Promoting Aquaculture for Sustainable Food Production *Volume-1 Issue-4:2016*

UVAS Fisheries and Aquaculture Newsletter

Introduction:
The Department of Fisheries & Aquaculture, UVAS aims to provide excellence in higher education, training, research and development, services and advice in the fields of sustainable Fisheries and Aquaculture consequently contributing to economic and social development of the country .

Mission:
Produce highly skilled professionals in the field of Fisheries and Aquaculture to meet the demand of growing fisheries industry by resolving food and environmental problems.

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Successful Breeding Of Genetically Male Tilapia (GMT) For All Male Progeny At UVAS Fish Farm, Ravi Campus

UVAS Researchers have successfully bred the imported Genetically Male Tilapia (GMT) from FishGen, UK. The dissemination of tilapia fry (100% all male) has been started to the interested fish farmers. The UVAS researcher team lead by Dr. Noor Khan (Associate Professor/Chairman/PI) & Dr. Fayyaz Rasool, (Assistant Professor/Co-PI) in a project awarded by US Pakistan Centre for Advance Studies in Agriculture & Food Security "USPCAS-AFS" entitled "Growth and Breeding Potential of Genetically Male Tilapia (GMT) Through Artificial Feed and Molecular Approach in Pakistan" imported 50 pairs of GMT Super Males (YY) from FishGen, UK on 5th May, 2016. The supper males were raised in earthen ponds for three and half months and then paired on 23rd August for breeding purpose. The fish was bred successfully in the mid of September, 2016 without using any synthetic hormones. This success has been achieved in very short duration within 08 months of the project awarded. It is good news for all the stakeholders of Fisheries & Aquaculture who imported sex reversed tilapia seed from Thailand or produced hormonally administered sex reversed seed in local hatcheries. UVAS is now able to provide hormone free naturally produced all male tilapia seed to the interested fish farmers available in the fish farm complex, Department of Fisheries & Aquaculture, Ravi Campus, Pattoki.

6th International Fisheries Symposium & Expo 2017 "Innovative and Sustainable Aquaculture for Blue Revolution" 8-9th February, 2017 at Faletti's hotel , Lahore, Pakistan

The 6th International Fisheries Symposium & Expo on "Innovative and Sustainable Aquaculture for Blue Revolution & Expo-2017" is going to be held on 8-9 February, 2017. The conference is being organized by the University of Veterinary and Animal sciences, Lahore in collaboration with the UVAS-Fisheries Socity working group on Fisheries & Aquaculture including public and private partners, provincial departments associated with this sector in one way or other. The symposium is also expected to provide opportunities for developing strong linkages among industry, research community, academia, civil society and regulatory bodies in the field of fisheries & aquaculture at national and international level.

Feeding Pakistan: Presented Talk at Aquaculture America-2016 In USA.

R.S.N. Janjua, Country Representative, American Soybean Association/WISHH/PK presented at talk on "Development of Tilapia Industry in Pakistan' which included the display of documentary "The Blue Revolution" at full day exclusive session on Tilapia at Aquaculture America-2016 of World Aquaculture Society in February, 2016 at Las Vegas, U.S.A. His trip was sponsored under FEEDing Pakistan program funded by USDA. He explained the role of FEEDing Pakistan program in development of tilapia and soy-based extruded floating feed, training of fresh graduate males as Field Research Officer (FRO) and female as Aquaculture Associates, and capacity building activities of fish farmers and fresh graduates by conducting series of seminars, and farmers field days. He also shared the results of feeding trials and demonstration in Pakistan.

Fisheries Department Punjab Sent Officers to AIT Thailand for Training

In accordance with the vision of Chief Minister Punjab regarding development of south Punjab, Fisheries Department has sent 18 officers to Thailand for training in intensive culture which is the modern method of fishery in brackish and salt waters. These officers have got training in cage culture for rearing fish in small dams of Potohar region.

