



2009 Massachusetts Aquaculture Association Newsletter

P.O. Box 500
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www.massaqu.org

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Learn the new innovative methods to deal with your summer nightmare.
- **SEMAC Up Date**
- **New Ads and Membership options for Dealers and Restaurants**
- **Check the MAA web site for downloadable forms, recent partnerships and correspondence.**

Upcoming

Events:

- 3/10/09
Massachusetts Agriculture day at the State House. March 15,16,17
- International Boston Seafood Show
- 4/21/2008 ECSGA Massachusetts BMP Session, and Marketing Presentation, Hemisphere Restaurant
- July 18 Buzzards Bay Festival
- September 2009,

Get ready to give it hell, no gov't bailout for us

Welcome to 2009. The MAA board of trustees has been very active in the last few months keeping the momentum up from 2008 in the midst of losing a great administrative assistant that spoiled us rotten. Beth Walton did an outstanding job in 2007-2008 as MAA's administrative assistant overseeing the funds of the MSAIC grant to bring us a new Bay State Farmed Shellfish logo, an updated Best Management Practices Manual that will soon go to print, our first annual "Shellfish Shindig" in Boston, and great communication and correspondence among growers and the state. These things were not all accomplished by one, but by many. We wish to thank all the trustees, officers and general membership that continue to go beyond what is expected to provide input, work, and support back into MAA. Thank You.

2009 will be an important year as is any year in this business, facing uncertain markets and high inventories of product on all of our farms we hope that price and demand will not falter. A few things that come to mind to help you market product as we head into the season are: Live shellfish are unprocessed and are safer to eat than peanut butter, oysters are high in zinc if your health insurance won't cover the cost of Viagra, consumers can take pride knowing that eating shellfish helps clean the environment and mitigates their carbon footprint, and fish and shellfish consumption promotes a healthier heart through omega three fatty acids so your consumers are less likely to suffer from heart palpitations when they look at their 401-k's. Good luck this year and don't let up!
The Clerk

Bio-fouling Control, with Food Grade Oil!

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Producers' maintenance costs have increased with the spread of invasive ascidians into PEI waters which foul aquaculture gear. The most recently arrived of four new tunicate species, *Cloaca intestinalis*, is the most detrimental, with the longest reproductive period and a high capacity for fast accumulation of biomass. This study focused on preventing the settlement of *C. intestinalis* and other fouling organisms on mussel aquaculture gear using a layer of food grade vegetable oil with a melting point higher than the maximum water temperature of PEI estuaries. Lab experiments compared the adhesiveness of two oils, shortening and coconut oil, to ropes and mussels in replicates of three. Shortening was selected for field trials because it formed a thicker, more uniform layer. A field trial with four different substrates was conducted between July and August 2008. Five treated (shortening) and five untreated

SEMAC still functions after Twelve Years

This month saw the 12th anniversary of the appointment and 1st meeting of the SouthEastern Massachusetts Aquaculture Center Board of Directors, and I thought it might be good time to both inform new members and remind older growers about the beginning of the center. The history of the SouthEastern Massachusetts Aquaculture Center began in September of 1995 with the publication of the *Massachusetts Aquaculture White Paper*.

Among the recommendations of the paper were the following:

- No. 4 – Bond monies should be directed to Strategic Plan priorities.
- No. 47 – Fund a research and innovation center
- No. 58 – Establish regional aquaculture demonstration centers.


With those recommendations in mind and within the Seaport Bond Bill, which

SEMAC still functions after Twelve Years

passed in 1996, was language that called for the establishment of an aquaculture economic development initiative to be located within Barnstable County. A series of meetings were held at the then Cape Cod Economic Development Council Office (CCEDC) and at the County complex with the purpose to structure the initiative. Through these meetings, an aquaculture center concept evolved, and in October of 1996 then Lieutenant Governor Paul Cellucci and Senator Henri Raushenback announced that \$100,000.00 would be available in the upcoming year to develop the center. The Senator then held a public meeting to discuss potential objectives for the center on November 15, 1996. This meeting was followed by a letter dated December 9, 1996 from the Senator to then Executive Director of the CCEDC John O' Brien. The letter indicated that Executive Office of Environmental Affairs was going to release half of the money or \$50K, and that some of that money should be spent to support and compliment the development and creation of an advisory Board through the CCEDC and Cape Cod Cooperative Extension (CCCE). The advisory board should then write an outline to provide guidance for all aspects of economic development associated with aquaculture development on Cape Cod. Upon receipt of that letter, a notice dated December 11, 1996, jointly signed by Bill Clark of CCCE and John O' Brien of CCEDC, was sent out to shellfish growers and aquaculturists of the region seeking participation in the formation of the center, and asking for interest in being a potential nominee for a Board of Directors. Strong interest in other areas of the region resulted in the center's role extending beyond Barnstable County to include Plymouth, Bristol, Nantucket, and Dukes Counties.

The County Commissioners appointed the original thirteen (13) board members on February 7th 1997, and the first board meeting was held on February 18, 1997. The majority of the board is comprised of industry representatives, 5 shellfish, 1 finfish, and the President of the Massachusetts Aquaculture Association (MAA) or his designee. It also includes the Director of Cape Cod Cooperative Extension, the Director of the Economic Development Council, 1 education representative, 1 academic/research representative, 1 environmental representative, and 1 municipal shellfish officer. Present members include: Bill Clark-CCCE, Dan Dray-CCEDC, Rick Karney-MVSC, Stephen Wright-MAA, Dick Kraus-ARC, Conrad Caia-Shellfish Constable, Stephanie Brady-CCCE, Scott Lindel-MBL, Gregg Morris-grower, Joel Fox-grower, Jennifer Mullin-grower, Andrew Cummings-grower, and Ed Baker-finish. Bill Burt and Diane Murphy serve as staff for SEMAC, and the center functions under the auspices of Barnstable County with the budget administered through the offices of Cape Cod Cooperative Extension.

