

# SEAFDEC AQD Matters

In-house newsletter of the SEAFDEC Aquaculture Department, Tigbauan, Iloilo

## AQD Chief attends inauguration at MOAP

**A**QD Chief Dr. Joebert Toledo attended the inauguration of Misamis Occidental Aquamarine Park's (MOAP) multi-species hatchery last January 5. This hatchery is a joint project of the Misamis Occidental provincial government, Australian government and the Department of Agriculture through SEAFDEC/AQD.

AQD was tasked to:

- (1) provide technical support,
- (2) provide science-based aquaculture technologies, and
- (3) supervise the project. Also, AQD's engineering section designed the multi-species hatchery.



Clockwise: AQD Chief Dr. Joebert Toledo with Agriculture Secretary Arthur Yap, President Gloria Macapagal Arroyo with Misamis Occidental Governor Loreto Ocampos & Secretary Yap during the ribbon cutting ceremony, and AQD Chief with BFAR Regional Director Mr. David Ignacio & Mr. Jojo Hilomen in front of MOAP's multi-species hatchery

## Australian embassy sets meeting with AQD

**M**r. Stephen Scott, Minister and Deputy Head of Mission of the Australian embassy visited AQD on January 22, meeting with AQD Chief Dr. Joebert Toledo, Research Head (RD) Dr. Evelyn Grace DJ-Ayson, and Administration & Finance Head (AFD) Atty. Jerry Opinion.

Mr. Scott was mostly interested to know about AQD's participation in the multi-species hatchery project in Misamis Occidental. He inquired about the contributions of AQD to the project, how the project started, what species will be



Australia's Deputy Head of Mission Mr. Stephen Scott (2nd from left) discusses with AQD Chief Dr. Joebert Toledo while AFD Head Atty. Jerry Opinion (left) and RD Head Dr. Evelyn Grace DJ-Ayson (right) listen

raised in the hatchery, and what benefits will be gained by the community.

The visit of Mr. Scott to AQD is part of the Australian embassy's scheduled appointments to

representatives of Philippine government agencies, academe, international and non-governmental organizations to discuss local politics, security, and development issues.

## NCSU professor visits AQD

**N**orth Carolina State University (NCSU) professor Dr. Russell Borski visited AQD last January 23-27 to discuss the progress of the existing collaborative project between NCSU and AQD entitled *Alternative feeding strategies to improve milkfish production efficiency in the Philippines*. Dr. Borski is the Principal Investigator and AQD RD head

Dr. Evelyn Grace DJ-Ayson is the host country Co-principal Investigator for the project.

On his first day at AQD, Dr. Borski together with Dr. Ayson went to Igang Marine Station to see the

site of the milkfish cage experiments which will be started this February. The next day, he met with seaweed farmers of Sibunag, Guimaras. These farmers were the beneficiaries of a previous workshop (which is also part of the collaborative project) conducted by AQD's Dr. Anicia Hurtado. Dr. Borski also surveyed the seaweed farms in Sibunag.

Dr. Borski had a meeting with Dr. Ayson, Ms. Milagros Castañón (Devcom head), and Ms. Kaylin Corre (OIC TID head) on the 26th to discuss podcasting as a new extension tool. During the meeting,

Dr. Borski also showed his initial efforts on tilapia book review podcast.

On that day, Dr. Borski also had a dinner meeting with AQD Chief Dr. Joebert Toledo, Dr. Ayson, Ms. Corre, and Dr. Ma. Junemie Hazel Ramos (Aquatic Ecology Program Leader) at Breakthrough.

Lastly, Dr. Borski conducted a research seminar on *Compensatory growth: mechanisms and applications for improving production efficiency of fish* (see summary on page 3) at the RD AV room on the 27th.

## BFS senior staff visits ABOT client

**B**FS senior staff Mr. Ruel Eguia visited the brackishwater pond of ABOT client Mr. Chito Nepomuceno at Magallanes, Sorsogon last January 22-23.

The purpose of Mr. Eguia's visit was to evaluate: (1) fish-pond infrastructure and

(2) preparation activities for the farm site. Mr. Nepomuceno is planning to culture milkfish and seabass and considering culturing tiger prawns as well.

Upon AQD's advise, Mr. Nepomuceno replaced his pond's primary and secondary wooden gates,

fabricated screens and wooden slabs, cleared the dikes of weeds, levelled the pond bottom, readied the ponds for fertilization and liming, repaired eroded dikes, and positioned the pond's main gate strategically.

