



AQD Matters

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

AQD scientists conduct fish health training in Cambodia

AQD scientists Dr. Gilda Lio-Po and Dr. Rolando Pakingking, Jr. were tapped to be the resource persons in the Government of Japan Trust Fund (GOJ-TF) sponsored basic training on freshwater and marine fish health management in Cambodia.

The training was held September 22-24 for freshwater fish and September 25-27 for marine fish. Participants are mostly fisheries officers of the Department of Fisheries (DOF) of Cambodia.



The goal of the training sessions is to provide participants with theoretical and practical knowledge on: (1) signs and epizootologies of economically-important freshwater and marine fish diseases, (2) evaluation of fish epizooties, (3) submission of diseased fish samples for diagnosis, and (4) basic laboratory skills for detection of viral, bacterial, and parasitic pathogens.

- FROM THE REPORT OF G LIO-PO

G LIO-PO



L-R: Dr. Lio-Po, Mr. Srun Lim Song and Dr. Pakingking during the opening ceremony

Top: Dr. Lio-Po explaining to trainees on how to evaluate the results of bacterial count
Bottom: Dr. Pakingking giving instructions to a trainee on the proper excision of fish organs for viral/bacterial examination

JIRCAS senior researcher visits AQD

JIRCAS (Japan International Research Center for Agricultural Sciences) senior researcher Dr. Satoshi Watanabe visited AQD last October 28 to 31 to discuss the feasibility of a research project on co-culture of shrimp and sea cucumber in collaboration with SEAFDEC.

AQD extended help to Dr. Watanabe thru the Deputy Chief Dr. Ogata in gathering relevant information. Dr. Watanabe spent his first day at AQD touring the hatchery of the UPV-DOST sea cucumber seed production and stock enhancement project (a collaboration with SEAFDEC and GOJ) together with Dr. Ogata and Ms. Rema Sibonga, the project's research assistant.



Courtesy call on the Mayor of Concepcion, the Hon. Betsy Salcedo (seated at the center). With her are JIRCAS' Dr. Satoshi Watanabe and AQD Deputy Chief Dr. Hiroshi Ogata. Standing L-R are AQD's Mr. Steve Garibay, Dr. Vern Alava, Dr. Fe Estepa, and Ms. Mercedes Maceren with Ms. Emelinda Abian, Environment Management Specialist of Concepcion (2nd from left).

Next, Dr. Watanabe with Dr. Ogata and some AQD staff went to Talotoan and other nearby islands in Concepcion, Iloilo last October 30 to observe and gather data on the natural habitat and existing

species of sea cucumber in the area. On the 31st of October, Dr. Watanabe, Dr. Ogata and Mr. Garibay went to Igang Marine Station where further data was gathered on the sea cucumber project.



AQD joins international symposia on World Fisheries...



Dr. Eguia with Dr. Kanno of the Onagawa Field Science Center guiding her on the use of the ABI 3130 sequencer used in analyzing shrimp samples from the Philippines during her sidetrip.

AQD continues to actively participate in both local and international conferences, workshops, and other relevant gatherings held recently.

The most current of which was the *World Fisheries Congress* held last October 19-24 in Yokohama, Japan wherein AQD Chief Dr. Joebert Toledo, Dr. Ma. Rowena Eguia and Dr. Edgar Amar presented papers on “Institutional capacity development for sustainable aquaculture and fisheries: strategic partnerships with local institutions,” “Research initiatives on the domestication and genetic

MRR EGUIA



AQD representatives (L-R) Mr. AC Fermin, Dr. MRR Eguia and AQD Chief JD Toledo with Dr. Melba Reantaso of FAO

improvement of freshwater prawns (*Macrobrachium* spp.) in the Philippines,” and “Immunological approaches for preventive management of WSSV in shrimp *Penaeus monodon*” respectively. Mr. Armando Fermin on the other hand presented a

poster entitled “Donkey’s ear abalone, *Haliotis asinina* (L): hatchery, aquaculture, and prospects of sea ranching in the Philippines.”

AQD participation was made possible through the support of GOJ-TF.

- FROM THE REPORT OF MRR EGUIA

... Fish Pathology...

