

FISHERIES AND AQUACULTURE

NEWS

CONTENT

First step towards valorising the Gaspé Peninsula deepsea king crab

A food-grade powder to valorise marine product processing waste

2

Lobster harvest baiting practices in Québec: Merinov conducts a survey

Building a framework for aquaculture development on the Magdalen Islands

3

Adapting the industry to climate change: Consultation of the fisheries and aquaculture sector

4



The 2013 fishing season is well underway. Already, marine products, freshly landed on wharves on the Gaspé Peninsula, Magdalen Islands and the North Shore, are appearing at fish mongers and grocery stores.

For instance, I think of northern shrimp and snow crab, which have been on the shelves since early April. Gaspé Peninsula lobster is just appearing on the market with Magdalen Islands lobster set to follow in a few days. In fact, last week I was on the Magdalens to share in the first moments of the new lobster fishing season. I took the opportunity to officially launch, in the presence of commercial fisheries and aquaculture representatives, the new *2013-2018 Action Plan* that will guide the actions of my ministry for the next five years.

This year, Québec lobster will be more visible in the Québec market. Indeed, Québec's lobster harvesters decided to increase the number of crustaceans bearing the *Aliments du Québec* tag with a code identifying the harvester and the region of origin, either the Magdalen Islands or the Gaspé. This helps consumers decide more easily which Québec lobster to buy.

While Québec consumers are increasingly seeking our fish and seafood, I can tell you that our marine products also enjoy an excellent reputation in the international seafood industry. I was able to see this at the International Boston Seafood Show, which I attended for the first time in March.

There, I could also see that Québec exhibitors are ideal ambassadors as they work to promote the quality and diversity of Québec's aquatic products in Québec. In addition, I had the opportunity to meet with my New Brunswick counterpart, Michael Olscamp, to exchange views on topics of common interest, including the collaboration agreement that exists between New Brunswick and Québec in the field of the fisheries and aquaculture.

On the whole, it was a very rewarding visit. I was able to appreciate fully the many challenges facing Québec companies as they engage in the export of fish and seafood. In May, some companies

will also participate in the European Seafood Show, where they will reach out to the European market, which has the potential to be equally promising. After that, there's SIAL Canada 2013 in Toronto, which will give our processors a great opportunity to show what they can do.

In closing, I'd like to inform you that we are also putting the final touches to the draft policy on food sovereignty. This ambitious project will be the subject of an official announcement in the coming weeks. I am confident that it will contribute to the sustainable development of our bio-food industry.

I wish you all an excellent fishing, production and processing season!

François Gendron
Deputy Premier,
Minister of Agriculture,
Fisheries and Food

QUÉBEC IMPRESSES AT THE INTERNATIONAL BOSTON SEAFOOD SHOW

By Simon Mercille,

Analyses and Policies
Directorate

The International Boston Seafood Show (IBSS) was held last March 10, 11 and 12. François Gendron, Deputy Premier and Minister of Agriculture, Fisheries and Food, went to the Massachusetts capital to support the representatives of Québec's fishing industry. He was able to speak with them about the marketing and evolution of Québec's seafood exports. He was also able to observe the extraordinary diversity of products offered on the market and assess the extent of international competition faced by the industry in Québec.

This year, the following Québec enterprises were present at IBSS: Cusimer (1991) inc., Les Crustacés des Monts inc., Dégust-mer inc., Fumoir Grizzly inc., La Poissonnerie de Cloridorme inc., Unipêche MDM Ltée and the Gaspé Cured consortium.

To showcase the products of these companies and give visitors the opportunity to enjoy them, the renowned Ritz-Carlton Montreal chef, Christian Lévêque, was on the spot. He conducted gourmet sampling sessions that tickled the taste buds of many of the visitors.

Efforts to promote Québec enterprises on foreign markets continued after the IBSS. Two major shows were on the program in late April and early May. A group of Québec entrepreneurs crossed the Atlantic to take part in the European Seafood Exposition in Brussels on April 23, 24 and 25. A week later, Québec set up its pavilion at the Salon international de l'alimentation – SIAL Canada – the international food fair which took place in Toronto this year on May 1 and 2.



