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From the Director's Desk

'The discovery of agriculture was the first big step toward a civilized life'
-Arthur Keith

The small holder agricultural farmers managed their agri-operations and marketing of their produces through using different digital platforms at local level and were on the way to revive their economic conditions gradually with the help of frontline agri-scientists and other agencies after first wave of pandemic. But, the consecutive onset of more disastrous second wave of pandemic not only created havoc losses of human life but also disrupted the economic condition of every people across the country. Being an agrarian economy, India suffered a very deep impact. Though Central and State Govt. considered agriculture as an essential service and relaxed many rules, even then continuous lockdown and restrictions severely affected the availability of various agri-inputs and labours in sowing, inter-cultural operations, harvesting, transportation and marketing of produces which ultimately increased the demand-supply gap and prices of food commodities. On the other hand, the common people lost their purchase capacity due to low income or loss of their jobs in different non-agricultural sectors across the states. The Govt. organizations including NGOs declared many people-friendly packages and organized various activities to support the needy people to manage the devastating economic conditions of the country. However, all 59 Krishi Vigyan Kendras (KVKs) under ICAR-ATARI Kolkata were continuously engaged in guiding farmers at district level regarding production, harvesting and marketing of food items. Many proven technologies were being successfully scaled up by the KVKs to optimize agricultural production. During this time, in addition to other activities, all scientists of ICAR-ATARI Kolkata were involved in organizing, reviewing and rigorous monitoring of various on-going and special programmes/ schemes implemented for the farming community of this zone and in providing different types of agro-advisories to the farmers.



I hope that this issue of 'ATARI Kolkata News' will definitely be worth-reading which highlights our different activities during this period. I appreciate all the involved scientists and staff of this institute for their sincere efforts in bringing out this publication. Feedback and suggestions are always welcome for improvement.

Sudrata Kumar Roy

(S. K. Roy)

Technologies applied successfully

Finger millet variety 'Arjuna' substantially became farmers' choice

The finger millet is the dominant cereal crop in Nabarangpur district after rice and maize. As numbers of finger millet varieties are limited in respect of higher yield and resistance to disease and pest, OUAT-Bhubaneswar developed a new variety of finger millet *Arjuna* (OEB-526) during the



year 2014 which has the capability to yield more than 15% over popular variety *Bhairabi*. During kharif season 2019, Nabarangpur



KVK took up an OFT programme on 'Assessment of finger millet varieties' and incorporated the variety-*Arjuna* (OEB-526) and *Bhairabi* in the field of 7 farmers under rainfed upland conditions. The result showed that *Arjuna* var. performed better than *Bhairabi* and predominant farmer var. *Kala Mandia* in respect of yield and other growth as well as development parameters. In the very next year i.e. 2020, it was demonstrated in 10 different farmers' fields where *Arjuna* attained 80% more yield than the local var.

Kala Mandia. The performance of demonstration fields has been given in the following table.

During the year 2020, *Arjuna* variety has been recommended by the State Department of Agriculture, Odisha for adoption and popularization in Nabarangpur district. The seeds were distributed among the farmers in the district under 'Millet Mission' programme. This variety attracted the farming community of the district due to its high productivity. Now, it is being cultivated in more than 700 ha of area in the district.



Varieties of finger millet	Yield (q/ha)	% change in yield	No. of productive tillers/pt	No. of finger/ear	Net return (Rs.)	B:C ratio
Farmers' practice (Finger millet var. <i>Kala Mandia</i>)	7.5	-	2	3	10500	1.87
Demonstration fields (Finger millet var. <i>Arjuna</i> ; OEB-526)	13.5	80	4	6	20750	2.59

Mushroom cultivation: A boon to women tribal farmers for nutritional security and livelihood

Mayurbhanj is the largest district in Odisha constituting 26 blocks, 382 gram panchayat and 3748



number of villages. Although it is the largest district, the productivity of mushroom was lower than other districts of Odisha which might be due to very less number of mushroom growers (share only 19%), absence of technical

competency and improper management of mushroom bed etc. Therefore, the availability of mushroom in the local market of this district depends on the neighbouring districts like Balasore, Bhadrak, Jajpur, Puri and Khurda. The Mayurbhanj-II KVK took initiative and contacted the interested farmers. The KVK conducted capacity building programme including training and exposure visit, FLDs including 600 tribal women beneficiaries



Contributor: Nabarangpur KVK, Odisha

from 32 villages, provided quality mushroom spawn, management



practices of mushroom bed, post-harvest management of mushroom etc. The climate of the district is quite conducive for cultivation



of mushroom throughout the year and many families adopted mushroom cultivation as an enterprise for their livelihood and

income generation. Mushroom cultivation in Mayurbhanj district is getting accelerated day by day due to increasing interest among

women farmers specially Women SHGs. The economics and status of mushroom cultivation in the district are given below.

