

ATARI Kolkata NEWS



Volume: 1 Number: 1
January – June, 2017

A Biannual Newsletter of ICAR-Agricultural Technology Application Research Institute Kolkata
(An ISO 9001: 2015 Certified Institute)

“Congratulations to Dr. Sati Shankar Singh on his new assignment as Director, ICAR-ATARI, Kolkata”

In This Issue ...

- » From the Director's Desk
- » About ICAR-ATARI Kolkata
- » Mandate
- » Staff strength
- » Zone reorganization
- » Impact making technologies
 - Land shaping
 - Sand bag check dam
 - Profitable pig farming
 - Backyard poultry farming
 - Magur seed production
- » Important activities of KVKs
- » News
- » Events
- » Meeting/ workshop/ training programmes organized/ conducted
- » Meeting/workshop attended by Scientists/ staff
- » Distinguished visitors
- » Ongoing projects/programmes
- » Publications
- » Recognition
- » Joining/ relieving

From the Director's Desk

“We should not forget that it will be just as important to our descendents to be prosperous in their times as it is to us to be prosperous in our time.”- Roosevelt

Truly, being prosperous is eternal; and this fits well with the present day Indian farmer's livelihood scenario. Nearly 119 million farmers and another 144 million landless agricultural labourers have certainly been exposed to the current policy environment composed by the national initiatives like doubling farmers' income by 2022, skill building with Agriculture Skill Council of India (ASCI) and the likes. Such an environment coupled with MGNREGA, globalization of market and most recently introduced Goods and Services Tax (GST) poses a constant and continuous thrust for a paradigm shift to knowledge-intensive and technology-packed agriculture by the farmers as well as non-farm agricultural entrepreneurs. Contribution of technological innovations, packaged as improved technologies and their wider adoption are the only key to make our farmers both complementary and competitive in such a policy situation that is always triggering a commendable uncertainty in agri-input condition as well as marketing of the produce.



In order to make ourselves prosperous in true sense, the Indian farming sector, both primary and secondary, and of course, tertiary, needs to adopt more and more available technological innovations for productivity enhancement, minimization of costs, widening of agri-marketing and reduction of post-harvest and other losses. Such knowledge-intensive agriculture backed with educated, skilled and informed farmers will definitely lead to increase/double the current level of average monthly income (Rs. 6430) of an Indian farmer. This would be possible by large scale field level operations of technology application by KVKs duly monitored by the ATARI and ICAR for need-based, contingent and appropriate ground-level planning and implementation of already generated location-specific agri-technologies. Thus, a prosperous India may emerge with much better productivity of crop, livestock and fisheries sector as a whole.

I hope that this First Volume of Newsletter from ICAR-ATARI Kolkata will be worth-reading which chronicles our activities in the last six months. I congratulate all scientists and staff of this institute for taking such important initiative to publish this first issue. Feedback and suggestions are always welcome.

(S. S. Singh)

About ICAR-ATARI Kolkata

The Zonal Project Directorate (erstwhile Zonal Coordinating Unit), Zone-II began its journey from the office premises located within the Directorate of Extension Education Complex of B.C.K.V., Mohanpur, Nadia, West Bengal with the specific objective to monitor and evaluate the Lab to Land Programme (LLP), country wide launched in the year 1979 in celebration of the ICAR Golden Jubilee Year and drawing fund support from the Cess Fund of ICAR. Alongside, it was entrusted with the responsibility to monitor and guide the activities of KVKs which were gradually coming up that time with great future promise as District Level First Line Agricultural Institutions. The initial operational jurisdiction of the Unit was spread over West Bengal, Odisha and A. & N. Islands. However, due to demanding administrative reasons, the state of Bihar was subsequently brought

under the fold of Zone-II in the year 1991 in lieu of Odisha, which was then shifted under Zone VII. The jurisdiction of ZPD was further extended to include the newly created state of Jharkhand in the year 2000. After ten years of its operation from B.C.K.V., the office of the then ZPD-II was shifted to Veterinary College Campus, Belgachia, Kolkata for required infrastructural facilities. However, conversion of Veterinary College into West Bengal University of Animal and Fishery Sciences again necessitated the Unit to shift its office to NBSS&LUP Campus, Salt Lake, Kolkata in the year 1996. During those years of instability in office housing, nevertheless, the Unit went on widening its service domains creditably in the form of successful implementation of a score of ICAR supported programmes like Operational Research Project, National

Demonstration and All India Coordinated Research Project on Scheduled Caste and Scheduled Tribe. Besides, special projects on Frontline Demonstrations under National Oilseed Production Programme (NOPP) and under National Pulse Production Programme (NPPP) were also carried out. Front Line Demonstrations on Farm Implements and Cotton were also initiated by this Unit in this Zone. Finally, the Zonal Coordinating Unit has been upgraded to Zonal Project Directorate in the pattern of other Project Directorates / Institutes of ICAR including administrative and financial power since 2009. The Directorate moved to its new administrative building in Salt Lake, Kolkata in 2013. Since July 2015, this Directorate has been renamed as ICAR-Agricultural Technology Application Research Institute (ATARI), Kolkata.

Mandate

The revised mandates of Agricultural Technology Application Research Institute are as follows :-

- * Coordination and monitoring technology application and Frontline Extension Education Programs.
- * Strengthening Agricultural Extension Research and Knowledge Management

The Agricultural Technology Application Research Institute, Kolkata takes up the following functions to achieve the above mandates.

- * Formulate, implement, monitor, guide and

evaluate the programmes and activities of KVKs.

- * Coordinate the work relating to KVKs and ATICs implemented through various agencies such as SAUs, ICAR institutes, voluntary agencies and development departments.
- * Coordinate with State/Central Government organizations, financial institutions and other organizations for successful implementation of programmes.
- * Partnering with Directorates of Extension Education of SAUs in assured technological backstopping to KVKs and appropriate

overseeing of KVK activities.