Renowned Ritz-Carlton Montreal chef, Christian Lévêque, was at the show to host gourmet sampling sessions that tickled the taste buds of many of the visitors. In the photo, he is with François Gendron, Deputy Premier and Minister of Agriculture, Fisheries and Food.

Photo: Paul R. Horwitz, photographer

PUBLISHED BY

Le ministère de l'Agriculture, des Pêcheries et de l'Alimentation
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Graphic design: Ghislaine Roy

FISHERIES AND AQUACULTURE NEWS is published bimonthly as an insert in Pêche Impact.

Québec

FISHERIES AND AQUACULTURE NEWS

FIRST STEP TOWARDS VALORISING THE GASPÉ PENINSULA DEEPSEA KING CRAB

By Danielle Bouchard,

Gaspé Peninsula Regional
Directorate

A project to evaluate the commercial potential of a new fishery, the deepsea king crab (*Lithodes maia*) fishery, will soon get underway on the Gaspé Peninsula. The as-yet unharvested species is caught as bycatch by snow crab and groundfish harvesters. The project is the first step that needs to be taken before applying for authorisation to commercially harvest this species.

Five Gaspé Peninsula fishing enterprises supported this initiative to conduct an experimental deepsea king crab fishery using snow crab traps in order to assess the technical and economic potential of a more sustained activity in the Gulf of St. Lawrence.

This first exploratory fishing will be done by the owner of one of the five enterprises involved in the project. Larry Boucher, of Fisheries Rosajustin inc., has an inshore fixed-gear fishing licence that authorises him to harvest groundfish,

whelks and pelagic fish in the northern sector of the Gaspé Peninsula. He will work with Merinov, Québec's fisheries and aquaculture innovation centre, which will provide the sampling protocol, oversee activities at sea and monitor data collection when the samples are taken. In addition, the Maurice Lamontagne Institute will analyse the morphological data (e.g., length and weight of the crustaceans) collected during the trials and the live deepsea king crab specimens, the goal being to learn more about the species' biology. Finally, a processing

firm will be involved in the project, to validate market responsiveness to the product.

MAPAQ supports this initiative financially by means of a \$30,783 grant via its *Financial support for the development of the commercial fisheries and aquaculture centre*.

A FOOD-GRADE POWDER TO VALORISE MARINE PRODUCT PROCESSING WASTE

By Danielle Bouchard and Michelle Parent

Gaspé Peninsula
Regional Directorate

In November 2009, the Ministry of Sustainable Development, Environment and Parks announced a new Quebec policy on waste management. Implementation of this policy has made processing waste management more difficult for seafood processing companies – in part because of the more restrictive conditions adopted by municipalities – and has also led to higher disposal costs. For instance, beginning this year, the town of Gaspé prohibits shrimp processing firms located in the town from taking their processing waste to municipal landfill sites.

On the Gaspé Peninsula, the seafood processing industry annually generates about 11,500 tonnes of shrimp waste. The vast majority is taken to municipal landfill sites. It is estimated that it would cost \$50 to \$100 per tonne, excluding transportation, to bury or treat seafood processing waste.

Over the past five years, two companies, Les Pêcheries Marinard Ltée and La Crevette du Nord Atlantique inc., have been shipping their shrimp waste to landfill sites or composting centres. However, it has become very difficult to market shrimp compost since the beginning of the recent economic crisis in the United States, which has limited or halted production for an indefinite period. As a result, nearly all shrimp processing waste was buried at the Gaspé landfill site.

For the seafood processing industry, planning and implementing projects to valorise waste is an advantageous solution that would prevent wasting organic matter and meet the requirements of the new policy. For these reasons, the two shrimp processors in the town of Gaspé evaluated various valorisation methods adopted elsewhere, notably in Denmark, China and Canada. They ultimately chose a Danish technology to produce food-grade powder from shrimp shells, a first in Canada.

The process, micronisation, consists of spraying the powdered grains by means of strong, converging jets of air that produce turbulence and cause the powder grains to collide. These jets of air cause multiple collisions, making the grains burst into fine particles. According to its manufacturer, the "turbo rotor" – which is based on the principle of the mill and thus has many advantages – is the appropriate device to first dry and then mill the carapace waste to

produce a heat-sensitive product with a range of characteristics in terms of fat content, moisture content, melting point, etc.

