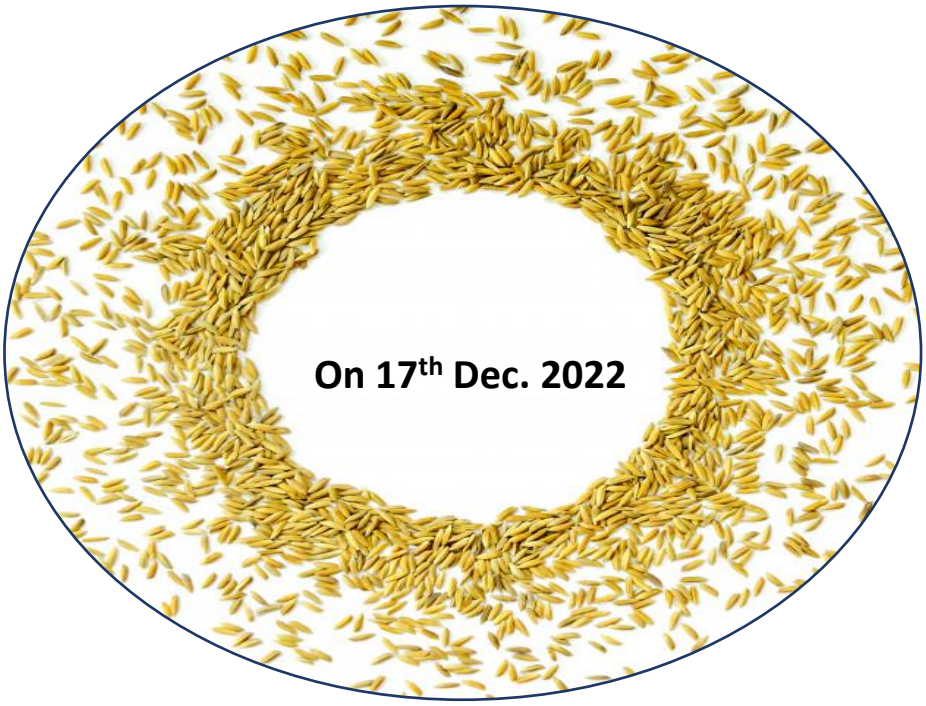
12TH SCIENTIFC ADVISORY COMMITTEE MEETING



KRISHI VIGYAN KENDRA, GANJAM-II

ODISHA UNIVERSITY OF AGRICULTURE & TECHNOLOGY

BHUBANESWAR

1.0 INTRODUCTION

Krishi Vigyan Kendra, Ganjam-II was established by ICAR in June 2012 under the control of OUAT at Ratanpur farm. At present this institution is operating in its new location at Golanthara, block -Rangeilunda. It is surrounded by Kandhamal in the North-West, Nayagarh in the North, Khurda in the North-East, Gajapati district in the West and Bay of Bengal in the South-East. On its southern periphery the district borders the state of Andhra Pradesh. Ganjam district is broadly divided into two divisions spreading over an area of 8206.0 Sq.km. The plains lie between the Eastern Ghats and the Bay of Bengal. Since the hills are close to the sea, the rivers flowing from the hills are not very long and are subject to sudden floods. The plains are narrow because of the absence of big rivers. The coastal plains in the east contain more fertile and irrigated lands. The southeastern portion is fertile. Ganjam economy is predominantly agrarian. Around 80 percent of the population depends on agriculture and allied activities. The long sea and Chilika coastline are a source of rich marine products and lime shells. Ganjam is a major salt-producing district in the state.

KVK serves as a knowledge hub and resource center of agricultural technologies for the farmers of the district. It operates as per the mandates of ICAR for the upliftment of the socio-economic condition of the farming community. Ganjam-II is the 2nd Krishi Vigyan Kendra of Ganjam district and lies between 19^{0}4' to 20^{0}17' Longitude and 84^{0}7' to 85^{0}12'. Latitude

KVK is an integral part of the National Agricultural Research System (NARS), which aims at assessment of location specific technology modules in agriculture and allied enterprises, through technology assessment, refinement and demonstrations. KVKs have been functioning as Knowledge and Resource Centre of agricultural technology supporting initiatives of public, private and voluntary sectors for improving the agricultural economy of the district and are linking the NARS with extension system and farmers.

2.0 MANDATE

The mandate of KVK is **Technology Assessment and Demonstration** for its **Application** and **Capacity Development**.

3.0 K.V.K. ACTIVITIES

To implement the mandate effectively, the following activities are envisaged for each KVK

1. On-farm testing to assess the location specificity of agricultural technologies under various farming systems.
2. Frontline demonstrations to establish the production potential of technologies on the farmer's fields.
3. Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies.
4. To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of the public, private and voluntary sector in improving the agricultural economy of the district.
5. Provide farm advisories using ICT and other media means on varied subjects of interest to farmers

In addition, KVKs produce quality technological products (seed, planting material, bio-agents, livestock) and make them available to farmers, organize frontline extension activities, identify and document selected farm innovations and converge with ongoing schemes and programs within the mandate of KVK.

4.0 THRUST AREAS OF KVK

- Crop diversification.
- Integrated Farming System.
- Integrated Disease and Pest Management Practices in crops.
- Integrated Nutrient Management practices in crops.
- Integrated weed management in field crops.
- Off season vegetable cultivation .
- Improving productivity of horticultural crops.
- Floriculture for income generation.
- Organic farming.
- Farm mechanization and soil and water conservation
- Nutritional Garden for nutritional security of farm families
- Scientific management of Dairy ,Goatery and Fishery.
- Drudgery reduction & Farm mechanization in agriculture
- Value addition in seasonal vegetables and fruits.
- Agroforestry.

5.0 BASIC INFORMATION OFGANJAM DISTRICT

Agro-climatic Zone	East and South East Coastal Plain Zone**(Ganjam-II)** North Eastern Ghat Zone**(Ganjam-I)**
Geographical Area	8,21,000 ha
Cultivated Area	4,06,000 ha
High Land	1,89,715 ha (47% of cultivated area)
Medium Land	1,13,460 ha (28% of cultivated area)
Low land	1,02,825 ha (25% of cultivated area)
Irrigation Potential	
*Kharif*Area Irrigated	2,89,591 ha
*Rabi*Area Irrigated	61,779 ha
Soil Type	Laterite soil, Black cotton soil, Red
Average annual rainfall	1275.2mm
Cropping Intensity	202 %
Major crops grown	Rice, ragi, greengram, blackgram, sesame, groundnut, vegetables, sugarcane, chilly, ginger, cotton, etc.