This was stated by Ex-Director General Fisheries Punjab Dr. Muhammad Ayub and present Director General Fisheries Punjab, Mr. Iftikhar Ahmed Qureshi. They said that these officers taken the training at Asian Institute of Technology will put their exports in particular use at the government and private fish farms in south Punjab and Potohar region. The training abroad under the Chief Minister's vision of bringing about a blue revolution in aquaculture so that this sector could be modernized for strengthening national economy. The other 20 official of the 2nd batch will return on 5th December, 2016. Dr. Muhammad Ayub said that the five-member committee set up by Chairman Planning & Development for the selection of the officers for sending abroad for training comprises three senior officers of Fisheries Department besides Dean, University of Veterinary and Animal Sciences and Professor of Zoology and Fisheries at Virtual University. Most of the officers to be sent abroad are already working on these projects.

Feeding Pakistan: UVAS Collaborative Seminar On"Aquaculture and Feeding Management" at UVAS Ravi Campus

Under FEEDing Pakistan program in collaboration with Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Ravi Campus held two days seminar on "Aquaculture and Feeding Management" from 25-26 October, 2016. Forty students were paraticipated who were invloved in Fisheries and Aquaculure research program in this activity.

Participants were taught about the benefit of soy usage in replacing the fishmeal in fish diet. It was a very successful event and desseminated the knowlege by the fish nutrionist and have the great experience in Fisheries and Aquaculture sector and foucus the use of the soy bean as an alternate of the fish meal and its benefit translated in quality production of ponds. The lectures were based on the feed Ingredients, Nutrition, Feeding Management techniques in ponds, feed formulation etc. Prof. Dr. Talat Naseer Pasha, Vice Chancellor UVAS, was chaired as chief host in the the closing cermony. The Vice Chancellor distributed certificates among the successful participants with a complimentary copy of both Aquaculture Handbook and Manual of Tilapia.

UVAS Developed Fish Vaccine Against Bacterial Disease, Infectious Abdominal Dropsy (IAD) In Grass Carp

UVAS Researchers have successfully developed fish vaccine against Infectious Abdominal Dropsy (IAD) disease. Ms. Iqra Farooq completed her M.Phil degree with her research dissertation entitled "Gel based inactivated vaccine production against Aeromonas hydrophila in grass carp *(Ctenopharyngodonidella)*" under the supervision of Dr. Muhammad Hafeez-ur-Rehman (Assistant Professor) Department of Fisheries and Aquaculture and Dr. Imran Altaf (Assistant Professor) Quality Operation Laboratory, University of Veterinary and Animal Sciences, Lahore.

Diseases are the biggest constraints in aquaculture industry. Among the bacterial diseases, Infectious Abdominal Dropsy (IAD) has been reported as a chief cause of substantial economic losses. The abdominal dropsy is investigated from various areas of Pakistan and is a major fish loss for aquaculture industry. The virulent strain of *Aeromonas hydrophila* isolated from infected fishes which could produce the disease symptoms within 24-72 hours on experimental inoculation. *Aeromonas hydrophila* is accountable for abdominal dropsy as well heamorrhagic Septiceimia which is acute and fatal disease. It causes symptoms like formation of skin lesions ultimately shedding the scales, ulcers, gills hemorrhages abdominal inflammation and exophthalmia. In acute form, the disease emanated so rapidly that fish die without the appearance of any clinical symptoms. In analysis, the farmers sustain intense loss due to the disease and no protective measures were available. There is an effort to develop a suitable vaccine to increase the fish antibody response against abdominal dropsy. The study was designed for the isolation of *Aeromonas hydrophila*, bacteria were confirmed by microscopic analysis and biochemical characterization. The pathogenicity of the isolated *A. hydrophila* was evaluated by administering the active strain in grass carp (Ctenophryngodon idella). The gel based inactivated vaccine was prepared by bacterial suspension and 0.5 ml, the best doze of vaccine were injected in grass carp fish produced long term immunity against abdominal dropsy.

This was the first attempt from Pakistan to develop fish vaccine for abdominal dropsy. The findings of her research will be useful for the enhancement of immune response to improve fish health and development of this vaccine manifest the great assistance to enhance the fish antibody response against abdominal dropsy ultimately reducing the magnitude of economic losses due to *Aeromonas hydrophila* to the fish producers. Further experiments on vaccine are in progress to expand on other commercially important aquaculture fish species of Pakistan.