- * Strengthening the Directorates of Extension Education of SAUs with financial support.
- * Serve as feedback mechanism from the projects to research and extension systems.
- * Implementing projects of ICAR like NICRA, ARYA, Farmer FIRST, CFLD and others.
- * Maintain close liaison with ICAR headquarter particularly with Division of Agricultural Extension for preparing reports, write ups and other important documents.

Staff strength

Category	Sanctioned	Filled
Director (RMP)	1	1
Scientific	6	6
Technical	1	1
Administrative	8	6
Skilled Supporting Staff (Gr. II)	2	1
Total	18	15



Zone reorganization

After reorganization of the then eight ATARIs in the country, new additional three ATARIs namely ATARI-Guwahati,

ATARI-Patna and ATARI-Pune were created by the Ministry of Agriculture and Farmers' Welfare, Government of

India. Those newly created ATARIs became functional since 1st April, 2017. Accordingly, the existing KVKs under

different states were redistributed under eleven functional ATARIs. The ICAR-ATARI, Kolkata have been allotted a total of 58 KVKs under Union Territory of Andaman and Nicobar Islands, Odisha state and West Bengal state. The detail distribution of KVKs under ICAR-ATARI, Kolkata has been given in Table.

State	No. of district	Details of KVK						Total
		SAU	NGO	ICAR	State Govt.	Deemed Univ.	CU	
A&N Islands	3	–	–	03	–	–	–	03
Odisha	30	31	–	02	–	–	–	33
West Bengal	23	12	03	04	01	01	01	22
Total	56	43	3	9	1	1	1	58

Impact making technologies

Land shaping/ Ail (Bund) cultivation

In the coastal zone of West Bengal, crop cultivation comes to standstill due to inundation of rain water. To overcome this problem, land embankment was raised up to one meter keeping the low



land paddy field aside. The width of the embankment was made 90 cm whereas the base remained 150 cm. To make a raised land embankment along the circumference of 1 ha land, having 400 running meter, 480 cubic meter soil was required which was collected by making trench or digging small pond of about 24 meter long, 10 meter width and 2 meter depth within the paddy field itself. When considering the quantifiable impact in

Profitable pig farming through scientific management

Scientific pig rearing has become very popular among the poor people in several districts of this Zone. In most of the cases,



terms of returns to investments, water is being harvested for irrigating vegetables grown in the embankment of paddy field. Paddy-cum-pisciculture is being practiced in the excavated pond. Such structure remains erect up to 8-10 years without incurring additional expenditure by the farmers. Vegetable cultivation throughout the year is possible in this shape of land. The technology has become very popular in many districts of West Bengal.

Sand Bag Check dam (Bora Bandi)

As a result of climatic vulnerability, many districts of Jharkhand state suffer from erratic and insufficient rainfall throughout the year leading to chronic shortage of water in the rivers/ streams. Earlier, pakka check dam was constructed on rivers but that dam used to be damaged after one year, and the dams became of no use. Due to slope, water could not be stored. After creation of low cost temporary structure through sand bag on river of 50 meter length, huge quantity of water can be stored for supplemental and drinking purposes. Recharging of well

in nearby of the village has become an additional advantage. Side by side, water table of the surrounding areas has risen by 44% followed by an expansion of area under off-season vegetable cultivation in 10.0 ha, summer paddy cultivation in 10.0 ha, wheat cultivation in 50.0 ha and safe harvesting of standing paddy from 30.0 ha during acute scarcity of rainwater. Mono-cropping has turned into double and in some cases multiple cropping in the village. Around 75 check dams were



created during last three years in Gumla district of Jharkhand. This technology is being rapidly adopted by the people of other surrounding districts in Jharkhand state.

pig farmers are following crossbreeding of deshi with exotic pig breed Tamworth (Tamworth x Deshi) and low cost feeding using locally available ingredients. Because, crossbred pigs resulted faster growth, better reproductive performance, better feed conversion efficiency, better disease resistance, better adaptability and higher economic returns. The comparative performances of deshi and crossbred pigs

have been given in the following table. On the other hand, use of locally available ingredients in feed saved the high cost of concentrated feed. It was observed that use of rice and marua fermented waste in grower ration and replacement of maize with marua (upto the level of 60% of total ration) reduced the production cost upto 30%. Considering the economics, it has been calculated that with the help of

Parameters	Desi Pig	T x D Cross
Litter size	4-6	10-12
Mortality (%)	10% less in T x D cross than Desi	
Farrowing interval (days)	220-240	180-200
Weight in one year (kg)	25-30	80-90

above technology, if a person rears at least 30 pigs, can earn between Rs. 60,000/- to Rs.2,50,000/- per year depending on the

Backyard poultry rearing with improved breed and low-cost technology increased profitability

During last few years, back yard poultry farming boosted the socio-economic status particularly of poor women farmers with very low initial investment in the rural areas. Due to unavailability of good poultry germplasm, unavailability of quality feedstuff, high incidence of diseases and attacks of predators, the production performance of poultry birds reared under backyard system was not up-to the mark. Recently, with the

Magur seed production technology

Seed production in fish farming is a very complicated and expensive proposition. This is the most crucial part of the technology. The low cost hatchery has been developed indigenously by the KVK which has two main structures- (a) a circular trough of 1m diameter made of cement; and (b) a circular hatching structure of 90 cm diameter made of iron to which nylon net is fitted and stretched. The fertilized eggs are spread over the circular net fixed inside the hatching trough and water was sprinkled over it through a perforated bottle of which one side tight with water flowing pipe and/or control taps. The tap water supply is essential, as this enables the adjustment of flow and oxygenation as well as allowing the controlled application of treatment to combat the spread of bacterial and fungal disease. Water is supplied through taps from the lower portion of the hatchery. The water comes from bottom of the hatchery. In other cases, circular hatching trough may be made up of galvanized iron sheet with 80 cm diameter and 30 cm height. The water from drum comes to the trough through pipe and water exits through outlet. A round perforated galvanized iron sheet portion is kept at the middle of the trough. A rectangular hatching tray (35 cm x 25 cm) may be made of iron to which nylon net is placed within the trough.

