

Policy on Integrated Pest Management (IPM) for control of pathogens, including virus, bacteria and parasites, in Kaldvík sea operations

Integrated Pest Management (IPM) is a comprehensive and systematic method for pest control, considered essential for successful pathogen management. IPM for pathogens utilizes well-established techniques and strategies from terrestrial pest and parasite management in agricultural systems. It integrates multiple goals, assesses available preventive and intervention methods, and makes informed decisions to achieve optimal outcomes.

Kaldvík recognizes the importance of IPM to maintain the low levels of lice on the East coast of Iceland, to maintain our fish free of ISA, and to reduce the impact of other pathogens that may compromise fish welfare. The following key elements are identified as part of Kaldvík's IPM approach:

Fish health, welfare and infection status

- Monthly fish health visits at all sites by third party fish health service/veterinarian
- Registration of all mortalities daily (when conditions allow) and categorization of causes of death in accordance with industry standard.
- Monitor ISAV-infection status by PCR-surveillance of all sites monthly.
- Adhere to National limits on sea lice levels and other required actions.
- Monitor lice infection pressure and initiate actions to maintain a low lice infection pressure throughout the production cycle.
- Lice counting and reporting by trained staff and monitor lice development on all sites at sea in accordance with local regulations.

Husbandry and management

- Following of Production areas between each production cycle (Areas minimum 6 weeks/Sites minimum 3 months).
- Health management/veterinary health plan in operation.
- Maintain optimal oxygen levels in the net pens to optimize fish welfare. Necessary actions will be implemented when considered appropriate, including net cleaning, use of water transportation systems or other relevant measures.
- Maintain optimal feeding.
- Routine removal of moribund fish.
- Monitor fish health status, behavior and disease.

Prevention

- Ensure optimal smolt quality, including vaccination, proper smoltification and smooth handling during transport.
- Sea sites are distributed in Production areas with separate land bases, personnel and equipment, and there are strict biosecurity routines between production areas and sites

- Following of Production areas between each production cycle (Areas minimum 6 weeks/Sites minimum 3 months).
- Prevent stress and avoid compromising fish welfare by integrating relevant tools when considered necessary (bird nets, under water-feeding, turbolift, etc), or a combination of these, where conditions permit, and such tools are available.
- Apply functional feeds with proven effect.

Intervention

- Only use licensed medicines, prescribed by a veterinarian, and according to clinical needs.
- Minimize internal infection pressure, and handling, by initiating actions on pen level (single pen management strategy) when appropriate and possible.
- Use the appropriate intervention tools for the fish health issue being targeted.
- For each production cycle, and where available, evaluate and use non-medicinal treatment tools.
- Practice intervention rotation, where possible and permitted.
- Maintain treatment and mitigation records and monitor treatment and mitigation efficacy.
- Have knowledge of the sea lice resistance status in the region.
- Initiate early harvest when fish welfare situation requires it, and alternative tools are considered insufficient.
- Ensure sufficient capacity on intervention tools, including sufficient emergence harvest capacity (1% of standing biomass within 24 hours).

Reporting

- Sea lice levels, biomass, environmental data, and mortality in our operations are reported routinely through several public channels. Links to some of the publicly available data are provided below.

Research & Development

- Kaldvik will continuously develop better management practices, new solutions and utilize the best management practices throughout our operations.
- Together with our academic and commercial partners, and relevant suppliers, we work continuously to identify measures, optimize existing solutions, develop novel and cost-effective methods to optimize fish health and welfare for our operations.

Hafnarfjörður, June 21st 2024,



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