

**Proceedings of the Online Annual Zonal Workshop of KVKs, 2019
organized by ICAR-ATARI, Zone-VII, Umiam, Meghalaya
(July 3-4, 2020)**

The Annual Zonal Workshop of KVKs (Annual Report) for 2019 under ICAR-ATARI, Zone VII-Umiam was conducted during 3rd -4th July, 2020 through Zoom Meeting App. The programme was inaugurated with the ICAR song followed by welcome address and brief overview of the programme by Dr. B.C. Deka, Director, ICAR-ATARI, ZONE VII Umiam. The programme continued with addresses from Chairman, Dr. A.K. Singh, DDG (AE), ICAR, New Delhi, and Chief Guest Shri Kailash Choudhary, Union Minister of State for Agriculture and Farmers Welfare, Govt. of India. The inauguration session was concluded with the Vote of thanks by Dr. A.K. Singha, PS, ICAR-ATARI, Zone VII-Umiam. After the inauguration, the programme proceeded with the Technical sessions.

The first session was chaired by Dr. A.K. Gogoi, Former Director, ICAR-ATARI, Umiam. Co-Chair by Dr. H.C. Bhattacharyya, Ex-DEE, AAU, Jorhat. Member of Panel Experts includes Dr. R.K. Saha, DEE, CAU, Imphal and Dr. B.C. Deka, Director, ICAR-ATARI, Zone VII-Umiam. KVK Imphal East and KVK Thoubal were the Rapporteur of the session.

The achievements during 2019 were presented by the Heads/ SMSs of the KVKs and important accomplishments were highlighted in their presentations.

Followings are the Action Points/ recommendations to be taken up by KVKs as per approved guidelines-

State: MANIPUR

Sl.No	Name of the KVK	Recommendations and Suggestions made by the house
1.	Imphal East	<ol style="list-style-type: none"> 1. The drudgery reducing parameter for manually operated transplanter suggested from the farmer women groups must be included for the technology intervention. 2. Inclusion of women farmer for drudgery reduction technologies to be given importance. 3. The title of the popularization of Jackfruit chips should be popularization of jackfruit chip making technology. 4. No. of vegetable preservator to be increased.
2.	Thoubal	<ol style="list-style-type: none"> 1. Technology intervention under intercropping resource conservation and rain-fed Situation Soil Moisture status and other Climatic Parameters must be taken as observation parameters. 2. Regarding OFT varietal evaluation of rice var. CAUR-4 title should change to fertilize dose evaluation and Soil

		<p>nutrient status should be analysed.</p> <p>3. Introduction of new crops in a region, protocols for crop production should be followed. So as to conserve the existing bio-diversity of the region.</p>
3.	Bishnupur	<p>1. OFT on Organic Cultivation of Cabbage Var. rareball, all the inputs should be organic.</p> <p>2. OFT on Intercropping of maize with green gram, observations for climatic parameters should be taken and presented in the result.</p> <p>3. OFT on broccoli cultivation was under double cropping situation, observation for soil nutrients status of the field should be made into consideration.</p> <p>4. Under participatory seed production programme, if there is any problem for storage, the KVK may consult KVK Imphal East for Hermetic storage bag.</p> <p>5. Extension activities on Farmers Visit to KVK, records for farmers visit should be maintained.</p>
4.	Ukhrul	<p>1. Title of OFTs/FLDs in the presentation should be mentioned.</p> <p>2. Year of FLD on Jalkund may be indicated</p> <p>3. Farmers' feedback need to be mentioned.</p> <p>4. Regarding technology on fish feed, stocking density of fish was less and it should be increased.</p> <p>5. Date of egg production of Vanaraja breed and Shrinidhi poultry bird may be rechecked.</p>
5.	Churachandpur	<p>1. Late blight disease incidence should be included in parameters for OFT on Tomato var. Arka Samrat</p> <p>2. Inclusion of another treatment for yellow sticky trap is recommended for aphid management in broad bean</p> <p>3. Regarding Fertilizer application dose proportion of NPK - ½: ¼: ¼ respectively in Tree bean should be included in another treatment.</p> <p>4. Economic analysis for both meat and egg should be</p>

