Proceedings of the Annual Zonal Workshop of KVKs, 2024

ICAR-ATARI, Zone-VII, Umiam

(19-21 September, 2024)

The Annual Zonal Workshop of KVKs-2024 under ICAR-ATARI, Zone-VII, Umiam was organized in collaboration with College of Fisheries, CAU (Imphal), Lembucherra, Tripura during **19-21 September, 2024** at College of Fisheries, CAU (Imphal), Lembucherra, Tripura. The primary objective of the workshop was to review the progress and achievements of mandated as well as other special programmes/ activities of KVKs during 2023. The formal inaugural programme of the workshop was held on 19th September, 2024; which was graced by Sri N. Indrasena Reddy, Hon'ble Governor of Tripura. In his address, Sri Reddy praised KVKs as a vital bridger between the laboratory and the land. He also emphasised the need for engaging youth and generating employment through innovative agricultural practices. Dr. U.S. Gautam, DDG (Agricultural Extension) of ICAR laid out an ambitious roadmap for KVKs, including the establishment of Urban and Semi-Urban KVKs and development of agribusiness centres to empower farmers and agri-prenuers. Dr. R.R. Burman ADG (Agricultural Extension) praised KVKs for their role in advancing sustainable agriculture through partnerships with the private sector and promoting technologies such as agroforestry and regenerative agriculture. He emphasized the integration of digital agriculture via platforms like Kisan Sarathi and stressed the importance of high quality seeds, planting materials, and KVKs role in creating over 70,000 rural entrepreneurs. Dr Burman also underscored KVKs ongoing efforts to promote precision farming and their pivotal role in shaping a sustainable and prosperous agricultural future for India. Notably, the workshops objectives is to transform KVKs into centres of agricultural excellence. Key initiatives include enchancing intellectual property portfolios through the promotion of the patents, copyrights, and geographical indication (GI) related to indigenous agricultural practices. Public – Private Partnerships (PPP) was also proposed to ensure the production and distribution of high-quality seeds and planting materials. Dr A K Mohanty Director of ICAR-ATARI Zone VII, outlined the workshop's diverse agenda, including Stakeholders' Interface, Agri-Industry FPO meets and a special session on the Protection of Plant Varieties and Farmers' Rights (PPV&FRA). Dr Anupam Mishra, Vice Chancellor of CAU, Imphal, emphasized the university's pivotal role in disseminating eco-friendly agricultural practices through its extensive KVK network. He also stressed on the importance of sustainable fish farming and called for continued collaboration to boost fish production, integrating aquaculture into the agricultural framework of the Northeast India.

The following Lead Lectures were delivered by Experts during the different technical sessions of the workshop-

- FPO: Realizing Farmers' Dream into Reality- By Dr. GAK Kumar PS & Head of the Division of Social Science at ICAR-NRRI, Cuttack.
- Performance of Bio-quest Organic Biostimulants in agriculture and horticultural crops- By Dr. Gangesh Varma, CoFounder, Bio-quest Organic Pvt. Limited, Kolkata
- Uniqueness of rice production systems of North East India - By Dr. A.K. Nayak, Director of NRRI, Cuttack.
- The glimpses of activities of IIHR and technological constraints in NEH Region. By-Dr. T.K. Behera, Director IIHR, Bangalore.
- Livestock based hill farming system- By Dr. Ashok Kumar Mohanty, Director, ICAR-CIRC, Meerut.
- Water and Nutrient Management Strategies to mitigate climate change. By Dr. Manoj P Samuel, executive Director, CWDRM.
- Varietal Technology options in field crops developed by ICAR Research Complex for NEH Region. By-Dr. S.P. Das, Director, ICAR-NRC on Orchids, Sikkim
- Technological Options for Sustainable Blue Transformation in the NEH Region. By-Dr. A. B. Patel, Dean of the College of Fisheries, CAU, Lembucherra, Agartala.
- Role of the Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA). By Dr. Dipal Roy Chaudhary, Joint Registrar, PPVFRA, New Delhi.