6.0 ADOPTED VILLAGES

Village Name	Year of adoption	Block Name
Raijhol	2012	Kukudakhandi
Padripalli	2012	Kukudakhandi
Dighapada	2012	Hinjilikatu

Bhimpur	2013	Pursotampur
Balrampur	2013	Chhtrapur
Giria	2016	Hinjilikatu
Putipadar(ST)	2017	Rangeilunda
Jharapadar	2017	Ganjam
Rajanapalli	2017	Chhatrapur
Narayanpur(ST)	2019	Patrapur
Panada	2019	Chikit
Sanabiswanathpur	2020	Rangeilunda
Medinipur	2022	Kukudakhandi

7.0 CROPPING SYSTEM

Sl. No	Name of the block	Cropping system followed
1	Khalikote	Rice-oilseed/pulse, Rice-vegetable, Vegetable-vegetable
2	Ganjam	Rice-pulse/oilseed, Vegetable-vegetable,
3	Chatrapur	Rice-pulse/oilseed
4	Purushotampur	Rice-pulse/oilseed, Rice-vegetable, Vegetable-vegetable
5	Rangeilunda	Rice-pulse, Rice- vegetable, Vegetable-vegetable
6	Patrapur	Rice-pulse, Rice- vegetable, Rice-fallow
7	Chikiti	Rice-pulse, Rice-vegetable
8	Kukudakhandi	Rice-pulse, Rice-vegetable, Vegetable-vegetable
9	Hinjili	Rice-pulse/oilseed, Rice-vegetable, Vegetable-Vegetable
10	Digapahandi	Rice-pulse,
11	Sanakhemundi	Rice-pulse/vegetable- Sesame, Vegetable-vegetable

8.0 FARMERS PROBLEMS

- Natural calamities- Drought & Cyclone
- Poor irrigation facility-34% (Moisture stress during rabi pulses and oilseeds)
- A severe attack of crop diseases and pests (BPH, YMV-22%, Blast -30% & Fruit and shoot borer- 40 % in Brinjal)
- Weed problem in paddy (More than 24 species)
- Improper Nutrient of management in crops (Rice, Pulses & Oilseeds- Less use of P, K & S)
- Soil Acidity- More than 70% (PMS not available during requirement)
- Poor availability of agri-inputs (Seeds, Biofertilizers & Fertilizers)
- Low Productivity of crops, livestock and Pisciculture.
- Small size and fragmented land holding-0.92 ha
- Seasonal Migration (after paddy harvesting)

9.0 SWOC ANALYSIS OF KVK

Strength	Weakness	Opportunities	Constraints
• **(i)Ecological** • Hot and humid climate favoring rice crop • Low rainfall, well-drained sandy loam soil for Kharif groundnut • Alluvial soil,moderate rainfall and high-water table for vegetable • Saline marshy land and water bodies for fish cultivation • Good forest coverage with fertile soil	• **(i)Ecological** • Low and erratic rainfall leading to the drought situation • Acid soil with low water holding capacity • Soil erosion causes land degradation • Indiscriminate deforestation and siltation of reservoirs and water storage structure • Prone to cyclone • Soil salinity due to ingress of the sea and Chilika water • Low groundwater table • Flood situation during Kharif	• **(i)Ecological** • Integrated watershed management • Potential for seashore plantation of cashew and coconut • pisciculture in tank • Expansion of area under coconut, mango,citrus and banana. • Harnessing groundwater potential	• **(i)Ecological** • Weather aberration like drought and flood • Gradual decline in the groundwater table • Upsetting natural balance due to deforestation
• (**ii)Socio-economic** • Social cohesion among the farmer • Cheap and efficient labour force • Existence of women SHG • Committed network of NGO • Traditional fishermen community • Large and skilled farmers for entrepreneurship development	• **(ii)Socio-economic** • Alcoholism in male • Castism and superstitions • Exploitation by rural money lenders • Migration of labour force • Small and fragmented landholding • Predominance of a landless and marginal farmer • Lack of farmers organization • The exploitation of the middle man	• **(ii)Socio-economic** • Labor-intensive work • Women SHG • Availability of family labour	• **(ii)Socio-economic** • Diversion of agricultural land to non-agricultural use • The exploitation of middlemen • Migration of agricultural labour to industrial work
• **(iii)Infrastructure** • Well connected with NH, State highways and railways • Viable credit institutions, SCSs and commercial banks • Milk route of grater in Ganjam Milk union • Fish seed hatchery • Diversities	• **(iii)Infrastructure** • Inadequate agro-processing and storage structure • Inadequate irrigation • Disorganized marketing • Non-availability of fruit preservation unit • Defunct LIPs	• **(iii)Infrastructure** • Formation of FPO • Construction of MIP, Cross bunds and tube well • Installation of cold storage • Establishment of fish and prawn processing units • Agro service centers and seed processing units • Installation of fruit preservation andprocessing unit	• **(iii)Infrastructure** • Procurement of seed, vegetables and fruits from neighboring states • A potential risk for Aska sugar factory

Strength	Weakness	Opportunities	Constraints
• **(iv)Production system** • Diversities of paddy to pulse, oilseed and vegetable crop varieties • Village tank for freshwater fish culture • Rearing of cows, goat and poultry birds • Brackish water prawn culture, shrimp and marine fish cultivation and integrated fish production • Cashew plantation • Commercial Kewda cultivation for the perfume industry • Extensive cultivation of coconut and areca nut • Agroforestry and Silvi-pasture • Mango and orange orchard • High water table for irrigation • extensive sugarcane and maize cultivation • Ginger and turmeric cultivation	• (iv)Production system • Yield gap due to lack of scientific know-how • Mono-cropping of sugarcane • Poor soil and water management • Excess use of nitrogen and imbalance fertilizer dose • Zinc deficiency in field crop • Distress sale of rice and vegetables • A technological gap in the management of livestock • High mortality of goat • Non-availability of green fodder for ruminants • Monkey and wild boar menace • The low market price of dairy product • Lack of rejuvenation of old orchard	• (iv) Production • Expansion of area under lime and mango • Expansion of area under turmeric and ginger cultivation • Commercial floriculture • Rejuvenation of old orchard • Apiary for landless farmer • Expansion of area under sugarcane • Breed up-gradation and dairy • Community fodder cultivation for dairy • Scope for breed up gradation in goatery and poultry • Renovation of fish tanks and composite pisciculture • Freshwater prawn hatchery • Establishment of poultry hatchery • Brackish water fishery • Pisciculture isthewaterlogged wasteland • Protected cultivation of vegetables and flowers • Micro-irrigation for fruit cultivation	• **(iv)Production system** • Distress sale and middle-men-ship in the vegetable market • Imbalance use of fertilizer leads to land degradation • Wild boar and monkey menace • Leaching of soil nutrients due to flooding

