from sea lice treatments.

Salmon sea lice are sampled and classified every week at water temperatures above 4°C from a minimum of ten fish. The average number of sea lice is registered in our production system.

Every region has implemented measures to comply with national sea lice legislation.

3 Our principles

Grieg Seafood prefers to use preventive and biological sea lice measures rather than medical and non-medical treatments. Harvesting will always be considered when sea lice-infected fish are close to harvestable weight.



- Sea lice measures are based on IPM (Integrated Pest Management) principles. A multifaceted approach will give improved results and reduce the risk of sea lice becoming resistant.
- Minimize use of pharmaceutical treatments methods that discharge treatment water into the sea. Pharmaceutical lice treatments are acceptable in clean treatment systems, which purify the treatment water before it is discharged back into the ocean.
- Non-medical treatments are preferred if they provide an acceptable level of fish welfare. A risk assessment must be performed prior to any treatment. The treatment’s effectiveness and the risk of side effects on fish and the environment should be evaluated.
- Pharmaceuticals for sea lice treatments must be prescribed by authorized fish health personnel, and only medicines licensed for sea lice control should be used.
- Withdrawal periods for medicine use are rigorously controlled and documented.

4 Definitions

Sea lice is the parasite *Lepeoptheirus salmonis*.

An adult female sea louse is a sexual mature female sea louse with egg strings or without egg strings.

A motile sea louse is a preadult sea louse.

5 Tracking, reporting and key performance indicator

Treatments are registered in our production system, specified by pharmaceuticals treatments, prescription number, type of pharmaceutical (active pharmaceutical ingredient grams used), duration of treatment, date and location. Additional information about treatment conditions during all treatments are registered in specific forms for evaluation usage.

The sea lice stages influencing the salmon, are the preadult and adult stages.

The limit for any physiological effect of sea lice in Atlantic salmon smolt is estimated to 0.1 lice/gram fish* and 100 % sea lice related mortality at 0.3 lice/gram**. We rarely reach such levels in aquaculture and use adult female lice as KPI to monitor the infection pressure of sea lice.

Key Performance Indicator

KPI 2020 - 2025	Europe and Newfoundland	BC
	Average adult female sea lice	Average motile sea lice
Within target	below 0.5	below 3.0
Unsatisfactory result	above 0.5	above 3.0

At the green licenses in Finnmark, the limit is 0.25 adult female sea lice per fish, while during April and June, when wild salmon smolt migrate from the rivers and pass the salmon farms, the limit is 0.2 adult female sea lice per fish.

Pacific salmon species on the Canadian west coast have a higher tolerance for sea lice*** and for that reason we use separate KPI for British Columbia.

6 Responsibility for implementing and adhering to this policy

Board of Directors

- Monitors compliance with the policy and results of the KPIs, as this policy is an integrated part of our business strategy

CEO & Global Management Team

- CEO approves this policy
- Championing the policy

COOs

- Reviewing and updating the policy
- Communicating policy organizationally
- Advising and assisting regional directors, managers and supervisors in addressing issues
- Responsible for results of the KPIs and corrective actions

Global Fish Health Manager/ Veterinarian

- Approves the policy

Regional Directors, Managers & Supervisors

- Communicating policy to all staff
- Adhering to policy
- Addressing issues
- Providing regular training programs
- Responsible for results of the KPIs and corrective actions

All staff

- Adhering to policy
- Attending regular training/awareness programs
- Responsible for results of the KPIs and corrective actions

7 Related documents or references

This policy is implemented in conjunction with the Global salmon Initiative protocols.

*Wagner G.N. et al 2003. Physiological impact of sea lice on swimming performance on Atlantic salmon. *Journal of Fish Biology* 62: 100-109

**Taranger G. L. et al 2015. Risk assessment of the environmental impact of Norwegian Atlantic salmon. *Journal of Marine Science*, 72:997-1021

*** Fast Mark D. et al 2002. Susceptibility of rainbow trout *Oncorhynchus mykiss*, Atlantic salmon *Salmo salar* and coho salmon *Oncorhynchus kisutch* to experimental infection of sea lice *Lepeoptheirus salmonis*. *Diseases of Aquatic Organisms* Vol. 52:57-68