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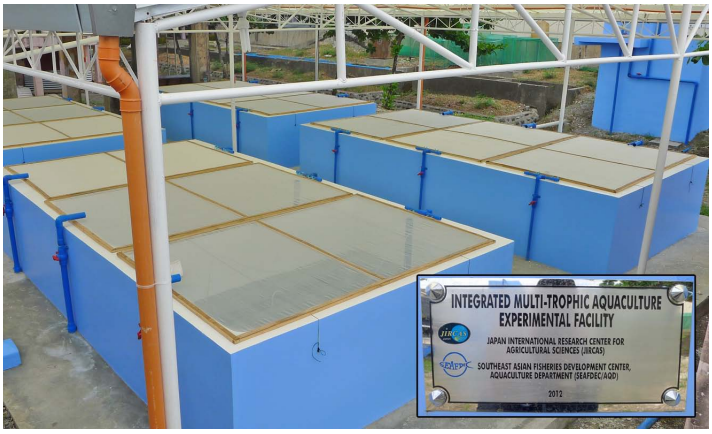
AQD Matters

Newsletter of the SEAFDEC Aquaculture Department (AQD), Tigbauan, Iloilo, Philippines



JIRCAS-donated Integrated Multi-trophic Aquaculture (IMTA) experimental facility at SEAFDEC/AQD has twelve units of 4-ton tanks with water filtration system. (L-R) AQD Visiting Scientist Dr. Satoshi Watanabe, JIRCAS Fisheries Division Director Dr. Yukio Maeno, JIRCAS Program Director Dr. Masayoshi Saito, AQD Chief Dr. Felix Ayson, AQD Deputy Chief Teruo Azuma, and AQD Research Division head Dr. Relicardo Coloso ceremonially ribbon-cutting to open the IMTA facility donated by JIRCAS

AQD and JIRCAS inaugurate new experimental facility

SEAFDEC/AQD ceremonially opened the JIRCAS-donated experiment facility for Integrated Multi-trophic Aquaculture (IMTA) on 16 October 2012 at its Tigbauan Main Station, Iloilo. JIRCAS is the Japan International Research Center for Agricultural Sciences that is funding a 5-year R&D on IMTA.

IMTA refers to the farming of different aquaculture species (including sandfish *Holothuria scabra*) together in a way that allows the waste of one species to be recycled as feed for another. As AQD Chief Dr. Felix Ayson said, "IMTA is one approach that would make intensification of aquaculture sustainable by limiting aquaculture's effects on the environment. To the staff who will be using this facility, we will await new and exciting results." Dr. Ayson thanked JIRCAS for the new facility, for funding study visits of AQD staff to Japan, for donating laboratory equipment, and for the present collaboration.

JIRCAS Program Director Dr. Masayoshi Saito, on the other hand, encouraged researchers to conduct more studies to provide information needed for the practical application of IMTA and to maximize aquaculture productivity and environmental mitigation. Dr. Saito also thanked AQD researchers for their joint studies with JIRCAS.

AQD, University of Rizal ink accord

The University of Rizal System based in Cardona, Rizal, Philippines is the new addition to the growing list of AQD partner institutions with the agreement signing on 19 October at AQD's research station in Binangonan, Rizal. The 5-year agreement aims to implement the *Aquaculture research, technology and development program* (ARTDEP) where both institutions committed to share their human, material and financial resources for fisheries development in the province.

The agreement was arranged by AQD's Dr. Maria Rowena Eguia and Dr. Frolan Aya together with URS's Ms. Jesselyn Rafin.

Photo by FA Aya

(Seated L-R) OIC of AQD's Binangonan Freshwater Station Dr. Frolan Aya, AQD Chief Dr. Felix Ayson, University of Rizal System (URS) President Dr. Marita Canapi and URS Cluster 1 Chancellor Dr. Fe Batoon. (Standing L-R) AQD scientist Dr. Ma. Lourdes Cuvin-Aralar and URS faculty

AQD at the host country's largest agri trade show

(L-R) DA Secretary Hon. Proceso Alcala at the AgriLink. Stakeholders visiting the AQD booth with AQD scientist Dr. Ma. Lourdes Aralar (in white). (Inset) Dr. Aralar entertaining queries from visitors. Present and former AQD staff present during the event

AQD put up a booth at AgriLink-AquaLink-FoodLink 2012 which was held from 4 to 6 October at the World Trade Center in Manila, Philippines. AQD offered technical consultation, promoted its programs for entrepreneurs & other stakeholders, and sold newly published manuals.

In one of the AgriLink forums, AQD Chief Dr. Felix Ayson spoke on "Improving milkfish production in brackishwater ponds and in fish cages by proper feeding management", a study he conducted with AQD scientist Dr. Evelyn Grace DJ Ayson. Similar to tilapia, the innovation is alternate day feeding to reduce feed inputs (by 50%) and costs (30-50% savings).

