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Lobster Institute

Winter 2010

The Lobster Bulletin, Winter 2010

Lobster Institute, University of Maine

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Winter 2010

“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 to Host 2010 Canadian/U.S. Lobstermen’s Town Meeting – March 26-27

The Lobster Institute will host its seventh consecutive Canadian/U.S. Lobstermen’s Town Meeting in Portland, Maine on Friday March 26 and Saturday March 27. The event is an industry-wide gathering of lobstermen and other interested parties to discuss the status of the lobster resource (*Homarus americanus*) and the industry – from the perspective of the fishermen.

With the 2008 and 2009 Town Meeting having focused on the economic situations influencing the lobster industry, this year’s Meeting will focus on “Where do we go from here?” Discussion will center on ways to secure the economic viability of the lobster industry moving into the future.

Michael Gardner of Gardner Pinfold Consulting Economists will give a keynote presentation; building on the landmark study his firm conducted in 2006 entitled “Benchmark Study on Canadian Lobster”, a comparative analysis of the Canadian and Maine lobster industries.

Friday’s presenters to-date and topic areas for discussion will include:

- Deb Neuman from Target Technology Center – discussing value-added products
- Geoff Irvine of the Lobster Council of Canada, and Dane Somers of the Maine Lobster Promotion Council – discussing market trends
- Bernie Feeney, President of the Massachusetts Lobstermen’s Association– discussing marketing your own product
- Michael Tourkistas from East Coast Seafood/Paturel International and Tim Kayfus from Ruby Tuesday – discussing pricing from boat to plate
- Gary Lupinacci from the Transportation Security Administration discussing Certified Cargo Screening.

As always, there will be plenty of time for open discussion from the floor. The Saturday portion of the meeting will center on sustainability certification and any other topics of interest.

– cont. on page 3

Factors Affecting the Post-Capture Survivability of the Lobster *Homarus americanus*

(excerpts from Abstract by D. Basti, D. Bouchard, I. Bricknell, K. Hoyt, D. Bean, E. Thomas and E.S. Chang)

It is well-documented that behavioral and physiological stress is a major contributor to the disease state in terrestrial animals and fish. It is not surprising that researchers now recognize physiological stress as potentially detrimental to the survival of commercially important crustaceans.

This experiment utilized a repeated measures design to compare the physiological changes that occur in lobsters over time as the result of differences in depth, hauling rate and storage methodology. In this study, lobsters captured at sea were allowed to acclimate to a recirculating seawater system. Survivors were sampled for baseline physiology and bacteriology and then taken into the field. A group was left behind to serve as a control. At sea, lobsters were placed into specially designed traps and lowered into either a shallow water or deep water site. After 8 days the lobsters were recovered. At each site they were hauled to the surface at either the

– cont. on page 3

The **Lobster Bulletin**

published by the



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Note:

If we inadvertently left anyone out or incorrectly listed your name, please notify us and we will make a correction in the next issue.

*We sincerely thank the over
110 annual donors & sponsors
– businesses, foundations and individuals –
who supported the work of the
Lobster Institute in calendar year 2009.*

We look forward to your continued support in 2010.

(List does not include donors to the C.O.R.E. Campaign.)


**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.

❖ Factors affecting the post-capture survivability of the lobster (cont. from page 1)

commercial rate or at a slow rate. Survivors were then randomly allocated into above deck storage in totes or below deck in totes, but within recirculating seawater. At dockside the lobsters were loaded into totes at ambient air temperature and transported back to the seawater holding facility. Upon arrival the survivors and resident control lobsters were again sampled for baseline physiology and bacteriology. During the reacclimation period lobsters were monitored for signs of distress or weakness and then resampled.

The results indicate that lobsters destined for long distance transport or temporary storage in pounds undergo physiological disturbance as part of the capture process. These changes are less pronounced in total hemocyte counts and glucose, but are significant across all treatment groups for crustacean hyperglycemic hormone, L-lactate and ammonia. Multivariate ANOVA for glucose indicates a significant interaction between depth and storage methodology over time for non-survivors. *Photobacterium indicum* was identified in pure culture from hemolymph samples of all weak lobsters. Histopathology revealed gram negative

bacteria throughout most tissues with evidence of ante mortem edema and necrosis suggestive of septicemia. We would recommend to the lobster industry that if a reduction in depth and hauling rate is not economically feasible, fisherman should take particular care in handling their lobsters and provide them with a brief recovery period in recirculating seawater prior to land transport. It may become necessary to use preemptive antibiotic therapy to reduce mortality in severely stressed lobsters susceptible to secondary infection with *Photobacterium indicum*.