		<p>carried out for poultry birds</p> <ol style="list-style-type: none"> 5. High cost fish (Pengba) should be replaced by high value fish in the title of the OFT. 6. The word evaluation should be removed from the title of OFT on dehydration of Broccoli (Green Magic) 7. Pea var. Azad P-4 should be replaced in the OFT.
6.	Chandel	<ol style="list-style-type: none"> 1. OFT on performance of pea, the B: Cratiwas too high and should verify whether the var. use isfield pea or garden pea. 2. Regarding intercropping of maize, Land Equivalent ratio and Maize equivalent yield should be calculated. 3. For OFT on piggery, using local breed, it should be continued in the next year with hampshire breed. 4. In poultry base OFT, dual type of birds should be considered.
7.	Tamenglong	<ol style="list-style-type: none"> 1. OFT comparing PM-27 and NRCHB-101 may be taken up. 2. Equivalent yield, soil moisture, temperature, rainfall to be studied under OFT being taken up in cropping system mode. 3. Disease/Pest incidence in percentage to be recorded/given with good quality photograph with banner and Sign board 4. Soil related parameters to be recorded in OFT 5. All OFTs should include feedback/acceptability along with B:C ratio
8.	Imphal West	<ol style="list-style-type: none"> 1. Soil status may be recorded as a parameter for straw waste decomposer. 2. OFT on Kadaknath comparison on economic analysis with Vanaraja should be for both meat and egg 3. Linseed var. for fibre purpose and oil may be improved by using better from the Directorate of oil seed. 4. In all the titles of OFTs/FLDs evaluation should be

		replaced by performance.
9.	Senapati	1. No Recommendations and Suggestions made by the Experts

State: MEGHALAYA

Sl. No.	KVK Name	Recommendations and Suggestions made by the house
1.	RiBhoi	<ol style="list-style-type: none"> 1. Suggested to rechecked and verified the BCR in OFT “Performance of transplanting technique of ginger for reduction of seed cost”, as the BCR is too high in comparison to the cost saving percentage. 2. Suggested to include two crop seasons for tomato to record the disease incidence and also suggested to increased the number of treatment. 3. Suggested to include the use of yellow sticky traps for thrips and aphids in OFT on Performance of Biological control of major Chilli pests. 4. Under OFT on Performance of paddy cum fish- Integrated Farming System, suggested to rechecked and verified the yield of rice as the yield is too low even after supplying external feed. 5. Suggested to increase the stocking density of fish 6. Amur carp and Common carp should not be mixed in composite fish culture. 7. In composite fish culture, number of fish species should be atleast 5
2.	East Khasi Hills	<ol style="list-style-type: none"> 1. OFTs should be concluded with results within 3 years. 2. Data collection and record should be done more thoroughly and can be consulted with ICAR RC for NEH Region, Umiam. 3. Suggested to increase the stocking density in IFS intervention. 4. The targeted number of Soil Health Card should be minimum of 500 nos.

		<ol style="list-style-type: none"> 5. Suggested to increase the number of Mobile advisory services 6. On-farm and off-farm yield of commodities should be given separately. 7. All the third year technology should be concluded.
3.	West Khasi Hills	<ol style="list-style-type: none"> 1. Under Horticulture- OFT on Peach, Suggested FYM to integrate along with vermicompost. by reducing the dose of FYM. 2. Need to identify specific problems in peach cultivation for adoption of low chilling variety. 3. In the case of OFT for tomato cultivation, suggested to rechecked the BCR and the cost of cultivation needs to be evaluated. 4. Under Plant Protection, OFT on paddy, suggested to rechecked the economics data. 5. In OFT for Housing of Poultry, the title and year of trial needs to be mentioned. 6. In paddy cum fish intervention, the incorporation of fish species; Catla, Rohu, Mrigal and Silver carp cannot be incorporated. Suggested to go for common carp only.. 7. Suggested to incorporate horticulture data in IFS intervention. 8. In FLD for Animal Sc., the data for meat production in poultry needs to be incorporated. 9. Number of pigs in IFS should be maintained scientifically so as to prevent water acidity of fish pond. 10. Avoid similar interventions in OFT and FLD technologies. GPS reading may be incorporated. 11. Specific title of OFTs and FLDs along with the Source and year of released needs to be mentioned. 12. Suggested to increase farmer contact above 100 for mobile advisory services.