The standard breeding technique was employed with little modification. Two

marketing value of meat. Due to mass dissemination and wider adoption of these rearing practices/ techniques, a

help of KVK scientists, some technology interventions like use of improved poultry breeds (RIR, Vanraja, Hit-CARI, Shyama, Gramapriya, Kroilers), use of low-cost mud-based portable housing, little supplementation of locally available feedstuffs along with calcium and zinc, and vaccination against Ranikhet Disease and Fowl Pox were done in backyard poultry rearing system. It resulted into high body weight (4-5 kg) compared to non-treated (2-2.5 kg), increased egg production by 322%, monetary saving in low-cost housing by Rs. 1260/- and

to three years' old fishes weighing about 300-350 gm each are used for breeding. Male is easy to identify as it has elongated and pointed genital papilla whereas gravid females are comparatively heavier having round and bulging abdomen and reddish vent. The brood magur fishes are stocked in a cemented tank, three months before the actual breeding. For induced breeding both male and female are given single dose (1.5 mg per fish) of pituitary extract at the same time. The injected male and female are kept in two separate tanks. After 16 hours of injection, it may be observed that the fishes are then ready for stripping. The eggs are released by gently pressing the abdomen towards the vent, collecting them on a stainless steel container. At the same time the milt are then added and mixed well with help of a feather followed by addition of water to activate the sperm. The injected male needs to be sacrificed to prepare sperm suspension in clean water. The testis is dissected out and cut into small pieces with the help of small scissors and macerated in normal saline water (0.9% NaCl in distilled water) to prepare finally the sperm suspension. The sperm suspension is sprinkled evenly over the eggs followed by clean water addition. Eggs and sperm are allowed to mix by gently moving tray for 4-5 minutes. The fertilized eggs are washed thoroughly and transferred to hatchery. The unfertilized or dead (opaque/white) eggs are removed immediately to prevent fungal infection.

Fertilized eggs are spread over the rectangular net which remains suspended inside the hatching trough at 5 cm depth

substantial amount of medium sized pig farms have been established in the zone.

increased net income of Rs. 9800/- from Rs. 3800/- per year from a 20 bird unit. This technology is being adopted by many back yard poultry farmers in this zone.



from the water surface. The fertilized eggs are uniformly spread. The water depth should be 12-15 cm. A feeble inflow of water is maintained. Normally the larvae take 18-22 hr of incubation after fertilization to hatch out. The newly hatched larvae retain a large ovoid yolk sac, which gets absorbed in four days. This time they do not take food from outside. The three day old larvae (4th day) are fed with live plankton. On the fourth day the hatchlings are transferred to a rearing tank. The temperature is kept in between 27-30°C and pH, in between 7 and 7.5.

After four days, the larvae are transferred to a polythene covered earthen bed (160 cm x 120 cm) surrounded by mud ridge to a height of 20 cm. The water depth in polythene covered earthen tank is maintained at 10 cm. The continuous water supply is to be maintained. After providing feed, water is not changed within 1 hr. The larvae are fed with live zooplankton for 10-15 days twice to thrice in a day. Planktons are collected from ponds at morning or evening time by a plankton-net. The collected plankton is filtered through a fine net. About 2-3 ml of plankton per litre water is sufficient for larvae. The dead zooplankton requires to be removed by siphoning at least twice a day. After 15 days, the magur fry reach to 10-12 mm size. Then the fry is reared in well prepared pond or outdoor cemented tank.

This technology does not require much investment and space, and it can be prepared very easily. Many fish farmers of West Bengal are using this technology for mangur seed production.



Important activities of KVKs

Sl. No.	Activities	Achievements
1.	Number of on- farm trials conducted (Number of technologies)	126
2.	Frontline demonstrations conducted (Number)	7975
3.	Farmers trained (in lakh)	0.895
4.	Extension Personnel trained (Number)	10486
5.	Participants in extension activities (in lakh)	6.164
6.	Production of seed (in quintals)	8679.5
7.	Planting material produced (in lakh)	12.64
8.	Live-stock strains and finger lings produced (in lakh)	12.78
9.	Soil, water, plant, manures samples tested (in lakh)	0.182
10.	Mobile agro- advisory provided to farmers (in lakh)	16.20

News

Inauguration of new KVKs

Foundation stone laying ceremony of ICAR-CISH KVK at Malda

Foundation stone laying ceremony of CISH-Krishi Vigyan Kendra, Malda was held on January 21, 2017 at ICAR-CISH Regional Research Station, Malda, West



Bengal. The foundation stone was laid by Dr. A. K. Singh, Deputy Director General (Agricultural Extension) in presence of Swami Viswamayananda Ji

(Secretary, Ramakrishna Mission Ashrama, Sargachi), Dr. Randhir Singh, Assistant Director General (Agricultural Extension), Dr. P. K. Chakrabarty, Assistant Director General (PP&B), Prof. S. K. Mitra, Former Dean, BCKV, Mohanpur, Dr. S. K. Roy, Director, ICAR-ATARI Kolkata, Dr. S. Rajan, Director, ICAR-CISH, Lucknow, Dr. B. K. Das, Director, ICAR-CIFRI, Barrackpore, Dr. R. K. Thakur, Project Coordinator (AICRP on Honey Bee & Pollinators, IARI) and other dignitaries.

Inauguration of ICAR-CRIJAF KVK at Nilgunj, North 24 Parganas

An additional KVK of North 24 Parganas, West Bengal was inaugurated at ICAR-Central Research Institute for Jute and Allied Fibres, Barrackpore, West Bengal. Dr. P.G. Karmakar, Director, ICAR-CRIJAF in his inaugural address emphasised on conserving the natural resources in an integrated diversified system with the aim of sustaining farm income at an increased level.