- FROM THE REPORT OF RV EGUIA

## AQD joins international symposia on catfish aquaculture...

**A**QD researcher Ms. Antonieta Evangelista presented a paper on "Growth and survival of Asian catfish *Clarias macrocephalus* (Gunther) fry reared at different stocking densities and feeding regimes in Laguna de Bay, Philippines" in the international symposium in Can Tho University, Can Tho City, Vietnam. AQD's Mr. Ruel Eguia is also among the conference's participants.

The *Catfish aquaculture in Asia: present status and challenges for sustainable*



Mr. Ruel Eguia (rightmost) and Ms. Antonieta Evangelista (3rd from right) with other Filipino participants

*development* conference was held last December 5-7, 2008.

The conference organizer was Can Tho University in collaboration with NACA (Network of Aquaculture Centres in Asia-Pacific),

ASEM (Asia-Europe Meeting) Aquaculture Platform, and PhysCAM Project of DANIDA (Danish International Development Agency). The government and other local institutions in Vietnam also supported the event.

In joining the conference, AQD participants gained knowledge and gathered relevant information on the economic importance of catfish aquaculture. It also expanded AQD's network of contacts for future collaborations.

- FROM THE REPORT OF AD EVANGELISTA

### Contributions from AQD employees are always welcome!

Please send text separately from your JPEG photos (300 dpi or better). Devcom also uses these materials to update the AQD website and as SEAFDEC Newsletter articles.

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Thanks to our colleagues who provided facts, images and feedback!

## ... fisheries biology...

**B**FS senior staff Dr. Maria Rowena Eguia, Mr. Ruel Eguia, and Ms. Antonieta Evangelista participated in the international symposium on *Current research trends in fisheries biology* last January 20. The conference was held at the Philippine Carabao Center, CLSU (Central Luzon State

University), Nueva Ecija.

The purpose of the conference is to disseminate results of collaborative studies between CLSU and the National Taiwan University under the Microsatellite and Otolith (MO) project.

The topics presented in the conference were mostly on population genetics as

applied in the conservation and management of freshwater fishes.

In joining this event, BFS participants were able to: (1) gather relevant concepts and techniques that can be applied to BFS's current research projects, and (2) meet researchers who are interested in collaborating with AQD.

- FROM THE REPORT OF MRR EGUIA

## ... and marine fish disease

**D**r. Edgar Amar of the Fish health section, acted as chair and moderator of the ASA-IM (American Soybean Association-International Marketing) sponsored technical seminar on *Marine fish disease: prevention, maintenance, identification, and treatment*. Dr. Gilda Lio-Po (also from

the Fish health section) on the other hand, gave a lecture on *Presumptive diagnosis of fish mortality outbreaks at the farm-level*.

The seminar which is part of ASA-IM's "Soy in Aquaculture Program" in the Philippines was held in Iloilo Business Hotel, Iloilo City last December 2, 2008.

Other AQD participants of the seminar were Dr. Mae Catacutan, Ms. Kaylin Corre, and Ms. Delia Tubo. Some AQD staff were also present as observers.

In participating in this event, AQD was also able to sell its books and manuals.

## Research seminars for January



**Improvement of broodstock and larval diets for tropical fish**  
**Part 1: Importance of squid ingredients in broodstock diets**  
by *Dr. Hiroshi Ogata*  
SEAFDEC/AQD

January 15

Broodstock diet of mangrove red snapper with squid meal showed superior performance compared to white fish meal based on percentage of: (1) fecundity and (2) normal eggs produced. The study also shows that mangrove red snapper broodstock fed with diet having squid meal improved: (1) egg production, (2) hatching rate, and (3) cumulative survival rate. On the other hand, freshwater prawn broodstock fed with squid oil-corn oil combination showed higher fecundity and increase in production & survival rate of larvae than those fed with corn oil alone. Hence, the researchers recommend feeding of squid or squid meal diets to broodstocks.

**Part 2: The distribution of arachidonic acid in mangrove and coral reef organism**

January 22

Arachidonic acid (ArA) is an essential fatty acid but a minor component especially in cold and temperate water species. However, it was found out that ovaries, eggs, and fry of tropical fishes like mangrove red snapper, rabbitfish, coral trout and striped jack have intermediate or high ArA levels and relatively low EPA (eicosapentenoic acid) levels. Moreover, the result also showed that ArA is a major fatty acid component in mangrove and coral reef organisms. Hence, it is possible that dietary ArA is essential to improve egg production and larval quality of tropical fishes. The researchers proposed 3.5 of ArA/EPA ratio and 2.1 of DHA/ArA ratio as the optimum ratios of broodstock diets in tropical fish.