For both companies, access to potential markets depends on mastering the characteristics of the finished product. When they start up production, the companies will make sure they market their finished products via a specific marketing agreement. While they initially intended to set up a single production unit, they finally chose to install a production line at each of their respective plants. Indeed, after analysis, this choice turns out to be less complex and less expensive than the option of only one plant producing a food-grade product; this would have required a monitoring system that, in the opinion of Merinov experts, would have been "burdensome and hard to control". The resulting facilities could be used soon.

Les Pêcheries Marinard and La Crevette du Nord Atlantique inc. have invested \$3 million to acquire the new technology, which has led to the creation of up to 15 new jobs. The Ministry of Agriculture, Fisheries and Food has provided nearly \$1 million in funding. While introducing the new production line, the companies also significantly upgraded their facilities in order to reach the level of productivity necessary to carry out their new activities. This new way to valorise processing waste allows the companies to make optimal use of the volumes landed at their plants and is a viable solution to a major environmental problem.



LOBSTER HARVEST BAITING PRACTICES IN QUÉBEC: MERINOV CONDUCTS A SURVEY

By Julie Boyer,

Gaspé Peninsula
Regional Directorate

Bait supply for trap or longline fishing has become one of the main concerns of fish harvesters given the reduced availability of species traditionally used and the higher cost to obtain them. Currently, research is underway, notably in Québec, Nova Scotia and New Brunswick, to develop alternative baits made of processing plant coproducts. However, none of these substitute baits has so far performed as well as the baits being used today.

Merinov, Québec's fisheries and aquaculture innovation centre considered it a priority to take stock of baiting practices in Québec to assist with this development work, and propose effective solutions. To this end, the organisation conducted a survey of sixty lobster harvesters on the Magdalen Islands and the Gaspé Peninsula, who together represent roughly 10 percent of the harvesters in Québec. Its goal was to evaluate the average volume and price of bait used during the fishing season and document the different baiting techniques used by lobster harvesters.

Bait species

According to the data collected by Merinov, the species used as bait on the Magdalen Islands are mainly yellowtail flounder, mackerel, herring and redfish. The harvesters consulted secure the bait to a vertical spike in the center of the trap.

Gaspé Peninsula lobster harvesters prefer herring and mackerel. Other fish, such as flounder and redfish, are also used occasionally. The harvesters taking part in the survey position the nail horizontally so the spike is able to withstand the current better.

Average bait volume by region

On the Islands, the average daily volume of bait was higher during the first week of activity (288 lb) and decreased thereafter until the final week of the season (203 lb). The average daily volume of landed lobster was also higher during the first weeks of fishing (589 lb in the first week compared to 230 lbs in the final week). During the first week of the season, fishermen used about a half pound of bait to harvest a pound of commercial lobster, while during the final week of the season, they had to use a pound of bait to take a pound of commercial lobster. The average ratio throughout the season was 0.77 lb of bait.

In the Gaspé, the daily volume of bait used remained relatively stable throughout the last fishing season at

around 200 lbs, except for the final week when it was around 150 lbs. However, the average daily cost of bait varied considerably; it fell from \$128 in the second week to \$89 in the ninth week. In fact, this decrease was accompanied by diminishing average daily landings of lobster as the season advanced. Thus, it took an average of 0.8 lb bait to harvest 1 pound of lobster during the second week of fishing. The average ratio of bait volume to landed volume remained relatively stable until the eighth week, where it rose sharply to 2.

Bait cost/harvesters' income ratio

On the Magdalen Islands, harvesters bought about \$0.10 worth of bait to earn a gross income of \$1 during the first week of the season. The amount invested to produce the same income increased to \$0.18 in the final week of the season. The seasonal average was \$0.13.

In the Gaspé, harvesters had to spend \$0.19 on bait to get \$1 worth of commercial lobster during the first week of the season. The seasonal average was \$0.22. The ratio remained relatively constant until the seventh week of the fishing season, but it increased significantly from the eighth week on, reaching 0.31.

Lobster harvesters therefore had to spend a large proportion of their gross income on bait (10 to 18% on the Islands and 13 to 33% on the Gaspé Peninsula).