Shri Arun Roy, Additional Director (Agriculture), Govt of West Bengal urged to take advantage of the KVK programs for enhancing their income and profitability of farmers. He also



appreciated role of KVKs in making this programme a success. The KVK has been assigned to serve the agriculture blocks of Hingaljanj, Sandeshkhali, Minakhan, Hasnabad, Barasat, Haroa, Barrackpore and Rajarhat of North 24 Parganas district. The second KVK in the district of North 24 Parganas will play an important role in improving the skills and income of farming community through introduction of suitable models of peri-urban and rural agriculture, horticulture, fishery and animal husbandry. This KVK will work under administrative control of ICAR-CRIJAF. Scientists and Staffs of ICAR Research Institutes participated in the event.

Events

International Yoga Day celebration at ICAR-ATARI, Kolkata

International Yoga Day was celebrated at ICAR-Agricultural Technology Application Research Institute, Kolkata on 21st June, 2017. All staff members including Director and Head of Office assembled at seminar hall of the



institute to attend the programme. Dr. F. H. Rahman, Principal Scientist welcomed the Yoga Expert and all staff members of the institute. One resource person namely Shri Kishnanlal Bajaj, a Yoga Expert, was invited for the programme. The expert demonstrated different Yogasanas and Prayanams, and briefed the positive effects and benefits on health. All staffs actively participated in performing the various Asanas with zeal and zest. He has also elaborately discussed the need

and ineluctability of Yoga on today's environment. One bulletin on Art of Healthy Living was distributed among the participants. At the end of session, Dr. S.S. Singh, Director addressed the participants about the importance, expediency and advantage of practicing Yoga regularly. The session was continued for two and half hours.



Swachh Bharat Abhiyan

ICAR-ATARI Kolkata

During the period from 16th to 31st May 2017, “Swachhta Pakhwada” was observed at this Institute. Besides the regular cleaning activities, the following points in Action Plan were also taken care of.



Sl. No.	Action Plan / Parameters	ATR on the Action Plan
1.	Identification of activities/factors accountable for creating dirt/garbage and the action taken thereof.	Official works to be continued on MIS/FMS software including payment of salaries, employee records, procurement, etc. Digitisation of office records to be continued.
2.	Steps taken for creating awareness to maintain cleanliness and preventive measures	Oath taking and making Swachh Bharat Mission activities regular at all the KVKs
3.	Special work/achievement during the Swachhta Pakhwada	Special cleanliness drive taken in the premises
4.	Pending files/matter/activities as on 31.05.2017 with period of pendency	Very few
5.	Weeding out files, status of destroying the records not meant for archival storage	Action initiated for file transfer to new ATARI
6.	Status of cleanliness in the office, rooms, lavatories	Regular cleaning of toilets and office premises Housekeeping activities in sections, laboratories, and office premises to be strengthened and monitored regularly
7.	Status of uploading of activities/photographs of swachhta pakhwada and news/events emerged in print and electronic media and website	Uploading of the action photographs
8.	Usage of eco-friendly technologies, lesser use of plastic etc. climate smart/energy efficient	Promotion of least use of plastic etc.
9.	Climate smart/energy efficient measures adopted	Limited use of petroleum products in day-to-day office activities

Krishi Vigyan Kendras under ATARI, Kolkata

Participation in swachhta activities and observance of Swachhta Pakhwada (16-31.05.2017) was accomplished by this Institute as well as all the KVKs of this Zone. Various programmes on sanitation, sustainable cleanliness drive including other activities were

undertaken by 83 KVKs involving about 3350 participants in ATARI Kolkata as well as KVKs of this Zone (at their respective office premises and adopted villages). Around 83 villages were involved in the programme across the Zone. Regular organization of various cleanliness programmes is being taken up by the KVKs under ATARI Kolkata.



Meeting/ workshop/ training programme organized

Sensitization meeting on implementation of ICAR-ERP system/ KVK Portal / KRISHI (Knowledge Based Resources Information System Hub for Innovations in Agriculture) Portal

A meeting was held at this Institute under the Chairmanship of Dr. S. K. Roy, Director on 9th January, 2017 to discuss the issues related to Finance Module and SCM Module of MIS-FMS, KVK Portal

and KRISHI Portal. The meeting was convened by Dr. S. K. Mondal, Principal Scientist-cum-Nodal Officer of ICAR-ERP. The meeting was attended by all scientists, administrative staff and YP-II of this institute. Dr. S. K. Roy briefed the purpose of the meeting. Dr. Mondal requested to all concerned staff members for real time implementation of the ICAR-ERP system at this institute, and to update all pending works in the system by

the end of January, 2017. It was decided that a feedback form for reviewing the progress of implementation of FMS-MIS would be filled in and sent to the Council. It was also decided that Dr. K. S. Das, Principal Scientist would be acting as Nodal officer for KVK Portal in this institute. He was requested to give necessary instruction to all the KVKs of this Zone to upload event details, CFLD data in KVK Portal with two quality

photographs without any further delay. In the meeting, Dr. K. S. Das, Nodal Officer of KRISHI Portal informed the house that all data relating to the technology, publication, experiment, survey, geo-portal etc. pertaining to ICAR-ATARI, Kolkata are the property of ICAR. Those data were to be uploaded in KRISHI Portal after getting approval from the competent authority of the Institute for the accessibility to others.

Meeting on KRISHI Portal

A meeting was held under the Chairmanship of Dr. S. K. Roy, Director, ICAR-ATARI, Kolkata on 25.02.2017 to discuss the issues related to KRISHI Portal. All Scientists of ICAR-ATARI, Kolkata attended the meeting. Dr. S. K. Roy briefed about the purpose of meeting. Dr. K. S. Das, Principal Scientist-cum-Nodal Officer of KRISHI Portal discussed about the objectives, present status of KRISHI Portal and its use in agricultural research systems. He presented how to register in KRISHI Portal system as individual scientist using unique e-mail identification provided by ICAR, and also how to upload various publications in the system. Dr. Das requested to all the Scientists of ICAR-ATARI, Kolkata to register and to upload their publications in the portal at the earliest. All Scientists were also requested to provide the soft copy of various publications published by this Institution.

Meeting of Institute Management Committee

The ninth Institute Management Committee (IMC) Meeting was held on 13th January, 2017 at ICAR-ATARI, Kolkata.



