FISHERIES AND AQUACULTURE

NEWS

2014 MARICULTURE TRANSFER WORKSHOP

By François Bourque,
de la Direction régionale
des Îles-de-la-Madeleine

The third mariculture transfer workshop was held on the Magdalen Islands on March 11 and 12. The activity, organised by Merinov in cooperation with the Ministry of Agriculture, Fisheries and Food, brought together numerous sector stakeholders who had the opportunity to take stock of the latest technological and scientific developments in the world of mariculture.

Delegates from a dozen mariculture firms (primarily mussel and scallop producers) and new businesses just starting up, representatives of government organisations and other agencies, consultants and Merinov researchers made up the bulk of the 65 people who took part in the meeting.

The early part of the first day focussed on the importance of good management for an enterprise as well as on analysing and improving performance. The presentations and ensuing discussion dealt with industry activities such as the development framework and the new requirements for markers identifying the locations of mariculture sites.

The second part of the day was dedicated to an examination of the constraints affecting mariculture. Such issues as contaminants, toxic algae, the repercussions of dredging and the presence of ducks and invasive species held the interest of participants and stimulated good discussion.

The first set of presentations on the second day of the workshop dealt with the themes of development and technology transfer. Notably, participants evaluated the processing equipment acquired via the *Mariculture technology development program*. In addition, several mussel producers spoke about their enterprises, showcasing their recent improvements and experiments: new mussel processing and holding technique, new collection and grow-out method, etc. The new equipment designed by the mariculture engineering team at Merinov drew the attention of participants. Finally, the projects currently underway in Québec and the Maritimes within the context of the *Aquaculture Innovation and Market Access Program* were presented.

The last part of the workshop concerned diversification of mariculture industry activities. Speakers presented progress reports on the oyster farming work done in Québec in recent years. Then, a biologist from New Brunswick drew a portrait of the oyster farming industry in that province. The emergence of a macroalgae system was another topic added to the presentation program. From culture techniques to processing to enhancement opportunities, large seaweed is an industry sector that is bound to grow, and it caught the attention of participants.

Photo: François Bourque, MAPAQ

Mariculturers, researchers and other workshop participants.

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Nearly all active mariculture enterprises on the Magdalen Islands, North Shore and Gaspé Peninsula attended the workshop, confirming the interest of an activity of this kind. Their representatives helped drive discussion while sharing the knowledge they had acquired over the years. So it's not surprising that the mariculturers expressed the hope that another transfer workshop would be organised in two years time, as did the other stakeholders attending. To this end, a survey will be conducted to help guide the choice of topics and, if necessary, modify the way the workshop is structured.

It is important to point out that this meeting could not have been held without financial contributions from the Ministry of Agriculture, Fisheries and Food, the Université du Québec à Rimouski, the Conférence régionale des élus de la Gaspésie–Îles-de-la-Madeleine, the Centre local de développement des Îles-de-la-Madeleine and the Société d'aide au développement de la collectivité de la Côte-Nord. A report on the workshop together with copies of the presentations given during the two days of the event have been posted on the Merinov site at www.merinov.ca.

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UN QUÉBEC POUR TOUS

Québec

FISHERIES AND AQUACULTURE NEWS

NEW ENVIRONMENTAL REQUIREMENTS FOR FISH FARMS

By Valérie Gagnon,
Fisheries and Aquaculture Analyses and Policies Directorate

On January 21, 2014, the Ministry of Sustainable Development, the Environment, Wildlife and Parks (MDDEFP) implemented the environmental analysis grid for fish farms regarding total phosphorous emissions (*grille d'analyse environnementale pour les piscicultures en fonction des rejets en phosphore total* – GAEP). This decision-making support tool sets new benchmarks for processing applications for authorisations to establish new fish farms, and applications to increase production submitted by existing fish farms.

The GAEP replaces the decision-making framework contained in the document *Orientations concernant les lignes directrices applicables aux pisciculture*s, introduced in 2001, which had been used until now by MDDEFP. With an emphasis on environmental protection, the new grid aims to standardise the processing of fish farming files. It is based on six categories of host environments. While the requirements differ for each of these categories, the basic requirement that must be met in all cases, saving exceptions, is that any enterprise seeking to establish a new fish farming site or to increase production at an existing site will have to plan to establish a waste processing system that will keep annual phosphorous emissions below 4.2 kilograms per tonne of production.