Common Suggestions/ recommendations for KVKs-

1. Use of digital tools and advanced technologies, such as the Internet of Things (IoT), Artificial Intelligence (AI), and data analytics, to enhance post-harvest handling. This approach can help minimize crop losses and ensure better storage conditions, thus improving overall efficiency.

2. Real-time monitoring of stored agricultural products to ensure quality and freshness. This approach can help minimize crop losses and ensure better storage conditions, thus improving overall efficiency.

3. Adoption of Smart Agri-Post technologies to help farmers directly connect with markets through digital platforms, reducing the role of intermediaries. This not only increases their market access but also leads to better price realization and higher incomes.

4. Enhancement of absorptive, adaptive and transformative capacity of the production systems on various rice varieties including the biofortified ones developed to suit the various agro-climatic conditions. Similarly, newly developed crop protection technologies such as light trap, pheromone trap, tricho card etc. were suggested.

5. Adoption of advanced nutrient management strategies such as digital LCC, digital tool for SSNM etc. in agriculture and horticulture.

6. Adoption of newly developed crop protection technologies such as light trap, pheromone trap, tricho card etc.

7. Enhancement of water use efficiency, water productivity and irrigation efficiency. Each KVK should have one automatic weather station. KVKs were urged to establish carbon neutral villages in the area of jurisdiction.

8. Adoption of techniques such as mulching, drip irrigation, stacking in tomato, water logging tolerance through grafting.

9. Explore post-harvest processing for production of fruit bars, RTS, osmotic dehydration products etc. To mitigate the dearth of quality seeds and planting materials, it was suggested that KVKs should take up ventures for locally producing the same through utilizing the services of FPOs, FPCs etc.

10. Development of region specific feed/ mineral mixtures and dissemination of Artificial Insemination technology for making good quality breeds available at local level.

11. Gomati Dhan, semi deep water rice Tripura Jala, fine grained variety Tripura Chikan Dhan, boro variety Tripura Sarat; disease resistant Tripura Nirog, contingency variety for direct upland seeded condition Tripura Hakachuk 2 etc. were underscored. Besides rice, availability of improved varieties in other crops viz, Field pea (TRCP-8,9), Brinjal, pineapple (queen mutant 1) (PQM 1), papaya (Tripura Popita 1) etc. were also suggested. For making the seeds or planting materials available in sufficient quantity, KVKs were urged to go for seed production at larger scale adopting participatory approach.

12. KVKs are to actively encourage farmers to register their varieties under the PPVFRA. KVKs were suggested to play a crucial role in raising awareness about the scheme, guiding farmers through the registration process, and ensuring that farmers can protect their intellectual property rights while also benefiting from the variety registration system.

13. Shifting of technological options from short-term productivity goals (Blue Revolution) to a broader, more sustainable and integrated approach (Blue Transformation) that considers ecological, social, and economic factors in the use of marine resources.

The technical session was made with the state-wise presentation by selected Heads of KVKs namely; Dr M. Islam, PS & Head, KVK, Ri Bhoi, Meghalaya, **Dr L. Kanta Singh**, SS & Head, KVK, Imphal West, Manipur, **Dr. Mitchelle**, **C. Lallawmkimi,** SS & Head, KVK, Kolasib, Mizoram, **Dr Hari Charan Kalita**, SS & Head, KVK, Longleng, Nagaland and **Dr. Abhijit Debnath**, SS & Head, KVK, Dhalai, Tripura.

Technical Session (Presentation by selected KVKs state-wise)

	KVK	Specific Recommendation
1	**KVK Ribhoi (for the state of Meghalaya)**	• Impact on entrepreneurship through poultry/duckery should be studied • Nutri cereal millet, high value dragon fruit should be popularized in large scale • Single bud technology of ginger and turmeric should be placed in State Action Plan through ATARI/ICAR. • Seed and planting materials production should be given more emphasis by each KVK.