		13. The targeted number of Soil Health Card should be minimum of 500 nos.
4.	Jaintia Hills	<ol style="list-style-type: none"> 1. Suggested to discontinue Groundnut Variety ICGS. 2. Suggested to mention clearly the methodology, block selection as well as sample size adopted for random sampling of selected farmers. 3. Ensure horizontal spread of technologies accordingly. 4. Under FLD in Fisheries, number of fingerlings/ha should be in happa 5. Suggested for verification and validation of low cost thermocol incubator identified by the KVK.
5.	West Garo Hills	<ol style="list-style-type: none"> 1. Seed treatment of <i>Trichoderma harzianum</i> in paddy for organic nutrient management will give biased yield data. Need to rechecked and verified. 2. Meat production data need to be incorporated in Performance evaluation of layer duck intervention. 3. Suggested to include Arka Samrat and Arka Abhed varieties along with Arka Rakshak for observation of disease incidence in tomato.
6.	South Garo Hills	<ol style="list-style-type: none"> 1. Suggested to reduce the area to 0.5 ha under OFTs with atleast 5 trials 2. Suggested to incorporate yellow sticky traps in Plant Protection. 3. Suggested to mention the effect of different weaning periods of piggery.
7.	East Garo Hills	<ol style="list-style-type: none"> 1. Under OFT on Performance of maize var. in kharif and rabi season, suggested to conduct in different season 2. Under Plant Protection on FLD, Suggested to conduct Mushroom production throughout the year and needs to be popularized in the district.. 3. Under Horticulture on FLD, Suggested to verify the details of technology with proper title. 4. Avoid similar interventions in OFT and FLD

		<p>technologies</p> <p>5. The Committee suggested ,FLD interventions needs to be carried out only after completion of OFT for all the FLD programmes</p>
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State: MIZORAM

Sl. No.	KVK Name	Recommendations and Suggestions made by the house
1	Aizawl	<ol style="list-style-type: none"> 1. Under OFT on Cropping system under organic management Maize + Beans-Pea, there should be three treatments. Maize equivalent yield should also be included in the Parameters to be observed. Check the Source of Technology for needful changes. 2. Under OFT on Assessment of King Chilli under low cost Polyhouse using UV film the Disease incidence should be included in the Parameter to be observed. 3. Under OFT on Chemical treatment for increased Vase life of the Spathe of Anthurium. There should be a comparative study on the life of the Spathe of Anthurium in open condition. 4. Under FLD on IPM on fruitfly in Bitter gourd the number of interval of spraying should be included in the parameters to be observed and the spelling of Malathion should be corrected. 5. The Briquette chulha must be popularized further under FLD on Popularization of Briquette chulha 6. The title of the FLD is to be corrected as Popularization of Zero Energy Cool Chamber. To include the number of days storage for Banana & Broccoli. 7. In the production of Seed and Planting materials, it is suggested to check whether the production of ginger local variety- Thinglaidum is authorised. To be discussed further with Director, ATARI.
2	Mamit	<ol style="list-style-type: none"> 1. Under OFT on promotion of Scientific Cultivation of different Bamboo species in an abundant Jhum land Carbon sequestration should be included in the parameters to be observed and to come up with a good publication once the trial is over. 2. Under OFT on Growth performance and Nutrient Digestibility in Piglets the observations on age of maturity of pigs should be reduced from 11 months to 6 months and proceed accordingly. 3. Under OFT on Performance of Papaya varieties ArkaPrabath, Surya and Sapna comparison on the first cutting should be observed and recorded. 4. Under FLD on Management of citrus Psylla in

		Mandarin orange the Gross return for Local and check should be incorporated.
3	Lunglei	<ol style="list-style-type: none"> 1. Under OFT on Foliar application of Macro and Micro Nutrients in Potato the Nutrient availability after application should be observed and the data mentioned before and after application should be rechecked for the differences. 2. Under OFT on Biological Soil Conservation measures to increase available soil nutrients there is no observation on Soil retention data. Check for needful changes and proceed accordingly. 3. Under FLD on Soil Conservation in Jhum land feasibility of cultivation of Tomato during winter is to be observed. 4. Under FLD on Improved farm tool to reduce drudgery observations on gesture should be included in the parameters to be observed.
4	Serchhip	<ol style="list-style-type: none"> 1. Under OFT Varietal evaluation of Tomato var. Arka Samrat the Yield should be rechecked and correct accordingly and Disease incidence should be observed. 2. Under OFT on Evaluation of Ergonomically design chair, the modified Ergonomically design chair to suit the local weavers assessed through OFT is highly appreciated by the panel experts and suggested for documentation of the assessed trial once completed and to notify the Institute from where the Source of Technology was obtained. 3. The SMS (Agronomy) should take the responsibility of Soil testing and Soil Health Card in absence of SMS (Soil Science).
5	Champhai	<ol style="list-style-type: none"> 1. Title of OFT Varietal Evaluation is to be corrected as Varietal Assessment. 2. Under Agronomy On Farm Trial, the technology is to be assessed not refined. 3. Under Horticulture FLD, in addition to tomato variety Arka Samrat another variety Arka Abhed a resistant variety to Blight, Virus and Bacterial wilt should be demonstrated. 4. Under FLD of Influences of Organic Mulches the paddy mulch is to be chopped and observe the soil moisture content accordingly. 5. To add the details of Technology in the FLDs.
6	Kolasib	<ol style="list-style-type: none"> 1. Under OFT on Kadaknath Poultry observations is to be compared with Vanaraja. 2. Under OFT on Eco-friendly Management of fruit fly in Pumpkin the number of fruit flies trapped should be observed and recorded. 3. Under FLD on Agro-Forestry the percentage of slope in SALT should be mentioned.

