
**SUMMARY OF THE PANEL DISCUSSION ON CULTURE HELD AT THE
CONCLUSION OF THE UJNR AQUACULTURE PANEL'S SCIENTIFIC
SYMPOSIUM IN DURHAM, NEW HAMPSHIRE, USA,
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The conveners of the 1997 UJNR Aquaculture Scientific Symposium included in the final day's program an afternoon session during which Japanese and U.S. scientists could discuss their most important research needs and try to identify areas and strategies for collaboration. The discussion on culture was facilitated by Drs. D. Bengtson, K. Fukusho, and M. Wilder and about 30 scientists participated (other panels on stock enhancement and offshore aquaculture were held concurrently in separate rooms).

The primary research needs are presented here in outline form:

- I. A definition of "egg quality." We all talk about the importance of quality of gametes to the growth and survival of offspring and we are interested in the parental contribution to gamete quality, but we do not have a standard definition of "quality."
- II. Natural spawning. The need here is for information transfer from Japanese scientists to U.S. scientists.
- III. Broodstock nutrition. Collaborative research would aid the understanding of the contribution of nutrition of the parents to the quality of their gametes, however we define that quality.
- IV. Cryopreservation of eggs. This is something that industry wants, but the panel identified it as high-risk research because of lack of previous success in this area.
- V. Selective breeding. Especially in the areas of disease resistance and reducing problems of inbreeding.
- VI. Larval rearing. The main areas of focus should be understanding the microbial ecology of rearing tanks and the replacement of live foods with formulated diets.
- VII. Disease.
 - A. Investigation of the potential for spread of diseases from aquaculture facilities to natural populations.
 - B. Work is specifically needed on diseases of cultured abalone and flounder and on mechanisms for better import controls on foreign seed.
 - C. Research and development of new diagnostic technology.
 - D. Research and development of new vaccine technology.
 - E. Research on disease prevention and treatment.

VIII. Recirculation systems.

- A. Engineering of more efficient systems.
- B. Biology and physiology of the organisms in the systems.
- C. Nutrition of the organisms in the system, especially to reduce the ammonia and solid waste outputs.
- D. Economics related to A-C above.

- IX. Nutritional requirements of "new" species. We still lack detailed knowledge of the nutritional requirements of many species that are in commercial culture.
- X. Development of culture techniques for new species, especially fry production technology. The list identified by the panel included: grouper, *Seriola*, tuna, true cod (Pacific), *Sebastes*, tautog, sea bass, haddock, and northern species of flatfish (sole, Pacific halibut, Atlantic halibut).

While the identification of research needs was relatively easy for this group, the identification of strategies and funding for collaboration was not. The UJNR meetings are an excellent way for scientists from the two countries to meet each other, but there should be more funding available on both sides for attendance at UJNR meetings. This panel discussion was a good way for the scientists to think about, and agree on, research needs and it would make sense for the UJNR Panel on Aquaculture to continue as a focal point for exchanges. Flounder research is a good example of a joint research project. Interested scientists can use existing programs for exchange (e.g., STA and JSPS post-doctoral fellowships, NSF and USDA programs, and Fulbright exchanges), but the group felt that the existing programs were insufficient for the kind of long-term collaboration that would be necessary to solve many of the problems identified above. New ideas and programs, probably involving additional government funding, will be required if significant collaborative efforts are to take place in addressing the above research priorities.

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Credits

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