**Compensatory growth: mechanisms and applications for improving production efficiency of fish**  
by *Dr. Russell Borski*  
NCSU

January 27

Compensatory growth is a period of growth acceleration that occurs when animals are alleviated of a previous growth-stunting condition. The study on hybrid striped bass show that restoration of normal feeding and/or temperature following growth-stunting conditions (i.e. feed restriction and/or low temperature) elicits a robust compensatory growth response. It is accompanied by increase in growth rate, increase in appetite, and improved feed conversion. Thus, compensatory growth may be used as basis to modify the feeding protocol to reduce production cost.

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**The role of osmolyte transporters and heat shock proteins in adaptation of Atlantic salmon to selected stressors**  
 by *Dr. Jacques Zarate*  
 University of Rhode Island

Organic osmolytes, including taurine and betaine, are involved in adaptation by a variety of organisms to hyperosmotic conditions encountered during the accumulation of wastes. A study was conducted to determine if Atlantic salmon possess genes that encode similar transport proteins required to import these osmolytes into their cells. The result shows that taurine and its transporter has a role in hyperosmotic adaptation in Atlantic salmon while betaine transporter has none.

Heat shock proteins (hsp) are responsible in helping fold newly made proteins. They also act as molecular chaperones. Hsps are induced under certain forms of stress (including heat stress); hence, are used as indicators of general stress in this study. Atlantic salmon were exposed to common forms of hatchery stress (i.e. cold stress, crowding, and capture stress) and responses of hsp30, 70, and 90 were measured. The result shows that no specific betaine transporter was identified in the salmon species studied.

## Chief invites UPV to AQD New Year Party

**T**o strengthen ties with the University of the Philippines Visayas (UPV), AQD Chief Dr. Joebert Toledo invited UPV officials to the AQD New Year party held at AQD's Executive House last January 9. UPV Chancellor Dr. Minda Formacion and most of UPV's senior staff were present during the gathering. AQD is also well represented by division & section heads and researchers.



Counterclckwise: AQD Chief Dr. Joebert Toledo welcomes UPV officials to the party, UPV Chancellor Dr. Minda Formacion in her turn thanks the Chief, and AQD Chief introduces AQD Deputy Chief Dr. Hiroshi Ogata to some UPV senior staff; leftmost is College of Fisheries Dean Dr. Carlos Baylon



AQD divas: Mrs. Reiko Ogata (top) sings a Japanese song, and Dr. Fe Dolores Estepa & Dr. Emilia Quinitio (left) sing hit songs of the '80s

## CONGRATULATIONS to...

Ms. Sheila Mae Santander (AQD's associate researcher) who tied the knot with longtime beau Mr. Erwin De Leon last January 31 at the Sto. Niño de Arevalo Parish, Arevalo, Iloilo City. AQD Chief Dr. Joebert Toledo, IMS head Mr. Albert Gaitan, and AQD scientist Dr. Mae Catacutan are among the principal sponsors.

Mr. Renato Agbayani (TID Head) who is now a proud Lolo of baby Zoey. "One of the tasks of Lolo Rene is to teach Zoey how to dance the boogie and swing," says Mr. Agbayani.



Baby Zoey cuddled by Lolo Rene with Mommy Renali (left) and Lola Lita (right)

## New year's wishes...

I resolve to accept things I can't change.

-Elvi Nemiz, Library

I wish that my family will receive more blessings... good health... and a peaceful country

-Dofra Tupas, Medical & Dental Services Unit

Despite the odds, I'm still hoping for the best this year... and the years to come.

-Emilio Gepana, Security Unit

Tighten my belt: a 25-inch waistline and a 40% reduction on daily food budget.

-Dianne Hope Tormon, Socioeconomics section

We wish that this year would be a prosperous one & maka-graduate kami. We also wish for more achievements para sa SEAFDEC

-OJTs from WVVSU

I wish that the new year will make us a little wiser, find us a little happier, help us to be a little more peaceful, and teach us to be a lot more caring. May we set aside our need to be better than others and find joy in being a part of the people. I also wish everybody good health, better friendship, and more love.

-Janelli Garibay, Fish World

May this year be a great year for us and for our families. May this year lead to more opportunities for us to do things we want to do in ourselves, in our jobs and in our families. I wish you all the good things in life with peace of mind, good health condition and most of all God's grace and wisdom. God bless us all!

-Joseph Laranja Jr., TVDD