10.0 11TH SAC RECOMMENDATIONS

As per the guidelines of the Indian Council of Agricultural Research (ICAR), New Delhi and after obtaining the administrative approval of the Hon'ble Vice-Chancellor, Odisha University of Agriculture and Technology, the Scientific Advisory Committee has been formed. Hon'ble Vice-Chancellor, OUAT acts as the Chairman and the Dean, Extension Education, OUAT, acts as the Co-chairman of the SAC committee. Zonal Project Director, Zone-VII, ICAR; Chief District Agriculture Officer, District Agriculture Officer, Dy. Director Horticulture, Horticulturist, Soil Conservation Officer, District Fishery Officer, Chief District Veterinary Officer, Lead Bank Manager, Director All India Radio; Director, Doordarshan; District Manager, OAIC; General Manager, DIC; District Social Welfare Officer, two progressive farmers male, two progressive farm

women and heads of two NGO are the esteemed members of the committee. Sr. Scientist and Head of K.V.K. acts as the member secretary of the committee. KVK always gave the utmost care to SAC recommendations during the formulation of the KVK action plan (Intervention framework) for the district context.

Sl. No	Recommendation	Action taken
1.	New generation pesticides should be used in aphid management in marigold, vegetable, etc.	▪ Demonstration on the application of Flonicamid@ 6gm/ 15 lit of water thrice in 15 days interval for control of aphids in marigolds and vegetables have been taken up. ▪ Soil drenching by neem cake @2.5 qt/ha. ▪ Application of Pymetrozine 250 g/ha. ▪ Villages covered- 5 (Govindanagar, Golanthara, Nandika, Ambagaon and Balipada) ▪ Flower Yield -FP-93q/ha, RP-105q/ha(Pest incidence decrease 23% ▪ No of farmers covered: 28 nos ▪ Area covered- 8.35 ha ▪ KMAs- 5
2.	Joint visit records must be maintained with department officials	▪ Joint visits with line department official have been conducted during disease pest incidence, selection of beneficiaries in schemes, verification of projects and assessment of yield or losses. ▪ No of visit : 27 nos.
3.	Protein content of the rice must be analyzed in bio-fortified rice varieties	▪ Biofortified rice var. CRDHAN-310 & CRDHAN-311 have been sent for analysis of its protein content. ▪ Villages covered- 4 (Kutharsingh, Kishorechandrapur, Padripalli , Giria) ▪ No of farmers covered: 17 nos ▪ Area covered- 3 ha ▪ KMAs- 5 and Short video-2 nos
4.	Organic farming and natural farming practices should be included in programme.	▪ Awareness cum training on natural farming i.e preparation and use of Bijamruta, Jivamruta, Panchagabya, and Handikhata has been conducted in villages. ▪ Demonstration on organic cultivation of vegetables has been taken up in farmer's field. ▪ Vermicompost production using poly vermipit has been demonstrated in backyard. ▪ Villages covered- 11 (Nandiigaon, Badagaon, Kharanipada, Nuagaon, Talaharidabadi, Jharapalli, Hinjiligaon, Kishorechandrapur, Mahisanpur, Medinipur and Sinhala) ▪ Area covered- 13 acres. ▪ SHG groups- 4 ha. ▪ Farmers covered- 68. ▪ KMA-6
5.	TARA farmers should be covered under poultry demonstration .	▪ Under demonstration on low input backyard poultry (Vanaraja, Kadaknath, Chabbro, RIR and Kalingabrown) , TARA farmers are included . ▪ Villages covered - 6 (Giria, Sunapur , Hinjiligaon, Gobindanagar, Kanisi, Sanabiswanathpur) ▪ No of farmers covered: 23 nos.
6.	Nutritional garden must be popularized for seed	▪ Demonstration on kitchen garden for nutritional security of farm families has been taken up. ▪ Trainings on vegetable seed and planting material production have

	production purpose	been imparted. ▪ Villages covered- 5 nos. (Nandika, Badagaon, Medinipur, Kusumi, Maisanpur) ▪ Training conducted- 4 ▪ No of farmers covered: 42 nos ▪ KMAs- 5
7.	New pulse crop should be taken up in KVK campus(Black gram var. OBG-41) should be taken into the programme	▪ With the availability of seed, demonstration on Black gram var. OBG-41 will be conducted in KVK instructional farm after the rice seed production programme. ▪ Black gram var. Sashi (OBG-33) has been demonstrated under the CFLD programme Kharif 2022 with an average yield – 4.21 q/ha. ▪ Greengram var. Virat has been taken up with average yield – 4.8 q/ha. ▪ Villages covered- 6 nos. (Kusapada, Siripur, Kolipentha, Narayanpur, Badalpahada and Padripalli) ▪ Area covered- 20 ha ▪ KMA- 3
8.	Farm pond (IFS model) should be developed	▪ About 32 nos. of IFS units have been strengthened with technological support from KVK. ▪ Training conducted- 7 nos. ▪ Villages covered- 18 (Govindanagar, Golanthara, Nandika, Ambagaon, Balipada, Rangailunda-T. Berhampur, Giria, Padripali, Kukudakhandi- Nistipur, Sumandi, Sukunda, Pallinabhapur, Hinjali, Sasanpadar, Dayapalli, Santoshpur) ▪ No of farmers covered: 32 nos ▪ Area covered- 8.16 ha . ▪ KMAs- 8, Video – 5 nos.
9.	Intercropping programme must be included in OFT & FLD	▪ Demonstration on ICM packages in intercropping of maize+ cow pea, Mango + turmeric/ginger, Chilli+ Knolkhol, cowpea + knolkhol has been taken up in villages ▪ Villages covered- 5 (Badakharida, Kulihala, Jagannathpur, Kharanipada and Padadiki) ▪ No of farmers covered: 78 nos ▪ Area covered- 10.8 ha ▪ KMAs- 5 and video – 2nos.
10.	Training on spawn production should be at KVK	▪ Training on mushroom spawn production was piloted in convergence mode with OLM and TATA STEEL ▪ Training conducted by KVK: 4 nos. ▪ No of trainees : 302 nos.(CRP, Anganwardi worker , SHGs, F/Fw)
11.	Training & demonstration should be included for skill development of farm women	▪ Skill training on preparation of dry fish, Fish pickle and value-added product. ▪ Planting material production ▪ Preparation of organic inputs like Handi khata, Bijamruta, Jibamruta & fish tonic ▪ Villages covered- 10 (Govindanagar, Golanthara, Ambagaon, Balipada, Kulihala, Mahisanpur, Haripur, Kharanipada, Nandigam, Nuagam) ▪ No of farmers covered: 213 nos

