

SEAFDEC AQD Matters

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

AQD and FFRC/CAFS renew agreement

AQD and the Freshwater Fisheries Research Center, Chinese Academy of Fishery Sciences (FFRC/CAFS) extended their partnership with the signing of a new memorandum of understanding (MOU) which will take effect in the next two years.

AQD Chief Dr. Joebert Toledo and FFRC/CAFS Director Dr. Xu Pao signed the MOU last May 14 in Xiamen, China during the 20th NACA (Network of Aquaculture Centres in Asia-Pacific) Governing Council Meeting.

The agreement calls for both parties to conduct research studies on feed development and disease control, genetic improvement



Shaking hands over the extension of their partnership are AQD Chief Dr. Joebert Toledo (right) and FFRC's Dr. Xu Pao (left) with NACA's Dr. Sena De Silva (middle) as witness

of prawn and tilapia, water environment for aquaculture activities, and socioeconomic.

Moreover, details on training activities and staff exchanges from both institutions are also covered by the agreement.

Further, during the NACA council meeting, elected meeting chair Deputy Director General Mr. Lu Xiaoping of the Department of International

Cooperation, Ministry of Agriculture informed the attendees that the Chinese government has established a US\$ 30 million trust fund to assist developing countries in the next five years in setting up demonstration facilities in agriculture and aquaculture.

He then suggested that NACA explore opportunities to apply for the funds in behalf of member governments.

AQD advances to phase 2 of Guimaras milkfish training

Around 30 fisherfolk of Brgy. San Antonio, Nueva Valencia, Guimaras participated in the first in a series of training workshops under the *Season-long training course on milkfish cage culture - Phase 2* that was conducted by AQD last May 20-21 at Roma Beach Resort in San Antonio.

The two-day training focused on proper handling after harvest, value-addition and marketing of milkfish.

The participants were taught deboning techniques and preparing marinades.

The activity was facilitated by AQD's Training Section with Ms. Rose Mueda (researcher) and Ms. Rosanna Alama (laboratory assistant)



Ms. Rose Mueda lectures on proper handling after harvest and value-addition of milkfish



Ms. Rosanna Alama demonstrates deboning of milkfish



Participants learn how to debone



Ms. Rose Mueda assists the participants in preparing the marinade



Participants learn how to prepare the marinade



Participants sun-dry their marinated milkfish



San Antonio Brgy. Captain Mr. Danilo Tagulalap (above) speaks on the benefits of the training to the barangay

AQD advances to phase 2 (from page 1)

from the Institute of Fish Processing Technology of the University of the Philippines Visayas.

AQD's Igang station head Mr. Albert Gaitan welcomed the participants while AQD's Training section head Ms. Kaylin Corre explained the course description, objectives, and expected output of the training.

The training course is part of a collaborative project of Petron Foundation Inc. with CITI Foundation and SEAFDEC/AQD on *Mariculture livelihood program for Guimaras fisherfolk*.

In related development, AQD's Training and Information Division Head Mr. Renato Agbayani met with Petron Foundation Inc. Executive Director Ms. Marilou Erni on May 30 in Makati City to discuss the reallocation of phase 1 budget (around PhP 2.14 million) which will be used for: (1) distribution of phase 1 income to participating fisherfolk association, (2) technical training and efficient transfer of technology to the beneficiaries, (3) evaluation of socioeconomic benefits of the project and assessment of the coastal environmental impacts

of the fish cage culture, and (4) social preparation and community organizing.

They also discussed about the proposed budget for phase 2 (around PhP 2.19 million) which will be allotted for: (1) construction of one unit of fish cage for San Antonio fisherfolk, (2) operating expenses for one production run for the 4 barangays of Nueva Valencia namely Igang, Magamay, Sto. Domingo, and San Antonio, (3) purchase of four units motorized boats, (4) community consultations, and (5) SEAFDEC/AQD administrative overhead and technical supervision.

AQD moves on to phase 2 in ICDSA Northern Samar

AQD and its partners Action for Community Empowerment (ACE) Association Inc. and Bureau of Fisheries and Aquatic Resources (BFAR) made plans for the phase 2 of the *Institutional capacity development for sustainable aquaculture (ICDSA)* project in Northern Samar entitled *Mariculture enterprise development project*. The meeting was conducted May 27-29 in Catarman, Northern Samar.