Income generation	Employment generation	Horizontal spread
Average monthly income of Rs. 4200/- to 8400/- from 50 to 100 beds per unit	2-3 man-days per day round the year	Farm women-1815 nos. Women SHGs- 147 nos. Villages- 414 nos., Block- 8 nos.

Poultry farming as a source of increased income

Sri Arabinda Ghosh, S/O- Sri Dayamoy Ghosh is a resident of Village-Batla, P.O.-Batarikar, Dist-Birbhum, West Bengal. He is hard working young graduate and started supporting his father in agricultural activities spread over only 0.3 acre land. The main sources of their income were from paddy, mustard, potato and vegetables. But, due to small land holding size, income from agricultural produces was not satisfactory. He came in contact

to start poultry farming. The necessary technical know-how



with the scientists of Birbhum KVK. After analyzing situations, scientists of KVK suggested him

was provided to him. Then, he started broiler farming with 2000 birds capacity during the year 2012 with gross annual income of Rs. 100000/-. Sri Ghosh was selected for the on-farm trial (OFT) programme on broiler farming and provided with RIR for backyard farming. Sri Ghosh was also given intensive skill development training programme under Agriculture Skill Council of India (ASCI) organized by Birbhum KVK on the job role 'Small Poultry Farmer' during the year 2019-20 and certified by Agriculture Skill Council of India. He also attended large number of

Contributor: Mayurbhanj-II KVK, Odisha

various awareness programmes and exposure visits to public as well as private sector poultry farms for gaining first-hand experience on scientific rearing and low-cost feed formulation for poultry. He procured coloured broiler both *Krishibro* and *Caribro* from the KVK. The capacity of his poultry farm has now been increased to 3000 birds by the year 2021 with gross annual income of Rs. 300000/-. Side by side, he also started farming of coloured broilers with 150 birds capacity and *Rhode Island Red (RIR)* birds under backyard system. The economics of his enterprise are given in the tables given below. Now,



he has become a promising poultry farmer in Birbhum district. A large number of rural youths and women farmers have started their poultry business after following the success of Sri Ghosh.

A) Backyard poultry rearing

Technology option	Av. body weight (Mean \pm S.E.)						Age at first egg (in day)	Egg production up to 72 week	Egg weight at 40 th week (in gm)	Cost of cultivation (Rs./ unit i.e. 20 nos.)	Gross return (Rs./ unit i.e. 20 nos.)	Net return (Rs./ unit i.e. 20 nos.)	B:C ratio
	At 6 th week (in gm)		At 40 th week (in gm)		At 52 nd week (in gm)								
	M	F	M	F	M	F							
Rhode Island Red (RIR)	551.17 \pm 4.17	437.81 \pm 3.23	2349.24 \pm 14.75	1768.39 \pm 12.35	2941.43 \pm 17.82	2298.14 \pm 12.57	184.58 \pm 0.92	157.23 \pm 1.10	53.09 \pm 0.26	12675	21168	8493	1.67

B) Coloured broiler rearing

Technology option	Av. body weight (Mean ± S.E.) at 6 th week (in gm)	Cost of cultivation (Rs./unit i.e. 30 nos.)	Gross return (Rs./unit i.e. 30 nos.)	Net return (Rs./unit i.e. 30 nos.)	B:C ratio
Krishibro	1542.45±10.45	3985	11700	7715	2.93
Caribro	1623.37±10.87	3985	12480	8495	3.13

C) Broiler farming

Av. body weight (Mean ± S.E.) at 6 th week (in gm)	Cost of cultivation (Rs./unit i.e. 3000 nos.)	Gross return (Rs./unit i.e. 3000 nos.)	Net return (Rs./unit i.e. 3000 nos.)	B:C ratio
2311.78±38.86	Chicks-120000, Feed-350000, Medicine-9000, Others-6000, Total=485000	Sell of birds-535000	50000	1.1

Intercropping (fish) in aquaculture: An innovative approach for enhancing fish farmers' income