Baiting practices of lobster harvesters

For its survey, Merinov also interviewed some fifteen fishermen on their baiting practices. Bait species used alone or in combination with a second species, the use of specific species as the season advances, the way bait is attached to the nail, the bait replacement rate, optimal freshness, bait cost and how supplies are obtained... all of these aspects of baiting are described in the report prepared by Merinov.

The information collected by Merinov will guide future work to find solutions to bait supply problems. The Ministry of Agriculture, Fisheries and Food supported this study by providing compensation for the students doing the field work.

For more information on the Merinov survey, please contact the project leaders – Jean-François Laplante at 418-986-4795, ext. 3225 or Jérôme Laurent at 418-385-2251, ext 4525. The survey report will soon be posted on the Merinov website.

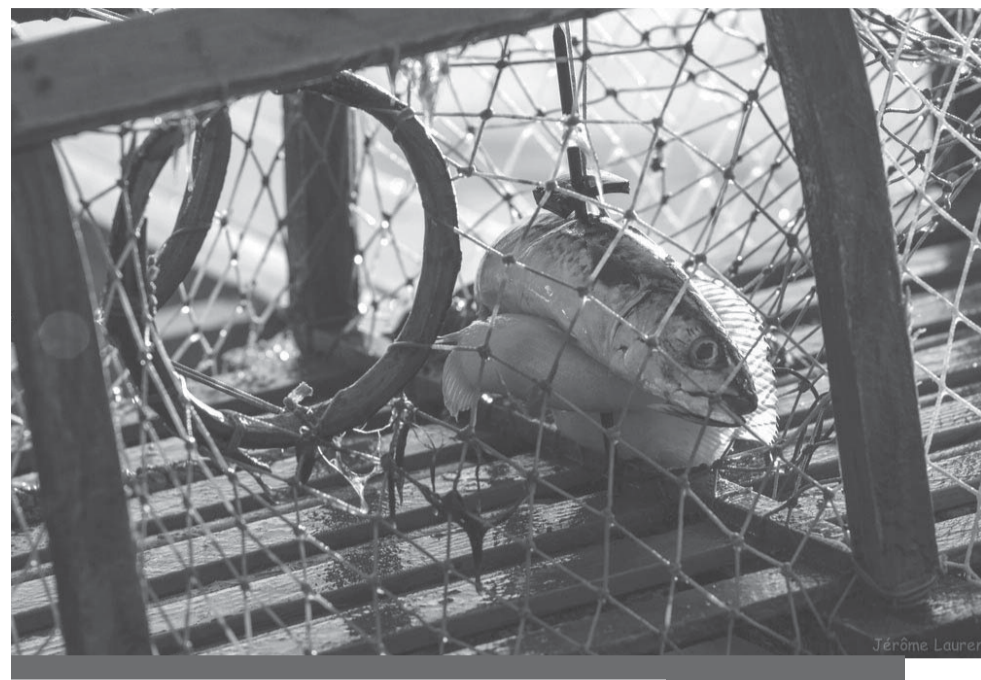


Photo: Jérôme Laurent, Merinov

Jérôme Laurent

BUILDING A FRAMEWORK FOR AQUACULTURE DEVELOPMENT ON THE MAGDALEN ISLANDS

By Meggie Desnoyers,

Aquaculture and Sustainable
Development Directorate

Background

In spring 2012, following an objective and rigorous review based on consultation with partners and stakeholders in Québec's mariculture community, the Magdalen Islands were chosen for the deployment of Québec's first aquaculture development framework (ADF). The goal? Support structured and orderly development of mariculture and recognise mariculturists as legitimate users of the marine environment, while minimising conflicts with other users. The appropriate place to establish what constitutes the main component of this first ADF, the mariculture area, lies off the Magdalen Islands.

What's a mariculture area?

A mariculture area is a marine zone that is destined to be used as a priority for mariculture; this means that it is easier to establish mariculture production sites there since the social acceptability process will already have been completed for such areas. This is a significant advantage of an ADF.

Numerous meetings

So far, the ADF project has been submitted to over 28 different groups, including those who use the affected area, who shared their concerns and comments. Some elements received

greater attention in the discussions, including environmental considerations and the species that would be farmed.

With respect to interactions between mariculture and the environment, the project proponents consulted with experts. Consequently, a decision was made to set up an environmental monitoring plan to study these interdependent relationships in the mariculture area as the new production sites are established. Particular attention will be paid to the interactions between mariculture activities and species harvested commercially, given their great importance for the Magdalen Islands and Québec.