The size of the enterprise and the capacity of the host environment, assessed on the basis of environmental waste objectives (EWO), are also taken into consideration for some categories. This translates into additional requirements for the enterprise, and it may be required to keep phosphorous emissions at their current level or below the EWO set by MDDEFP.

The GAEP sets out other requirements as well; notably, it will no longer be possible to establish a new fish farm in a lake, reservoir or closed bay or upstream to any of these water bodies. In addition, no new enterprises will be permitted in watersheds where there is already a surplus of phosphorous. These watersheds are those that have already been identified in the Ministry's position paper on the reduction of phosphorous in wastewater emissions of domestic origin, which can be consulted in the "Water" section on the Ministry's website at www.mddefp.gouv.qc.ca.

The GAEP has not yet been published but a copy will be posted this spring on the MDDEFP website (www.mddefp.gouv.qc.ca). More information on the new grid and on the related requirements can be obtained by contacting an MDDEFP regional directorate.

INNOVATIVE LOBSTER CONTAINMENT SYSTEM TESTED BY THE COOPÉRATIVE DES PÊCHEURS DE CAP DAUPHIN

By Julie Boyer,
Gaspé Peninsula Regional Directorate

Nearly 2,700 tonnes of lobster are landed in nine weeks at a dozen wharves on the Magdalen Islands. Since most of the catch is sold live, it's easy to imagine how much space is needed to store the lobster. Catches are held for a few days, the time it takes for the lobster to disgorge and reach optimal quality before shipping them to destinations throughout Québec, to Boston and to local fish stores. Lobster enterprises face a major challenge: the containment systems soon reach their full capacity early in the season, temperatures rise quickly during the summer and prices fall as the supply becomes abundant.

The Coopérative des pêcheurs de Cap Dauphin is one of Québec's largest buyers of lobster. Located in Grosse-Île, the enterprise will soon have to increase its holding capacity for the disgorging lobster. It must also meet growing demand from local consumers during the summer. The Coopérative decided to take this opportunity to also upgrade its facilities so it will be able to hold its lobster for an extra two months after the end of the fishing season and thus offer a superior-quality fresh product for a longer period of time.

The enterprise chose to explore an innovative system, unique in Québec; it involves increasing the holding capacity inside the premises it already uses by placing bins on top of the live tanks currently used for commercial production. It also hopes to extend the length of time it holds its lobster by using a chilled water recirculating system.

The Coopérative mandated Aquabiotech, a firm specialising in holding systems for marine organisms, to develop and test this idea over the course of the 2013 season. Hélène Drouin and Tony Pouliot, biologists and Aquabiotech founders, gathered technical data on current operating conditions and on water quality before and during holding (daily loads, water and air flow, fluctuations in ammoniacal nitrogen and dissolved oxygen in the tanks).

The team conducted holding trials in refrigerated aquariums supplied with recirculating water, using commercial live lobster volume/seawater volume ratios. It measured ammonia production, suspended matter and oxygen consumption under these conditions. Then, it assembled a shower system for the bins in which the lobster were held while disgorging; these bins were stacked near one of the live wells. The team then measured the additional loads generated by the system (ammonia, variation in pH, suspended matter, oxygen and carbon dioxide rates).

The Coopérative and Aquabiotech called on Merinov to gather live well-related data and assess the condition of the lobster throughout the season. The results obtained for blood proteins, moulting stage, and lobster condition showed the Coopérative's crustaceans to be in excellent condition, and well prepared for prolonged containment.

Using the data gathered, Aquabiotech was able to determine the water filtration and recycling infrastructure that would be needed and to design a system specifically adapted to the Coopérative's activities, the goal being to significantly expand holding capacity without increasing operating costs. The Coopérative believes that this preliminary study has demonstrated the interest of this technology, and it will useful when the time comes for the company to make a decision about future investment.

It is important to point out that this initiative was supported financially by the Ministry of Agriculture, Fisheries and Food.

Photo: Coopérative des pêcheurs de Cap Dauphin

The Coopérative des pêcheurs de Cap Dauphin facilities on the Magdalen Islands.

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NEWS

QUÉBEC FISH AND SEAFOOD EXPORTS IN 2013

By Jean-Michel Poulin and Françoise Nicol,
Fisheries and Aquaculture Policies and Analyses Directorate

Figures show that Canadian fish and seafood exports surged to $4.5 billion in 2013, a 6.7-percent increase from 2012. The primary destination of Canadian products continues to be the United States, to which 62 percent of exports—worth $2.8 billion—were shipped in 2013. Within Canada, Québec has a market share of close to 5.2 percent and ranks fifth among the exporting provinces.