Dr. Leobert de la Peña and Dr. Edgar Amar of the Fish health section attended the 5th International Symposium of the Japanese

Society for fish pathology with the theme *The role of fish pathology in sustainable aquaculture* held October 18-19 at the University of Tokyo.

During this event, Dr. de la Peña presented a poster on the multiple viral infections in the wild black tiger shrimp in the Philippines.

- FROM THE REPORT OF LD DE LA PEÑA

... Small-scale Fisheries...

Ms. Didi Baticados and Dr. Nerissa Salayo of the Socioeconomics section were AQD’s representatives to the Global Conference on Small-scale Fisheries last October 13-17 in Bangkok, Thailand. The said conference was organized by FAO-Rome in collaboration with the host Government of Thailand and its Department of Fisheries, SEAFDEC and the World Fish Center. The key issues discussed during the Conference’s panel plenary and work group presentations include social and economic development and human rights issues, governance, policy processes and systems, fisheries management approaches and market aspects and means of increasing post harvest benefits. Panel discussions on securing access



The panel during the concluding session of the conference

and user rights by small-scale indigenous people, and fishing communities to coastal and fishery resources that affect their livelihoods were also covered during the Conference. Although the Conference is about small-scale fisheries, it has major linkages with aquaculture in

view of the inter-relations between fisheries and aquaculture. Aquaculture was viewed during the said gathering as supplemental or alternative livelihood for small-scale fishers when there is available technology suited in the community and its environment.

- FROM THE REPORT OF ND SALAYO

... and Sea & human security

Dr. Nerissa Salayo attended the UNITAR (United Nations Institute for Training and Research) training workshop series on sea and human security with the theme *Towards a comprehensive security for seas and oceans: the Hiroshima initiative* held last September 27 to October 3 in Hiroshima, Japan.

The theme is based on the understanding that sustainable use and protection of seas and oceans can lead to peace. In this connection, the said event aims to enhance the capacity development of experts from different fields and develop a peer exchange among themselves.

- FROM THE REPORT OF ND SALAYO



Dr. Salayo (right) with other UNITAR participants, resource persons, and workshop organizer Ms. Hiroko (left)

AQD joins Philippine congresses on Microbiology

Several AQD staff participated in the *16th Philippine Society for Microbiology, Inc. (PSM) - Visayas Chapter Annual Meeting and Scientific Convention* last October 16-17 at Mambukal Resort Convention Center in Murcia, Negros Occidental.

Mr. Norwell Brian Bautista & Mr. Demy Catedral of the Fish Health Section, and Mr. Francis Legario of the Nutrition & Feed development Section presented papers entitled “Experimental susceptibility of pompano *Trachinotus blonchii* to viral nervous necrosis virus (VNNV),” “Isolation and characterization of oxytetracycline - resistant bacteria associated with the rearing water of hatchery-reared mudcrab (*Scylla*

serrata)” and “Identification of *Lactobacillus* sp. isolated from milkfish *Chanos chanos* Forsskal using 16s rRNA gene sequencing” respectively.

The following AQD staff on the other hand presented posters.

- Mr Joseph Faisan Jr. (Fish Health Section) - “Enhancement of immune responses of high value aquaculture species (*E. fuscoguttatus* and *P. monodon*) by immunostimulant administration”
- Ms. Ma. Thesa Billena- Hagy (Biotech Office) - “Electron microscopy at SEAFDEC
- Ms. Dianne Aster Yunque (Farming Systems & Ecology Section) - “Ice-ice associated bacterium isolated and characterized from infected *Kappaphycus striatum* var. green sacol tissue”

In addition, AQD scientists Dr. Gilda Lio-Po and Dr. Relicardo Coloso gave a lecture on recent developments in the study and surveillance of koi herpes virus (KHV) in Asia and biochemical characterization of bacteria isolated from the digestive tract of the milkfish *Chanos chanos* and its use in the improvement of the nutritive value of ingredients for milkfish feed, respectively.

Dr. Rolando Pakingking headed the convention’s organizing committee as his last official function as PSM-Visayas President. Mr. Bautista, Mr. Catedral and Mr. Ave Aron Araña of Devcom Section served as recording secretary, corresponding secretary and technical support respectively.

... Saline tolerant tilapia ...