2	**KVK, Imphal West (for the state of Manipur)**	• FPOs should confine to one primary or secondary crop for adoption. • Exclusiveness of the crops which does not cover fish, livestock and IFS model • One FPO-one block should be connected with KVK. • Production of video documentary of 2-5 minutes highlighting its activities and stories for all KVKs in local language with suitable subtitle in Hindi/English with scientific data for better rationalization. • Proper data collection and suitable data analysis to be publishable in high impact journals. • Proper assessment of lab-generated technologies and to suggest its feedback, even if negative result is achieved for relaying the technology in proper manner.
3.	**KVK Kolasib (for the state of Mizoram)**	• All the state wise presenter showed simple statistics, so, it was suggested to use • ANOVA / t-test/z-test /chi square test etc., which is relevant to the data of our trials. • To have more number of publications in research journal with high NAAS rating, in addition popular articles are also not to be neglected. • To have maximum exposure and knowledge of all the latest technologies which is duly acknowledged by scientists and farmers across the globe and country. KVKs to • be the knowledge bank for farmers in the field of Agriculture and allied sectors in all the districts where it is established. • To popularize the Indigenous Technology Knowledge (ITK) which is highly regarded by the community and go for Frontline demonstration (FLD) or awareness training programmes. • To establish more Agri- entrepreneur for agri start up business programmes.
4.	**KVK Wokha (for the state of Nagaland)**	• Source of Technologies and year should be clearly mentioned for each technology under assessment and refinement. • Since demand of Broiler poultry is high in Nagaland, it should be tested some advanced technology for higher production of broiler based on local climatic conditions. • Preference may be given on IFS and water conservation • Promoting sustainable and climate-resilient practices to ensure access to safe and nutritious food. • Encouraging organic farming, agro-ecology, and integrated farming systems. • Promotion of Agri-Horti system in the state through KVKs interventions • Select location specific and farmers preference technologies for OFT
5.	**KVK Dhalai (for the state of Tripura)**	• Promotion of high-yielding cattle breeds and crossbreeding programs. • Encouraging fodder cultivation and improved feeding practices.

		• Strengthening milk cooperatives and Farmer Producer Organizations (FPOs) for better market access. • Promotion of dual purpose poultry farming and backyard poultry in rural households. • Introduction of low-input, high-output poultry breeds developed by ICAR, SAUs. • Skill Training and financial support to small-scale poultry farmers to start the initial scientific poultry farming. • Strengthening hatchery networks and ensuring quality chick supply by supporting small-scale portal hatchery units. • Training programs for fish farmers on scientific aquaculture practices. • Collaboration with ICAR institutes and fisheries research centers for knowledge transfer. • Establishment of hatcheries to ensure timely availability of quality fish seed. • Adoption of advance technology for intensive fish farming. • Integrated Duck Cum Fish Farming, Integrated Poultry Cum Fish Farming, Integrated Pig Cum Fish Farming, Integrated Horticulture Cum Fish Farming with a Scientific approach with proper economics to document the productivity. • OFT and Frontline Demonstrations to assess and promote new paddy varieties tailored to specific regional challenges as paddy is the major crop in the State. Incorporation of Biofertilizers, Micronutrients etc. Diversification through rice-pulse and rice-oilseed cropping systems need more efforts to improve cropping intensity and soil health. • Diversification into high-value crops should be recommended to increase farmers' income and reduce risks associated with monoculture. • Organic Farming: Encouraging the adoption of organic farming practices, especially in regions like the North East, to cater to the growing demand for organic produce. • Technology Integration: Promoting the use of advanced technologies, such as protected cultivation and precision farming, to improve yield and quality of horticultural produce. • Capacity Building: Organizing training programs for farmers on the latest horticultural practices and technologies to enhance their skills and knowledge. • Establishing strong market linkages to ensure that farmers receive fair prices for their high-value horticultural produce. • KVKs should organize specialized training sessions to equip farmers and rural youth with entrepreneurial skills. KVKs provided training to SHGs and FPOs on effective group dynamics, leadership, and management practices to enhance their operational efficiency. The action plan of a KVK outlined training sessions aimed at strengthening the formation and management of SHGs. KVKs encouraged the cultivation of high-value crops and provided training on value addition techniques to enhance income.