

The 39<sup>th</sup> Scientific Symposium of UJNR Aquaculture Panel

October 25<sup>th</sup> – 26<sup>th</sup>, 2010

Kagoshima University Inamori Hall, Kagoshima

## The Present and Future of the Aquaculture Industry

### Aim of the symposium

Based on the goals of the third five-year-plan of FRA that will begin in 2011 and the NOAA and USDA strategic plans for aquaculture, the focus for this meeting will be to present and discuss issues concerning the history and role of aquaculture as well as future production systems and strategies used by each nation to promote aquaculture production, both from the standpoint of the farmer and the consuming public. The primary focus will be on problems faced by the aquaculture industries of the two nations and strategies and solutions to create competitive new and existing aquaculture industries. We will explore current aquaculture systems that are expanding and aquaculture systems that have the potential to expand in the future. We will consider the research needs to maximize the future potential of these industries by examining aquaculture production systems. Aquaculture systems include the whole process from spawning of a certain species to consuming the product including broodstock/hatchery, cultivation, harvest, processing and distribution as a commodity. From this exchange we expect to highlight key bottlenecks that need to be addressed in future meetings. In particular, we will propose a direction for our aquaculture industries and aquaculture research areas that are useful and necessary to promote effective consumer friendly industries that support our seafood culture and consumption. We will present and discuss issues about the history, role, and processes from producing to consuming, process of making a profit and how aquaculture can meet consumer needs.

### Program

Monday, October 25<sup>th</sup>, 2010

Registration 11 : 30 – 14 : 00

Opening remarks (Takaji Iida, Japan Panel Chair) ..... 13 : 00 – 13 : 10  
Welcome greeting (Tadahide Noro, Dean of the Faculty of Fisheries) ..... 13 : 10 – 13 : 20  
Aim of the symposium (Makoto Yamasaki, Deputy Secretary General) ..... 13 : 20 – 13 : 25

#### Session I . Overview of Aquaculture Research Policy

(Moderators: Walton Dickhoff, Hisashi Yokoyama)

1. Course of the Research for Sustainable Aquaculture in Japan  
Fuminari Ito (National Research Institute of Aquaculture, Fisheries  
Research Agency) ..... 13 : 30 – 13 : 48
2. Aquaculture Research Priorities and Opportunities 2010-2015 and beyond:  
a USDA and Interagency Perspective  
Jeffrey Silverstein (USDA, Agricultural Research Service) ..... 13 : 48 – 14 : 06
3. Current Policy of Aquaculture Industry and Research  
Mitsuyuki Hirai (Fisheries Agency, Ministry of Agriculture, Forestry and  
Fisheries) ..... 14 : 06 – 14 : 24

4. Aquaculture Policy and Research Priorities from the NOAA Perspective  
Robert N. Iwamoto (NOAA, Northwest Fisheries Science Center) ..... 14:24 – 14:42

Break ..... 14:42 – 15:02

### Session II. Aquaculture Industry Overview and Research Planning

(Moderators: Marty Riche, Takashi Iwasaki)

5. Aquaculture in North America: Present Status and Future Opportunities  
Paul G. Olin (UCSD, Scripps Institution of Oceanography) ..... 15:02 – 15:20
6. Overcoming Technical Barriers to the Sustainable Development of  
Competitive Marine Aquaculture in the United States  
John A. Hargreaves (Aquaculture Assessments LLC) ..... 15:20 – 15:38

### Session III. Techniques of Aquaculture Production

(Moderators: James Sullivan, Susumu Uji)

7. A. Challenge to Technology Development of the Year Round Egg Production  
in Kan-pachi Amberjack *Seriola dumerili*: Advanced Spawning Technique  
Kazuhisa Hamada (National Research Institute of Aquaculture, FRA)  
..... 15:38 – 15:56
8. Spawning and Larval Rearing of Yellowtail Amberjack (*Seriola lalandi*) in  
Southern California  
Kevin Stuart (Hubbs-SeaWorld Research Institute) ..... 15:56 – 16:14

Break ..... 16:14 – 16:34

(Moderators: Robert Iwamoto, Akiyuki Ozaki)

9. The Development of Aquaculture Techniques for Greater Amberjack  
(*Seriola dumerili*) Using Artificially Produced Seed : Technological  
Advancement of the Seed Production  
Hiroshi Hashimoto (Shibushi Station, National Center for Stock  
Enhancement, FRA) ..... 16:34 – 16:52
10. Success of Artificial Completion of the Japanese Eel (*Anguilla japonica*)  
Life Cycle  
Hiroshi Imaizumi (Shibushi Station, National Center for Stock  
Enhancement, FRA) ..... 16:52 – 17:10
11. Offshore Mussel Farming in Southern New England; Recent Results  
Scott Lindell (Marine Biological Laboratory, Woods Hole) ..... 17:10 – 17:28