Feeding Pakistan: Three-day Seminar On "Aquaculture And Feeding Management" and Study Tour to Feed Mills

Under FEEDing Pakistan program of American Soybean Association (ASA)/WISHH, funded by United State Department of Agriculture (USDA), SoyPak held a three-day seminar on "Aquaculture and Feeding Management" including a Study Tour to Feed Mills and Fish Ponds. The seminar was held exclusively for female students of Fisheries and Aquaculture at Lahore College for Women University (LCWU). This activity was organized with the collaboration of the Zoology Department of LCWU, Zoological Society of LCWU, Society for Promotion of Science and Technology of LCWU, and the Small and Medium Enterprise Development Authority (SMEDA), Ministry of Industries, Government of Pakistan. The event was held in the Biotechnology Department, LCWU from Wednesday, August 03, 2016 through Friday, August 05, 2016. This training program was a continuation of training for female students specializing in "Fresh Water Aquaculture" and was attended by 40 students and faculty members. This study tour marked the first time a group of female Pakistani students were allowed to visit large scale feed mills in the country.

Dr. Uzma Qureshi, Vice Chancellor LCWU, was the Chief Guest at the inaugural session. This study tour marked the first time a group of female Pakistani students were allowed to visit large scale feed mills in the country and learned about the soy-based floating extruder technology for manufacturing floating feed. Participants were taught about the benefit of soy usage in replacing the fishmeal in fish diet. It was a very successful event where all the female graduates and faculty members were having a lot of knowledge, more practical approach, about the soy usage in feed and its benefit translated in quality production of ponds. Basics of the Aqua-feed manufacturing, feed ingredients, Nutrition and Technology and Feeding Management techniques in ponds and nutrition balance and formulation was new things for them including information about soy.

This was a sort of first training program held to educate the students and the faculty about different techniques applied in Aquaculture, feeding management, pond management, feed technology and economics. Field trip was an eye opening for the participants and they had very active participation in field trip related to their subject specialty. At the closing ceremony all the successful participants were given completion certificate with a complimentary copy of both Aquaculture Handbook and Manual of Tilapia.

Celebration Of World Fisheries Day, 21 November, 2016 at UVAS, Ravi Campus Pattoki

World Fisheries Day, 2016 was celebrated at the Department of Fisheries & Aquaculture, UVAS, Ravi Campus, Pattoki with the cooperation of UVAS, ASA feeding Pakistan and HEC-BC KEP project. The Worthy Vice Chancellor, UVAS, Prof. Dr. Talat Naseer Pasha graced the ceremony. About 200 participants including faculty members, representatives of the Department of Punjab Fisheries, Fisheries Development Board, Fish Feed industry partners, fish farmers, and students of the faculty of fisheries and wildlife participated in the inaugural session. The activities of the day were started with a walk organized by the Organizing team of the World Fisheries Day. Worthy Vice Chancellor, UVAS, Faculty, fish farmers, industry partners and large number of students participated in the walk.

The guests and participants then visited stalls of fish dishes prepared by the students of the FF&W. The judges evaluated these dishes and the winners were awarded with shields, certificates by Dean FF&W and cash prizes from Mr. R.S.N. Janjua country representative ASA feeding Pakistan. Dr. Noor Khan, Chairman, Department Fisheries & Aquaculture welcomed the audience and highlighted the importance of World Fisheries Day. Worthy Vice Chancellor, UVAS, while addressing the participants appreciated the efforts of the department for arranging this event with joint cooperation of ASA Feeding Pakistan and stressed on the collaboration between industry and academia. He said that there is a great potential in aquaculture industry and it is the need of the time to fully utilize all the available resources to face the challenges of food security. He also advised the faculty and students that they should write extension papers for fish farmers and stakeholders about new fish culture techniques and problem oriented research. Dr. Zahid Yaqub while addressing the audience stressed on the certification of fish hatcheries, standardization and adoption of modern aquaculture techniques.