Québec posted $237.3 million in exports in 2013, a drop of 9.4 percent from 2012.

Despite these numbers, the United States remains the main market for Québec fish and seafood products, accounting for 85.0 percent of the province's exports, or $201.6 million. Snow crab was the main species exported to our neighbours to the south, representing more than $94 million, or 44 percent of Québec exports. Lobster came in second, bringing in a little over $50 million.

Japan is Québec's second-largest trading partner, with exports worth close to $8 million (3.4% of Québec's total exports in 2013).

The Japanese market has also cooled since 2012, showing a drop of 19.3 percent. More than $5.4 million was derived from the sale of snow crab products. The remaining exports primarily consisted of molluscs and fish eggs.

Exports to mainland China and Hong Kong, respectively worth $4.1 million and $732,000, fell by 35.2 and 63 percent.

However, exports to South Korea made significant gains, for a total of $1.3 million, thus surpassing the value of exports to Hong Kong. Moreover, in terms of Québec fish and seafood exports, 2013 was one of the best years for trade with the Korean peninsula since 1996. With the ratification of the Canada-Korea Free Trade Agreement, it is quite possible that a decrease in tariffs will generate greater business opportunities for Québec manufacturers.

Exports to the European Union show a steady decline in recent years.

Exports to this market fell by 26.4 percent in 2013, totalling a mere $6 million. The main exports were shrimp, lobster and salt cured fish. This drop can partially be explained by the economic troubles that have plagued Europe, in particular Spain and Italy. However, a gradual rebound could be triggered by the ratification of the Comprehensive Economic and Trade Agreement between Canada and the European Union.

The Caribbean is a traditional market for Québec products.

Exports to this region totalled $8.8 million, and though surpassing the value of exports to Japan, this nonetheless represents a drop of 21 percent from 2012. Salt cured fish continued to dominate exports to the Caribbean market.

In sum

There may have been an overall drop in the value of Québec exports in 2013, but there is another side to this story. Among other things, MAPAQ estimates show that Québec fish and seafood processing plants expanded production in 2013—by 3.1 percent since 2012—for a total of $378.5 million, pointing to the likelihood that Québec companies made gains on the Québec and Canadian domestic markets. However, no statistical data is currently available to assess the extent of interprovincial trade.

It may be premature to speculate on the 2014 forecast since there are too many uncertainties, which in turn hinge on a sustainable return to former consumption levels, particularly in the American and European markets. It will also be necessary to keep abreast of economic trends in Asia and monitor fluctuations in the rates of exchange between the Canadian dollar and other major currencies.

QUÉBEC SHOWCASES ITS SEAFOOD PRODUCTS AT SEAFOOD EXPO NORTH AMERICA IN BOSTON

By Françoise Nicol,
Fisheries and Aquaculture Policies and Analyses Directorate

On March 16, 17 and 18, 2014, Boston set the stage for Seafood Expo North America (SENA), a trade show better known under its former name, the International Boston Seafood Show.

SENA is the largest fish and seafood trade show in North America. This activity takes place ahead of the fishing season, an opportune time for participants to meet buyers, stay abreast of market trends and prices, and shine the spotlight on their products.

Once again this year, several Quebec food processing companies set up shop at SENA Québec booth to present their products and meet foreign buyers. Cusimer (1991) inc., Les Crustacés des Monts inc., Dégust-Mer inc., Fumoir Grizzly inc., Poissonnerie de Cloridorme inc., Groupe MDMP inc. and Groupe Alimentaire Nordique were all present at this international trade show, which brought together more than 1,000 exhibitors hailing from more than 100 countries.

Consortium Gaspé Cured enr. was also there to represent the Gaspé Peninsula-based companies Lelièvre, Lelièvre et Lemoignan ltée, Les Pêcheries Gaspésiennes inc. and Poisson Salé Gaspésien ltée. Finally, renowned chef Christian Levêque showed the products of participating Québec companies in action, whipping up bites for visitors to enjoy at the Québec booth.