[Look for a full article with experiment results in an upcoming edition of *Diseases of Aquatic Organisms*]

- ❖ **Maine Sea Grant Announces NOAA Funding** – Yong Chen of the University of Maine and Carl Wilson of the Maine Department of Marine Resources received \$127,890 to work on "A comparative study of monitoring programs for coherence in quantifying the dynamics of American lobster fisheries in Maine." Chen and Wilson will compare and evaluate the nine different lobster assessment methods currently in place, with a goal of improving monitoring program design for greater efficiency and reduced costs.

Lobstermen's Town Meeting

--cont. from page 1

As always, the Town Meeting is designed first and foremost to allow fishermen's voices to be heard. The goals have remained the same: to provide fishermen with an opportunity to share with one another what they are observing in their day-to-day operations, what their concerns might be, and what positive things they are seeing. This will allow fishermen to get a more complete picture of the entire resource, including commonalities, differences and potential future impacts

A special thank you to **Darden Restaurants** for serving as primary sponsor of the Town Meeting each and every year; and to **Fishery Products International/Highliner Foods**, sponsor of the Seafood Reception each year. We also thank our other 2010 sponsors: **Downeast Lobstermen's Association, East Coast/Paturel, Maine Import/Export Lobster Dealer's Association, Riverdale Mills (Jim & Betty Knott), and new this year - Ruby Tuesday.**

Please see the ad to the immediate right for more details and registration information. Fishermen should contact their lobster associations for possible car-pool opportunities. ☼

- ❖ **Maine Sensors, Inc. Exploring a New Technique to Gauge Lobster Vitality** -- See full story on page 4.



LOBSTERMEN'S TOWN MEETING

"Where do we go from here? Securing the economic future of the lobster industry."

**Friday March 26, 9:00 – 4:30 &
Saturday March 27, 9:00 – 11:30**

Regency Hotel – Portland, Maine

Special room rate of \$119(US) while availability lasts.

Call 1-800-727-3436 and mention Lobster Institute.

Hosted by the:

Lobster Institute

**\$25 Registration Fee – includes lunch
for pre-registered participants only.**

Forms are available by calling 207-581-1443
or online at www.lobsterinstitute.org

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LOBSTER INSTITUTE

Lobster Bulletin, Winter 2010

Boat Raffle to Benefit Lobster Institute

The *F/V Oddball* is being raffled off by owner Josh Conover of Islesboro. Tickets are \$150 each and only 350 tickets will be sold. Ten percent of the proceeds from the first 300 tickets sold, and 100% from the final 50 tickets sold will be donated to the Lobster Institute to further their work in maintaining a sustainable fishery and vital fishing communities.

The *Oddball* was recently assessed at \$40,000 to \$50,000, with a replacement value of \$250,000. The vessel is a fully renovated 1977 - 38' Clifford Alley wooden lobster boat, with cedar planks over an oak frame. It comes equipped with a John Deere 6.8 liter 6-cylinder, 225HP turbo charged diesel engine and navigation & communication equipment.



The drawing will take place once all tickets have been sold. For more information, contact Mr. Josh Conover at 207-581-2751 or Thomastodd@lobsterinstitute.org. The *Oddball* is available upon request from Mr. Conover or the Lobster Institute. A color photo and information is also available online at www.lobsterinstitute.org.

Raffle cancelled due to licensing issues.

(Note: the name *Oddball* will not convey with the boat.) ❧

Lobster Vitality Sensor in Development

In an earlier issue of the *Lobster Bulletin*, it was reported that proof of concept work had been started by Mainely Sensors, Inc., in conjunction with the Lobster Institute, to determine the feasibility of using a novel, non-invasive fiber optic reflection probe sensor to determine the vitality of the American lobster, a task now performed by an invasive technique using a refractometer. Tests were performed to analyze lobster hemolymph *in vitro* and *in vivo* using benchtop optical absorbance and fluorescence probe sensors to determine if a correlation between the probe sensor response and refractometer readings could be established. Although it was shown that a degree of correlation existed in some cases, it was not deemed sufficient to warrant design of a non-invasive probe. Based on the *in vitro* work, optical sensing using absorbance spectroscopy yields accurate and reproducible results. However, several *in vivo* studies using a 280nm and 334nm light yielded no acceptable correlation between *in vivo* absorbance measurements and refractometer readings. Fluorescence spectroscopy was far more problematic than absorbance spectroscopy. No acceptable correlation could be established between *in vitro* or *in vivo* fluorescence studies and refractometer readings.

With information gained from their original proof-of-concept work, Mainely Sensors is now developing an alternate approach to measuring lobster vitality. The new method is minimally invasive and offers improved efficiency in time, energy and resources over the current industry standard. This new sensor uses a 20µl sample and provides rapid analysis and sterile disposable syringe tips that do not require cleanup. This is in contrast to the industry standard which uses at least a 1 mL sample and requires sterilizing the refractometer before analyzing a new sample. Look for more information in a future edition of the *Lobster Bulletin*. ❧