12	Programme on fodder cultivation should be included	▪ Demonstration on package and practices of hybrid Napier has been taken up in farmer's field. ▪ Villages covered- 3(Giria, Jagannathpur, Medinipur) ▪ Beneficiaries included- 17 ▪ Area -2.5 ha
13.	Livelihood activities should be taken up	▪ Skill training on planting material production, flower cultivation, high-value vegetable cultivation, value addition of fish etc. are taken up in adopted villages. ▪ Training conducted-3 nos. ▪ Villages covered- 9 (Mahisanpur, Balipada, Giria,Jharapalii, Hinjiligaon, Bhikaripali, Chatrapur, Talaharidabadi, Kutharsingh) ▪ No of farmers covered: 102 nos ▪ KMAs- 5
14	Awareness & demonstration on under exploited vegetables has to be included in KVK program.	▪ Demonstrations on package and practices for cultivation of Desi onion (yield-154q/ha), Sankha saru (yield-143q/ha) , Ghia kunduri(yield-86 q/ha), Desi kankada ((yield-143q/ha)) and elephant foot yam((yield-143q/ha) has been taken up in farmers field . ▪ No of farmers-58 ▪ Area covered- 23 ha ▪ Villages covered- 42 villages ▪ KMAs- 4

11.0 ACHIEVEMENTS OF THE MANDATORY ACTIVITIES

(Rabi 2021-22 to Kharif 2022)

11.1 Detail of On-Farm Testing

Crop/ Component	Technology Assessed	Technology option	Details of technologies	Yield (q/ha)
Rabi 2021-22				
Chilli	Assessment of chilli varieties	FP	Cultivation of hybrid variety Tejaswini	138.4
		TO_1	Cultivation of hybrid chilli variety Arka Meghna	164.7
		TO_2	Cultivation of hybrid chilli variety Arka Harita	160.4
Betel vine	Assessment of integrated nutrient management in betel vine	FP	Application of N-P_2O_5-K_2O (100:50:50) + Mustard Oil Cake (MOC) @ 3 q /ha	12,07,035
		TO_1	STBF (50%NPK) + MOC @ 1.5 t/ha + Vermicompost (VC) @ 10 t/ha	15,16,500
		TO_2	STBF (50%NPK) +MOC @ 1.5 t/ha + Vermicompost (VC) @ 10 t/ha + consortia of azotobacter, azosprillum and PSB each @ 4 kg/ha inoculated to 300kg VC, mixed with 15 kg lime incubated at 30 % moisture for a week and applied in the rhizosphere	16,24,180

Chilli	Assessment of chemical management of Die back in Chilli	FP	No seed treatment	142.5
		TO_1	Seed treatment with Vitavax @ 2g/ kg of seed and application of Difenconazole 25 EC @ 1ml/lt of water from initial disease appearance twice at 10 days interval	160.1
		TO_2	Seed treatment with T.viridae@ 2.5g/ kg of seed and application of Pyraclostrobin 20 WG @ 1gm/lt of water from initial disease appearance twice at 10 days interval	169.8
Fish	Assessment of Probiotics as remedial measures for pisciculture in problematic waters	FP	Application of Organic manure & Lime	$23.08^{c} \pm 2.15$
		TO_1	Application of Water probiotic @ 1kg/Ac at fortnight interval	$29.65^{b} \pm 3.26$
		TO_2	Application of Soil Probiotic @ 1lt/Ac at Fortnight interval.	$32.58^{ab} \pm 4.17$
		TO_3	Alternative application of both soil & water probiotic at fortnight interval	$35.62^{a} \pm 3.76$
Fish	Assessment of different Parasiticidal agents in controlling external parasites in grow-out carp culture system	FP	Mechanical removal of the Parasite or in few cases use of Formalin (37% HCHO)	$24.75^{a} \pm 2.15$
		TO_1	Pond application of Synthetic Pyrethroid like Cypermethrin @ 60ml/Acre-mt (4 times in weekly interval)	$29.68^{bc} \pm 2.15$
		TO_2	Application of Ivermectin @250 g/ton feed.	$31.19^{b} \pm 2.15$
Kharif, 2022				
Chilli	Assessment of foliar application of growth regulator on chilli	FP	No application of growth regulator	136.7
		TO_1	Spray of NAA @ 10mg/lit of water	165.8
		TO_2	Spray of Triacontanol @ 1.25ml/liter	159.5
Rice	Assessment of biofortified rice varieties	FP	Cultivation of rice variety LALAT	37.8
		TO_1	Cultivation of rice variety CR DHAN 310	41.2
		TO_2	Cultivation of rice variety CR DHAN 311	43.5
Fish	Assessment of genetically improved Catla spawns for maximizing fry production in nursery tanks	FP	Normal Catla spawns with traditional Nursery Rearing	33.83^{a}
		TO_1	Normal Catla spawns with Recommended Practice	41.61^{b}
		TO_2	Improved Catla Spawn with traditional Nursery Rearing	39.28^{b}
		TO_3	Improved Catla Spawn with Recommended Practice	45.47^{c}
Mushroom	Assessment on management of competitor moulds in paddy straw mushroom	FP	Pre-soaking of straw for 10 to 12 hours with no management for moulds	36
		TO_1	Treatment of pre-soaked paddy straw for 10 to 12 hours in boiling water	28
		TO_2	Pre soaking of paddy straw bundle with 0.02% of bleaching powder for 6 hours	21
		TO_3	Presoaking of Paddy straw with 1% calcium carbonate for 6 hours	8

ICT	Assessment of the performance of FPOs with varied levels of task and commodity to enhance profitability	FP	Farmers marketing their produce through intermediaries (10 F)	30.00
		TO_1	FPO dealing with a single commodity with a single task i.e., Vegetable-Marketing (30 F)	88.89
		TO_2	FPO dealing with multi-commodity with single task i.e., Pulses, Vegetable, Enterprises-Marketing (30 F)	92.22
			FPO dealing with multi-commodity with multi-task i.e., Pulses, Crops Vegetable, Enterprises- sorting, grading, packing, value addition, branding, leveling and marketing (30 F)	94.44