"We have grown milkfish to marketable size in ponds and in sea cages where feeding is done on alternate days. Although it takes a little bit longer to reach marketable size of 400-500 g when fed alternate days compared to everyday feeding, total milkfish biomass is comparable in both groups," Dr. Ayson noted. "With reduced feeds and feeding, the new practice is environment-friendly."

AQD had been an annual part of the AgriLink activities for several years now.

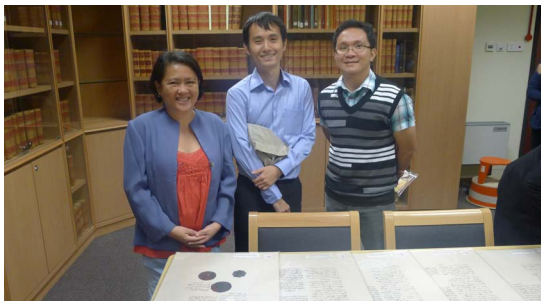
AQD collaborates with PNRI

(L-R) PNRI Scientist Dr. L Abad, AQD Research Division Head Dr. Relicardo Coloso, AQD Chief Dr. Felix Ayson, PNRI Director Dr. Alumanda de la Rosa and PNRI Deputy Director Dr. CC Bernido

SEAFDEC/AQD signed an agreement with PNRI (Philippine Nuclear Research Institute of DOST) for a five-year research collaboration and exchange of experts on 5 October in Quezon City. Every study, however, will be covered by a separate terms of reference. The first one is on the *Potential uses of irradiated low molecular weight carrageenans in aquaculture* which will be conducted by AQD associate scientist Dr. Ma. Michelle Peñaranda and PNRI scientist Dr. Lucille Abad.

How did AQD link up with PNRI? Dr. Abad, incidentally a Dangal-ng-Bayan awardee, initiated the brief exchanges on researchable areas with AQD scientist Dr. Ma. Rowena Eguia; both knew each other as former fellows of the JSPS Ronpaku PhD dissertation grant. AQD then invited Dr. Abad to deliver a seminar on nanotechnology (specifically on the use of irradiated seaweeds in agriculture) and to meet prospective AQD collaborators (Dr. Helen Marcial, Dr. Mae Catacutan, Dr. Peñaranda, Dr. Fiona Pedroso and Ms. Rovilla Luhan) at AQD's station in Iloilo in 2011. The drafts of the Memorandum of Understanding and Letter of Agreement (for the first study) were finalized in late September 2012 and signed early this month.

Technical information is "available but invisible"



Information officers of the SEAFDEC Secretariat and its Departments including AQD were in Singapore 23-24 October 2012 to assess the progress of SEAFDEC's 5-point strategy to improve visibility and communication. The strategy is on its fifth year, and so far, the meeting noted no clear, discernible trends in the production/dissemination of information materials and in the usage of these materials by stakeholders. As SEAFDEC Secretary-General Dr. Chumnarn Pongsri said, the technical information produced by SEAFDEC may be "available" in various forms but these, unfortunately, may be mostly "invisible" or "inaccessible" to public stakeholders.

Dr. Chumnarn and SEAFDEC/MFRD Chief Mr. Yeap Soon Eong (who hosted the meeting) joined the 12 information officers in discussing the production of technical (manuals, science papers), promotional (annual reports) and press release materials; their dissemination through the SEAFDEC websites, social networks & public media, exhibitions, meetings & missions, libraries & repositories, training courses; and the stakeholders' interaction with SEAFDEC in terms of requesting information, giving feedback, and funding programs. Information activities also seem constrained by the small budget they are getting (from 4 to 13% of program funds).

The meeting was optimistic that SEAFDEC visibility could be improved with more vigorous pursuit of the 5-point information strategy: (1) production of relevant, timely and useful information materials to meet the requirements of target audience; (2) raising SEAFDEC image at international, regional and national levels; (3) enhancing communication and information sharing both within SEAFDEC and with member and non-member countries, international/regional organizations and the public; (4) strengthening SEAFDEC capability in information-related activities; and (5) regular monitoring and evaluation of information activities.

[L-R] Information officers in discussion. Information officers of SEAFDEC Secretariat and Departments with Ms. Khoo Gek Hoon, Deputy Director of Post-harvest Technology Division; Mr. Yeap Soon Eong, SEAFDEC/MFRD Chief; and Chumnarn Pongsri, SEAFDEC Secretary-General. AQD's development communication head Ms. Mila Castaños, the ISEAS librarian who conducted the study-visit, and AQD's information assistant Mr. Daryl Superio at the ISEAS rare book / manuscript room

AQD attends BFAR functions

AQD scientist and Manila Office head Dr. Maria Rowena Eguia represented the department in two succeeding functions of Bureau of Fisheries and Aquatic Resources (BFAR).

