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The purpose of this Regulatory Proposal (RP) is to consult on the ministry's proposed changes to the Integrated Pest Management Regulation (IPMR) to address the use of pesticides to manage sea lice in aquaculture facilities. This RP incorporates information derived from science reviews and jurisdictional scans relating to how sea lice are managed globally.

The proposed changes to the IPMR are intended to minimize the release of pesticides used to manage sea lice and establish clear requirements for the aquaculture industry in B.C.

Goals

The goals for updating the IPMR and associated guidance are to:

- Enhance protection for the marine environment by minimizing the release of pesticides used to manage sea lice.
- Provide clarity and certainty on the requirements when considering pesticide use in aquaculture operations with a focus on desired environmental outcomes.
- Provide a smooth transition for industry to adapt to the new requirements.
- Update guidance to maximize adoption of Integrated Pest Management (IPM) when managing sea lice in aquaculture facilities.

Key Policy Concepts

- ➔ Regulatory requirements that lead to desired environmental outcomes.
- ➔ Use of pesticides to manage sea lice requires a pesticide use permit.
- ➔ Pesticide application requires the use of a well boat or other "closed containment" technology.
- ➔ Exemptions may be granted to in cases of environmental emergencies such as the protection of wild salmon populations.
- ➔ A transition period (one year) to facilitate adoption of new requirements while minimizing disruption to industry.
- ➔ Encourage maximizing IPM when managing sea lice, including pest prevention activities, nonchemical treatments and adoption of improved application technology.

Sea lice and chemotherapeutants

Sea lice infestations are an important issue facing the aquaculture industry worldwide. An infestation of sea lice can affect the survivability of very young salmon and, in severe cases, older stock. Sea lice occur naturally in the environment, and conditions in aquaculture facilities may exacerbate infestations due to increased fish density. In some cases, they may present a risk of spread from farmed populations to wild salmon.

Sea lice are managed with both chemical and non-chemical methods. Chemotherapeutants refers collectively to veterinary drugs and pesticides used to treat sea lice.

A heavy reliance on a limited number of chemotherapeutants has led to reduced efficacy and concerns of developing resistance to these treatments. It is for this reason that operators in B.C. recently began to incorporate the use of pesticides to manage sea lice.

Current regulation of sea lice treatments in B.C.

Pesticide use is regulated by several levels of government. All pesticides must be assessed and approved for use by Health Canada's Pest Management Regulatory Agency (PMRA) before they may be sold in Canada. When the PMRA approves pesticide products, they establish general conditions for use on the label.

The province then further regulates pesticide use by setting general and site specific conditions as well as certification and training requirements for applicators. The IPMR describes practices for using, storing and managing pesticide use in an environmentally sound manner and applies to all pesticides used in aquacultural operations.

The use of pesticides in a body of water requires a pesticide use permit issued under the IPMR. Several permits have been issued for hydrogen peroxide bath treatments using tarpaulins in open net aquaculture pens. Veterinary drugs are not regulated under the IPMR and their use does not require a permit.

Environmental concerns

Good aquacultural stewardship of the marine environment in B.C. supports environmentally protective values. Robust husbandry practices, diligent monitoring and targeted intervention, including the judicious use of chemotherapeutants, should pose a low risk for adverse impacts to the environment.

However, even with the multiple layers of requirements and good practices, the use of pesticides carries certain risks to the marine environment and may contribute to cumulative effects. These risks may be inherent to the pesticide products or due to improper use from applicator error or accidents. Concerns have been raised recently regarding potential negative impacts from pesticide use during the application, and discharge following treatment.

Examples of potential impacts from the use of pesticides in aquaculture include:

- Direct toxicological effects on non-target organisms
- Indirect effects on non-target organisms (e.g., altering behaviour)
- Impacts to wild salmon populations (e.g., direct impacts, increased likelihood of sea lice infestation)
- Direct toxicological effects on farmed fish stock
- Increased susceptibility of fish stock to other pathogens or infestations which may contribute to increased risks to wild salmon populations

Key policy concepts

Good management practices in aquaculture can reduce or eliminate the potential of these effects. As well, good practices can benefit aquaculture facility operators and the marine environment by minimizing pest problems from developing in the first place and by reducing the unnecessary use of pesticides. Reduction of unnecessary pesticide use through adoption of IPM is a cornerstone of the IPMR. A component of IPM is employing pesticides in a manner that minimizes effects on non-target organisms.

The proposed requirements include the following key policy concepts to address the concerns:

- Achieve desired environmental outcomes through clear, unambiguous requirements.
- Clarify which type of authorization is required to use pesticides in aquaculture under the IPMR.
- Require application technology which minimizes exposure to the marine environment when using pesticides to manage sea lice.

- Provide flexibility in application methods for industry to consider in order to foster innovation while meeting the desired environmental outcomes.
- Allow ministry staff to exempt the application technology restrictions when faced with the potential for environmental emergencies, such as threats to wild salmon.
- Ensure a sufficient transition period is established to enable aquaculture facility operators the ability to assess which options best suit their interests and implement any changes they require.
- Encourage the use of non-regulatory tools to facilitate good aquaculture practices and IPM adoption to maximize pest prevention efforts and improve how pesticides are employed.

Proposed changes

1. Updating pesticide uses which require a permit

The IPMR prescribes pesticide uses that require a permit. This section in the revised regulation will be updated to clarify and confirm that the use of pesticides in aquaculture to manage sea lice requires a pesticide use permit. The purpose of this proposed amendment is simply an administrative improvement and will not present a change to how the sector is regulated; all pesticide uses in aquaculture currently require a permit.