The partners also assessed the progress of the nursery and grow-out of the first phase - *Enhancing adoption of mud crab production technologies (nursery, grow-out, and fattening)*. The target survival rate of 40% at the nursery was met at the three sites. Lao-ang, Pambujan, and Rosario had 46%, 70.18%, and 54% survival rate respectively.

Phase 1 activities for the remaining months of this



AQD scientists Dr. Mae Catacutan demonstrates feed preparation to the trainees (left) and Dr. Emilia Qunitio (right) handles the pond feeding practicals in a grow-out site at Camparanga, Pambujan



year and preparation of an illustrated manual were also discussed during the meeting.

Other than the project meeting, AQD scientists Dr. Mae Catacutan and Dr. Emilia Qunitio conducted a training entitled *AquaFeed: feed formulation and preparation* at Pambujan as requested by its local government and pond operators. The training is part of a season-long training course.

The project is funded by the Australian Centre for International Agriculture

Research (ACIAR) and the Community Agricultural Technologies Project (CATP).

Lastly, AQD specialist Ms. Didi Baticados also joined the group to gather data about her Government of Japan-Trust Fund study on the socioeconomic aspects of mud crab culture while AQD Devcom section head Ms. Milagros Castaños and information assistant Mr. Rommel Guarin documented the team's activities.



AQD TID head Mr. Renato Agbayani facilitates the discussion on phase 1 output and phase 2 plans (above)

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Hatchery under construction

The construction of *Marine fish and abalone backyard hatchery* near FishWorld started middle of this month. The hatchery is scheduled to be inaugurated in July.



The hatchery (encircled in red) is situated at the left side of FishWorld

The backyard hatchery has an area of 896 m² with gravel bedding and perimeter fence made of bamboo posts and hogwire.

The hatchery area devoted to marine finfish will have 6 units of 10-ton circular larval rearing tanks (LRT), 10 units of 10-ton circular natural food culture tanks (NFT), and 12 units of 2-ton circular nursery tanks (NT). LRT and NFT are made of rubberized canvas with marine plywood support while NT are made of concrete.



On-going construction of the *Marine fish and abalone backyard hatchery*



RV HOSICLOS

The abalone area on the other hand will have 6 units of 10-ton rectangular settlement tanks, 4 units of 5-ton rectangular diatom culture tanks, and 4 units of 10-ton rectangular secondary nursery tanks. These tanks are made of rubberized canvas with bamboo frames/support.

In addition, each hatchery area has its own independent pre-filtered seawater supply system with 2 HP centrifugal pumps and 1 HP roots blower for aeration. The hatcheries also have concrete drain pits and main canal for harvesting and drainage.

Furthermore, the backyard hatchery has a common harvest and work areas, storeroom, equipment room, and roof structure.

The backyard hatchery aims to produce and sell reasonably priced abalone juveniles and marine fish fry and fingerlings to grow-out operators while showcasing AQD technologies.

AQD joins PSM annual convention...

AQD scientists Dr. Gilda Lio-Po and Dr. Rolando Pakingking Jr, researcher Ms. Gregoria Pagador, and technical assistant Mr. Norwell Brian Bautista participated in the *38th Annual convention and scientific meeting of the Philippine Society for Microbiology Inc. (PSM)* last May 14-15 at the Hyatt Hotel and Casino, Malate, Manila.

During the event, Dr. Pakingking presented a paper on *Expression of neutralizing-antibodies and in-vivo suppression of betanodavirus replication in Asian seabass, Lates calcarifer Bloch, vaccinated*



Dr. Rolando Pakingking Jr (leftmost) is conferred a *Diplomate in Microbiology*. To his right are Ms. Irene Papa (University of the Philippines Los Baños research associate) also conferred a *Diplomate* and Dr. Windell Rivera (University of the Philippines Diliman, Institute of Biology professor) conferred as *Fellow*

with inactivated betanodavirus while Mr. Bautista presented a paper on *Mass mortality of hatchery-reared pompano (Trachinotus blochii) associated with viral nervous*

necrosis in the Philippines (see related story on page 5).

Ms. Pagador on the other hand, presented a poster entitled *Parasite fauna of bivalves in the Philippines*.

