INTENSIVE TRAINING AND INTERNSHIP IN BIVALVE CULTURE AND SHELLFISH SANITATION

Production System Design & Best Management Alternatives/ Activity/ 07BMA05UH

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ABSTRACT

A seven day training workshop in hatchery methods and shellfish sanitation was held in Louisiana on June 8-15 and was hosted by the Louisiana State Sea Grant College Program. The training was highly effective in increasing capacity among the personnel of LSU, UHH, UAS and UCA for hatchery design, planning, management as well as for shellfish sanitation. Knowledge and skills acquired from this training have since benefited the CRSP efforts in the U.S., Mexico and Nicaragua. Four graduate students also benefited from the training.

INTRODUCTION

Bivalve mollusk culture is a priority for aquaculture development throughout LAC. In the case of Mexico, state governments (e.g. Nayarit, Sinaloa, Sonora) and the federal government have prioritized shellfish culture for development for nearly ten years. The Autonomous University of Sinaloa and its numerous partners in aquaculture development have recently worked together in an integrated effort to accelerate development of the shellfish industry with long-term support from CRSP/USAID. In the case of Latin America, there is wide spread recognition of the potential for shellfish aquaculture, but progress towards realizing its potential has been slow. The Central American University (UCA), has been promoting shellfish culture and management of the shellfish fisheries for over ten years with support from multiple donors, including CRSP. Throughout Latin America, molluscan culture has been most successful when wild spat collection is adequate to support industry development.

Further development into other areas and species has been limited by the lack of mollusk

hatcheries. In the case of the Pacific Coast of Mexico, the bivalve industry is divided between Nayarit, where spat collection of the native "Pleasure Oyster" *Crassostrea corteziensis* is abundant, and the northern States surrounding the Sea of Cortez, where the non-native species, *C. gigas* (Japanese Oyster) is predominant. The latter industry is largely supplied with eyed larvae or spat from U.S. hatcheries. In Nicaragua, UCA has been working since 1997 to research and development bivalve culture, particularly for cockle species. Throughout the LAC region, there is potential to develop other native species for culture and improve production methods for currently cultured species, but one major impediment is the lack of molluscan hatcheries in the region. The lack of hatcheries is due in part to the greater economic feasibility of shrimp production, but also in part due to lack of technical capacity.

The objectives of this training workshop were to:

- Build capacity among Mexican and Nicaraguan researchers and extension agents for hatchery methods;
- Increase inter-institutional sharing of knowledge and methods;
- Provide hands-on experience in hatchery and nursery production;
- Increase understanding of the U.S. model of shellfish sanitation; and
- Familiarize participants with other aspects of the U.S. Gulf Coast shellfish industry. The desired outcomes included:
- Sufficient capacity among UAS and UCA personnel to evaluate the feasibility of establishing small scale hatcheries at their home institutions
- That personnel would have sufficient technical capacity to design, build and operate small-scale hatcheries;
- To support on-going efforts to establish shellfish sanitation programs in Mexico and Nicaragua; and
- An increased degree of institutional collaboration between U.S. and HC institutions.

METHODS

A training workshop was held June 8-15 at the Louisiana State University (LSU) Sea Grant College Program Oyster Hatchery. Dr. John Supan is Director of the hatchery and led this effort with assistance from Dr. Maria Haws, who directs the UHH shellfish hatchery program. Participants met in New Orleans and first attended the Southeastern States Shellfish Sanitation Annual Meeting which included one day of presentations and one day of visits to surrounding industry sites. The latter included visits to Motavatit Seafood, which is one of only two companies in the U.S. which uses hydrostatic pressure to treat raw oysters. A second company was also visited which uses low temperature pasteurization for oysters. The group had a chance to see and sample various treated products and discuss value-added strategies. The group also saw oyster dredges and discussed harvesting and handling processes.

The LSU hatchery is located on Grand Isle in Louisiana. Six days of training were provided there on the topics of: microalgae culture; induced spawning; larval rearing; remote setting; water treatment; and related topics. Additionally, considerable discussion

was given to the topic of hazard preparedness in hatchery design and operation. The LSU hatchery had been destroyed by Hurricane Katrina in 2005, but due to special design and preparedness considerations, economic loss was minimized and recuperation was speeded up. This information is useful since both the Nicaraguan and Mexico coasts are vulnerable to storms and hurricanes.

Participants included: John Supan, Esther Young, Marc Stubbs (LSU), Maria Haws (UHH), Nelvia Hernandez and Abelardo Rojas (Nicaragua), Daren Garriques (Ecuador) and Olga Zamudio (Mexico). Young, Stubbs, Garriques and Rojas are graduate students.

RESULTS

There was a high level of satisfaction among the trainees and several have since put the acquired knowledge and skills to use. Olga Zamudio and Nelvia Hernandez have since begun to plan and design small-scale research hatcheries for their universities. The former hatchery at FACIMAR/UAS in Mexico is part of the CRSP workplan for 2010. UCA obtained funding for their hatchery efforts from other donors. Daren Garriques is now employed at the UHH oyster hatchery and is utilizing his increased skills in conducting his masters degree research. Maria Haws has since made modifications to the UHH hatchery, particularly for preparedness purposes, based on the methods used at the LSU hatchery.

CONCLUSION

The workshop was very beneficial in increasing capacity for hatchery design and development. Additionally it also increased the level of communication and cooperation between the four institutions participating in this work. Much of the future CRSP research and extension in Mexico and Nicaragua has since benefited from this training.

Benefits

Please see above.

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