Mr. Ruel Eguia an associate researcher in BFS represented AQD at the *First national summit on saline tolerant tilapia* held at the Asian Fisheries Academy, BFAR-NIFTDC compound, Dagupan City last October 2-3. The summit’s aims were to: (1) gather all fisheries

players from the academe, government, non-government and private sector to formulate the road map for research, development and extension (R, D & E) for saline tolerant tilapia, (2) document the R, D & E and gaps on saline tolerant tilapia and (3) identify the package of technologies

on saline tolerant tilapia for dissemination and promotion.

Mr. Eguia served as moderator in the session “Culture techniques for saline tolerant tilapia.”

- FROM THE REPORT OF RV EGUIA

... and White shrimp

LD DE LA PEÑA



Dr. de la Peña during his lecture on diseases of *Penaeus vannamei* and diagnostic services

AQD Chief Dr. JD Toledo together with AQD scientists Dr. MLC Aralar, Dr. MRR Eguia, Dr. LD de la Peña, Dr. FD Estepa, Dr. CL Pitogo, and Dr. ET Quintio participated in the *Hipon Summit 2008* hosted by BFAR-NIFTDC held last August 21 to 22 in Dagupan City.

Dr. Eguia presented a paper on the status and prospects of high health *Penaeus vannamei* broodstock production while Dr. dela Peña presented a paper on diseases of *P. vannamei* and diagnostic services. Dr. Aralar and Dr. Pitogo on the other hand acted as moderators in summit sessions.

The oath-taking of new officials of the Philippine Aquaculture Society wherein Dr. Toledo is the new president and Dr. Pitogo is the vice president for the Visayas also took place.

- FROM THE REPORT OF MRR EGUIA, CL PITOGO & LD DE LA PEÑA

AQD participates in AgriLink/FoodLink/AquaLink...

AQD participated in the *AgriLink/FoodLink/AquaLink 2008 exhibit* organized by the Foundation for Resource Linkage and Development, Inc. It was held at the World Trade Center Metro Manila last October 9-11 with the theme "Sustaining agricultural growth through niche markets."

In joining this prestigious event, AQD was able to: (1) showcase its products (publications and hatchery fry) and services (technical assistance and training programs) to a wide range of clientele (i.e. entrepreneurs, students, educators, and development oriented groups), (2) promote science-based aquaculture technologies to more than 200 visitors, (3) sell 231 books & aquaculture extension manuals and (4) sell red tilapia fry and giant freshwater prawn postlarvae to re-focusing entrepreneurs who wanted to do trial production runs. In addition, unsold fish stocks on display were donated to a fisheries school for educational purposes.

AQD technical resource persons on the other hand, gained exposure and insights on the problems and needs of the industry through interacting with people from the



industry. Such needs could prompt further research.

AQD's technical resource persons during this 3-day event were Dr. Ma. Rowena Eguia, Ms. Grace Garcia, Ms. Antonietta Evangelista, Dr. Ma. Lourdes Aralar, Mr. Armando Fermin, Mr. Emiliano Aralar, Mr. Ruel Eguia and Mr. Manuel Laron. Other AQD employees

involved or helped during the exhibit were Mr. Joseph de la Cruz, Mr. Nestor de la Cruz, Ms. Alma Lazartigue, Ms. Elma Africa, Dr. Nerissa Salayo, Ms. Anna Ma. Josefa Ortiz and Mr. Nelson Taganas.

On the third day, Mr. Fermin presented a seminar on breeding and grow-out of abalone as part of the DA-BFAR seminar series.

- FROM THE REPORT OF G GARCIA

... NSO exhibit...



AQD participated in the statistical exhibit organized by National Statistics Office (NSO) Region 6 as part of the celebration of the 19th National Statistics Month having a theme of “Demand-driven statistics: key to micro, small and medium enterprise (MSME) development.” The exhibit opened October 7 with a program at the ground floor of Robinson’s

Place, Iloilo City. Guests of honor were Ms. Rowena Barte-Zulueta, Executive Director of Iloilo Producers Association with Dir. Ro-Ann Bacal, Chairman of Regional Statistical Coordination Committee & NEDA Regional Director, and Mr. Harry Dolendo, Provincial Statistics Officer of NSO Iloilo.