Photo: collaboration Robert Nicolas

Québec government representatives, from left to right: François Gaudreau, Foreign Market Development Director, Ministry of Agriculture, Fisheries and Food (MAPAQ); Mary Beth Totten, Commercial Attaché, Québec government office in Boston (DQB); Marianne Bonnard, Acting Head, DQB; Françoise Nicol, Trade Policies Advisor, Commercial Fisheries and Aquaculture Branch (SMPAC) (MAPAQ); and Aziz Niang, Assistant Deputy Minister, Commercial Fisheries and Aquaculture (MAPAQ).

PORTRAIT OF BAIT USE IN THE CRAB FISHERY

By Julie Boyer,
Gaspé Peninsula Regional Directorate

Bait supply for trap fisheries has become one of the main concerns of fish harvesters. Catches of mackerel and herring, traditionally used as bait, have fallen in some regions in recent years, to the point where most mackerel used as bait on the Magdalen Islands in 2013 had to be imported and consequently, was more costly.

Merinov has made it a priority to set up a bait research and development program. To properly guide research and implement solutions, the centre drew up a portrait of baiting practices in Québec.

A first study conducted in 2012 focussed on lobster harvesters and clearly showed just how much bait is needed. On the Islands, the bait volume to harvested lobster volume ratio proved to be 0.77 throughout the season. In contrast, the ratio on the Gaspé Peninsula was 1.40. In addition, Magdalen Island harvesters paid $0.13 on average to earn a mean gross income of $1 from the sale of lobster while their Gaspé Peninsula counterparts paid $0.19. The situation is different, however, for the crab fishery and this is what Merinov evaluated during the 2013 season.

BAIT SPECIES

The main species used for bait on the Magdalen Islands are herring, mackerel and squid. Harvesters based on the Gaspé Peninsula use primarily herring and mackerel. On the North Shore, herring is the favourite bait. Regardless of the region, harvesters generally put about 10 fish per bait bag and hang three bags in each trap.

BAIT/CATCH RATIO

On the Magdalen Islands, a dozen area 12 crab harvesters, an equal number of harvesters holding temporary quotas for the same fishing area and a dozen area 12F harvesters took part in the study. On average, throughout the season, they used 0.07 to 0.16 pounds of bait to harvest 1 pound of crab. On the Gaspé Peninsula, the 15 area 12 harvesters in the study used an average 0.11 pounds of bait to harvest 1 pound of commercial crab. On the North Shore, two harvesters in each of the following fishing areas – 12C, 13, 14, 16 and 16A – participated in the study. On the whole, and throughout the season, they reported their best performances when using 0.02 to 0.04 pounds of bait to catch 1 pound of crab.

The crab harvesters paid from 1 to 6 ¢ for the bait needed to earn each dollar of crab sold. The bait cost/fishing income ratio was lowest on the North Shore and highest for harvesters active in fishing area 12F.

BAITING METHODS USED BY CRAB HARVESTERS

As part of its survey, Merinov also questioned harvesters about their baiting methods. While lobster harvesters use a range of different methods, crab harvesters bait nearly all their traps in the same way. The bags containing mackerel and herring are replaced during each fishing trip while the squid bags are changed only every three or four fishing trips, which generally last from 24 to 48 hours each.

It turns out that the bait/catch ratio in the crab fishery is much smaller than in the lobster fishery. Similarly, the cost associated with baiting compared to income generated is also lower. But bait is nevertheless still a source of concern for crab harvesters, particularly in terms of supply.

It is important to point out that the Ministry of Agriculture, Fisheries and Food provided financial support for the Merinov study. For more information about the study, please contact the people responsible for the project – either Jérôme Laurent at 418-385-2251, ext. 4525, or Jean-François Laplante at 418-986-4795, ext. 3225. The study will soon be posted on line on the Merinov website and will be available for consultation there.

REGION AND FISHING AREA	Mean bait weight / crab weight sold	Mean bait cost / crab income ratio
Magdalen Islands – Fishing area 12	0.07	0.03
Magdalen Islands – Fishing area 12 (temporary quotas)	0.10	0.02
Magdalen Islands – Fishing area 12F	0.16	0.06
Gaspé Peninsula – Fishing area 12	0.11	0.04
North Shore – Fishing area 16	0.03	0.02
North Shore – Fishing area 16A	0.02	0.01
North Shore – Fishing area 14	0.02	0.01
North Shore – Fishing area 13	0.04	0.02
North Shore – Fishing area 12C	0.02	0.01