11.2 Details of Front Line Demonstration

Sl No	Technology demonstrated	Detail of Technology		Results (q/ha)
Rabi 2021-22				
1	Demonstration of tomato variety- Arka Rakshak	FP	Cultivation of hybrid tomato variety Laxmi	332.6
		RP	Cultivation of hybridtomato variety- Arka Rakshak	395.3
2	Demonstration of Foliar Spray of Micronutrient in Marigold	FP	No spray of micronutrient	105.2
		RP	Foliar Spray of Micronutrient in Marigold	126.9
3	Demonstration on integrated nutrient management in chilli	FP	Application of NPK fertilizers only (60:40:40 Kg N: P_2O_5 :K_2O /ha)	127.5
		RP	Demonstration on integrated nutrient management in chill	164.7
4	Demonstration on application of Sulphur and Boron for curd quality and higher yield in cauliflower	FP	Application of chemical fertilizer (110:46:45Kg N: P_2O_5 :K_2O /ha) only	188.5
		RP	Demonstration on application of Sulphur and Boron for curd quality and higher yield in cauliflower	241.1
5	Demonstration on management of tea mosquito bug in cashew nut	FP	Indiscriminate use of Chloropyriphos @ 1lt/ha	10
		RP	Demonstration of IPM against tea mosquito bug in cashew nut	16
6	Demonstration of management of tobacco caterpillar in Sunflower	FP	Spraying of chloropyriphos @ 1 lt/ha	14.51
		RP	Management of tobacco caterpillar in sunflower	18.22
7	Demonstration on Amur carp as substitute to Mrigal in composite pisciculture	FP	Maintaining stocking ratio of Catla: Rohu : Mrigal:: 30:40:30	25.65
		RP	Stocking ratio Catla: Rohu:Mrigal:Amur carp :: 30:40:10:20 @ 7500 nos/ha with proper soil and water quality management.	34.33
8	Demonstration on Use of Insulated fish bag to preserve quality of Fish	FP	Use of local made bamboo basket or Plastic bag during retail vending	8.5
		RP	Use of 3 layered insulated Fish carrying bag during retail vending	9.53

Sl No	Technology demonstrated	Detail of Technology		Results (q/ha)
9	Demonstration on yearlings production	FP	Practicing fry and fingerlings production, No yearling production	24.52
		RP	Yearlings production practices	34.60
10	Demonstration on low input poultry breed Kadaknath in Backyard	FP	Rearing of indigenous bird	1.05
		RP	Rearing of Kadaknath breed	1.35
Kharif 2022				
11	Demonstration on INM on growth, yield and quality of tuberose	FP	Use of chemical fertilisers only (150:100:60kg /ha NPK)	4.18
		RP	Application of 75% N (Urea) + 25% N (mustard oilcake) of recommended dose of 200:200:200 kg /ha NPK along with 10t/ha FYM.	5.32
12	Demonstration on integrated nutrient management in okra	FP	Application of N: P_2O_5 :K_2O @87:46:30 kg /ha	108.6
		RP	Integrated application of STBF NPK + FYM (5 t/ha) + lime@0.2LR	139.5
13	Demonstration on consortia biofertiliser application in brinjal	FP	Application of chemical fertilizer 120:46:30 N:P2O5:K2O Kg/ha	197.6
		RP	Demonstration on consortia biofertiliser application in brinjal	251.2
14	Demonstration on chemical management of BPH In Rice	FP	Imbalanced dose of nitrogenous fertilizer & spraying of Buprofezin@ 1lt/ ha	36.1
		RP	Skip row planting (after 3 m), installation of spider trap @ 25/ ha.need based alternate spraying (based on ETL) of Flonicamid 50%WG 200 gm/ ha and pymetrozine 50%WG @ 250 gm/ha. with tank mix of neem oil @ 2.5 ml/lt water	42.7
15	Demonstration of Blast disease management practices in kharif Ragi	FP	Spraying of carbendazim @ 2gm/lt	11.74
		RP	Three sprays of Prochloraz 26.25% + Tricyclazole 22.5% SE @ 1 lt/ha at 10 days interval	18.12
16	Demonstration on use of floating fish feed for yield enhancement in pisciculture	FP	Rice Bran and Oil cake feeding without maintaining CP level	29.35
		RP	Feeding floating fish feed (CP-24/4mm) @ 5-2% body wt. twice daily with equal installments. Maintenance of water quality parameters at Optimum level	40.08
17	Demonstration on use of Probiotic for enhanced pond productivity	FP	Indiscriminate application of Lime and Organic mannure	25.78
		RP	Alternative application of both soil and water probiotic @1kg or lt/Ac at fortnight interval.	34.92

11.3 Cluster Demonstration on Pulse

Name of crop	Technology demonstrated	Area (ha) / No.	No. of the beneficiary	Results (q/ha)
Blackgram Var.-Shashi(OBG-33)	Improved seeds (*Shashi*), Seed treatment with (*Trichoderma Viridae*) @ 5gm/kg seed, foliar spraying of N-P-K(19-19-19) @25kg/Ha & spraying of boom flower @ 2ml /lit of water for better flower and growth, Spraying of Neem Oil @2.5ml/lit to prevent the insect & pest, Spraying of broad-spectrum neonicotinoid insecticide Thiamethoxam @ 15gml/lit for control of sucking pests & other insects, Spraying of Profenofos 50% EC@ 2 ml/ lit of water for controlling aphid, whiteflies, milli bug/leaf folder problems & use of pro supper gunny bag for storage of seeds	10	25	3.6 q/ha

11.4 Training

Type	Target			Achievement		
	No.	Duration (in Days)	No of Farmers	No.	Duration (in Days)	No of Farmers
Farmers & Farm Women	72	72	1800	72	72	1800
Rural Youths	20	40	300	20	40	300
In-Service Personnel	12	12	120	12	12	120
Total	**104**	**124**	**2220**	**104**	**124**	**2220**

11.5 Other Extension Activities

Extension Activities	Achievement	
	No	Participants
Field Days	8	400
Kisan Mela	1	300
Diagnostic visit	58	810
Group Meeting	6	150
Scientific Visit to farmers Fields	152	750
Farmers Visits	260	260
Lecture Delivered by KVK Scientists	15	500
Exhibitions	1	Mass
Film Shows	1	Mass
Radio Programmes	6	Mass
TV Shows	16	Mass
Soil Testing Campaigns	12	62
KMA	50	34200
Celebration Day	18	1700

11.6 Publication

Sl.No	Item	No.	No. of copies printed
1	Book/ Booklet	5	2500
2	Leaflets	5	2500
3	Poster/Flex	20	20
4	News letter	1	500
5	News paper Coverage	16	-
6	Popular Articles	10	5000
7	Technical bulletins	15	15
8	Technical report	12	24
9	Training material	05	-
10	Training Calender	01	100
11	CDs/ DVDs	01	10