Other participating agencies of this 10-day event were Commission on Population, Bureau of Fisheries and Aquatic Resources, Cooperative Development Authority,

Department of Agrarian Reform, Department of Health, Department of Environment and Natural Resources, Department of Social Welfare and Development, Department of Trade and Industry, Fiber Industry Development Authority, Iloilo Provincial Planning and Development Office, Iloilo State College of Fisheries, National Statistics Office, National Statistical Coordination Board, Philippine Postal Corporation, Social Security System, and Technical Education & Skills Development Authority.

Ribbon cutting ceremony and guests looking at the AQD poster

... 45th Fish conservation week...

AQD joined the 45th *Fish conservation week: fisheries exhibit and product fair* with the theme “Pagbabago ng klima: hamon sa likas-kayang pangisdaan.” The event was organized by BFAR-Fisheries Industry Development Support Division (FIDSD) held last October 19-25 in AANI Garden and Livelihood Center, Quezon City Memorial Circle.

Participating in this event, AQD was able to show its fervent cooperation and support for the ideals of fish conservation and environment protection. SEAFDEC’s efforts and contributions to the industry were also

publicly acknowledged by Mr. Jonathan Dickson of BFAR who is incidentally the country coordinator for SEAFDEC activities.

In addition, AQD staff who participated experienced various informative and interactive activities. Lastly, AQD was able to promote science-based aquaculture technologies and sell books and manuals.

AQD’s technical resource persons for this event were Mr. Ruel Eguia, Ms. Grace Garcia and Mr. Manuel Laron. Other AQD employees involved during the exhibit were Ms. Alma Lazartigue, Mr. Nestor de la Cruz, Ms. Anna Ma. Josefa Ortiz, Ms. Avelina Arojado, Mr. Nelson Taganas, Ms. Elma Africa and Mr. Enocito Atejano.

- FROM THE REPORT OF G GARCIA



... and DepEd Division Science Fair

Dr. MR Eguia and Ms. Antonieta Evangelista of BFS served as members of the Board of Judges in the *Dep-Ed division science quiz, fair, sci-drama and strategic intervention material competition* last September 30 at the FP Felix Memorial National High School, Cainta, Rizal.

- FROM THE REPORT OF MRR EGUIA



AQD specialists conduct shrimp health training in Dagupan City

AQD scientists Dr. Leobert de la Peña and Dr. Celia Lavilla-Pitogo together with technical assistant, Mr. Geimbo Capulos conducted shrimp health management training at the new DA-NFRDI (Department of Agriculture-National Fisheries Research and Development Institute) Aquatic Health Laboratory in Dagupan City last August 24-30.



Dr. Leobert conducting a lecture and trainees during their laboratory activities



CL PITOGO



Dr. Westly Rosario, Interim Executive Director of NFRDI standing at the center with AQD's Dr. Leobert de la Peña & Dr. Celia Pitogo and training participants. In the front row is Mr. Giembo, AQD's technical assistant (center) with two other training participants.

The training aims to familiarize the participants with the basic principles of shrimp health management to enable them to recognize diseases using diagnostic methods.

Topics included biosecurity procedures,

disease recognition by gross examination and other methods and preparation, submission and processing of samples.

Training participants were mostly from NFRDI with two other participants from UP Diliman and AgriFisheries World.

- FROM THE REPORT OF CL PITOGO

Training courses this October

Training courses on fish health management and culture of natural food organisms were offered October 3, and ending on the 30th.

There were two trainees for the former and one for the latter. Trainees are from Saudi Arabia and China.



Trainees at work in AQD laboratories



Counterclockwise: AQD Chief meets the trainees, TID Head welcomes the trainees, and trainees during the closing ceremony



R BAUTISTA, S PAGADOR, R SALDE

PSHSWV students visit AQD

Philippine Science High School-Western Visayas (PSHSWV) students accompanied by their teachers Mr. Edward Albaracin and Mr. Aris Laroder visited AQD last October 23 to have

a consultative meeting with AQD scientists and researchers regarding their research proposals involving topics in marine science. Ms. Margarita Arnaiz, Dr. Relicardo Coloso, Ms. Perla Eusebio, Mr. Francis

Legario, Dr. Gilda Lio-Po, and Ms. Ophelia Reyes were present during the meeting held at the OC conference room.