The culture of Minor barbs with Indian Major Carps i.e. intercropping technology in aquaculture has been proven successful by the ICAR-CIFA, Bhubaneswar in terms of higher biomass production from per unit water use. As per discussion at different scientific platforms



and considering the water bodies of Nayagarh district of Odisha, Nayagarh KVK was suggested to demonstrate this technology to the farmers' field directly. As a result, during the year 2020-21, demonstration programmes were conducted at 10 different locations/ farmers' fields of Nayagarh district. Stockings of Minor barb (Java Puntii) fingerlings @2000 nos./ha along with Indian Major Carps (Catla, Rohu and Mrigal) fingerlings @7000 nos./ha were

done in the pond with the normal pond management practice as followed. The demonstration was conducted considering the carrying capacity of the pond at initial stage of aquaculture practices and potential growth rate of minor barbs for the initial 6 month of days of culture (DOC). The farmers able to harvest fish (Java Puntii) within 5-6 months of DOC with average body weight of 380g (Java Puntii) and fish (Indian Major Carps) with average body weight of 830g at 10-11 months of DOC with net income of Rs. 185400/- per ha per annum with total yield of 21.6q/ha and additional production of 4.2q/ha. Field day was also conducted at farmers' pond involving the line department officials with active participation of other fish farmers from nearby blocks of the district. It is very surprising that within a very short span of time, this intercropping (fish) technology of aquaculture has become very popular among the



Contributor: Birbhumi KVK, West Bengal

fish farmers of Nayagarh district. It has spread over 6 blocks, out of 8 blocks of Nayagarh district, and fish farmers are getting very good return from it.

Contributor: Nayagarh KVK, Odisha

Tomato grower set example of humanity during COVID lockdown

In the crucial situation of COVID-19, like other states, Odisha also adopted phase-wise lockdown to prevent the spread of the virus. As we know 'Everything can wait, but not Agriculture', the lockdown period could not lock up the hands of agrarian community which is the backbone of this country. The Kendrapara KVK is always working in the frontline to help the farmers of the district who have been consistently putting efforts to fill our plates with food.

During Rabi 2019-20, an assessment on triple disease resistant tomato varieties was conducted at the farmers' field in Chhatar village of Mahakalpara block. Two tomato varieties i.e. Arka Rakshak and Arka Samrat were evaluated. The average yield obtained from these two varieties were 428 q/ha and 445 q/ha, respectively. The economics of production have been given in the table.

Technology option	No. of trials	Bacterial wilt incidence (%)	Early blight (%)	Fruit weight (gm)	No. of fruits per plant	Yield (q/ha)	% increase in yield	Cost of cultivation (Rs./ha)	Gross return (Rs/ha)	Net return (Rs./ha)	B C ratio
Farmers' Practice (Var. Lakshmi)	7	7	9	120	12	388	-	118660	232800	114140	1.96
Var. Arka Samrat	7	0	3	100	17	445	14.69	119830	267000	147170	2.22
Var. Arka Rakhak	7	0	3	95	16	428	10.30	119130	256800	137670	2.15



The farmers expressed their happiness about achievement of higher yield with less insect and disease pest incidences. One among those successful farmers is Mr. Nrusingha Charan Samal, S/O-Kulamani Samal in Kendrapara district. The work done by Mr Samal is really praiseworthy and a source of inspiration to other farmers of the district as well as the state. With the support of KVK Kendrapara, Mr. Samal cultivated tomato in an area of 0.4 ha which yielded around 56 q of tomato within 15 days of harvesting period. Unfortunately, the harvesting period lied in between the lockdown periods. He faced some problems in marketing. In this predicament,

the *WhatsApp* group created by KVK Kendrapara with the purpose to disseminate agro-advisory and other information to the farming community during COVID-19 lockdown period helped him a lot. He expressed his problems regarding marketing of the produce in the group and the same was circulated among all the *WhatsApp*



Mr. Samal has created a respectful image and has set an example for the entire farming community.

Contributor: Kendrapara KVK, Odisha

Indigenous bird 'Haringhata Black' transformed livelihood of poultry farmers

Backyard poultry farming has been found as an important livelihood option among the self-help group (SHG) members and farm women in Bankura district of West Bengal especially with *Haringhata Black*. It not only meets the nutritional security but also supports the additional income and as a whole increases the empowerment status. It is evident from the study that beneficiaries are well aware of taste of desi chicks and they are accustomed to rearing birds with their indigenous



group of farmers and traders created. As a result, few buyers directly bought around 25 q tomato at a very remunerative price. Mr. Samal, was not only happy with the timely marketing of his produce but also did a commendable job as a true human being by distributing the surplus tomato of about 6 q among the needy families who were deprived of vegetables in his village and nearby villages during this lockdown period. He may not be financially sound but he is very rich from heart. He told everybody that he felt very happy to do this and how he could sleep peacefully with his family when his neighbours were struggling for vegetables/ foods under such stressful lockdown situations. By doing such type of noble work





techniques. Adoption of *Haringhata Black* has found to be accelerated positive and vertical growth as taste of this bird beats other locally available birds like *RIR*, broilers etc. It has got high disease resistance and low mortality at field level in free ranging system too. It may be concluded that *Haringhata Black* poultry is genetically superior and they play an important role in self-employment in those particular area where the poultry farming is the only source of income. Apart from this, the by-product obtained from them may be the other source of income e.g. feather can be used for making pillow, broom, other fancy things etc. Through selective breeding and vaccination, the superiority and survivability, respectively of the birds can be improved. Finally, the role of village people in conserving this indigenous/desi fowl breed may have remarkable opportunity.