... and National symposium & workshop on algae

AQD visiting scientist Dr. Anicia Hurtado; researchers Ms. Milagros de la Peña, Ms. Antonietta Evangelista, & Ms. Ma. Rovilla Luhan; senior technical assistants Ms. Alma Lazartigue & Ms. Annie Franco; and junior technical assistants Ms. Hananiah Sollesta & Ms. Iris Ann Borlongan attended the *2nd National symposium and scientific meeting on algal trends and opportunities* of the Philippine Phycological Society held at the SEARCA Building of the University of the Philippines Los Baños (UPLB), Laguna last April 13.

In the symposium, Ms. dela Peña delivered a plenary lecture on the *Application of microalgae in aquaculture*. Dr. Sung-Min Boo from Chungnam National University, Daejeon, Korea, on



Clockwise, from top left: (L-R) Ms. Ma. Rovilla Luhan, Dr. Anicia Hurtado, Ms. Iris Ann Borlongan, Ms. Annie Franco, Ms. Antonietta Evangelista, and Ms. Alma Lazartigue at the symposium venue; Ms. Alma Lazartigue during one of the workshop activities; and the workshop participants

the other hand, discussed the different species of macroalgae in Korea and the importance of phylogeny in identifying algal species.

The symposium-meeting was followed by a two-day training on *Molecular techniques for algae*. Ms. Lazartigue, Ms. Sollesta, and

Ms. Borlongan were AQD's participants in the workshop.

The workshop included laboratory activities on the extraction of deoxyribonucleic acid (DNA), polymerase chain reaction (PCR), purification and editing, alignment of sequences and reconstruction of phylogenetic tree.

AQD meets with CHED

AQD's training & information senior staff Mr. RF Agbayani, Ms. KG Corre, and Ms. MT Castañeros met with Commission on Higher Education (CHED) Region 6 representatives on May 22 to discuss the

possibility of including AQD's publication *Handbook on rural aquaculture* among the required textbooks for fisheries schools in Western Visayas.

They were well-received by CHED's program specialist Dr. Rex Casiple and education

supervisors Dr. Gregorio Perez Jr and Dr. Alan Lina who plan to invite AQD back in October to present the *Handbook on rural aquaculture* to an organization of fisheries schools that will meet at that time.

Mr. Cabalum joins AQD family



Mr. Rene Cabalum, a resident of Tigbauan, Iloilo officially joined AQD last May 4 as the Human Resources Management Section Head.

He is completing his Doctorate degree in Business Management at the Central Philippine University. He finished his Masters degree

in business management, BS Business Administration major in Accounting, and secondary education at the University of the Philippines Visayas.

Mr. Cabalum has an extensive work experience: as bank appraiser for 16 years at BPI (Bank of the Philippine Islands),

a professor in marketing and management courses of various universities in Iloilo, a marketing and enterprise development specialist of Taytay sa Kauswagan Inc., and a practicing consultant in financial and business management, strategic planning, and marketing.

New Publications



Seed production and grow-out of mud crab (*Scylla paramamosain*) in Vietnam, a 40-page manual on the culture techniques of mud crab abundant in Vietnam

Php 200



Philippine freshwater prawns (*Macrobrachium* spp.), a 60-page manual about the distinguishing features, biology, habitat, distribution, and economic importance of 22 notable species of *Macrobrachium* in the Philippines

Php 300



Research collaboration @ SEAFDEC/AQD, a 2-page flyer on AQD's research priorities & facilities, flow chart for proposals, and sample research topics

Can be downloaded from: www.seafdec.org.ph

AQD holds supervision and team development seminar



AQD Chief Dr. Joebert Toledo and AFD Head Atty. Jerry Opinion give out the seminar certificate of appreciation to the resource person Mr. Rolando Bermudo Jr

AQD organized a *Supervision and team development seminar* for its supervisors and head of offices at the TID Conference Room last May 28-29. The activity was facilitated by AQD's Human Resources Management Section.

The seminar's resource person was Mr. Rolando Bermudo Jr, the human resource senior manager of Pepsi-Cola Products Philippines Inc. (Iloilo-Bacolod Plants).

The activity aimed to develop teamwork among AQD employees and to enhance leadership skills of AQD supervisors.

AQD Deputy Chief Dr. Teruo Azuma and around 20 AQD supervisors attended the two-day seminar.



