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"News, research updates, and information on lobsters and the lobster industry."

Published by the Lobster Institute

"Protecting and conserving the lobster resource, and enhancing lobstering as an industry...and a way of life."

Lobster Institute Cooperating Experts Directory a Valuable Asset

Sometimes referred to as "Lobster 411" the Lobster Institute and its director, Dr. Robert Bayer have long served as a valuable resource for a variety of lobster-related information to those in the lobster industry, scientists, students, and the general public. Dr. Bayer has over 30 years of experience in lobster research and in providing technical support to the lobster industry. Those seeking information or with questions regarding lobsters or the industry are invited to contact the Lobster Institute at 207-581-1443 or email Dr. Bayer at bob.bayer@umit.maine.edu.

In addition, the Lobster Institute is pleased to provide an international resource directory of lobster experts with a wide range of interest and experience. This list of over 40 people is available via the Lobster Institute's Web site at www.lobsterinstitute.org and then clicking the "Institute" heading. Areas of expertise range from bio-resource engineering to food science to biology and many other specialties.

The Lobster Institute's Cooperating Experts list is constantly being updated. The Institute is accepting and encouraging recommendations for additions to this list. Please e-mail lobsterinstitute@maine.edu with your suggestions.



*Lobster Institute
Cooperating Expert
Dr. Denise Skonberg,
University of Maine
Department of Food
Science & Human
Nutrition.*

*See a related article
on Page 3 in the
"Research Report".*

Atlantic Lobster Sustainability Foundation Hosts First Lobster Science Symposium

More than 100 people, including scientists and members of the lobster industry gathered in Moncton, New Brunswick on July 26 and 27, 2011 for the first Lobster Science Symposium hosted by the Atlantic Lobster Sustainability Foundation (ALSF). The focus of the series of presentations throughout the symposium was "Sustainable Growth of the Atlantic Lobster". Scientists from both Canada and the United States gave talks on a variety of topics ranging from lobster health, to ocean-based lobster nurseries, to a cost-benefit analysis of artificial reefs for lobsters, and much more. Gro van der Meer from the Institute of Marine Research in Norway was a featured speaker, presenting on stock enhancement efforts in European lobsters.

Rick Doucet, Executive Director of the ALSF, also invited leaders of the projects funded by the Foundation in 2010 to share their results to-date. As summarized on the ALSF Web site, these projects are:

--cont. on page 2

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ALSF Lobster Science Symposium

--cont. from page 1

- 1) Lobster early life-stages health research program. A study to ensure that any hatchery-raised lobsters being released into the wild are healthy, thereby protecting wild stocks from potential diseases.
- 2) Economic benefits of lobster seeding. A study that examined the biological and economic benefits of seeding lobster larvae as a means of stock enhancement over a 10 year time span.
- 3) Economic benefits of artificial reefs for lobster. A study that examined the biological and economic benefits of artificial reefs as a means of stock enhancement over 10 and 20-year time spans.
- 4) Development of probiotics for lobster larvae culture. A study to see if marine probiotic bacteria are capable of improving the survival of lobster larvae through the early phases of rearing.
- 5) Improved larval lobster culture through the use of natural feed compounds. A study to assess the utility of algal feed additives to improve growth, survival and health of larval lobsters grown in hatcheries.
- 6) Photoperiod manipulation. A study to determine the best combinations of photoperiod and light intensity to optimize the seeding success of stage IV lobster larvae
- 7) Establishing a baseline of lobster health to promote stability & sustainability of lobster stocks. A study to define the microbial baseline for "normal" lobsters to better determine and recognize new and emerging pathogens.

The ALSF is a non-profit organization that was founded in 2009 by a variety of stakeholders in the lobster industry. According to Doucet, "To meet market demands, we had to make sustainability a priority and we needed a vehicle to bring together stakeholders and invest in research in this area. That's where the Atlantic Lobster Sustainability Foundation comes in." According to their vision statement, "The Lobster Sustainability Foundation is a non-profit, private entity that will function as the vehicle to promote, preserve, and support a strong, healthy, and sustainable resource; and a robust, stable, and self-sufficient industry that will provide long-term economically viable opportunities for all levels of stakeholders, associated participants in the industry, and their communities."