After came in contact with the scientists of KVK Bankura in an awareness meeting organized by the KVK, Mrs. Sulata Mondal from Nityanandapur village, Sonamukhi block, Bankura district learned about the indigenous poultry production in the district specially about this new breed and its potential. She listened attentively as the KVK team shared their plan for commercialization of local chicken production. It was gut feeling that pushed her to be a part of the plan and made a decision to be part of the programme. The KVK suggested all the beneficiaries to be ready with low-cost poultry shelter and provided training on construction of low cost scientific poultry house using locally available materials. As soon as the shelter

was ready, Mrs. Mondal along with other beneficiaries received 100 day old *Haringhata Black* chicks along with feed, poultry keeping guide book, vaccination schedule, an exercise book for record keeping and essential medicines as subsidy for one month.

From the first 100 batch of *Haringhata Black*, she hatched 450 chicks in her first attempt and raised those 450 to maturity. From those 450 birds in the 2nd cycle, she earned by selling 350 birds for worth Rs. 105000/- and egg of Rs. 61200/- after deducting inputs and transportation cost. She used part of her money to renovate her house, expand the poultry shed and paid fees for her children's education. Her story has inspired several women in Bankura district to join commercial



production of *Haringhata Black* poultry especially after she was elected as master trainer by KVK Bankura to mobilize other women in the area to start commercial production. It is a story of a strong-willed woman who has successfully splintered a coating which had for decades remained conglomerated in a vicious cycle of systems challenges, poor poultry keeping practices, fear for failure and general lack of a commercial drive; to free her family from the collar of poverty into improved livelihood.



Mrs. Mondal expressed her gratitude towards KVK Bankura for opening her eyes on the potential of *Haringhata Black* poultry birds. The KVK linked other poultry producers with input suppliers to promote access to essential inputs. Mrs. Mondal's story represents several other untold stories of over 300 farm women in Bankura district whose lives have been transformed through commercial production of *Haringhata Black* poultry. Within a period of one year of implementing the programme, local chicken production had increased from an average of 5-10 birds per beneficiary to 100-300 birds. The number of production cycles also increased from only 1 in 12-18 months to 3 in 12 months which enabling beneficiaries to earn more frequently from the venture. Mrs. Mondal opened a bank account for the first time in her lifetime using money earned from production of indigenous (*Haringhata Black*) poultry farming. She is one of the beneficiaries of the 'Nityanandapur Maa Sarada Krishak Adhikary Gosthi' aided by WBCADC KVK Bankura with an objective of transforming the rural poultry subsector into a viable commercial enterprise. The story of Mrs. Mondal clearly shows that the increased indigenous poultry production can lead to increased household income, reduced poverty and improved livelihood for the poultry farmers.

Contributor: Bankura KVK, WB

Roof top rainwater harvesting for drinking water and domestic use at costal saline zone

Under Swachh Bharat Mission, KVK S 24 Parganas (Nimpith) demonstrated around 63 units of rainwater harvesting structures in 3 villages at their costal saline zone to ensure water for drinking and other domestic uses. It was found that the stored rainwater was potable and much better in quality than the traditional sources. The women members of

the beneficiary families could get a relief from their daily drudgeries



of travelling long distances in search of potable water during

winter and summer season. This pure drinking water source proved to be highly indispensable during and after cyclonic disturbances like 'Bulbul' and 'Amphan' in the region. The adoption of roof top rainwater harvesting system ensured a step forward towards a healthy and hygienic society in the Sunderban villages where ground water level is dwindling day by day.

Contributor: S 24 Pgs (Nimpith) KVK, WB

Important activities of KVKs (January to June, 2021)

Sl. No.	Activity	Achievement
1	Number of on-farm trials conducted (Number of technologies)	248 (43)
2	Frontline demonstrations conducted (in number)	9754
3	Farmers trained (in lakh)	0.222
4	Extension personnel trained (in number)	1429
5	Participants in extension activities (in lakh)	1.21
6	Production of seeds (in quintals)	5569.7
7	Planting materials produced (in lakh)	14.15
8	Livestock strains and finger lings produced (in lakh)	2.4
9	Soil, water, plant and manures samples tested (in lakh)	0.029
10	Mobile agro-advisory provided to farmers (in lakh)	24.7

