

# Fish Welfare Policy

As a salmon farmer, Cermaq has full responsibility for the health and welfare of the fish under our care. Therefore, our goal is for our fish to thrive, grow and be healthy throughout their entire life from hatched egg and until harvest. Good fish welfare leads to a fish that is healthier, performs better and ultimately has better quality, which is essential for the productivity and sustainability of Cermaq's farming operations.

This policy is based on the universally recognized "Five Freedoms" as described by the World Organization for Animal Health's (OIE) guiding principles on animal welfare.<sup>1</sup>

Cermaq aims to be an industry leader in fish welfare through application of best available scientific and operational knowledge, in addition to a progressive approach towards implementing knowledge from scientific fields and technological developments going into the future. A continuous improvement work of fish welfare is a central objective for Cermaq's operations, research, and technological development.

## **Scope**

This policy covers Cermaq's production of Atlantic salmon and Coho salmon across its operating regions in Norway, Canada and Chile.

## **Governance**

The Managing directors and the Group Management Team hold the overall responsibility for the policy, goals, KPIs, and performance on fish welfare, but fish welfare is a key task for all involved in fish production across Cermaq. Additionally, each operating company has a dedicated fish health team responsible for managing fish welfare in the daily operations.

## **Competence and People**

Fish welfare cannot be achieved without people with substantial competence and dedication. True care for our fish constitutes as the basis of Cermaq's operations. Each operating company has a dedicated fish health & welfare manager, and each site manager holds the daily responsibility for the fish at their site.

All Cermaq staff working with live fish has training in fish welfare, with focus on the key welfare parameters to optimize welfare and minimize distress. Performance on fish welfare is followed up regularly by the staff.

Cermaq also has a global innovation team on fish health and welfare that supports all operating companies and drives research and trials e.g., on vaccines, and innovative technologies to optimize fish welfare.

## **Optimization of environment**

Water quality is essential for the fish's health and welfare. Therefore, our sea water sites are selected to provide the best water quality possible. Implementation of comprehensive environmental indicators

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<sup>1</sup> The "Five Freedoms" are: 1) Freedom from hunger, malnutrition and thirst; 2) Freedom from pain, injury and disease; 3) Freedom from fear and distress; 4) Freedom to express normal patterns of behavior; and 5) Freedom from physical and thermal discomfort.

and water quality plans at all facilities ensures good environmental conditions, including monitoring and management of parameters such as oxygen levels, salinity, and temperature. This also includes monitoring of environmental risk factors such as algae blooms.

Our installations are designed to allow for responses to changing ocean conditions, optimal movement, and minimal handling of the fish to avoid discomfort, injuries, predator attacks, and escapes in both normal and adverse weather conditions.

Stocking densities in our tank facilities and in the sea net pens are adjusted after the life stage the fish are in and are maintained within the regulations in the operating country.

### **Proper nutrition**

Our fish are provided nutritious feed to ensure healthy growth, distributed in adequate amounts to reduce stress and competition for food, using actively optimized diets and feeding practices. The feed should support the growth, health and quality of the fish.

Prior to handling events and harvesting we carefully assess the sufficient fasting times for the fish to reduce stress and maintain a proper welfare under the event.

### **Preventive fish health and responsible treatment**

We apply preventive measures to fish health by prioritizing the development and use of appropriate vaccines, selective breeding, pathogen screening, monitoring, farming technology and practices to reduce handling, stress, and need for medical treatment. Additionally, Cermaq has determined to not utilize cleaner fish in our production, as we cannot ensure their welfare. Nor do we produce genetically modified or triploid salmon for the same reasoning.

Fish welfare and biosecurity measures are assessed and managed throughout the entire production and life cycle of the fish. All our sites have fish health management plans in place with procedures describing disease monitoring, diagnostics, and if necessary, treatment options according to the conditions and risks of each region.

We screen our broodstock and smolts for pathogens to prevent disease. The fish is also regularly monitored throughout the production for the presence of pathogens for early detections ahead of eventual outbreaks. This is to detect any e.g. eventual diseases prior to fish welfare being compromised, and for us to be able to act early on when measures will be most effective.

Execution of medical treatments are determined by a veterinarian or fish health biologist. The treatment will be chosen based on whether it can reduce or avoid the loss of welfare, or whether it is necessary with a humane culling. This includes infections or diseases requiring anti-bacterial or anti-fungal treatments, but also anti-parasitic treatments such as delousings, which can be performed with the use of therapeutics or mechanical treatments. During treatment the fish's response will be monitored.

We strive to minimize the use of antibiotics, and have therefore limited the use to scenarios where:

- Animal welfare is threatened by a bacterial disease
- A diagnosis of disease exists with prescription of antibiotic by authorized personnel
- The antibiotic has a proven therapeutic effect against the disease
- The antibiotic is approved for use

### **Monitoring fish welfare**

Fish welfare is monitored throughout the production cycle with special focus on operations that may be stressful to the fish. Our staff are trained on and experienced in observing the fish's behavior and identifying unusual behavior. Fish welfare assessments include monitoring of the group's behavior and appetite, as well as individual examinations with scorings of physiological parameters to evaluate the fish's overall condition. The environmental conditions will also play an essential role in the overall welfare of the fish and is monitored regularly.

We monitor our fish daily in all our production facilities. This is performed using cameras, surface observations, feeding systems and handlings to detect unusual behaviors or signs of compromised welfare. We pay special attention in situations where handling of fish is needed, for example during treatment or movement of the fish. We check the welfare status on the fish priorly, during and after operations. During handling some stress is to be expected, but if observations throughout the event indicate that the fish welfare is compromised, it will be stopped immediately.

### **Transport and harvest**

Environmental and behavioral monitoring are performed continuously during harvesting, handling and transport to identify and reduce stress. Crowding is also managed to control the stress levels for the fish whether the fish are transported in a well boat to a harvest plant or harvested at site.

During harvesting the fish are euthanized humanely by a percussive stunning to sedate them, followed by exsanguination by gill or aorta cutting.

### **Transparent reporting**

We report our ambitions and performance on a suit of fish health welfare indicators in our annual sustainability report. See a more detailed overview of fish welfare in Cermaq [here](#).

### **Research and continuous improvement**

Our approach towards fish welfare do not solely rely on health. Through implementation of new technologies, proper managements plans, environmental monitoring and constant staff training we continuously aim towards improving the production. All newly implemented advances are monitored and evaluated to ensure that all processes critical to the well-being of the fish are maintained at safe and controlled levels.

Cermaq's global innovation team engages in fish welfare in multiple ways, e.g. by identifying pathogens and their transmission pathways or in the development of vaccines. The team works closely with the fish health teams at each operating company to support the operations specific concerns. In addition, we strive for continuous improvement by communicating and applying the newest scientific knowledge.

We contribute to the development of feed products based on strong scientific knowledge gained through research and collaborations with feed suppliers.

### **Summary**

Cermaq firmly believes that good welfare throughout the whole production cycle leads to a healthy animal, being key to obtain the best salmon possible and for sustainability in the industry. That is why we have dedicated ourselves into it every day in our practices.