Sensitization workshop for Animal and Fishery Science SMSs of West Bengal

A two days Sensitization Workshop on 'Technology Application in Animal

and Fishery Sciences' was held at ICAR-ATARI, Kolkata on 16th and 17th March, 2017 to sensitize the SMSs on transferable technologies in Animal and Fishery sciences, and to make a common platform for knowledge exchange among the SMSs through an interactive mode. An attempt was made to prepare an inventory of the available proven technologies in animal and fishery sciences for West Bengal. The Workshop was attended by Prof. S. Pan, F/O- Veterinary Sciences and Prof. S. K. Das, F/O- Fishery Sciences of WBUAFS, Kolkata, W.B., Scientists of ICAR- ATARI, Kolkata and 20 Subject Matter Specialists (SMSs) relating to Animal and Fishery sciences from West Bengal KVKs. In the inaugural function, Dr. Avijit Halder, Principal Scientist and Course Coordinator, ICAR- ATARI, Kolkata welcomed the experts and the participants. Dr. P.P. Pal, Principal Scientist, ICAR- ATARI, Kolkata gave a brief overview of the programme.

Prof. S. Pan delivered a brief talk emphasising on livestock farming business technology. He warned that the population of cattle, buffaloes, goats, sheep, pigs and backyard poultry birds is declining gradually in West Bengal. Prof. Pan stressed upon the socio-economic conditions and the capacity of the farmers in doing livestock farming business. He pointed out the challenges in specialized farming. Prof. S. K. Das appreciated ATARI Kolkata for organizing such workshop in view of strengthening operational research and transfer of technology in the field of fishery science. He put a question why the farmers are not practising composite fish culture with six species. Prof. Das highlighted the importance of floating feed considering the variant mouth structures of different fish species and energy expenditure aspect of various fish species at different layers of a pond. He indicated the huge scope of culturing the stunted seeds and threw a concept of claiming organic fish culture.

The parallel technical sessions on information about the technologies and their field application in animal and fishery sciences were conducted

separately by the scientists of ICAR-ATARI, Kolkata in the presence of the expert in the respective fields.

In the 2nd day of the workshop, Dr. (Mrs.) Anindita Chaudhuri, Assistant Professor, Department of Psychology, University of Calcutta, Kolkata delivered a talk on 'Stress and motivation at work place'. Thereafter, Dr. Debdul Dutta Roy, Associate Professor, Psychology Research Unit, Indian Statistical Institute, Kolkata discussed on 'Self-efficacy in Technology Adoption'. The participants interacted very actively in such motivational technical session.



In the technical session on analytical review on implementation of technology in the field, Dr. S.K. Mondal, Principal Scientist, ICAR- ATARI, Kolkata delivered a talk on Designing of OFT: Concepts, Methodologies and Concerns. Thereafter, Dr. P.P. Pal, Dr. Avijit Halder, Dr. S.K. Mondal and Dr. K. S. Das placed the analytical review on implementation of technology in animal and fishery sciences undertaken by different KVKs in West Bengal through summarizing the two day long deliberations and outlining the future plan of action for effective implementation of agricultural technologies.

Annual Zonal Workshop of KVKs Under ICAR-ATARI, Kolkata

The Annual Zonal Workshop for 89 KVKs of Zone-II consisting the states of Bihar, Jharkhand, West Bengal and Union Territory of A. & N. Islands was held at ICAR-CIARI, Port Blair on April 14-16, 2017. The workshop was inaugurated by the Vice-Chancellor of BAU, Sabour, Bhagalpur, Bihar, Dr. A. K. Singh in the presence of Dr. S. Dam Roy, Director, ICAR-CIARI, Dr. S. S. Singh, Director, ICAR-ATARI, Kolkata, Directors of Extension Education of SAUs, Scientists of ICAR-ATARI, Kolkata, Faculty of ICAR-CIARI, Port Blair, nearly 100 KVK personnel, press & media people and others. After a brief welcome and putting up a few pertinent issues by Dr. P.P. Pal, Principal Scientist, ICAR-ATARI, Kolkata, Dr. S. K. Roy, Principal Scientist,

ICAR-ATARI, Kolkata presented the achievements of this zone during last one year. In inaugurating the workshop, the Vice-Chancellor, BAU, Bhagalpur,



Bihar appreciated the efforts of the KVKs in bringing visible changes in the agriculture of this zone. He, however, urged the KVKs to become more active in implementing various schemes and programmes of Govt. of Bihar and Central Government for the benefit of the farming community of this zone. Some publications like Proceedings of National Conference of KVKs 2015, NICRA News Letter, NICRA News -At a Glance, Champion Farmers etc. were released during the session.

The inaugural session was followed by a special technical session on panel discussion on various aspects functioning of KVKs chaired by Dr. A.K. Singh. Detailed discussion took place regarding present functioning of KVK system and suggested measures to improve upon the pattern of functioning for better output/ outcome of the system. Major issues highlighted in the session includes issue of soil health card, strengthening of soil & water testing laboratory, engagement of contractual manpower, infrastructure development, cashless transaction, kisan portal, linking AADHAR of the beneficiaries of KVKs, digitization, skill training, registration of more number of farmers variety, convergence with all other stakeholders, recruitment in ICAR KVKs by ASRB, filing up vacant posts in KVKs by SAUs, inclusion of research component in ATARI functioning, incorporation of GPS in all field activities of KVKs, focus on technology assessment and refinement to make more visible etc. Three concurrent



sessions were held during the workshop to critically evaluate the activities of KVKs during last one year (2016-17) and suggested Action Plan for 2017-18.

Annual Zonal Workshop of NICRA-TDC

The Zonal Workshop of National Innovations on Climate Resilient Agriculture (Technology Demonstration Component) of ICAR-ATARI Kolkata was held at Uttar Banga Krishi Vishwavidyalay, Coochbehar, West Bengal on May 30-31, 2017. The workshop was chaired by Dr.