News from KVKs

Activities of doubling farmers' income

Doubling Farmers' Income (DFI) by 2022 programme was monitored at different KVKs of this zone. All KVKs under ICAR-ATARI Kolkata have undertaken various activities like FLD, OFT and training programmes in two selected villages of a particular block of the district covering a total of 82 villages in this zone. A number of technologies have been made available at the farmer's field to figure out how the income could be doubled or more. Technological interventions covered 469.8 ha land with the participation of 1133 farmers in Odisha and 451.5 ha land with the involvement of 2247

farmers in West Bengal. A total of 166 SHGs were actively involved in this programme. A total of 368 numbers of training programmes were organized to build up the capacity of the farmers. Many technological interventions have been implemented at the selected villages. The technologies like pond based integrated farming



system, off season vegetable production under protected cultivation using poly-tunnel, dragon fruit cultivation and intercrop vegetables, air breathing fish culture, Kadaknath poultry farming under backyard system etc. have been found the most significant technologies for doubling income of the farmers.

Activities of bee keeping

Under National Beekeeping and Honey Mission (NBHM), 12 KVKs conducted 20 physical trainings each of 7 days involving 500 participants with a batch of 25 participants in each training and one KVK organized one online training of 3 days with a batch of 25 participants on scientific beekeeping. Out of 500 trainees, 155 were female participants which accounted 31% of the total trainees. The



participation was also noted from 22 SHGs and 9 FPOs. The most significant achievements of the training included effective skill development on scientific beekeeping, enthusiasm and

interest creation among the rural youth, especially women for beekeeping entrepreneurship, starting of scientific beekeeping by most of the trainees as a new venture after receiving training.



Events

Training programme on DAESI

The 'Diploma in Agricultural Extension Service for Input



Dealers (DAESI)' programme was organized by the KVKs of this Zone for educating Agri-Input Dealers in their concerned districts on agriculture, facilitating them to serve farmers better and acting as para-extension professionals. It was implemented by MANAGE



through State Agricultural Management and Extension Training Institute (SAMETI) in West Bengal state. During



the period, Purba Medinipur, Dakshin Dinajpur, Murshidabad (Sargachhi), Purulia, Uttar Dinajpur KVK conducted one training each with 40 participants whereas Bankura, Hooghly,



Jalpaiguri, Murshidabad, Nadia, S 24 Parganas (Narendrapur) KVK conducted two trainings each with total 80 participants.

Meeting/ workshop/ training programme organized/ conducted

Review meeting of CSISA organized

A review meeting of Cereal Systems Initiative for South Asia (CSISA) was conducted on 01.03.2021 at ICAR-ATARI Kolkata for KVKs of West Bengal on Landscape Diagnostics Survey (LDS) to review the progress



of the work and to discuss the issues related to the programme. The meeting was chaired by Dr. P.P. Pal, Pr. Scientist, ICAR-ATARI Kolkata. He welcomed the participants with brief introduction of the landscape diagnostics survey. Dr. A. Kumar, CSISA Coordinator, Odisha hub, Bhubaneswar, IRRI emphasised the need of conducting landscape diagnostics survey in eastern part of India and briefly reviewed the survey carried out by the six participating KVKs i.e. Purulia, S 24 Pgs (Narendrapur),



Murshidabad, Burdwan, N 24 Pgs (A) and Paschim Medinipur of West Bengal. Dr. N. C. Banik, Senior Specialist, IRRI, Odisha outlined the detailed results of LDS in Eastern part of India in second phase. Discussion was also made on budget sanction and its utilization under the project.

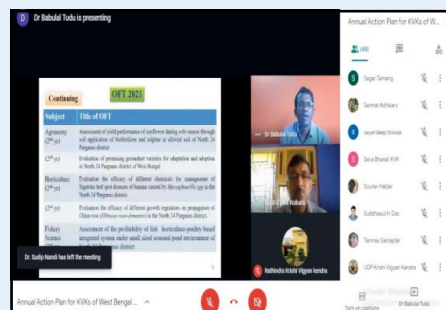
Review workshop for finalizing action plan (2021-22) for Odisha KVKs organized

ICAR-ATARI Kolkata organised a two days webinar on 'Review workshop for finalizing action plan for the year 2021-22 for KVKs of Odisha' w.e.f. 22.04.2021 to 23.04.2021. The workshop was attended by Joint Directors of Extension Education, OUAT, Bhubaneswar- Prof. A. Khuntia and Prof. P. Mishra; Pr. Scientists from ATARI Kolkata; Sr. Scientist and Heads (SSH) and Scientists of all 33 KVKs of Odisha state. Dr. P. P. Pal moderated the webinar. In his welcome address, Dr. Pal highlighted the modus operandi of the presentations of Annual Action Plans for the year 2021-22 by the Heads of concerned KVKs. While addressing, Dr. S. K. Roy, Director, ATARI Kolkata enlightened the house with few remarks and general suggestions viz. what should be the minimum no. of training target as well as no. of farmers trained, how to conduct/document/report different flagship/sponsored/skill development training programmes in addition to different mandated activities of KVKs following all protocols of COVID-19 Pandemic situations etc. He encouraged all 33 KVKs to conduct farmers' training through online mode to avoid public health hazard. Prof. Khuntia briefly narrated the presented status of different schemes/programmes run by Odisha KVKs and assured the house to adopt all COVID protocols by them for successful implementation of various programmes. In both