However, wording in the regulation is complex and has led to some confusion. The proposed change simply clarifies what is already required and will clearly inform all interested parties which authorization is required when considering applying pesticides in aquaculture.

The proposed requirements include:

- Specifying that the use of pesticides to manage sea lice is a prescribed activity that requires a permit.

2. Restricting application technology

Adoption of IPM when managing pests is critical to avoid the unnecessary use of pesticides. This is important to reduce risks to the environment and human health by minimizing exposure to pesticides. An important aspect of reducing unnecessary pesticide use is using application technology that maximizes efficiency of treatment while minimizing unintended release to the environment. Systems that treat farmed fish stock in a closed containment system, such as with the use of well boats, best control the release of pesticide to the environment.

The ministry recognizes that other technology may be available that achieves the desired environmental outcome and wishes to enable innovation and adoption of better application technology. Consideration of other acceptable application technology may include characteristics of the proposed pesticide to be applied, such as decomposition rate and the risk proposed by breakdown products. For example, this could enable proponents to develop a proposal for the use of hydrogen peroxide bath treatments with tarpaulins if the pesticide could be contained until decomposition to safe byproducts was complete.

The proposed requirements include:

- Aquaculture facility operators will be required to use a well boat for the application of pesticide to manage sea lice.
- Aquaculture facility operators may request substituting other “closed containment” application technology that prevents release of pesticide into the environment when conducting sea lice treatments.

3. Exemptions in cases of emergencies

The ministry understands that under certain conditions, the use of well boats or other closed containment application technology may not be practical within a critical treatment window and that not treating an infestation of sea lice could present a hazard to wild salmon populations. In these cases, aquaculture facility operators will have the ability to request that ministry staff provide an exemption to this requirement. Supporting information for this request may be provided by the Department of Fisheries and Oceans Canada (DFO). Use of this exemption is not intended to impede widespread adoption of closed containment application technology in the aquaculture industry.

The proposed requirements include:

- An exception to the requirement for using of a well boat or other closed containment application technology only where this requirement would prevent the management of sea lice and result in a serious risk to wild salmon populations.

4. Proposed Timelines

The transition to adopting technology which controls release of pesticide into the marine environment requires time to implement. The ministry understands that industry must assess the proposed changes, analyze potential impacts to their current operations, develop strategies to meet the new requirements and organize access to suitable equipment, if necessary.

The ministry balances this need for a sufficient transition period with the desire to adopt practices that minimize future introduction of pesticides into the marine environment. It is for these reasons that new requirements are proposed to come into effect one year after the IPMR is amended.

Approach to compliance

Ministry staff follow an established [Compliance Framework](#) and the [Compliance Policy and Procedures](#) when addressing compliance with Acts and regulations under its mandate. The ministry aims to set regulatory requirements that are clear, practical, achievable and enforceable to encourage the support and compliance of individuals and businesses.

Ministry staff work first to establish and communicate clear regulatory objectives, related to protection of the environment and human health, and develop clear guidance to support compliance. Assessing compliance involves monitoring and verification, assessment of risks and hazards posed by non-compliance, and the specifics of each situation (e.g., history of compliance or non-compliance).

A range of tools are available to respond to non-compliance, from advisories and warnings to orders, tickets and administrative monetary penalties to prosecutions. Decisions on which tool or tools to use are made using a matrix based on factors, such as the significance of the impact to the environment and human health, non-compliance history, the willingness of the individual to share information and respond, and their due diligence in responding to the event.

Working with aquaculture organizations, industry sectors and other agencies (such as the Ministry of Agriculture, PMRA and DFO) on education and awareness initiatives will help ensure aquaculture facility operators are aware of and understand the requirements for protection of the environment and human health.

Process and next steps

Responses to the proposed revisions will be solicited throughout Fall 2018. A policy update will be distributed in early fall following consideration of the comments provided.

Ministry staff are currently working to bring about the proposed revisions to the IPMR early in 2019. The ministry understands that industry may require time to prepare for the new requirements. It is anticipated that the new requirements will not come into force until approximately one year following the date that the regulation is amended.

To assist those affected by the proposed changes, the ministry intends to publish a series of fact sheets and guidance documents. It is anticipated that these will be available when the regulation is amended.

Providing comment

The ministry welcomes comments on the proposals outlined in this intentions paper. The ministry has prepared a response form based on the proposed revisions to the IPMR. The response form can be accessed from the Ministry's IPM website (www.gov.bc.ca/ipm-public-engagement). Those interested are invited to submit comments on the proposed changes using the prepared response form or by separate submission if desired.

Comments can be provided to the Ministry of Environment and Climate Change Strategy by e-mail attachment to the e-mail address below, or by mail to the address listed below. Comments regarding the proposed changes are being solicited until November 30, 2018 and will be carefully considered in updating the Integrated Pest Management Regulation.

All submissions will be treated with confidentiality when preparing consultation reports. Please note however that comments you provide and information that identifies you as the source of those comments may be publicly available, if a Freedom of Information request is made under the *Freedom of Information and Protection of Privacy Act*.

Please send all submissions or if you have any questions or comments regarding this information, as well as comments on the ministry's schedule for the engagement process, to the following:

E-mail: IPMProgram@gov.bc.ca
Mail: B.C. Ministry of Environment and Climate Change Strategy
Integrated Pest Management Program
PO Box 9341 Stn Prov Govt
Victoria B.C. V8M 9M1
Attn: IPMR Review

Comments to the ministry should be made on or before **November 30, 2018**.

Thank you for your time and comments!