7	Lawngtlai	<ol style="list-style-type: none"> 1. To repeat OFT on Evaluation of Groundnut var. ICGV 91114. 2. Under Agriculture Extension the Impact of adoption of technologies in the village where OFT and FLD has already been conducted should be included in the observation and Parameters. 3. Improve the slides of Power Point Presentation.
8	Siaha	<ol style="list-style-type: none"> 1. Under Horticulture OFT Arka Gold, Arka Amar and Arka Kesar results are to be given as T1, T2, T3 & T4 (Farmers Practice). 2. Under Horticulture OFT on Scientific Management of cultivation of Cabbage there are no scientific observations or parameters. The title should be changed and apply technology which is new to the region. 3. Under Home Science, Arka humidity box should be compared with open storage. 4. Under Animal Science, Pig pen model should be continued and under Duck cum fish culture comparison should be made with monoculture likewise in the FLD also and proceed accordingly. 5. Under FLD in Plant Protection, verify the Kashi Pragati variety as it is resistant to some extent Select some susceptible variety and proceed accordingly.

State: NAGALAND

Sl. No.	KVK Name	Recommendations and Suggestions made by the house
1	Dimapur	<ol style="list-style-type: none"> 1. VL-63 should be changed 2. Source of technology in OFT Papaya Candy 3. In OFT in IPM cabbage farmer practice to be explained 4. Organoleptic test results should be included in Home Science discipline 5. Parameters of demonstration should be included in FLD Home Science
2	Kohima	<ol style="list-style-type: none"> 1. Variety-IPFD to be checked whether its garden of Field pea and should be followed by paddy. 2. Disease resistance parameters to be included in lentil 3. In French bean, creeper and bushy beans may be included 4. In case of green manuring Dhiancha, bulk density of the

		<p>soil before sowing and after harvest may be recorded</p> <ol style="list-style-type: none"> 5. In case of potato, four technologies i.e. CIPRI, state recommended, organic inputs and farmers practices may be tried. 6. Chloropyriphos dose may be mentioned properly. Rogor/ Neem oil may be taken another treatment 7. Lime application to be done only during Rabi season/FLD to be discarded.
3	Mon	<ol style="list-style-type: none"> 1. Paddy yield is very low in OFT 2. VL-63 to be replaced 3. B.C. ratio in animal science OFT to be changed 4. JS-335 to be stopped for demonstration and may be handed over to the state government with package of practices. 5. In OFT maize var. Shriram 9662 liming should not be done and discontinue furrow application of lime 6. Soil conservation SMS should conduct OFT and FLD according to discipline and not as Soil science. 7. Kufri Jyoti should be replaced by Kufri Joyraj 8. In FLD maize open pollinated variety may be taken up. 9. DFI income to be given year-wise.
4	Tuensang	<ol style="list-style-type: none"> 1. No of replication in rice variety Gomati to be increased. 2. System mode to be adopted for Rice-Toria: Rice-Pea/Lentil. 3. SMS Horticulture should take OFT on important Horticultural crops rather than value addition. 4. In groundnut, variety-ICGV-9114 to be added. 5. In case of Rajmah, suitable variety of Tripura may be taken up. 6. In potato, Kufri joyti to be replaced by new variety. 7. Naga Mircha to be replaced by king chilly 8. Senior scientist should present the report. 9. Technology demonstrated should be clearly mentioned in FLDs