days, all SSHs were presented their Action Plan 2021-22 one after another. The Action Plan was discussed in details and suggestions were invited from the house to incorporate in their respective plans. The Chairman appreciated to all the KVKs for preparing judicious action plan pertaining to the concerned districts.

Review workshop for finalizing action plan (2021-22) for A & N Islands and West Bengal KVKs organized

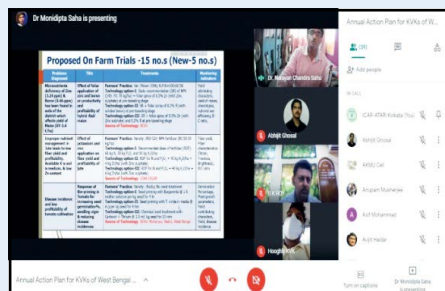
ICAR-ATARI Kolkata organised a two days online 'Review workshop for finalizing action plan for the year 2021-22 for KVKs of A & N Islands and West Bengal' w.e.f. 08.06.2021 to 09.06.2021. The workshop was participated by 3 KVKs of A & N Islands and 23 KVKs of West Bengal; Director of Extension Education- BCKV and UBKV;



days, all SSHs presented their Action Plan (2021-22) and it was discussed in details and suggestions were invited from the house to incorporate in their respective plans. The Chairman appreciated all the KVKs for preparing judicious action plan pertaining to the concerned districts.

Concluding zonal workshop of NICRA-TDC conducted

A concluding zonal workshop of NICRA KVKs of Zone V was organized by ICAR-ATARI Kolkata on 23.06.2021 through virtual mode. Prof. H. K. Senapati, Chairman, Zonal Monitoring Committee, shared his experiences from visits to various NICRA KVKs and highlighted the interventions like mulching, soil moisture conservation, custom hiring centre, etc., making significant contribution in resilience against climate change. Dr. V. K. Singh, Director, CRIDA, in his opening remarks, emphasised on farming system typology based planning and then its implementation through a family based approach. He appreciated the convergence programmes with Government schemes in the States of Bihar and Orissa. He urged for more crop diversity in the areas of rice based farming systems. Dr. S. K Roy, Director, ICAR-ATARI Kolkata mentioned that the intervention under NICRA should read vulnerability with existing cropping practices and could prevent those vulnerability through NICRA interventions on priority basis. Dr. J. V. N. S. Prasad, Coordinator,



Scientists from ATARI Kolkata and reviewed the action plan. Senior Scientist and Heads (SSH) of KVKs presented the action plan. Dr. P. P. Pal, Pr. Scientist conducted the webinar. In his welcome address, Dr. S. K. Roy, Director, ATARI Kolkata enlightened the house with his remarks on different mandates and regarding upcoming flagship/sponsored /skill development /seed mini-kit distribution programmes. He also explained the key points of mandates i.e. technology assessment, single window knowledge system, resource centers and capacity building. It was emphasized that the new technologies, identified by the scientists, should be based on the need of farmers. In both

OFTs to be conducted

Problems	Details of Technologies	Source & Year	Observation Parameters
Low yield in PP	Management of nutrient 50% WP @ 1 kg	OUAT 2018	No. of nutrient use efficiency
Low yield in PP	Application of Trifluralin 1.5L/ha, SC @ 100g x 1 ha	OUAT 2018	Yield, Weed control efficiency
Low yield in PP	Plant emergence application at 2-5 leaf stage	OUAT 2018	No. of rice plants per ha
Low yield in PP	Application of herbicide 74.4% SC @ 1.20 ml/ha or 10% DAK (Pre emergence application of herbicide 14.4% SC @ 1.20 ml/ha + control abiotic stress force)	OUAT 2018	Yield, Weed control efficiency
Low yield in PP	Management of nutrient 50% WP @ 1 kg	OUAT 2018	No. of nutrient use efficiency
Low yield in PP	Application of Trifluralin 1.5L/ha, SC @ 100g x 1 ha	OUAT 2018	Yield, Weed control efficiency
Low yield in PP	Plant emergence application at 2-5 leaf stage	OUAT 2018	No. of rice plants per ha
Low yield in PP	Application of herbicide 74.4% SC @ 1.20 ml/ha or 10% DAK (Pre emergence application of herbicide 14.4% SC @ 1.20 ml/ha + control abiotic stress force)	OUAT 2018	Yield, Weed control efficiency