C. Chattopadhyay, Vice Chancellor, Uttar Banga Krishi Vishwavidyalaya, Coochbehar, Co-Chaired by Dr. S.

S. Singh, Director ICAR-ATARI Kolkata. The Chief Guest of the Workshop was Dr. R. S. Poswal, Assistant Director General (AE), ICAR New Delhi. The workshop was attended by Dr. Anjani Kumar Singh, Director, ICAR-ATARI Patna, Dr. J. V. N. S. Prasad, Coordinator-NICRA TDC, ICAR-CRIDA, Hyderabad, Dr. S. C. Sarkar, Director of Extension Education, Dr. Ashok Chowdhury, Director of Research, Registrar, Heads of Departments, Senior Faculties of UBKV Coochbehar, NICRA Nodal Officer of ICAR-ATARI Kolkata and all the Heads of NICRA-KVKs of the Zone. Dr.



Chattopadhyay in his address pointed out that the intervention under NICRA should read vulnerability with existing cropping practices and preventing the vulnerability through NICRA intervention was to be done on priority. He also spoke about the climatic issues existed in and problems of water crisis in the northern parts of West Bengal were being faced by the people there. One CD on 'Success Story of Sand Bag Check Dam' of KVK Gumla and two publications on 'An Introduction of Edible Mushroom' and 'Green Fodder Cultivation' of Coochbehar Krishi



Vigyan Kendra were released during the workshop. In the technical session, all Programme Coordinators/ PIs of the NICRA-KVKs presented their salient achievements of out scaled technologies during the last six years and action plan for 2017-18.

First State Coordination Committee meeting for doubling farmers' income held at ICAR-ATARI Kolkata

The first State Coordination Committee (SCC) Meeting for doubling farmers' income in West Bengal was held under the Chairmanship of Dr. D. D. Patra, Vice-Chancellor, Bidhan Chandra Krishi Viswavidyalaya (BCKV), Mohanpur, Nadia, West Bengal at ICAR- Agricultural Technology Application Research Institute (ATARI), Kolkata, Salt Lake, Kolkata on 7th April, 2017.

Dr. D. D. Patra, Vice-Chancellor, BCKV, Mohanpur, Nadia, West Bengal emphasized on strategies for doubling the



farmers' income by increasing the cropping intensity per unit area per unit of inputs like fertilizers,

irrigation and other natural resources with the right combination of crops including animal husbandry and fisheries, the promotion of high value crops like pulses, oilseeds, spices like turmeric, ginger etc. He suggested for the orchard development with mango, litchi, cardamom etc. in western part of West Bengal i.e. Bankura, Purulia, part of Burdwan, part of Birbhum where irrigation facility is almost nil. Taking on soil fertility, Dr. D. D. Patra warned the missing of crop response to soil fertility and nutrient management. He indicated the effect of climatic factors on crop production. He also suggested for the restructuring of the marketing system of the agricultural commodities to provide minimum support price to the farmers. Dr. Patra emphasized on the development of agro-ecological zone specific, crop specific and the farmer centric technological modules in view of doubling the farmers' income by March, 2022 in West Bengal.



The Vice-Chancellor of State Agricultural Universities, Directors of ICAR Institutes, Director of Min. of Food Processing

Industries, GOI, New Delhi, Director of Directorate of Jute Development, Min. of Agri. & FW, GOI, New Delhi and

Senior Officials of State Government Departments and Scientists of ICAR-ATARI, Kolkata attended the meeting.

Meeting/workshop attended by Scientists/ staff

Sl. No.	Purpose of visit	No. of scientist(s)/staff attended
1	Annual zonal workshop of ICAR-ATARI, Kolkata	5
2	State level review workshop	7
3	Scientific advisory committee meeting of KVKs of ATARI, Kolkata	7
4	NICRA-TDC zonal workshop	3
5	Site selection committee visit for establishing new KVKs	4
6	National workshop of farmer FIRST programme	7
7	Workshop of CFLD on pulse and oilseeds	7
8	Selection of various posts at KVKs/host organizations/ others	7
9	Inauguration of new KVKs	4
10	Delivering of lectures at different institutes/ universities	7
11	Monitoring of NICRA-TDC project at KVKs	2
12	Conducting of viva-voce	5
13	State-wise coordination committee meeting for doubling the farmers' income	7
14	Conference/symposia/workshops	7
15	Interactive meetings with the Hon'ble Union Agriculture Minister, Shri. Radha Mohan Singh Ji	4
16	Interface meeting with university and KVK-Agripreneurs	1
17	EFC meeting	5
18	Strategizing pulse production in rice fallow areas in Eastern India	3
19	Seed hub implementation planning meet	7
20	Implementation of PFMS	12

Distinguished visitors

* Shri Radha Mohan Singh, Hon'ble Minister of Agriculture & Farmers' Welfare, Govt. of India



* Dr. Trilochan Mohapatra, Secretary, DARE and Director General, ICAR, New Delhi

* Dr. Ashok Kumar Singh, Deputy Director General (Agril. Ext.), ICAR, New Delhi

* Dr. Ajoy Kumar Singh, Vice Chancellor, Bihar Agricultural University, Sabour, Bihar

* Prof. P. Biswas, Vice Chancellor, West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal

* Dr. D. D. Patra, Vice Chancellor, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal

* Dr. C. Chattopadhyay, Vice Chancellor, Uttar Banga Krishi Viswavidyalaya, Pundibari, Coochbehar, West Bengal

* Dr. V. P. Chahal, Assistant Director General (Agril. Ext.), ICAR, New Delhi

* Dr. R. S. Poswal, Assistant Director General (Agril. Ext.), ICAR, New Delhi

* Sh. Sujit Mitra, Director (P), ICAR, New Delhi

* Dr. A. Kumar, Director, ICAR-ATARI, Patna

* Sh. Vineet Sharma, Director, Ministry of Food Processing Industries, Govt. of India, New Delhi

* Dr. K. Manoranjan, Director, Directorate of Jute Development, Kolkata

* Dr. Ashis Lahiri, Jt. Director of Agriculture, Govt. of West Bengal

* Dr. J. Mitra, Director, Central Research Institute for Jute and Allied Fibres, Barrackpore, West Bengal