Research seminars for October

RP GUARIN, RV HOSILLOS

October 02



Recent updates in the seed production research in donkey's ear abalone, *Haliotis asinina*
by Mr. Armando Fermin
SEAFDEC/AQD

Abalone has a great demand in the international market and the Philippines is one of the principal countries exporting it. Recently however, there was a fast decline in abalone production from the natural fishery due to heavy exploitation. Hence, development of aquaculture technology arose to enhance abalone's production. AQD is in the forefront of this endeavor wherein further studies are being conducted to improve hatchery rearing techniques to increase production of seeds for stocking.



Echo seminar on recent developments in shrimp culture (including updates on culture strategies and SPF development)
by Dr. Celia Lavilla-Pitogo
SEAFDEC/AQD

An echo seminar based on the presentations at the "Healthy Shrimp Forum" in Bacolod City on the global status of shrimp farming business, management strategies of various countries including techniques and design to prevent viral infections, and value & culture of SPF Penaeus monodon based on experiences in Madagascar, Malaysia, and Brunei.

October 08



Estimating current mangrove area: mapping for non-GIS users
by Mr. Jon Altamirano
University of Tokyo

Modern techniques in GIS and remote sensing as means of estimating mangrove areas require expensive software and hardware. Hence as an alternative, a relatively low-cost and simple technique was devised using generally available software.

October 21



Pesticide/herbicide degrading bacteria
by Dr. Fahrul Huyop
University Technology
Malaysia

Some synthetic halogenated compounds are highly toxic and can cause enormous problems to mammals and the environment. Presence of these compounds in the aquatic system can also lower the immune system of fishes and toxic to algae. Thus, investigations were done on the biodegradation of halogenated compounds which led to the detection and identification of various dehalogenating enzymes catalyzing the removal of halogen atoms in carbon-halogen bonds.

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October 23



Diatom preference of tropical abalone, *H. asinina*, post larvae
by Mr. Vincent Encena
SEAFDEC/AQD

*The preferred diatom species of *H. asinina* postlarvae was determined so that it will be mass cultured for the commercial production of abalone seed. The results of the study show that *Cocconeis sp. 1*, *Navicula sp. 1*, *Amphora sp. 1*, *Synedra sp.* and *Mastoglia sp.* were the most common diatoms found in the digestive tract of tropical abalone postlarvae.*

October 29



Relationship between nutritional conditions of manila clam *Ruditapes philippinarum* and feeding environment
by Dr. Satoshi Watanabe
JIRCAS

The manila clam is an important commodity in Japan, however, commercial production has markedly declined for the last two decades due to stock depletion. Determination of food sources of this commodity is fundamental to the planning of its fishery management and production. Since the information of food availability is crucial for controlling harvest timing and stocking density in the fishing ground. In addition, manila clam is usually harvested in shallow coastal environments hence food environments can be manipulated to improve stock conditions. The result of the study on the relationship between food environment and nutritional conditions of manila clam in Tokyo Bay shows that sampling area farthest from the river mouth have best conditions for feeding and growth. The result also shows that manila clam is an optimistic filter feeder.



Certificates of appreciation were given to Dr. Fahrul Huyop (top) and Dr. Satoshi Watanabe (right) by the Deputy Chief Dr. Hiroshi Ogata for giving time to share their research study to AQD.



Management of seahorses, *Hippocampus barbouri*, *H. comes* and *H. kuda*
by Ms. Shelah Mae Buen-Ursua
SEAFDEC/AQD



Seahorse aquaculture was given importance due to the decline of its wild population and recognition of its economic value. Few culturing protocols have already been established for tropical species in Indo-Pacific countries. AQD improved hatchery techniques which resulted to the increase of seahorse hatchery production. The primary modifications made were the use of UV-treated seawater and improvement of feeding schemes. Some seahorse juveniles are then transported to Igang Marine Station for nursery culture in illuminated sea cages. However, it was noticed that survival of illuminated cage cultured seahorses compared to tank cultured ones is lower due to infestation of filamentous algae and presence of predator fishes (i.e. puffer fish and trigger fish).

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!