Announcement ..... 17:28

Tuesday, October 26<sup>th</sup>, 2010

Registration 9:00 – 9:30

### Session IV. Management, Social and Economic Issues of the Aquaculture Industry

(Moderators: Paul Olin, Fuminari Ito)

12. Structural Problem of Fish Farming Industry in Japan  
Masaaki Sano (Faculty of Fisheries, Kagoshima University) ..... 9:20 – 9:38

13. The Political Economics of United States Aquaculture  
Gunnar Knapp (Institute of Social Economic Research, University of  
Alaska) ..... 9:38 – 9:56

**Session III. Techniques of Aquaculture Production; continued**

(Moderators: Jeffrey Silverstein, Mitsuyuki Hirai)

14. Fish Nutrition and Fish Health – Recent Progress in Japan –  
Shunsuke Koshio (Faculty of Fisheries, Kagoshima University) ..... 9:56 – 10:14
15. The Future of Aquaculture Feeds in the United States  
Michael B. Rust (Resource Enhancement and Utilization Technologies  
Division, Northwest Fisheries Science Center) ..... 10:14 – 10:32

**Break** ..... 10:32 – 10:52

(Moderators: Cheng-Sheng Lee, Tetsuro Shibuno)

16. Progress of DNA Marker-Assisted Breeding in Mariculture Finfish  
Akiyuki Ozaki (National Research Institute of Aquaculture, FRA) ..... 10:52 – 11:10
17. Biotechnology for Competitive Aquaculture  
Walton W. Dickhoff (Resource Enhancement and Utilization Technologies  
Division, Northwest Fisheries Science Center) ..... 11:10 – 11:28
18. Development and Evaluation of Real-time Loop-Mediated Isothermal  
Amplification Methods for the Rapid Detection of Penaeid Viruses  
Tohru Mekata (National Research Institute of Aquaculture, FRA) ..... 11:28 – 11:46

**Lunch Break** ..... 11:50 – 14:00

————— Poster Session —————

**Session V. Supporting Techniques of Aquaculture**

(Moderators: Scott Lindel, Shusaku Kadowaki)

19. Bioindicator and Biofilter Function of *Ulva* spp. in Fish Farm Environments  
Hisashi Yokoyama and Yuka Ishihi (National Research Institute of  
Aquaculture, FRA) ..... 14:15 – 14:33
20. Inland Marine Fish Culture in Low-Salinity Recirculating Aquaculture  
Systems  
Marty A. Riche (U.S. Dept. of Agriculture, Agricultural Research Service)  
..... 14:33 – 14:51
21. Landbased Poly-Eco-Aquaculture of Abalone and Seaweed in the Small  
Scale Recirculating System Using the Recycled Frozen Container  
Mohammad M. Rahman (Faculty of Fisheries, Kagoshima University)  
..... 14:51 – 15:09

**Break** ..... 15:09 – 15:24

(Moderators: Kevin Stuart, Makoto Yamasaki)

22. Techniques for Current Control in Tank; Lessons Learned from Rearing  
Larvae of Red Spotted Grouper *Epinephelus akaara*

Takashi Iwasaki (National Research Institute of Aquaculture, FRA) ···	15:24 – 15:42
23. Pond-to-Plate Analysis of the US Farm-Raised Catfish Industry	
Terrill R. Hanson (Department of Fisheries and Allied Aquacultures, Auburn University) ···········	15:42 – 16:00
24. Beneficial Meat Quality Induced by Diets in Yellowtail	
Itaru Shioya (Central research laboratory, Nippon Suisan Kaisha Ltd.) ··········	16:00 – 16:18
<b>Break</b> ···········	16:18 – 16:33

**Session VII. Stock Enhancement**

(Moderators: Gunnar Knapp, Tohru Mekata)

25. A Multi-Year Collaborative Effort to Evaluate the Impact of Acclimation Cage Conditioning for Stocking Japanese Flounder, <i>Paralichthys olivaceus</i> , in Wakasa Bay, Japan	
Michelle L. Walsh (University of New Hampshire) ···········	16:33 – 16:51
26. Acoustic Conditioning and Ranching of Black Sea Bass <i>Centropristis striata</i>	
Scott Lindell (Marine Biological Laboratory, Marine Resources Center, Woods Hole) ···········	16:51 – 17:09
Closing remarks (Michael B. Rust, U.S.A. Panel Chair) ···········	17:09 –
Announcement ···········	– 17:20