11.7 Revolving Fund

(i) Achievement Paddy seed

Season	Variety	Category	Area (ha)	Production (q)
Kharif 2022	MTU- 1224	Paddy	5	200 (Approximate)

(ii) Quality planting material production

Name of plant	Variety	No. produced
Tomato	Arkarakshak	53000
Chilli	Arka harita, Arka Meghana	78000
Drumstick	Bhagya, PKM-1,ODC-3	3650
Papaya	Sapna F1, Vinayak	3500
Onion	Red -3	103000

Name of the item	**No./ Kg .produced**
Vermi-compost-	30 q
Earthworm (Eisenia Foetida)	15 kg
Ornamental fish -	500
Yearling / fingerling	10000(Advance fingerling > 100 mm)

ACTION PLAN 2023-24

ON-FARM TESTING (OFT)

Sl. No.	Problem Identified	Technology Assessed	Details of technologies		Observation Parameter
1	High infestation of YVMV	Assessment of Okra hybrids for resistance to YVMV(New) Kharif 2023 Beneficiary -07	FP	Cultivation of Okra hybrid Radhika attacked by YVMV	Days to 50% flowering, pod length(cm), No. of pods per plant, yield/plant, Yield(q/ha).
			TO_1	Cultivation of Okra hybrid Arka Nikita resistant to YVMV.	
			TO_2	Cultivation of Okra hybrid Kashi Kranti resistant to YVMV	
2	Low productivity and poor quality flowers of marigold	Assessment of foliar application of biostimulants on growth and flowering of African marigold(Year-II) Rabi- 2023-24 Beneficiary -07	FP	No application of growth regulator	Days taken for flower bud appearance, No. of flowers / plant, shelflife (days
			TO_1	Spray of Seaweed extract @ 1% at 30,45,60 DAT	
			TO_2	Spray of humic acid @ 0.2 % at 30,45,60 DAT	
3	Low fruit yield due to imbalanced use of nutrients	Assessment of integrated nutrient management on growth and yield of papaya Year-II Kharif 2023 Beneficiary -07	FP	Application of chemical fertilizer NPK (200:200:200 g/plant)+FYM @1kg/plant	Plant height and girth, number of fruits per plant, soil test value (before planting and after harvesting)
			TO_1	Application 300-300-300 g NPK/plant with micronutrient formulation dose 2ml/litre 2 sprays at 15 days interval during 5th month of planting & 1 spray at fruit setting and spray after 12 months of planting	
			TO_2	75% STBF(NPK) + vermi-compost @ 4 t/ha + Azotobacter@4kg/ha + PSB@4 kg/ha	
4	Low yield due to poor nutrient management	Assessment of integrated nutrient management in ridge gourd (New) Rabi 2023-24 Beneficiary -07	FP	Application of $N\text{-}P_2O_5\text{-}K_2O$ (80:46:30)	No. of fruits/vine, wt. of fruit, yield,soil test value (before planting and after harvesting)
			TO_1	50%RDF (NPK) + 25%RDN through vermicompost+ Azotobacter @2.5 kg/ha and PSB @2.5 kg/ha	
			TO_2	STBF (NPK) +FYM@10t/ha+ consortia of azotobacter, azosprillum and PSB @ 4 kg/ha each .	
5	Leaf discoloration , Stunted growth & low yield	Assessment of Leaf curl disease management practices in Papaya(Year II) Kharif 2023 Beneficiary -07	FP	Spraying of Imidachloprid @ 200ml/ha.	No .of affected plant/m2,Yield (q/ha), B:C ratio,
			TO_1	Seed & planting material treatment with Thimethoxam @ 3g/kg of seed and foliar spraying of Thiomethoxam 25%WG@ 200 g/ ha, twice at 15 days interval	

			TO_2	Planting material treatment with Flonicamide 50%WG@ 3gm/kg of seed and foliar spraying of Flonicamide 50%WG@ 200gm/lt of water twice at 15 days interval.	
6	Low yield due to YMV infestation	Assessment of YMV management in Ridge gourd (Year-I) Rabi 2023-24 Beneficiary -07	FP	Application of Chloropyriphos@ 1lt/ha.	No .of affected plant/m2,Yield (q/ha), B:C ratio,
			TO_1	Planting material treatment with Imidachloprid 17.8% SL @ 3ml/lt of water and foliar spraying of Thiomethoxam 25%WG@ 200gm/ ha, twice at 15 days interval	
			TO_2	Planting material treatment with Pymetrozine 50%WG@ 3gm/lt of water and foliar spraying of Pymetrozine 50%WG@ 250gm/lt of water twice at 15 days interval.	
7	Less initial growth rate of Catla spawns in nursery tanks encourages predation by insects, thus leads to poor survival and final low yield of fry	Assessment of genetically improved Catla spawns for maximizing fry production in nursery tanks (Year –II) Year Round 2023-24 Beneficiary -07	FP	Normal Catla spawns with traditional Nursery Rearing	Average growth rate, Survival rate, Plankton, pH, DO_2, Alkalinity, Hardness. B:C ratio
			TO_1	Normal Catla spawns with Recommended Practice	
			TO_2	Improved Catla Spawn with traditional Nursery Rearing	
			TO_3	Improved Catla Spawn with Recommended Practice	
8	Indiscriminate use of Organic fertiliser and environmental temperature variation leads to infestation of external crustacean parasites	Assessment of Ivermectin in controlling Argulosis (Year- II) Year Riund 2023-24 Beneficiary -07	FP	Mechanical removal of the Parasite or in few cases use of Formalin (37% HCHO)	% of Infestation, % of Recovery, Plankton, pH, DO_2, Alkalinity, Hardness, yield(q/ha), B:C ratio
			TO_1	Ivermectin 2% w/w in feed @250 ppm & fed to the fishes for 4-5 days	
			TO_2	Ivermectin 2% w/v in pond water @ 200ml/Acre-m	
9	Unorganized farmers fetching low price due to distress sale of farm produce	Assessment of the performance of FPOs with varied levels of task and commodity to enhance profitability Kharif /Rabi 2023-24 Beneficiary -	FP	Farmers marketing their produce through intermediaries (10 F)	Farmers Opinion, Contribution to share capital, business planning, Etc.
			TO_1	FPO dealing with a single commodity with a single task i.e., Vegetable-Marketing (30 F)	
			TO_2	FPO dealing with multi-commodity with single task i.e., Pulses, Vegetable, Enterprises-Marketing (30 F)	
			TO_3	FPO dealing with multi-commodity with multi-task i.e., Pulses, Crops Vegetable,	