Dr. Eguia shared a talk on *Good genes, good seeds, good harvest – enabling sustainable local fish production through effective stock management* as one of the five keynote speakers during the 4th Bureau of Fisheries and Aquatic Resources - National Fisheries Research and Development Institute (BFAR-NFRDI) Scientific Conference in Diliman, Quezon City from 9 to 10 October. She said in her presentation that the status of the locally available aquatic resources has to be regularly assessed to enable effective management and sustainable fish production for food security.

Dr. MR Eguia as keynote speaker during the 4th BFAR-NFRDI Scientific Conference in Quezon City

Also, she attended a two-day fisheries symposium "*Ugnayan para sa maunlad na Pangisdaan"* of BFAR as a part of the 49th Fish Conservation Week held in the Philippine Coconut Authority Auditorium in Quezon City on 8-10 October. There were many interesting aquaculture-related presentations including: (1) the various systems used in fish production activities in Taal and Laguna Lake; (2) the development programs of BFAR on organic aquaculture, aquasilviculture and mariculture; (3) the guidelines on environmentally-sound farming of Pangasius in the Philippines; and (4) the status of the tuna fishing industry.

Training courses

(1) Sandfish training

(Top) Trainees during the settlement plates preparation at AQD's sandfish hatchery in Tigbauan. (Bottom) At AQD's Igang Marine Station, trainees check the sandfish juveniles they stocked in sea pens

Five participants finish the course on *Sandfish seed production, nursery and management* conducted from 15 to 29 October at SEAFDEC/AQD's Tigbauan Main Station and Igang Marine Station.

The participants were from USA (2), Italy (1), Switzerland (1) and Philippines (1). The course included lectures on topics regarding sea cucumbers, in particular the sandfish *Holothuria scabra*. The trainees were also trainedon the practical activities in sandfish production including larval rearing, stock management and spawning & grow-out techniques.

AQD's technical lead person for the sandfish course and associate scientist Dr. Jon Altamirano said during the closing ceremony that this training will be continuous because scientists and researchers of AQD are still pursuing many studies and experiments to make the production of sandfish more effective and cost-efficient. "AQD will be here for your questions and as we develop new technologies and discover new things we are very willing to share them with you," he added.

In one of the responses, Project Development Director of Innovare Development and Consulting and trainee Mr. John McCurry's impression on the course was very positive. "This [sandfish training course] was a very helpful trip. At first, when I look at the itinerary of the course I say it was very good but in the end it exceeded my expectations. The course is fantastic and you all had been so approachable when we have questions. I am very impressed with the work SEAFDEC is doing and excited to be a part of this," he said.

(2) Bighead carp and native catfish training

Two training courses on freshwater commodities entitled *Induced spawning of bighead carp* and *Hatchery and grow-out culture of native catfish* were held at AQD's Binangonan Freshwater Station from 17 to 21 September and from 8 to 12 October, respectively.

Three participants from the private sector attended the carp training. The course included lectures on broodstock management and practical sessions with emphasis on broodstock selection, hormone preparation, egg stripping & incubation and monitoring of embryonic & larval development. The participants showed keen interest on the course that two of them even brought 750,000 pieces of one-day old carp fry for nursery culture in several hectares of company-owned fishponds in Calauan, Laguna.

On the other hand, the training course on native catfish was attended by seven participants from government and business sectors. Through a series of presentations and interactive discussions, the training introduced science-based technologies and methods of catfish breeding, larval rearing, and fry/fingerling production for grow-out purposes. The course also covered the following topics: biology & reproduction, site selection & water management, diseases & health management, nutrition & feeding, and economics of pond farming.

In both courses, a total of 23 fisheries students and faculty of the University of Rizal System (URS) Cardona campus joined. AQD and URS recently signed an agreement to share knowledge and information.

-- Photos & story by FA Aya

(L-R) Trainees during lectures. Trainees doing the stocking of one-day old catfish larvae in tanks. AQD Engr. EV Aralar observes as trainees and URS students and faculty prepare hormones for carp spawning trial

Photos from ZSL

AQD's Dr. Emilia Quinitio (in orange) and Dr. Jurgenne Primavera (seated fourth from the right) during discussion and together with LGU officials

LGUs learn aquasilviculture

SEAFDEC/AQD scientists were invited as resource persons to LGU-Ibajay's two-day training on aquasilviculture in Ibajay, Aklan held 19-20 October 2012.

AQD scientist and head of technology verification & demonstration Dr. Emilia Quinitio together with scientist emerita Dr. Jurgenne Primavera discussed various topics such as (1) concepts & principles; (2) mud crab as species for aquasilviculture (including mudcrab biology, site selection & feasibility of mudcrab as species for aquaculture); (3) site assessment to the members of the local government unit of Ibajay.