Ongoing projects/ programmes

- * Cereal Systems Initiative for South Asia (CSISA)
- * Cluster Frontline Demonstration (CFLD) on Pulses and Oilseeds
- * Farmer FIRST Programme (FFP)
- * Integrated Farming System (IFS)
- * KRISHI Portal
- * KVK Portal
- * Management Information System (MIS) including Financial Management System (FMS)
- * Mera Gaon Mera Gaurav (MGMG)
- * mKisan Portal
- * National Attracting and Retaining Youth in Agriculture (ARYA)
- * National Fisheries Development Board (NFDB) sponsored capacity building programme
- * Pradhan Mantri Fasal Bima Yojana (PMFBY)
- * Pre-Rabi and Pre-Kharif Kisan Sammelan
- * Protection of Plant Variety and Farmers Right Act (PPVFRA)
- * Seed Hub programme
- * Skill Development Training programmes (ASCI)
- * Swachh Bharat Abhiyan
- * Technology Demonstration Component of National Innovations on Climate Resilient Agriculture (NICRA-TDC)
- * Tribal Sub Plan (TSP)

Publications

Research articles

Haldar A, Das D, Saha B, Pal P, Das S, Das A, Rajkhowa D, Hazarika S, Datta M. 2017. Smallholder pig farming for rural livelihoods and food security in North East India. *Journal of Animal Research*, 7 (3): 471- 481.

Khan M, Manna D C, Mondal S K, Chatterjee J K and Pyne S K. 2017. Comparative performance of Vanaraja, RIR and indigenous birds under backyard system of rearing in Birbhum district of West Bengal. *Indian Journal of Poultry Science*, 51 (3): 308-311.

Technical articles

Datta D, Das K S and Mondal S K. 2017. Effective production and post-production activities in agriculture through use of Information Technology (IT) based tools. In: E-Book of National Conference on "Revisiting agricultural extension strategies for enhancing food and nutritional security, sustainable livelihoods and resilience to climate change-towards transforming agriculture". Full paper published in EXTRACON 2017 organized by Sarvareddy Venkureddy Foundation for Development (SVFD) and Participatory Rural Development Initiatives Society (PRDIS) held in Prof. Jayshankar Telengana State Agricultural University, Hyderabad from April22-24, 2017, pp: 135-140.

Mondal S K, Datta D and Das K S. 2017. Market intelligence and marketing

strategies of agricultural producers in Eastern India. In: E-Book of National Conference on "Revisiting agricultural extension strategies for enhancing food and nutritional security, sustainable livelihoods and resilience to climate change-towards transforming agriculture". Full paper published in EXTRACON 2017 organized by Sarvareddy Venkureddy Foundation for Development (SVFD) and Participatory Rural Development Initiatives Society (PRDIS) held in Prof. Jayshankar Telengana State Agricultural University, Hyderabad from April22-24, 2017, pp:200-207.

Technical bulletins/ reports

Batabyal K, Murmu S, Tamang A, Das I, Saha S, Rahman F H, Pradhan D, Chakrabarty M, Hazra G C and Mandal B. 2017. Nutrient management practices for common root and tuber crops (carrot, radish and elephant foot yam) of West Bengal. Published by Directorate of Research, BCKV, Kalyani, WB, pp: 32.

Rahman F H, Ghosh D and Roy S K (Eds.). 2017. NICRA Annual Report 2016-17. Published by Director, ICAR-ATARI Kolkata, Salt Lake, Kolkata, pp: 1-64.

Roy S K, Pal P P, Mondal S K, Rahman F H, Das K S and Haldar A (Eds.). 2017. Annual Report of ICAR-ATARI, Kolkata. Published by

Director, ICAR-ATARI, Kolkata, pp: 1-108.

Paper presented/ published in symposia/ conferences/ other fora

Biswas S and Rahman F H. 2017. Effect of different phosphatic sources on potato yield and soil quality. Compendium on invited papers and book of abstracts of National Seminar on "Maximizing fertilizer use efficiency & environmental health for posterity" held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 47.

Biswas S, Sarkar Sand Rahman F H. 2017. Effect of enriched compost on carbon sequestration, physical, chemical and biological attributes of soil quality for rice-potato cropping system under Terai agro-climatic zone of West Bengal. Compendium on invited papers and book of abstracts of National Seminar on "Maximizing fertilizer use efficiency & environmental health for posterity" held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 46.

Das B, Sultana S and Rahman F H. 2017. Effect of *Sesbania rostrata* incorporation (green manure) with 50% of recommended N on rice productivity under low and medium land situation of Malda. Compendium on invited papers and book of abstracts of National Seminar on "Maximizing fertilizer use efficiency & environmental

