



## SUMMARY OF AUDIENCE NEEDS ASSESSMENT OF LICENSED SHELLFISH AQUACULTURISTS IN MASSACHUSETTS, 2004

**INTRODUCTION** This study of the training and information needs of licensed shellfish aquaculturists in Massachusetts was commissioned by four organizations that are committed to supporting that sector – the Southeastern Massachusetts Aquaculture Center (SEMAC), Barnstable County Cooperative Extension, Woods Hole Oceanographic Institution Sea Grant Program (WHOI Sea Grant), and the Massachusetts Department of Agricultural Resources (MDAR). The study was conducted by Duane Dale of DFD Associates.

**METHODOLOGY** A written questionnaire with an explanatory cover letter was mailed in April 2004 to 274 shellfish aquaculture license holders or recent applicants; 28% returned their questionnaires in timely fashion. Fifteen of the respondents were selected at random for a follow-up telephone interview. The questionnaire elicited information about aquaculture practices, training and experience to date, topic and delivery preferences for information and training, topic preferences for research and for web-based information, and logistical preferences.

### RESULTS

#### **Question: What is the nature of shellfish aquaculture as practiced in Massachusetts?**

Eighty percent of the license holders have Cape Cod mailing addresses, as do 69% of the respondents.

Oysters are the most common species, cited by 78% of respondents, followed by quahogs (54%). Forty-five percent report working with two or more species. Thirty percent of respondents have been licensed for shellfish aquaculture for at least ten years, 39% for less than five years, and 4% have submitted a license application which is pending. The median licensed acreage is two acres; the median area in production is one acre.

**Question: What preferences exist with regard to delivery methods, training time, location, and other details?** For face-to-face sessions, winter weekdays are best. Locations should be selected that allow most participants to travel less than one hour each way. Aquaculturists learn a good deal by interacting with one another and by seeking the advice of more experienced aquaculturists.

**Question: What topics are most appealing?** Questionnaire respondents rated 28 different content topics, 19 research topics, and 18 web-based content areas using a five-point scale, with “1” indicating low interest and “5” indicating high interest. The top-ranked items in each category are shown in the table below.

Category	Top Tier	Second tier	Third Tier but at least 40% gave 4 or 5 ratings
<b>Content topics</b>  <i>Top tier: Mean ratings &gt; 3.75</i> <i>Second tier &gt; 3.5</i>	Predator & pest management Improving crop management Information on predators & predation Disease management	Assessing survival and growth Insurance (various types) Marketing, labeling, trademarks, etc. Gear (incl. maintenance and innovation)	Out-of-state sales and shipping Internet sales Funding (loans, grants, etc.) Wholesaler requirements, HACCP Genetic improvements Product handling Best mgmt. practices Liabilities
<b>Research topics</b>  <i>Top tier: Mean ratings &gt; 3.9</i> <i>Second tier &gt; 3.65</i>	Improve field performance Predator & pest management Effects of water pollution & coastal development on species Disease management Effects of increased production on survival & growth	Genetic selection for faster growth Fouling-resistant coatings Genetic selections for disease resistance Effects on water quality Improve performance in hatchery Effects on local fisheries	Test & compare gear Genetic selection for longer shelf life Equipment design & engineering Improve performance in nursery Development of non-food markets

Category	Top Tier	Second tier	Third Tier but at least 40% 4 & 5 ratings or 20% 5 ratings
<b>Web-based content</b>  <i>Top Tier: Ratings &gt; 3.75</i> <i>Second Tier: 3.4–3.75</i>	Recent water quality (temperature, salinity, etc.) Informational bulletins	Case studies; lessons learned Live water quality Grant opportunities Shellfish regs. & laws Workshops, aquaculture meetings, industry shows Legislative updates & hearing notices Weather & tides	Results and reports from funded projects Gear exchange

## RECOMMENDATIONS

Those who would develop programs and informational materials for shellfish aquaculturists should consider these points:

- Learning from peers, especially in the early stages of shellfish aquaculture, is widespread. Also, there is a good deal of problem-solving, creative thinking, and trial-and-error learning with respect to species, gear, and practices. Develop ways to enter into these unstructured learning activities, such as via a “master aquaculturist” program, similar to volunteer master gardener programs, and open forums where practitioners predominate but scientists introduce their ideas into the flow of discussion.
- There is interest in face-to-face gatherings such as workshops, and also in individualized information access such as web-based information services, home-study guides, and factsheets. Utilize the optimal delivery method for each type of content and each learning objective.
- The six months from May through October are considered by many aquaculturists to be bad months for training. When information or skills must be disseminated during those months, be prepared to use non-face-to-face delivery methods.
- Planners of programs and information materials should consider the topic ratings shown in the table above – not only those that received the highest mean scores but also those shown in the right-hand column of the table, which had lower mean scores but still a strong proportion who gave them above average ratings (4s or 5s on the five-point rating scale).
- From time to time, additional topics should be offered and recommended to aquaculturists even if the aquaculturists themselves have not identified them as priorities. Such topics may arise from scientific research, the public’s interest in food safety and environmental impacts, or changing environmental, disease, or economic factors..
- The existence of adequate programs or informational materials (already available from other sources) may reduce the need to address some topics.
- Face-to-face training events are likely to draw their best attendance between December and March. Weekdays are best; Saturdays and weekday evenings are slightly less desirable than weekdays. Sundays are to be avoided. Full-day events on weekdays are at least as acceptable as part-day events. If events are held during the aquaculturists’ active working months, tides are an important consideration. Travel distances should be minimized; travel distances of greater than an hour each way are likely to reduce attendance.

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