LGU-Ibajay organized the activity with the Zoological Society of London.

HOT OFF THE PRESS

On 6 October, SEAFDEC/AQD released two new extension manuals describing the nursery and grow-out culture of marine fishes that fish farmers can profit from.

Grow-out culture of mangrove red snapper in ponds, 30 pages, is written by EB Coniza, MR Catacutan and PA Caballero.

Cage culture of high-value fishes (seabass, grouper, snapper, pompano) *in brackishwater ponds*, 23 pages, is written by J Madrones-Ladja, N Opina, M Catacutan, E Vallejo and V Cercado.

For orders, email bookstore@seafdec.org.ph

CALL FOR PAPERS! Participants are encouraged to submit papers for either oral or poster presentation related to the topic. Deadline of abstract submission is on 01 February 2013 (send via email to iwfs@seafdec.org.ph)

You are invited to the International Workshop on Food Safety of Aquaculture Products in Southeast Asia on 8 to 9 May 2013 at Hotel del Rio, Iloilo City, Philippines. Organized by SEAFDEC/AQD with funding from GOJ-Trust Fund.

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Research Seminars

Mr. Philipp Cruz, President and founder of Herbanext Laboratories Incorporated, presented his paper entitled *Rationalizing Products Research and Development in Aquaculture* on 11 October.

Mr. Cruz talked about the comeback of natural products in the world market fuelled by the global movement towards healthier living, consumer-driven healthcare and the need for environmental sustainability. The renewed interest in natural products however extends well beyond food and medicine, hence the opportunities for natural products to be used in aquaculture research and development.

He's convincing AQD to conduct more research that utilizes herbal plants and natural products. With this, he sited related studies that might help like the anti-viral activities of Thai traditional herbs against fish and shrimp pathogenic virus, usage of herbal extracts in shrimp broodstock diets, immonomodulatory effects of turmeric on giant freshwater prawn against *Vibrio*, immunological and bactericidal effects of turmeric extract in pacific white shrimp to name a few.

Mr. Cruz also believes that the economic implications of a vibrant natural products industry for the Philippines are enormous, from foreign exchange, rural job creation, eco-tourism to biodiversity conservation, and better health care for the general population.

Dr. Isao Tsutsui of Japan International Research Center for Agricultural Sciences (JIRCAS) presented a paper entitled *Development of Co-Culture System of Giant Tiger Prawn and Unexploited Benthic Organism* on 17 October.

He explained that the co-culture system of giant tiger prawn and organisms such as seaweed *Chaetomorpha ligustica* and shellfish *Stenothyra sp.* will minimize the negative impacts caused by the intensive farming of prawn. His study investigated the technique to propagate these species, and their dietary effects on prawn growth.

Dr. Tsutsui's results indicated that *C. ligustica* and *Stenohyra sp.* can be adapted in giant tiger prawn culture ponds because they are euryhaline, fast-growing and can promote shrimp growth. Co-culture is advantageous because it is simple, low-cost, has low-impacts on surrounding waters and can easily be adapted by small-scale shrimp farmers.

Dr. Kaoru Hamano, Fisheries Research Agency - Japan, talked about her research entitled *Yellow head virus (YHV) infection and transmission in shrimp cultivation in Thailand* on 17 October.

She said that the occurrence of YHV in Thailand is increasing through the years, hence control and prevention of the spread of this viral disease is urgently needed. JIRCAS has conducted an epidemiological survey and laboratory work since 2008 for YHV infection of *Paneaus monodon* in Thailand that yielded the following results: (1) YHV was not easily transmitted via the cultivation water; (2) YHV's occurrence depends on the environmental factors of each ponds; (3) YHV is not detected amongst major benthos in the cultivated ponds; (4) The main benthic organisms in shrimp ponds are not infected by YHV by immersion; and (5) YHV activity in infected shrimp significantly declined after 24 hours of death.

Dr. Janus Ong, from the Internal Medicine Department, Gastroenterology Section of the University of the Philippines – Philippine General Hospital, presented *Updates on Hepatitis B and C* on 19 October.

Dr. Ong said Hepatitis B and C infections are among the most common blood borne infections in the world today, affecting 400 million and 170 million persons respectively. Dr. Ong noted that PCR-based assays for viral load determination in both Hepatitis B (the HBsAg levels) and C (IL-28B) are now available. Despite the availability of several drugs for Hepa B, its cure is still unattainable whereas Hepatitis C can be treated through interferon-free regimens.

Besides these medical breakthroughs, Dr. Ong emphasized that a patient's response to treatments vary depending on some factors such as race, sex and age.