- health for posterity” held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 34.
- Datta D, Das K S and Mondal S K. 2017. Effective production and post-production activities in agriculture through use of Information Technology (IT) based tools. In: E-Book of National Conference on “Revisiting agricultural extension strategies for enhancing food and nutritional security, sustainable livelihoods and resilience to climate change-towards transforming agriculture”. Abstract published in EXTRACON 2017 organized by Sarvareddy Venkureddy Foundation for Development (SVFD) and Participatory Rural Development Initiatives Society (PRDIS) held in Prof. Jayshankar Telengana State Agricultural University, Hyderabad from April 22-24, 2017, pp: 53.
- Mukherjee S, Mukhopadhyay K, Raha S and Rahman F H. 2017. Assessment of integrated nutrient management on brinjal towards development of soil health without hampering yield. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” at RKMVU, Narendrapur WB on 8th March, 2017, pp: 64.
- Sharma A, Mandal M and Rahman F H. 2017. *Environment friendly fish amino acid based organic manure to enhance the productivity of homestead garden*. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” at RKMVU, Narendrapur, WB on 8th March, 2017, pp: 65.
- Taleb A, Rahman F H, Saha M, Roy U, Pathak P, Roy A and Patra S. 2017. Efficient nutrient management of wheat through nutrient expert based fertilizer recommendation in alluvial soil of Murshidabad district of West Bengal. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 62.
- Ghosh D and Rahman F H. 2017. Use of Azolla as fertilizer supplement in rice cultivation and as feed supplement for livestock. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” at RKMVU, Narendrapur WB on 8th March, 2017, pp: 50.
- Ghosh B, Basak J, Rahman F H, Pal P and Roy S K. 2017. Effect of integrated nutrient management on oilseeds and pulses under CFLD programme in Eastern Region of India. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 62.
- Garain P K, Roy S K, Rahman F H and Maitra N J. 2017. Use of *Trichoderma harzianum* as plant growth promoter in Betelvine cultivation in Sagar Island of South 24 Parganas. Compendium on invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” held at RKMVU, Narendrapur WB on 8th March, 2017, pp: 50.
- Narendrapur WB on 8th March, 2017, pp: 64.
- Narendrapur WB on 8th March, 2017, pp: 32.
- Book edited**
- Mandal B, Sahu N C and Rahman F H (Eds.). 2017. Compendium of invited papers and book of abstracts of National Seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” and published by the Society for Fertilizers and Environment, pp: 1-70.
- Rahman F H (Chief Ed.). 2017. Farm Women Empowerment-An experience (2nd Edn). Authored by Chakraborty M and Maitra N. J. and published by ICAR-ATARI Kolkata, 2017, pp: 1-70.
- Invited lectures**
- Das K S. 2017. Documentation. Lecture delivered in seven days HRD Training Programme on “Modern Extension approaches for improved performance of extension system” for KVK Scientists of Dr Rajendra Prasad Central Agricultural University (RPCAU), Pusa Samastipur organized by DEE, RPCAU, Samastipur on 22.02.2017.
- Sahu N C, Das I and Rahman F H. 2017. Various aspects of impacts of fertilizer use on environment. Compendium on invited papers and book of abstracts of national seminar on “Maximizing fertilizer use efficiency & environmental health for posterity” held at RKMVU, Narendrapur WB on March 8, 2017, pp: 14-22.
- Book chapters**
- Rahman F H and Roy S K. 2017. Efficient water conservation measures for augmented farm productivity in NICRA adopted Eastern Indian villages. Compendium of National Conference on ‘Climate change and agricultural production-adapting crops to increased climate variability and uncertainty’ at BAU, Bhagalpur on April 6-8, 2017.
- Biswas S, Rahman F H and Mukhopadhyay P. 2017. Interaction of bio-agent with earthworm during

the process of vermi-composting. Compendium of National Seminar on “Nutrients and pollutants in soil-plant-animal-human continuum for sustaining soil, food and nutritional security - way forward” held at BCKV, Mohanpur on June 9-10, 2017, pp: 95.

Ghosh B, Basak J, Rahman F H, Pal P P, Roy S K and Singh S S. 2017. Bio-fertilizer application on pulse and oilseeds demonstration in Eastern Region of India. Compendium of National Seminar on “Nutrients and pollutants in soil-plant-animal-human continuum for sustaining soil, food and nutritional security - way forward” held at BCKV, Mohanpur on June 9-10, 2017, pp: 125.

Kandir K M, Ekka A B, Kumar B, Kumari M and Rahman F H. 2017. Assessment of different forms of Zinc formulation in wheat to enhance yield during rabi season in Red and Lateritic areas of Paschim Mednipur district of West Bengal. Compendium of National Seminar on “Nutrients and pollutants in soil-plant-animal-human continuum for sustaining soil, food and nutritional security - way forward” held at BCKV, Mohanpur on June 9-10, 2017, pp-123.

Maiti A K, Bej N K and Rahman F H. 2017. Bio-fertilizer application on pulse and oilseeds demonstration in Eastern region of India. Compendium of National Seminar on “Nutrients and pollutants in soil-

plant-animal-human continuum for sustaining soil, food and nutritional security - way forward” held at BCKV, Mohanpur on June 9-10, 2017, pp:127.

Nayak D, Rahman F H and Chatterjee T. 2017. Way forward for revival of decline condition of Darjeeling mandarin: a case study assessment of profitability of fruit based inter cropping in kitchen garden. Compendium of National Seminar on “Nutrients and pollutants in soil-plant-animal-human continuum for sustaining soil, food and nutritional security - way forward” held at BCKV, Mohanpur on June 9-10, 2017, pp: 143.

Recognition

Dr. Kalyan Sundar Das, Principal Scientist (LPM) was conferred with “*Editorial Excellence Award*” by Agricultural Research Communication Centre (ARCC), Karnal, Haryana for his significant contribution towards ARCC Journal. He has been associated as one of the Editorial Board Members of the journal “*Asian Journal of Dairy and Food Research*”.

Joining/ relieving

Dr. S. S. Singh has assumed the Charge of Director, ICAR-ATARI, Kolkata on 12.04.2017.

Dr. S. K. Roy was relieved from the duties of Acting Director, ICAR-ATARI, Kolkata.

A PDF version of the Newsletter is also available at: <http://www.atarikolkata.org/publications>



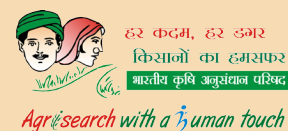
ATARI Kolkata News

A Newsletter of ICAR-Agricultural Technology Application Research Institute
(An ISO 9001: 2015 Certified Institute)

An Institution of Indian Council of Agricultural Research (ICAR)

Bhumi Vihar Complex, Block-GB, Sector- III, Salt Lake, Kolkata- 700097 (W. B.)

Tele-fax: +913323352355, E-mail: atarikolkata@gmail.com, Website: www.atarikolkata.org



Published by

Director
ICAR-ATARI, Kolkata

Compiled and Edited by

Dr. K. S. Das, Dr. S. K. Mondal,
Dr. F. H. Rahman, Dr. P. P. Pal,
Dr. S. K. Roy, Dr. A. Haldar and S. S. Singh

Designed by

Dr. S. K. Mondal and Dr. K. S. Das