Funding has been through the MA Department of Agricultural Resources using monies from first the Seaport Bond Bill, but in recent years funding came by way of appropriations within the Environmental Bond Bill. Even with the poor economic situation, SEMAC will receive \$50,000.00 for FY 2009, and projects will include: ongoing response to disease outbreaks and issues, continuing the research into unexplained mortalities of cultured quahaugs in Wellfleet harbor, maintaining the research farm network at 11 sites and the marine water quality monitoring YSI equipment at three stations, marketing assistance and a new project to attempt an assessment of cultured shellfish impact on improved water quality as a means to build public support for aquaculture. The mini-grant and scholarship program have been suspended for this year, but it is hoped that in FY 2010, those programs will once again be available.



Jiselle Bakker, On the water, researching Bio fouling control technology. And, Clear results of efficacy of Food Grade Oils on gear to prevent fouling.

Bio-fouling Control, Food Grade Oil! From P. 1

(control) buoys, spat collector and collector plate ropes and six mussel socks (50 cm) per treatment were deployed in St. Mary's Bay, PEI for one month on a mussel longline. Treatment was accomplished by dipping dry gear into a vat of liquid shortening heated by a petroleum boiler. The mussel socks were lifted from the water, treated and immediately returned to the water. After retrieval, weights and lengths of *C. intestinalis* and other fouling weights were measured.

Results indicate that (after one month) the treated gear had significantly less biofouling than the controls. Interestingly, very little spat was found on spat collector ropes, treated or untreated. Based on visual observations of the spat collector plate ropes, the layer of shortening did reduce spat settlement.

Observations noted during the lab experiments indicate that the temperature of the oil at the time of application may impact the thickness of the layer of oil on a substrate. When rope subsections were dipped in shortening at higher temperatures, it did not adhere as well as when the oil was at a lower temperature, closer to

its melting point.

The cost of treating a Styrofoam floater buoy was \$0.10, a 50 cm mussel sock was \$0.61 and for a spat collector of a length of 1.83 m, it was \$0.12.

Further research is needed to determine the persistence and effectiveness of shortening in reducing biofouling over a period of time to determine its cost effectiveness before integration into farm management practices is practical. Treated and control buoys are currently deployed in PEI waters over winter to gauge the effects of cooler temperatures on the solid layer of oil coating the substrate. Other vegetable grade oils could prove to have the same capacities in reducing biofouling as the shortening and could lead to finding substances that have greater adherence to the mussel shells while remaining benign to farmed organisms. The shortening treatment could also be applied to other domains of aquaculture; this upcoming season, some growers in the New England area are planning to test the shortening on 9mm mesh juvenile oyster bags.

Please feel free to direct any questions or comments to the primary author.
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Brine Dip, to Control Bio-

brine-dip or hyper-saline solution to help reduce fouling.

Research Farmers from Bamstable, Bourne, Dennis, Duxbury, OrHears, Provincetown, Wellfleet, and Yarmouth participated in this study and provided the care of the oysters and gear throughout the duration of the experiment. They were given 8,000 ~6mm oyster seed from a local hatchery in July, 2007. Each of the eight grower's 8,000 seed were divided equally into 16 ADPI bags at a 500/ bag stocking density. The following spring (April/ May) bags and oysters were dipped in a brine solution (~225ppt) for several different treatments. Four (4) bags were dipped for a 5-minute period, 4 bags

dipped for a 1-minute treatment and 4 bags were left out as an air-dry control and 4 bags were left out in the oyster cages and never brought in for treatment. Oyster bags were shaken to ensure the oysters were tightly closed before submerging them in the brine solution.

Note: sensitive mollusks such as bay scallops and steamers will not survive the dipping. All 8 brine-dipped bags and the 4 air-dry control bags were left out of the water for a 24-hour period to dry. This drying period is thought to have a greater effect on the fouling organisms as the drying salt crystals have a negative effect on fouling organisms. A second brine-dipping treatment was applied late in the summer (August).

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Bio-Fouling Control, Brine Dips! (Diane Murphy)

During the past several years SEMAC and Barnstable County Cooperative Extension staff have worked with shellfish growers in the region to develop a Research Farm Network to carry out research projects that address their issues and needs. One of the recent experiments was a directed study investigating the use and efficacy of brine-dipping

oyster bags. There has been research into ways of controlling or eliminating bio-fouling on aquaculture gear and product that employ the use of chemicals or methods that require larger investments of time and money. We wanted to explore a cost-effective, low-tech, and safe approach to this industry-wide problem. One such method is the use of a



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Brine Dip, from p.3
Fall (October) 2008, brine-dipped oysters at all sites were assessed for survival by counting the number of live animals from representative bags of each treatment, as well as controls. Samples from each were also brought back to the lab to measure growth, as well as fresh weights and dry weights to assess condition. The oyster shells were also scraped to remove all fouling from each animal and weighed to determine long-term effects of brine-dipping. Work is ongoing to analyze results, but it appears that the effects of brine-dipping are site specific. One of the growers found the brine treatments to be so successful that brine-dipping is now incorporated into their routine maintenance and a brining tub now sits on their float.

Atlantic
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THANK YOU!