For more information about presentations from the symposium, contact the ALSF through its Web site at <http://lobster-homard.com>.



****Boats for Sale****

Proceeds to Benefit the Lobster Institute

1984 Mako 235

**Fiberglass Boat with a Gelcoat finish.
23.5' Length 8' Beam 1' Draft
Center Console – Outboard
200 HP Mercury outboard needs work – gear box
valued at \$1,200.**

Price: \$5,000

**Valued at \$7,200 – \$8,250 in
2008 survey (available on request.)
Survey found the boat in good condition.**

**Boat can be viewed at Tidal Falls in Hancock, ME
by calling Herb Hodgkins at 207-422-6238.
Call the Lobster Institute at 207-581-1443 for a
copy of the appraisal and to make an offer.**

1984 Wellcraft Cabin Cruiser

**25' Fiberglass – Outboard
235HP 1984 Evinrude 6 cylinder – overhauled in
2000 but needs some work.**

Price: \$5,000

**Valued at \$6,700 in 2008 survey
(available on request)
Survey found the boat in good condition.**

**Boat can be viewed at Billings Marine in
Stonington, ME 207-367-2328
Call the Lobster Institute at 207-581-1443 for a
copy of the appraisal and to make an offer.**



**Check out the Lobster Institute website
at www.lobsterinstitute.org,
providing the definitive site for lobster
information with nearly 200 links.**





Contact us at 207-581-2751 if you would like to sponsor our "Research Report" and see your logo here!

RESEARCH REPORT

Readers may contact the Lobster Institute for more detailed information on any of these projects.

❖ **Using the Invasive Green Crab in Food Product Development** – *A report by Denise Skonberg, Department of Food Science & Human Nutrition, University of Maine*

The European green crab (*Carcinus maenas*) has become a successful invasive predator in Maine, as well as in other North Atlantic and Pacific coast states. Populations of green crab have dramatically increased in the past few decades, leading to serious concerns about their impacts on local mollusk and crustacean fisheries. These voracious predators consume clams, oysters, and mussels, as well as the young of valuable species such as lobsters. Due to their small size (1 ½ - 3" carapace width), hand-picking the meat is extremely labor intensive, and there is currently no commercial fishery for green crab. However, researchers in the Department of Food Science & Human Nutrition have investigated methods to mechanically remove the meat from the shell and use the green crab minced meat in the development of food products. Graduate student Joseph Galetti teamed with Jason Joyce, a fisherman from Swan's Island, to evaluate the effects of mechanical processing on the yield and quality of green crab minced meat. Dr. Bob Bayer, Executive Director of the Lobster Institute, and Dr. Beth Calder, Food Science Extension Specialist, collaborated on the project, which was funded in part by the Maine Technology Institute.

The preliminary study evaluated the effects of thermal processing, mechanical separator settings, and crab size on mince meat yield and quality. The average meat yield was approximately 50%, and the nutritional quality of the meat was similar to that of other crab species. Since the crabs were cooked to a minimum internal temperature of 165 F and immediately packed in ice, the microbial quality of the minced meat was appropriate for use in high-quality, human food products.

The objective of the follow-up study was to develop a food product containing significant amounts of green crab mince meat that consumers would enjoy. Empanadas are stuffed and fried pastries which traditionally contain chicken, beef, or pork along with a variety of fillers such as rice and potatoes. Empanadas were chosen for further product development because they can contain large

amounts of green crab mince meat and also fit in with the growing trend among American consumers for more ethnic cuisines.

