

FISHERIES DIVERSIFICATION PROGRAM

Productivity and Product Enhancement

Project Summary: FDP 64, 89 & 330

2002

Snow Crab Quality Initiatives

Chionoecetes opilio

Producing top-quality snow crab requires a concerted effort from harvesters, handlers, processors, truckers and sellers. Educating everyone in this industry on better handling techniques will mean a better return for the entire seafood sector. The objective of improving snow crab quality is at the heart of three Fisheries Diversification Program (FDP) projects. The projects involve a series of one-day snow crab quality improvement workshops and the production of a "SNOW CRAB, Quality Handling Practices" video.

One-day seminars on snow crab quality initially started in 1998/99, with these latest sessions going beyond those early efforts to a broader-based initiative.

The proposal from the Fisheries Association of Newfoundland and Labrador (FANL) and the Fish, Food and Allied Workers Union (FFAW) was supported by the Department of Fisheries and Aquaculture (DFA), the Atlantic Canada Opportunities Agency and the Department of Fisheries and Oceans, through FDP. The Marine Institute of Memorial University and a private grading company, TAVEL Ltd., were contracted to present the quality improvement workshops.



Size grading

Crab quality workshops were held in 23 Newfoundland and Labrador communities in early 2001, involving 1,058 participants, 605 fishers and 260 processors. In 2001-2002, a second series of crab quality workshops were held in 15 additional communities around Newfoundland and Labrador, involving 497 participants. The crab quality video was developed to illustrate the measures industry could take to increase snow crab quality. The workshop series and video aim to help build a culture of quality awareness.

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and Labrador**

Background

Available data shows the crab industry had a landed value of \$275 million in 2000 in Newfoundland and Labrador, but 6.7 % of all landings were rejected for a number of reasons. Some 5 % were critically weak at dockside, while the remaining 1.7 % were undersized, had barnacles or a soft shell, or arrived dead. In 2001, this figure was 7.19 % of the total crab landings.

Furthermore, grading data showed 36 to 45 % of the total crab catch throughout the Province had at least one limb missing. Considering these statistics, these one-day crab quality seminars attempted to reduce losses and increase the value of the snow crab fishery.

Snow Crab Workshops

As a principle, all groups and individuals involved in these projects agreed that they are partners in an effort to produce the best quality crab in and for the world.

The one-day workshops began with the facilitators providing an overview of the seafood industry, including data on the global snow crab supply, the history of crab quotas, the history of local prices and changes in the American and Japanese markets, including crab sections versus crab meat. They also covered specific catch statistics from different Fisheries Management Divisions.

Commentary was made on research and development activities surrounding an onboard crab slide which reduces the impact on crab when it is returned to the water.

Also, comment was made on an experimental soft-shell tester which might replace the thumb squeeze in determining shell hardness.

Marine Institute officials offered a brief overview on the biology of the snow crab, including worldwide distribution, as well as snow crab abundance in Newfoundland and

Labrador. The life cycle of the snow crab was reviewed and commentary was presented on missing limbs, regeneration, bitter crab and barnacles.

The dockside graders then addressed crab grading standards in general before the Marine Institute officials spoke about maintaining quality on board.

A review of dockside and transport quality issues was followed by an overview of industry regulations by DFA officials.

The day concluded with the showing of a video covering aspects of all the topics covered in the one-day seminar.

Video Highlights

Developed in conjunction with the Fisheries Association of Newfoundland and Labrador (FANL) and the Fisheries, Food and Allied Workers (NFFAW) Union, the video reviewed some comparisons between smaller and larger vessels, different crab storage systems, bitter crab and more.

The video suggests every crab vessel's crew should review two questions: how can we minimize temperature shock, and how can we reduce physical shock?

The delicate balance in temperature that crab harvesters must maintain when storing their catch at sea is illustrated. The hold must not be too cold so that crab freezes, and not too warm so that ice melts more quickly than it should.

The production also examines the height of shelving in pens, the amount of space left at the top of each storage box, and the damage some crab suffer when they are pulled by the legs or stored improperly by allowing legs to stick out over the sides of storage boxes. The storage system used on a vessel should always facilitate the offloading process.

The future direction for truckers may be to have an automated temperature and humidity recorder or regularly maintain a log book with this information.

All surfaces with which the crab come in contact, especially the stowage containers, boat hold, culling tables and deck, must be sanitized after every voyage with a Canadian Food Inspection Agency-approved disinfectant. These surfaces must then be scrubbed to remove any solids or proteins and rinsed with clean water before starting another fishing trip.

Crab fisherman, Nelson Bussey, comments in the video: “We’ve come to the point where all fishermen in Newfoundland and Labrador have to take the responsibility on themselves to become more educated through workshops and by whatever means.”

“Fish for value, not volume,” is the closing message of this video.

Quality Issues

The workshop reviews the following issues for the harvesting sector:

- The impact shock when dumping the crab pot and how to reduce it;
- The use of ‘swift and gentle’ culling methods;
- The handling and storage of the ‘bitter’ crab catch;
- The onboard bulk storage on shelves two to three feet high (Provincial Regulations have a three-foot maximum limit);
- Box storage techniques, including enhancing the icing of the catch; and
- The use of a humidity and temperature (HAT) sensor.

When crab arrives at dockside, the following procedures were suggested:

- Remove the crab from the hold as carefully as possible;
- A crab stored with its belly up is six to eight times more likely to die within 20 hours than if stored with its back up;
- Dropping a pan or box will cause shock and death to the crab;
- Don’t unload unless there are facilities to process the catch;
- Maintain temperature controls at all time;
- If processing is not available as soon as you reach the dock, ice and shelter must be made available immediately;
- If trucking the catch is planned, a high humidity level (95%) and a low temperature on a truck means a longer life and better quality crab; and
- Minimize transit time and all delays in production where possible.



Checking for liveliness

Conclusions

The workshop evaluation questionnaire, completed by participants, rated the seminars very highly. Among all the responses, the most frequent said the workshops should be mandatory to all harvesters as a condition of their license.

Included in the final reports for these projects were the following recommendations:

- Community-based delivery of these workshops should be continued and expanded to other places;
- Develop and delivery processing workshops specifically for plant personnel in the crab industry;
- Information gaps exist regarding the handling of shellfish and research to fill these gaps should be given serious consideration;
- FANL and FFAW should approach the Professional Fish Harvesters Certification Board and the Department of Fisheries and Oceans to determine the feasibility of making quality handling workshops mandatory for fish harvesters and handlers;
- The course book should be of a higher quality;
- The industry management plan and conditions of license might be included in the workshop package; and
- Quality workshops should be given earlier in the winter.

Copies of the video used for these workshops, titled "SNOW CRAB, Quality Handling Practices," and final project reports are available through your nearest Department of Fisheries and Aquaculture Regional Office.



Proper icing and storage means higher quality.



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(Or a DFA Regional Office near you)

The \$10 million Fisheries Diversification Program is part of the \$81.5 million Canada-Newfoundland Agreement Respecting the Economic Development Component of the Canadian Fisheries Adjustment and Restructuring Initiative.