				Enterprises- sorting, grading, packing, value addition, branding, leveling and marketing (30 F)	
10	Poor accessibility to accurate and timely information on technical knowledge/advisory in rice production	Assessment of the effectiveness of different extension methods to access information on rice production Kharif /Rabi 2023-24 Beneficiary - 10	FP	Farmers getting information from the peer group, input dealers, extension functionaries, mass media and, KMA	Timely Availability/delivery of technology, suitability of technology, ease in handling the extension method, retention and retrieval of information (All parameters to be taken on a three-point scale and measured through a weighted matrix)
			TO_1	FP + Short Video Lecture+ Focus Group discussion / Clarification session	
			TO_2	FP + Using of "riceXpert" App.	
11	Distress Sale and low income due to short shelf life	Assessment of packaging practices of paddy straw mushroom (Year-I) Kharif 2023 Beneficiary -07	FP	No packaging practices adopted by the farmers	Sensory Evaluation Weight loss(%) Shelf life
			TO_1	Fresh Mushrooms buds washed with potassium meta bisulphite (KMS 0.1% and o.1% citric acid,) for 10 minutes and allowed to air dry on muslin cloth for 30 min and then packed in perforated polypropylene bags punched with 10 holes stored at room temperature	
			TO_2	Fresh Mushrooms Buds treated with potassium meta bisulphite (KMS 0.1% and o.1% citric acid,) for 10 minutes and allowed to air dry on muslin cloth for 30 min and then packed in paper Bags punched with 10 holes (0.5 cm diameter) stored at room temperature	

FRONT LINE DEMONSTRATION

Crop	Problem Identified	Title	Technology		Observation Parameter
Brinjal	Flower and fruit drop. Low yield due to heavy flower drop and poor fruit set	Demonstration of foliar application of growth regulator in brinjal (New) Kharif 2023	FP	No application of growth regulator	Fruit wt. (g), No. of fruits/plant
			RP	Spray of growth regulator GA3@50ppm40days after transplanting	

		Beneficiary – 10			
Tuberose	Low yield, poor growth and less number of florets/spike	Demonstration on INM on growth, yield and quality of tuberose (Year-II) Kharif 2023 Beneficiary – 10	FP	Use of chemical fertilisers only 150:100:60kg /ha NPK	No. of floret Per spike,spike length, yield
			RP	Application of 75% N (Urea) + 25% N (mustard oilcake) of recommended dose of 200:200:200 kg /ha NPK along with 10t/ha FYM	
Marigold	Low yield due to less duration of flowering, and less number of flower per plant	Demonstration on use of phyto hormone to increase the productivity of Marigold (New) Rabi2023-24 Beneficiary – 10	FP	No spray growth regulator.	Number of flower/plant, flower diameter, flower yield/plant
			RP	Foliar spray of 250 ppm NAA at 25 days after transplanting (DAT) .	
Ridgegourd	Low yield due to more number of male flower	Demonstration of application of plant growth hormoner in Ridgegourd (New) Rabi2023-24 Beneficiary – 10	FP	No application of growth regulator	No of nodes per plant, Sex ratio,(female to male),no,. Of fruits/plant
			RP	Spray of ethrel @250ppm at 3 to 4 leaf stage and 2nd spray after 15 days interval from the first date of spray.	
Okra	Farmers are getting less yield due to improper nutrient management	Demonstration on integrated nutrient management in okra (New) Kharif 2023 Beneficiary – 10	FP	Application of N: P_2O_5 :K_2O @87:46:30 kg /ha .	No. of fruits/plant, yield, soil testing values before and after crop
			RP	Application of STBF(NPK) +0.2LR	
Brinjal	Farmers are getting low yield due to imbalance use of nutrients	Demonstration on consortia biofertiliser application in brinjal (Year-II) Kharif-2023 Beneficiary – 10	FP	Application of chemical fertilizer 120:46:30 N:$P_2O_{5:}K_2O$ Kg/ha .	No. of Fruits/plant, fruit wt. ,yield,soil testing values before and after crop
			RP	STBF+ inoculation of OUAT consortia bio-fertilisers to pre-limed(5%) 300 Kg FYM/VC (1:25) incubated for 7 days at 30% moisture and applied in the rhizosphere on the day of planting	
Chilli	Low yield due to imbalanced application of nutrients	Demonstration on integrated nutrient management in chilli Rabi 2023-24 Beneficiary – 10	FP	Application of NPK fertilizers only (20:40:40 kg N: P_2O_5 :K_2O /ha) .	Soil parameter before and after crop, yield,No. of fruit per plant, Avg. fruit wt
			RP	STBF NPK, Nitrogen to be applied in 3 split doses, Soil application of Azospirillum @ 5kg/ha should be mixed with 20 kg FYM	
Onion	Low yield due to imbalance	Demonstration on integrated nutrient	FP	Application of NPK fertilizers only (80:40:40	Soil parameter before and after

	nutrient application	management in onion(Year-II) Kharif-2023 Beneficiary – 10		kg N: P_2O_5 :K_2O /ha)	crop, Bulb wt., bulb diameter
			RP	Application of STBF based NPK along with sulphur @ 30 kg/ha	
Chilli	Low yield due to dieback	Demonstration on chemical management of Die back in Chilli (OFT to FLD) Rabi2023-24 Beneficiary – 10	FP	Application of Chloropyriphos @ 1lt/ha.	Dieback incidence %/m2, Yield (q/ha), B:C ratio,
			RP	Seed treatment with T.viridae@ 5g/ kg of seed and application of Pyraclostrobin 20 %WG @ 500gm/ha of water from initial disease appearance twice at 10 days interval	
Pointed gourd	Low yield due to Fruit borer, low market price	Demonstration on chemical management of Fruit borer in pointed gourd. (Year-II) Kharif 2023 Beneficiary – 10	FP	Application of Chloropyriphos@ 1lt/ha.	No .of affected plant/m2,Yield (q/ha), B:C ratio,
			RP	Application of neem cake @ 2.5q/ha at the time of planting, Neemazole @ 5ml/lt at 15 days interval upto flowering, use of Pheromone Trap @ 75no.s/ha, need base application of Flubendiamide 39.35%M/MS.c.@ 125ml/ha and Clorotraniliprole 18.5% W/WS.c @ 150ml/ha twice after 15 days interval.	
Marigold	Low yield due to Aphid infestation	Demonstration on IPM–Aphid management in Marigold. Rabi (year-II) 2023-24 Beneficiary – 10	FP	Spraying of Imidachloprid @ 200ml/ha.	No .of affected plant/m2,Yield (q/ha), B:C ratio,
			RP	Application of neem cake @ 2.5q/ha at the time of planting, and foliar spraying of Flonicamide 50%WG @ 200gm/lt of water twice at 15 days interval.	
Ragi	Drying of leaves and stunted growth and low yield	Demonstration of Blast disease management practices in kharif Ragi(year-II) Kharif 2023 Beneficiary – 10	FP	Spraying of carbendazim @ 1kg/ha.	No .of affected plant/m2,Yield (q/ha), B:C ratio,
			RP	Seed & planting material treatment with tricyclazole @ 3g/kg of seed and Three sprays of Prochloraz 26.25% + Tricyclazole 22.5% SE @ 1 lt/ha at 10 days interval	
Fish	Undesirable water characters such as high alkalinity, hardness and bloom formation	Demonstration on use of Probiotic for enhanced pond productivity(Year-II)	FP	Indiscriminate application of Lime and Organic mannure	Avg. Body Wt. & Length, Survivability%, SGR (%); Plankton, pH,
			RP	Alternative application of	