Green crab mince was incorporated into empanadas at 30, 50 and 70% by filling weight. Other filling ingredients included corn, onion, bell pepper, and spice. Empanadas were served randomly

– cont on page 4

❖ **Progress in the war against sea lice** – *excerpt from the Aquaculture Research Institute newsletter, Volume 1, Issue 1, Fall 2011*

"ARI researchers published a paper in August 2010, in which they demonstrate that the blue mussel can eat larvae of the sea louse, a parasitic pest that has recently made a comeback on fish farms, decimating populations of farmed finfish.

The findings funded, by the Maine Economic Improvement Fund, were published in the journal *Aquaculture* and have implications for the farmed salmon industry in Maine. If further analysis in the field holds up, the use of mussels on salmon farms could be another disease management strategy for reducing the infectious pressure of sea lice in a finfish farm. [Editors note: *This may positively impact the lobster industry by providing an alternative to harmful chemicals now used to mitigate sea lice.*]

The results also have implications for the development in Maine of a concept called integrated multi-trophic aquaculture (IMTA): an alternative approach to the standard mono-culture aquaculture. IMTA is believed to reduce the environmental impacts of commercial aquaculture systems by combining the cultivation of fed species, such as salmon, with extractive species, such as mussels."

You can read about this and other projects and happenings at the Aquaculture Research Institute at the University of Maine in their new newsletter, *ARI News*. The newsletter will be published twice a year. It will be made available online, or you can request a copy via email by contacting Anne Langston, Associate Director of the ARI at anne.langston@umit.maine.edu. ❧



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LOBSTER INSTITUTE

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Green Crab in Food Products

--cont. from page 3



Inserting temperature probe in cooked green crab.

to 87 panelists at the Department of Food Science and Human Nutrition Consumer Testing Center. The panelists were asked to rate the appearance, texture, flavor, and acceptability of the empanadas using a 9-point scale (1=dislike extremely to 9=like extremely). The specific goal of this study was to determine how much green crab minced meat could be added to an empanada without decreasing consumer acceptability. Empanadas containing 30 and 50% mince had significantly higher ratings for filling appearance, flavor and overall acceptability compared to the empanadas with 70 % mince. Many of the attribute scores approached 7 (or "like moderately") which indicates potential for this novel product. Over 60% of the panelists reported that they would "probably or definitely buy" green crab and vegetable empanadas if they were available to them locally. The development of value-added green crab mince meat products is an important step toward establishing a viable green crab fishery which could help to alleviate the negative consequences of the green crab invasion. More information on this research is available online at: www.library.umaine.edu/theses/pdf/GalettiJA2010.pdf

Maine Lobster Chef of the Year Finalists to Compete in Portland

The Maine Lobster Promotion Council and Big Claw Wine will host the annual Maine Lobster Chef of the Year competition, as part of Portland's Harvest on the Harbor Celebration, on October 21, 2011. Three finalists will be selected by a panel of expert judges to participate in the "people's choice" cookoff and taste-testing competition. The event is being held at Portland's Ocean Gateway Pier. The award winning dishes of all three finalists will also be served at the Lobster Institute's Holiday Lobster & Wine Feast (see below).

Tickets for the competition are now available and can be purchased via the Maine Lobster Council Website at www.lobsterfrommaine.com; or from the Harvest on the Harbor site at www.harvestontheharbor.com. ☞

Hold the Date for the Lobster Institute's Holiday Lobster & Wine Feast

**Thursday, December 1, 2011
Buchanan Alumni House, University of Maine
Co-hosted by the University of Maine Foundation**

Reception, dinner, wine and entertainment!
Proceeds benefit the work of the Lobster Institute.
This event features lobster dishes of the three finalists in the Maine Lobster Chef of the Year competition, as well as special wines selected for the occasion.

**To be sure you are on the invitation list, email the
Lobster Institute at lobsterinstitute@maine.edu**

The University Inn in Orono is offering a special rate for those seeking accommodations for this event.

Single \$79 / Two-person \$89. Includes a full hot breakfast.
Call 1-800-321-4921 & mention Lobster Holiday event at UM