New Brunswick Salmon Growers Association

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TRIALS SHOW TREATMENT EFFECTIVE ON SEA LICE WITH NO IMPACT ON LOBSTERS OR OTHER SPECIES

ST. GEORGE – Field trials conducted over the past month have shown that AlphaMax®, a treatment for sea lice on farmed Atlantic salmon, is working and is having no impact on other marine life.

The New Brunswick Salmon Growers Association met Thursday, August 13 with representatives from various New Brunswick fisheries organizations to provide preliminary findings on the monitoring and research program supporting the AlphaMax® trials in the Lime Kiln, Bliss and Back Bay areas in the Bay of Fundy.

“This meeting fulfills the commitment we made when we met with the fisheries groups in May to share preliminary results as soon as they were available,” said Pamela Parker, Executive Director of the Salmon Growers Association. “We appreciate concerns people can have when new management techniques are introduced so it’s been important to us to talk to people about this program over the past few months. New Brunswick’s provincial vet, Michael Beattie, has also been very supportive by maintaining ongoing communication.”

Regulatory agencies have been monitoring the treatments. Research activity is recording short and long-term impacts of AlphaMax on the marine environment. Preliminary field results show the amount of AlphaMax® being used in salmon cages has no impact on other species and that by the time the treatment is finished, AlphaMax® is virtually undetectable in the water near the cage sites and downstream. The monitoring includes testing the impact on lobster at all stages of development and the lobsters used in the testing will continue to be monitored in a lab for the next four months.

It is essential for industry to have access to a broad range of tools to optimize fish health management in the prevention of disease and to control parasites. In managing sea lice the salmon farming industry uses natural control measures such as fallowing and temperature variation; however, therapeutants are also necessary at times. Currently SLICE®, or emamectin benzoate, is the only treatment approved by Health Canada’s Veterinary Drugs Directorate for the control of sea lice while other salmon farming countries have access to up to four different treatment options. Alternating a variety of treatment options helps to ensure optimal benefit from each over time.

“A tremendous amount of research was conducted by the industry and by governments to ensure that AlphaMax® would not negatively impact the environment or marine life,” said Parker.

"We are very pleased that the trials on AlphaMax® supported the findings from other jurisdictions. I think it's important to remember that New Brunswick fish farmers have a genuine concern about the environment. A broad diversity of natural species is evidence of a healthy marine environment and it's important that this be maintained – not just because it's the best environment for growing healthy fish but because it supports a diversified working waterfront and benefits our neighbors too."

Key findings released today indicate that:

- Monitoring of all treatments by industry was conducted by both federal and provincial agencies
- AlphaMax® was effective in treating sea lice (*Lepeoptherius salmonis* and *Caligus elongates*) with no effect on non-target species
- No disruption to the normal life-cycle of lobster was observed in the field at all stages of the lobster's development; lab observations will continue over the next four months
- AlphaMax® is not detectable outside the net pen skirting during trials and within 10 minutes following release of the skirting following treatment
- Concentrations of the therapeutant immediately following removal of skirting was less than one half part per billion, well below the target of three
- Active ingredient deltamethrin was undetectable within 10 minutes of release either at the farm site or down current from the site

See attached information sheet on background on AlphaMax® and the monitoring and research program.

- 30 -

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ALPHAMAX® TRIALS FOR SEA LICE CONTROL ON SALMON FARMS

BACKGROUND:

The New Brunswick salmon aquaculture industry has responded to a number of fish health challenges throughout its history, including the control and management of sea lice. Salmon farmers have a detailed knowledge of salmon husbandry and are attentive to the day to day living conditions of their fish and of the surrounding environment. All farms in the Bay of Fundy are monitored on a regular basis for fish health by private veterinarians, fish health biologists and New Brunswick Department of Agriculture and Aquaculture (NB DAA) fish health staff. In addition to disease surveillance, sea lice levels are also monitored.

Sea lice occur naturally in the Bay of Fundy, the Gulf of Maine and the Atlantic Ocean and do not pose a human health risk. There are several species of sea lice that are parasites to many species of wild fish. One of the benefits of farming in our region is that the cold winter waters of the Atlantic deter the growth of sea lice while bay management and fallowing practices help to break the cycle of this parasite when it occurs.