	leading to low pond productivity	Year-2023-24 Beneficiary- 10		both soil and water probiotic @1kg or lt/Ac at fortnight interval	DO_2, Alkalinity, Hardness,yield(q /ha) B:C ratio
Fish	Improper feed management in nursery	Demonstration on Carp starter -II compound feed for raising fry to fingerling(Year-I) Year-2023-24 Beneficiary- 10	FP	FP-Imbalanced feeding with rice bran and occasional with GNOC	Avg. Body Wt. & Length, Survivability%, yield(q/ha), B:C ratio
			RP	Feeding of Carp starter -II compound feed in nursery pond with a gradually decreasing feeding rate of 10-5% of biomass	
Fish	Organic fertiliser and environmental temperature variation leads to infestation of external crustacean parasites.	Demonstration on CIFE-Argunil medicated feed mix for controlling Argulosis (Year-I) Round the Year-2023-24 Beneficiary- 10	FP	Indiscriminate use of banned chemicals	% of Infestation, % of Recovery, Plankton, pH, DO_2, Alkalinity, Hardness, yield (q/ha) B:C ratio
			RP	Supplementing feed mix@2% body weight along with basal feed	
Fish	Non utilization of pond bund and adjacent area for more yield	Demonstration of strengthening of pond based IFS (Year-I) Year-2023-24 Beneficiary- 10	FP	Non-utilization of pond area.	Yield Additional return, BC ratio
			RP	RP-Stocking of yearlings of IMC @ 5000 nos/ha, planting of papaya, bananaand drumstick on pond dykes + Poultry rearing	
ICT	Less efficacy of existing dissemination modes i.e. text messages/verbal advisory/ print literature	Demonstration of the effectiveness of short technology videos on technology adoption Year-II Year Round -2023-24 Beneficiary- 10	FP	Less efficacy of existing dissemination modes i.e. text messages/verbal advisory	Visually engaging/Informative and timeliness, Understanding the method and process depicted in the video, Retention , retrieval & re-use of the content
			RP	Preparation of small videos (1.5-2.0 minutes) on different activities of production process of selected commodities and the same will be sent through WhatsApp to the identified farmers.	
Mushroom	Low shelf life & less market price of oyster mushroom	Demonstration of low cost technology for drying of Oyster Mushroom (Year-I) Rabi 2023-24 Beneficiary-10	FP	No sun drying is practiced	Sensory evaluation-(Colour, flavour, Taste, Overall acceptability), Self life (Days).
			RP	Drying of oyster mushroom	
Poultry	Poor sustainability of backyard poultry rearing with improved breeds due to non availability of brooded	Demonstration on portable brooder to control early mortality in poultry chick, Year-I	FP	Improper brooding management	Chick mortality rate during brooding period, body weight at 21 days, survivability of birds till start of laying
			RP	Artificial brooding of chicks	

	chicks,Improper broodingmortality of chicks during brooding	Round the year 2022-23 Beneficiary - 10			
Ragi	Distress sale lack of knowledge on nutritional aspect	Demonstration on value addition of Ragi (Nutri Ragi mix) to combat malnutrition in children Year-I Rabi 2023-24 Beneficiary- 10	FP	Preparation of Ragi malt and Ragi kheer	Change in Body weight Shelf life(Days), Sensory Evaluation (Colour, Flavour & Taste)
			RP	Preparation of Ready to Use Nutri Ragi mix (Baby Food) Cleaned→ soaked(12 hours)→Germination (48hours→dried under shade(24hours)→milling →sieving→mixed with Milk powder (10%) and sugar (20%)	

TRAINING

Type	Target		
	No.	**Duration (in Days)**	**Participants**
Farmers & Farm Women	80	120	2000
Rural Youths	25	50	375
In-Service Personnel	10	10	100
Vocational training	5	25	75
Total	120	205	2550

OTHER EXTENSION ACTIVITIES

Extension Activities	**Target**	
	No	**Participants**
Field Days	15	450
KisanMela	2	2000
Diagnostic visit	55	780
Group Meeting	5	125
Scientific Visit to farmers Fields	150	1200
Farmers Visits	300	1000
Lecture Delivered by KVK Scientists	20	700
Exhibitions	6	Mass
Film Shows	2	100
Radio Programmes	12	Mass
TV Shows (News-18- Annadata& DD-Oriya-Palishri)	15	Mass
SAC Meeting	1	40
Animal health camp	2	100
Soil Test Campaigns	4	50
KMA	50	40000

Video Documentation	5	-
Soil testing	500	-

Seed production

Crop	Variety	Class	Area (ha)
Rice	Swarna Sub -1	FS	5
Greengram	Virat	TL	1
Black gram	PU-39	TL	2

Quality Planting material production

Name of the crop	Details of production		
	Variety	Type of Produce	Qty.
Tomato	Arka Rakshak, Arka Samrat, Swarna Sampad	Seedling	100000 no.
Chilli	Arka Harita, Arka Meghna	Seedling	100000no.
Brinjal	Swarna Shyamali	Seedling	50000
Onion	Red 3, Bhima Super	Seedling	100000
Papaya	SapnaF1, Red lady	Sapling	5000
drumstick	PKM-1, Bhagya	Sapling	5000
Others	As per farmers demand	Cuttings	10000

Other materials/ Commodities

Season	Name of item	Quantity/No.
Kharif/Rabi	Vermi-compost	25 q
Kharif/Rabi	Earthworm(Eisenia Foetida)	20 kg
Kharif/Rabi	Fish	2 q
Kharif/Rabi	Ornamental fish	5000 pairs
Kharif/Rabi	Yearling	5000 nos.
Kharif/Rabi	Paddy straw mushroom and oyster mushroom	1q

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