NICRA-TDC, CRIDA, Hyderabad stressed upon up-scaling of low cost promising technologies in neighbouring villages and in documenting success stories. He also emphasized that development of different models



of entrepreneurship with focus on custom hiring centres, seed bank and primary level of value addition. One publication of NICRA Newsletter of ICAR-ATARI Kolkata was released during the workshop. Dr. F. H. Rahman, Pr. Scientist-cum-NICRA Nodal Officer presented the highlights of the salient achievements carried out by the NICRA- KVKs during the last ten years. In the technical session, Heads of NICRA-KVKs presented salient achievements of out scaled technologies during



the last ten years and Action Plan of 2021-22. Dr. P. K. Pal, DEE UBKV and Dr. P. Mishra DEE OUAT and scientists from other ICAR Institute have also attended the workshop.

Meetings/workshops/symposia etc. attended by scientists/ staff

Sl. No.	Name of the programme(s)	No. of scientist(s)/ staff attended
1	Online action plan (2021-22) review workshop for KVKs of Odisha	8
2	Online action plan (2021-22) review workshop for KVKs of A & N Islands and West Bengal	8
3	Online meeting on various network projects and institute projects approved by RAC, ICAR, New Delhi	6
4	Online scientific advisory committee (SAC) meeting of different KVKs	6
5	Online orientation programme for the KVKs selected for FPO formation organized by National Cooperative Development Corporation (NCDC), New Delhi	2
6	Online NICRA workshop of ICAR-ATARI Kolkata	5
7	Meeting as committee member for scrutinizing application for the post of SSH, Nimpith KVK at ICAR-ATARI Kolkata	4
8	Online review meeting of officers and staff of ICAR H.Q., Institutes of ICAR, ASRB and DARE addressed by DG, ICAR organized by the Council	10
9	Online meeting on BE (2021-22) of NEMA project organized by AE Division, ICAR, New Delhi	4
10	Online meeting on training-cum-awareness programme on Fisheries and aquaculture with reference to Pradhan Mantri Matsya Sampad Yojana (PMMSY)	2
11	Online meeting of NITI Aayog in collaboration with Galilee International Management Institute, Israel	1
12	Online six monthly review meeting of the XXV th ICAR Regional Committee-II	2
13	Online special public lecture of Dr. A. K. Srivastava, Member, ASRB, New Delhi and President, National Academy of Dairy Sciences, India on 'Animal health and productivity' organized by ICAR, CAFRI and ISAF	3
14	Online special lecture on 'One health and COVID Awareness' delivered by Dr. S. V. S. Malik, Head, VPH, IVRI, Izatnagar organized by Cuttack KVK, Odisha	2
15	Online workshop on various issues of KRISHI portal as Nodal Officer organized by Dr. R. Prasad, Director, ICAR-IASRI, New Delhi	1
16	Attended various meeting as chairman/ committee member at ICAR-ATARI Kolkata	10

Sl. No.	Name of the programme(s)	No. of scientist(s)/ staff attended
17	Online brainstorming session on 'Gender and Nutrition based Extension in Agriculture'	6
18	Online review meeting for KVKs of West Bengal on landscape diagnostic survey under CSISA organized by ICAR-ATARI Kolkata	6
19	Coordinated a meeting of the Director, ATARI Kolkata with State govt officials of project- <i>Unnati</i>	2
20	Meeting with the Vice Chancellor and DEE of BCKV, Mohanpur	3
21	Meeting with Director/CAO of ICAR-CRIJAF, Barrackpore for DAMU posts recruitment	2
22	Online meeting on NICRA revised estimate 2020-21	4
23	Online 8 th annual convention and National webinar of SFE	2
24	Video conferencing of regional committee meeting (RCM)-VI	2
25	Webinar on 'Millet processing and value addition' organised by MoFPI, IIFPT and PMFME under Azadi ka Amrit Mahotsav	3
26	Online seminar on balanced used of fertilizer campaign in collaboration with NBSSLUP, Kolkata	2
27	Meeting with Dr. R. K. Samanta, Chairman of QRT on various issues organized by ICAR-ATARI Kolkata	12
28	Webinar on 'Alleviating malnutrition and promoting gender equity through rural poultry production in India' organized by ICAR-CIWA, Bhubaneswar	3
29	Meeting for selection of SMS in Animal Science for transfer in KVK, Barackpore, North 24 Parganas at ICAR- CRIJAF, Barackpore, North 24 Parganas	1
30	Meeting as committee member for MACP promotion of Mrs. S. Pal of ICAR-ATARI Kolkata	4
31	Other meetings/workshop/ seminars as committee member(s) on various issues	12