5	Zunheboto	<ol style="list-style-type: none"> 1. Number for farmers/SHGs benefitted under OFT tapioca cake should be mentioned 2. Administration Action should be initiated against SMS (Agril. Extension) for not conducting OFT and FLD by Head KVK. 3. Number of pests collected on yellow sticky trap should be recorded. 4. Should increase number of Mobile Advisory Service. 5. DFI data should be included and % increase should be mentioned.
6	Wokha	<ol style="list-style-type: none"> 1. Botanical names of medicinal plants to be collected 2. Seed production to be increased
7	Longleng	<ol style="list-style-type: none"> 1. Annual Report 2019 of Longleng to be reviewed at ATARI level due to poor internet connectivity
8	Phek	<ol style="list-style-type: none"> 1. HQPM -1 should be replaced by HQPM - 9 2. Rajmah variety Arun to be replaced by TR1 and Arun should be kept as check. 3. ArkaSamrat to be added 4. Increase number of trials in all OFTs 5. Should increase seed production 6. Soil testing and distribution of soil health card should be increased
9	Mokokchung	<ol style="list-style-type: none"> 1. In OFT Tomato, the problem should be identified properly. 2. Percentage of infestation and severity in potato due to white grub to be mentioned 3. Paddy CAUR-1 should be replaced by CAU-5 in OFT 4. FLD on off-season cucumber may be taken up 5. Pea Var, Azad to be stopped and be replaced by Arka Apurba/RCM-5/TRC-P-8 6. Technology details should be mentioned clearly.
10	Peren	<ol style="list-style-type: none"> 1. Soil testing and distribution of soil health cards should be increased

11	Kiphire	1. No recommendations and suggestions made by the Experts
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State: TRIPURA

Sl. No.	KVK Name	Recommendations and Suggestions made by the house
1.	Khowai	<ol style="list-style-type: none"> 1. In case of OFT on Assessment of certain biopesticides against fruit borer, <i>Earias spp.</i> in Okra with severity of damage, yield of okra also to be included. 2. OFT on Assessment on Creep Feeding for Piglets to be taken as FLD for the year 2020. 3. FLD on Application of NAA in prevention of flower and fruit drop in chilli should not be continued as yield increase is less than 10%. 4. The yield data of FLD on Management of fruit fly in bitter gourd Pheromone traps @ 25 trap/ha + Gur based poison bait trap: (50 ml malathion + 200 g gur + 2 litre water) should be re-checked.
2.	Unakoti	<ol style="list-style-type: none"> 1. Labour cost should be included while calculating the gross cost in rice cultivation (var: Kalikhasa) 2. Rice var: Gomati should be taken up under FLD programme 3. B:C ratio should be checked in both the rice varieties (Kalikhasa and Gomati)
3.	Gomati	<ol style="list-style-type: none"> 1. As a new KVK and as there is no SMSs in the KVK, Gomati may adopt more FLDs. 2. One kitchen garden model as demonstration unit for the farmers need to be established in the KVK farm. 3. One IFS model also to be established in the KVK farm. 4. Quality planting materials to be raised in the KVK nurseries. 5. More efforts needs to be taken for increasing more

		revenue from KVK farm.
4.	West Tripura	<ol style="list-style-type: none"> 1. Efforts must be taken to Produce Mushroom round the year. 2. Economics of interventions may be worked out
5.	North Tripura	<ol style="list-style-type: none"> 1. Title of the OFT in performance of Bajra hybrid Napier should be change to effect of Bajra hybrid napier on milk yield of cattle. 2. ii. Title of the FLD on popularization of Guinea grass on milk yield of cattle should be change to only popularization of Guinea grass.
6.	Dhalai	<ol style="list-style-type: none"> 1. To continue with FLD on IPM in Brinjal. 2. To check the crop duration of CO 51 before recommending to state department.
7.	Sepahijala	<ol style="list-style-type: none"> 1. To change the title of OFT -2 of horticulture “Assessment on integrated nutrient management in okra” instead of “Evaluation of different okra varieties under late sowing condition using organic nutrients”. 2. ii. To change the title of OFT-1 of Plant Protection “Organic management of blast disease in rice” instead of “Performance of different rice varieties/genotypes to blast disease of rice.”

General Recommendations

- ❖ For taking up any technological methods and situations *viz.*, Rain-fed, extreme climatic conditions, Climatic parameters must be included in the observation as it is a real time event.
- ❖ Under resource conservation technologies, resource conservation parameters should be recorded.
- ❖ Double or triple cropping should be taken up in mono crop areas with suitable technologies.
- ❖ For taking up any interventions under abundant Jhum land, parameters like number and the year of Jhum cycle and soil status should be recorded.
- ❖ Production of community nursery for rice under drought like situation as a contingent measure should be followed to meet the need of the farmers.
- ❖ For taking up any technological intervention, source of technology must be clear and feedback/acceptability from the farmers for the technologies should reached to the source of technology where technology was developed.

- ❖ Action taken reports on previous year recommendation to be included in the presentation.
- ❖ For up-scaling technologies, all the successful technologies should be passed on to the respective state line departments for horizontal spread.
- ❖ Title and year of trial for every OFTs/FLDs should be indicated.