It is essential for industry to have access to a broad range of tools to optimize fish health management in the prevention of disease and to control parasites. This is a fundamental principal in an effective integrated pest management approach and helps to ensure that all treatments deliver optimal results. Currently, in Canada, SLICE® or emamectin benzoate, is the only treatment available through Health Canada's Veterinary Drugs Directorate for the control of sea lice while other salmon farming countries have access to up to four different treatment options.

PRODUCT OVERVIEW:

AlphaMax® has Full Market Authorization (FMA) in Norway, and is also used in Scotland and Chile. AlphaMax® is a bath concentrate, containing the synthetic pyrethroid deltamethrin which is capable of blocking impulses in the nervous system of the sea lice resulting in mortality. This formulation of deltamethrin was developed as a fish bath and has been proven to be effective at treating infestations of all stages of sea lice (Lepeoptherius salmonis). Deltamethrin is currently a registered active ingredient in Canada and is used widely throughout the agriculture sector for treating crops.

Only certified personnel will administer treatments under the direction of a veterinarian.

CURRENT SITUATION:

The New Brunswick Department of Agriculture and Aquaculture and salmon farming industry worked closely with the Federal government to access an alternative for sea lice control. Several options used in other salmon farming jurisdictions around the world were investigated. AlphaMax®, with the active ingredient deltamethrin was selected. The Department of Agriculture and Aquaculture applied to Health Canada applied for access to AlphaMax®, a product utilized globally, to provide safe and effective control of sea lice and to enable the introduction of an integrated pest management approach on salmon farms.

An in-depth monitoring, surveillance and research program was developed in collaboration with the province, Fisheries and Oceans Canada, Health Canada's PMRA, Environment Canada and the New Brunswick Salmon Growers Association to support the safe, responsible and effective use of AlphaMax®. The monitoring and surveillance studies were designed to ensure the proper use of the product and ensure early warnings of any potential adverse effects on the environment.

Treatments of AlphaMax® began in early July. Trials were conducted at four sites prior to any approvals being given to continue treatments in Lime Kiln, Bliss and Back Bay areas and potentially two sites located in Beaver Harbour and Foleys Cove. Trials included detailed monitoring and surveillance and research that was conducted in conjunction with treatments.

MONITORING & RESEARCH ACTIVITIES:

The following monitoring, surveillance and research projects have been developed in collaboration with Fisheries and Ocean Canada, Health Canada, PMRA, Environment Canada and the New Brunswick Salmon Growers Association to support safe, responsible and effective use of AlphaMax® in the treatment of sea lice on salmon farms. All research will be guided by reputable scientific personnel and all results will be made public

Activity #1 - Dispersal of Deltamethrin
To determine the direction and concentrations of the deltamethrin downstream after release from treated cage

- The results will provide real time data on the dilution of deltamethrin in sea water based on local conditions

Activity #2 – Vertical Mixing
To determine the concentration of the deltamethrin in the water at specific time intervals before, during and after treatment within the treated cage

- The results will provide real time data on:
  - the mixing of the deltamethrin in the cage
  - the validation that the target dosages (3ppb) are being met
  - confirmation that the concentration of active ingredient leaving the cage after a 40 minute treatment is significantly less as the deltamethrin is expected to bind to organics within the cage
  - the concentrations of the deltamethrin from time zero to the cage to 12 hours after release

Activity #3 – Sentinel Organisms
To determine the impact of the deltamethrin on non-target organisms

- This activity will provide data on the impact on species located in the top 4m of the water column and species located near or on the benthos

Activity #4 – Integrated Multitrophic Aquaculture (IMTA)
To determine the effect of deltamethrin on mussels located on IMTA sites

- This project will provide information on what effects, if any, the product may have on mussels.

Activity #5 – Laboratory Lobster Studies
To determine sub-lethal end points and pulse dose effects of deltamethrin on as many life stages of lobster as possible.

- This information will provide the LC-50 values as well as validate research previously completed on crustaceans. It will also determine the effects, if any, regarding pulse doses.

Activity #6 – Field Lobster Studies
To determine effect of deltamethrin on lobsters of at least three different size ranges in locations surrounding treatment sites. Lobsters will remain at these locations for the duration of the treatment.

- Information from the lab studies will be validated through this field study. It will provide real time field data on the effects of pulse doses of deltamethrin on lobsters.

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