AQD Deputy Chief Dr. Teruo Azuma (above) welcomes the seminar's participants and AQD Chief Dr. Joebert Toledo at the closing ceremony (right)



Mr. Rolando Bermudo Jr (inset) explains the mechanism of the seminar's teamwork exercise; AQD staff including Deputy Chief Dr. Teruo Azuma did the ping pong ball relay with gusto

Research seminars @ AQD



Mr. Norwell Brian Bautista

Mr. Norwell Brian Bautista presented a paper last May 12 at AQD on *Mass mortality of hatchery-reared pompano (Trachinotus blochii) associated with viral nervous necrosis in the Philippines* which he co-authored with Dr. Rolando Pakingking Jr, Dr. Evelyn Grace DJ-Ayson, Ms. Ophelia Reyes, and Dr. Clarissa Marte.

He discussed the probable cause of the mass mortality of pompano fingerlings observed at AQD hatchery which may have been piscine betanodavirus.

This virus - also the causal agent of viral nervous necrosis (VNN) - was found in the tissue of dying pompano fingerlings.

To verify their findings, the researchers injected healthy pompano juveniles with betanodavirus, and this did result in high mortalities.

They recommended that a fish hatchery must: (1) screen spawners for VNN,

(2) disinfect eggs, (3) monitor larval health and quality, and (4) practice appropriate biosecurity measures.

On the 20th of May, Dr. Yukio Maeno of JIRCAS (Japan International Research Center for Agricultural Sciences) presented a paper on the *Pathological studies of infectious diseases in marine fish and shellfish*.

He said that the occurrence of viral, bacterial, and other infectious diseases in the culture of marine fish and shellfish continues to be a major problem in mariculture.

For instance, the population of pen shell *Atrina pectinata* in Ariake Bay in Japan has markedly decreased. JIRCAS is now studying the relationship between viral infection and mass mortalities in pen shell stocks in Ariake.

The results of the experimental infection and transplant trials revealed that a virus is most likely the cause of the mass mortalities.

However, there seems to be a difference in mortality rate between the fishing ground outbreaks and the experimental infection. Dr. Maeno noted that this may be due to the combined effects of poor ambient environment, reproductive status of pen shells, and other factors.

Lastly, on the 27th of May, former AQD researcher Dr. Eduardo Leñaño (now connected with the Department of Aquaculture, National Taiwan Ocean University) presented a paper entitled *Thraustochytrids: ecological role and potential commercial use*.

Dr. Leñaño said that thraustochytrids are non-photosynthetic, heterotrophic marine microbes which are commonly isolated from a wide range of marine and estuarine habitats.

He describes these marine microbes as mostly *saprobies* (obtain nutrients from dead or decaying >> page 6

Research seminars @ AQD

(from page 5)

plant or animal matter) or *epibionts* (live on the surface of another living organism). He also said that the most common genera isolated from marine and estuarine habitats are *Thraustochytrium* and *Schizochytrium*.

Thraustochytrids play an

important role in the degradation of plant materials in mangrove habitats since it converts leaf debris into nutritious forms for consumption of organisms in higher trophic levels.

Moreover, these marine microbes has a

biotechnological potential since it contains a high amount of docosohexaenoic acid (DHA). These have also garnered the interest of aquaculturists because thraustochytrids are used as food supplements in the livestock industry.

Palaro 2009 begins

AQD Palaro 2009 with a theme *AQD promotes a healthy lifestyle through adequate fish diet and physical fitness* officially opened last May 22. The event started with a fun walk from Tigbauan Plaza to the main station. AQD divided itself into two teams: Alimango and Lapu-lapu.

A *boodle fight* inspired breakfast at the Cafeteria grounds followed.

Boodle fight is a military style of eating where food is laid out on banana leaves atop long tables, and eaters use their bare hands.

During the opening program AQD Chief

Dr. Joebert Toledo said that AQD wishes to promote physical fitness and to develop sportsmanship among employees.

The cheering competition and parlor games came next with both teams giving their best shot to outdo each other.



Palaro streamer bearers Ms. Dianne Hope Tormon and Dr. Relicardo Coloso



AQD employees during breakfast at the Cafeteria grounds



Alimango vs. Lapu-lapu the competition begins...



From top: Cheer dance, food relay, rice relay, and going to the market



Clockwise: AQD Chief Dr. Joebert Toledo lights the torch after the opening ceremony, AQD Deputy Chief Dr. Teruo Azuma leads the recitation of the Oath of Sportsmanship, and Palaro committee chair Dr. Leobert dela Peña declares the Palaro open