Distinguished visitors

- Dr. R. Samanta, Chairman, QRT, ICAR-ATARI Kolkata
- Dr. A. Kumar, Coordinator, CSISA, Odisha Hub

Publications

Research articles

- Das S, Bhattacharya R and Rahman H. 2021. Response of black cumin (*Nigella sativa* L.) to different spacing and nitrogen on growth and yield in new alluvial soil of West Bengal. *Indian Journal of Extension Education*, **56**(4): 165-169.
- Dey Gupta M, Mondal S K, Basu D and Pan S. 2021. Haringhata Black poultry adoption in tribal areas of Bankura district: Empowering rural women through backyard poultry farming. *Indian Journal of Animal Sciences* (Submitted).
- Gautam D, Vats A, Pal P, Halder A and De S. 2021. Characterization of Anti-Müllerian Hormone (AMH) Gene in Buffaloes and Goats. *Frontiers in Veterinary Science*, **8**:627094. [doi: 10.3389/fvets.2021.627094].
- Malik H N, Naik U, Sahoo U, Panda A, Phonglosa A, Bhattacharya R and Rahman F H. 2021. Influence of micronutrient management on growth and yield attributes in pigeon pea [*Cajanuscajan* (L.) CV. RG176] in Kalahandi district of Odisha. *Journal of Experimental Agriculture International*, **43**(2): 86-93.
- Mondal S K, Das K S and Roy S K. 2021. Effect of various control measures on predator incidence and production performance in Lac insect (*Kerria lacca*). *Asian Journal of Research and Review in Agriculture*, **3**(4): 46-49.
- Mondal S K, Das K S, Roy S K and Rajkhowa C. 2021. Physical characteristics and chemical composition of Mithun (*Bos frontalis*) carcass. *Journal of Veterinary and Animal Science* (Submitted).

Mondal S K, Pal D T, Das K S and Roy S K. 2021. Nutrient composition of preserved fodder grasses of Nagaland used for feeding of Mithun (*Bos frontalis*). *Indian Agriculturist* (Accepted).

Mukherjee S, Rahman F H, Bej N K and Das S. 2021. Assessment of bio fungicides to control blast in rice in red and lateritic belt of Paschim Medinipur district of West Bengal. *Indian Journal of Extension Education*, 56(4): 226-232.

Technical bulletins

Rahman F H, Bhattacharya R and Nandi S. 2021. NICRA Newsletter: Towards Climate Smart Agriculture. Published by Director, ICAR-ATARI Kolkata, 7(1): 1- 8.

Sen H S, Mandal B, Ghorai D, Sahu N C, Rahman F H, Murmu K, Chandra S, Bandyopadhyay S and Sarkar D. 2021. Fertilizers and Environment News.

Published by the Society of Fertilizers and Environment, 7(1): 1-16.

Abstracts presented in national/international seminars, conferences etc.

Bhattacharya R, Sahoo T R, Mishra P, Mohapatra N M, Mishra S N and Rahman F H. 2021. The response of green manuring of sesbania aculeate on growth and yield of rice in flood prone area of coastal Odisha. In: National webinar on 'Stewardship of agrochemicals for upkeeping environment' organized by the Society for Fertilizers and Environment in collaboration with Bidhan Chandra Krishi Viswavidyalaya, Nadia on March 30-31.

Udgata J, Parida D, Bhattacharya R and Rahman F H. 2021. Assessment of balance nutrition (N, P, K, Zn and B) and green manuring on yield, nutrient uptake, economics and soil fertility

of rainfed rice (*Oryza sativa* L.) in drought prone areas of Odisha'. In: National webinar on 'Stewardship of agrochemicals for upkeeping environment' organized by the Society for Fertilizers and Environment in collaboration with Bidhan Chandra Krishi Viswavidyalaya, Nadia on March 30-31.

News items

- Two days webinar on 'Review workshop for finalizing Action Plan 2021-22 for KVKs of Odisha' for ICAR, KVK Portal and ICAR-ATARI Kolkata website.
- Two days webinar on 'Review workshop for finalizing action plan 2021-22 for KVKs of West Bengal and Andaman and Nicobar Islands for ICAR, KVK Portal and ICAR - ATARI Kolkata website.
- Webinar on 'Concluding zonal workshop of NICRA KVKs of Zone-V' for ICAR website.

Personalia

Relieving

Sh Roshan Lal, AAO was relieved from ICAR-ATARI Kolkata on 24.06.2021 (afternoon).

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



ATARI Kolkata News

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