What's next?

Although many meetings have already taken place, there are still several more to come before the ADF can in effect be implemented. The concerns and comments of the users involved must be examined and fully studied before the final delimitation of the mariculture area can be determined.

For more information on this issue, please consult the article *Work underway on framework for aquaculture development* published in the June-July 2012 edition of the journal *Fisheries and Aquaculture News*, at www.mapaq.gouv.qc.ca/nouvelles.



Photo: Marc Lajoie, MAPAQ

ADAPTING THE INDUSTRY TO CLIMATE CHANGE: CONSULTATION OF THE FISHERIES AND AQUACULTURE SECTOR

By Julie Boyer,

Gaspé Peninsula Regional
Directorate

Fish harvesters have always known how to adjust their practices as stocks and markets evolve. Today, the fisheries and aquaculture industry has to prepare to meet the challenges posed by climate change and equally, make the most of the coming changes.

Last January, Ouranos – the consortium on regional climatology and adaptation to climate change – and the Ministry of Agriculture, Fisheries and Food organised a day of consultation on the issue and research activities underway to study the adaptation of Québec's biofood sector to climate change.

The purpose of the meeting was to help define priority needs in terms of the acquisition of knowledge and development of tools to help the sector adapt to climate change, the renewal of the Ouranos scientific program and the implementation of the Government of Québec's *Action Plan on Climate Change*.

Examples of anticipated changes

Higher water temperatures, lower oxygen content, increased acidity, rising sea levels, less winter ice: these are phenomena that affect the reproduction, development, growth, survival and migration of species. Changes affecting the aquatic environment will also impact the food chain and interactions between species.

The anticipated increase in water temperature would cause a species like the snow crab, which does not tolerate temperatures higher than 3 or 5°C, to suffer. Exposed to more acidic waters at

the seabed in the estuary, crustaceans and molluscs would have to expend more energy to produce their carapaces and shells. Lower water levels in the upper St. Lawrence River would threaten the quality of fish habitat by reducing the size of spawning and roe hatching areas. The migration routes of some species such as mackerel and herring would be modified due to changes in water temperature. In several regions of Québec, the warming of the water used to supply fish farm ponds or basins might affect their production performance.

On the other hand, some species such as cod could probably benefit from the warmer water. Indeed, productivity might increase, spurred by the longer period of growth and temperatures that are closer to their optimal temperature for growth.

It is anticipated that non-native invasive species will arrive and changes in the frequency and intensity of phytoplankton bloom in saltwater and cyanobacteria (blue algae) in fresh water will occur. Winter ice cover will be smaller than before, which would have consequences for certain activities such as the seal hunt.

Priority issues

During the day of consultation, while a number of participants focused on agricultural production, some twenty researchers and representatives from various universities, Fisheries and Oceans Canada, the Ministry of Sustainable Development, Environment, Wildlife and Parks, the Merinov centre, networking tables and the Ministry of Agriculture, Fisheries and Food considered the fisheries and aquaculture sector.

In the fisheries sector, the distribution and abundance of harvested and forage species, changes in the aquatic environment and the capacity to adapt of harvested species are priority issues, as are habitat management and development. In aquaculture, freshwater supply, the choice of species or strains, modification of rearing systems and the adaptation of sites and infrastructure are issues of importance. In both sectors, the impact of more invasive pest species, anthropogenic effects exacerbated by climate change and evaluation of socio-economic aspects are also worth noting.

This first survey, conducted by twenty Québec aquatic environment, fisheries and aquaculture experts, will help establish priorities for actions to support the industry's adaptation. Already, some projects are underway in Québec and it

is expected that climate change-related research and development efforts will increase.

Elsewhere in Canada, the industry is also increasingly concerned about the issue. Thus, at the 2013 Aquaculture Canada conference, organised by the Aquaculture Association of Canada and to be held from June 2 to 5 in Guelph, a working session will focus on the impact of climate change on aquaculture. The Ecology Action Centre, located in Cheticamp, Cape Breton Island, has recently published a booklet on adapting Atlantic Canadian fisheries to climate change. The document is available for consultation in the *Publications* section on the Centre's website at <http://www.ecologyaction.ca>.



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