He underscored the need of development of basic farm equipment locally and that Government should take lead in the initial development through private sector by providing drawings and designs and specifications (cages, aerators etc).

Mr. Ansar Mahmood Chatha, Deputy Director, Punjab Fisheries also deliver detailed presentation the current aquaculture scenario, efforts taken by the Punjab Fisheries, ongoing projects, introduction of cage culture in small dams and establishing of quarantine laboratory at Rawal Fish Hatchery, Islamabad.

He also mentioned that currently Punjab Fisheries Department is working on the solar panel project which will be distributed to fish farmers in Punjab Province. Mr. R.S.N. Janjua, country representative ASA Feeding Pakistan mentioned the role of ASA in Feeding Pakistan and introducing artificial fish feed and tilapia culture in the country. He then showed an interesting video and highlighted the role of ASA Feeding Pakistan in capacity building, introduction of new aquaculture techniques, fish feed and GIFT strain in Pakistan. Ch. Nabeel, CEO, AMG/Fish Farmer highlighted the issues of fish market and price. He advised that we should focus on vertical expansion instead of horizontal in fish farming to save lands for staple foods and minimizing overall expenditure per unit of area. Mr. Umer Farooq Khan, fish farmer in his address advised the constitution of fish farmers association and highlighting their problems through this forum. Mr. Sami Ullah Khan, CEO Himalaya Fish Hatchery suggested that only solution of getting good price for fish farmers is fish processing and value addition and in this regard Punjab Govt. should take the leading role and establish pilot scale units to run on public private partnership basis. Prof. Dr. Muhammad Ashraf, Dean, Faculty of Fisheries & Wildlife delivered the closing remarks in which he appreciated the speakers highlighting the issues facing by the fish industry and ideas shared by the stakeholders for their solutions on this Fisheries Day Seminar. He also thanked worthy Vice Chancellor, UVAS for sparing his precious time and participation in this important event. The Dean then distributed shields and certificates among the participants and students

Pak China Discuss Cooperation In Cold Water Fish Production and Bio Energy

A six members Chinese delegation including fishery scientists and engineers from Gansu Fishery Research Institute (GFRI) Lanzhou, China visited Pakistan Agricultural Research Council (PARC) Headquarters on Thursday. December 1, 2016. The delegation discussed cooperation between China and Pakistan in cold water fish production and bio energy.

The delegation was led by Wang Bin, Deputy Director General, Department of Science and Technology of Gansu Province, P.R. China, while other members of the delegation included Ms. Zhang Yanping, Chunguang Ouyang, Dr. Lou Zhongyu, Jiao Wenlong and Tai Wang. Acting Chairman PARC Dr. Nadeem Amjad delivered a detailed presentation about PARC history, governance structure, core functions, and research establishments, located in various agro ecological zones of the country for achieving the national goal of food security and poverty reduction through agricultural research and development.

The other participants of the meeting from PARC included, Member Animal Sciences Division Dr. Shahid Rafique, Member Coordination and Monitoring Division Dr. Munir Ahmad, Director Climate Change, Alternate Energy and Water Resources Institute (CAEWRI) Dr. Muhammad Munir Ahmad, Director Land Resources Research Institute (LRRI) Dr. Arshad Ali, Director Range Management and Forestry/Project Director RADP Dr. Sarfraz Ahmad, Program Leader Fisheries Program NARC Dr. Muhammad Afzal and Dr. Farid Ullah from Trout Research and Multiplication Station, Mountain Agricultural Research Centre (MARC) Gilgit. The Pakistani and Chinese scientists discussed in detail the scope of collaboration between PARC and cold water fish production.

After briefing session, the delegation also visited Aquaculture and Fisheries Research Program, Bio Energy Research Centre and other components of mutual interest to outline the collaboration between both sides.

This news letter is jointly initiated by UVAS-Industry Liaison Working Group on “Fisheries & Aquaculture” and HEC-BC KEP Project titled “**To STRENGTHEN PUBLIC/PRIVATE PARTNERSHIP AMONG FISHERIES & AQUACULTURE COMMUNITIES THROUGH EDUCATION & TRAINING IN PUNJAB PAKISTAN”.**

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