PROFORMA FOR PREPARATION OF ANNUAL REPORT

(1st January 2023 to 31st December 2023)

1. GENERAL INFORMATION ABOUT THE KVK

1.1. Name and address of KVK with phone, fax and e-mail:

Name of the KVK as per official records (MoU) : Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle.
Address : Krishi Vigyan Kendra, Yagantipalle (P), Banaganapalle (M), Nandyal (Dt.), A.P.
Phone : 9440607424
Fax : -
Email : pendekantikvk@gmail.com

1.2. Name and address of host organization with phone, fax and e-mail:

Name of the Host Organization as per Official Records : Shri Hanumantharaya Educational & Charitable Society
Status of the Host Organization (As per the MoU) : NGO
Address : Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle (P), Banaganapalle (M), Nandyal (Dt.), A.P.
Phone : 9440607424
Fax : -
Email : pendekantikvk@gmail.com
Name of the Chairperson : Sri P. Balaji
Mobile No : 7702127616
Email : Pb1961@rediffmail.com

1.3. Name of the Programme Coordinator with phone & mobile No:

Name of the Programme Coordinator / SS&H : Smt. G. Dhanalakshmi
Residential Address : Illurukothapeta (V & P), Banaganapalle (M), Nandyal (Dt.), Andhra Pradesh.
Phone No. : -
Mobile No. : 9440607424
Email : dhanaguru12@gmail.com

1.4. Year of sanction of the KVK (as per Official Order) : 1989
1.5. Month and year of establishment : December, 1989
1.6.Total land with KVK (in ha) (Consolidated figure) :

S. No.	Item	Area (ha)
1	Under Buildings	2
2	Under Demonstration Units	1
3	Under Crops	10
4	Orchard/Agro-forestry	4
5	Others (specify)	3
	Total	**20**

1.6. Infrastructural Development:

A) Buildings:

S.No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			CompletionDate	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area(Sq.m)	Status of construction Completed/ in progress/ to be initiated)
1	Administrative Building	ICAR	1994	550	7.59	1990-91		
2	Farmers Hostel	ICAR	1994	450	8.0	1990-91		
3	Staff Quarters (No.)	ICAR	1998	650	32.27	1992-93		
4	Demonstration Units	ICAR	1992-93	300	6.5	1992-93		
5	Fencing	ICAR	2005-06		6.5	2004-05		
6	Rainwater harvesting system	-	-	-	-	-		
7	Threshing floor	-	-	-	-	-		
8	Farm godown	ICAR	2005-06	112.5	5.28	2005-06		
9	Shed (Farm equipment)	-	-	-	-	-		
10	Soil Testing Laboratory	ICAR	2004-05	112.5	8.59	2004-05		
11	Goat Shed	ICAR	2016-17	35.0	3.0	2016-17		

B) Vehicles:

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms covered as on 31.12.2020	Present status
Bolero	2019	6,50,000-00	25,024 Km	OK
Mahindra & Mahindra Tractor	2005	3,54,522-00	30678 (hrs)	OK
Motorcycle (Hero Honda)	2014	-	13386 Km	OK

C) Equipment & AV aids:

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Tape Recorder	1990	2,600-00	OK
Over Head Projector	1991	6,200-00	OK
Slide Projector	1991	7,168-00	OK
Ahuja Micro phone Set	1994	9,500-00	OK
Television	1994	19,999-00	OK
Video Cassette Recorder	1996	19,000-00	OK
Ahuja Portable wireless Amplifier	2003	9,927-00	OK
Cordless micro phone	2003	5,804-00	OK
Collar Mic	2005	5,800-00	OK

1.7. A). Details SAC meeting* conducted in the year:

S. No.	Date	No of Participants	Salient Recommendations
1	16.02.2023	33	1. Adoption of each technology (ANGRAU & ICAR) demonstrated or propagated is to be recorded. 2. Suggested to include information on Bengalgram variety NBeG-452 through SMS. 3. Incorporate suggestions made by the members for the technical programme. 4. In OFT on organic farming in rice, include one more treatment i.e. Natural farming method for SMS (Soil Science). 5. Include new OFT on organic farming in Bengalgram with three treatments T1: Farmer practices, T2: Organic farming practice, T3: Natural Farming practice for SMS (Soil Science). 6. In OFT include the different time of sowings in Cotton to SMS (Agronomy). 7. Demonstration on real time contingency measures in rainfed crops. Consult Dr. T. Sahadeva Reddy for components of demonstration for SMS (Agronomy). 8. Maintain RBK and FPOs data of the district and communicate the messages on regular basis for SMS (Extension). 9. Execute OFTs, demonstrations and trainings through RBKs which helps to reach the technology to larger area. 10. Change title of OFT to include IPM and Organic methods of pest management in Foxtail millet based cropping system. eg. Redgram intercropped with Foxtail millet for SMS (Plant Protection). 11. Explained about different seed varieties, technologies and functioning of ANGRAU for Research and Extension in Agriculture for understanding of the SAC members. 12. See that all the problems discussed in SAC be covered in technical programme.

			13. ANGRAU may distribute a pamphlet depicting its latest technologies for the benefit of the house. 14. Virtual/ offline need based trainings to RBK in-changes at mandal, division and district level. 15. Document blue prints of IFS models in respective of Mandal, Division level and create wider awareness on it. 16. Conduct Seed production and value addition activities through FPOs. 17. Most of small and marginal farmers are showing interest towards organic farming, which is a welcoming sign. But they need more knowledge and support regarding marketing. 18. Late wilt in maize is the problem hampering the crop in Rabi, solution needed. 19. Efficient vaccinations are needed for management of Blue tongue disease in sheep, which is causing lot of damage to the herds. 20. He informed the house about his experiences of natural farming in his 1.7 ac acid lime orchard with about 25-30 types of other crops , vegetables, medicinal plants to maintain 365 days green cover in his field and how he is getting regular income from his Farm. He also said that he is producing Rice with SRI method with Natural Farming. 21. Shared his experience of controlling pest and diseases in red chilli without any chemical pesticides, relying completely on Botanicals and Bio-pesticides. He informed the house that he has achieved an yield of 20 q/ac in Super 10 variety this season. He expressed his gratitude to KVK for supporting this achievement and urged other farmers to try the same in their fields to reduce the load of pesticides in the harvested produce. 22. Use of alternatives for chemical pesticides need to be followed by all the farmers to reduce the poison load in the food we are eating and it is everybody's responsibility. He explained how he is practicing Natural farming in Rice and producing different kinds of rice and supplying to consumers. He said he is also supplying various Cow based preparations, Vermi compost, Mixed compost (Bio, cake enriched) at very reasonable price to the farmers.

2. DETAILS OF DISTRICT (2023)

2.0. Operational jurisdiction of KVKs:

District	New districts governed by the KVK after division of the district, if applicable	Taluks/Tehsils and/or Mandals under the KVKs jurisdiction
Nandyal	Nandyal	29 mandals

2.1. Major farming systems/enterprises (based on the analysis made by the KVK):

S. No	Farming system/enterprise
1	Agriculture + Horticulture
2	Agriculture + Dairy
3	Agriculture + Horticulture + Dairy
4	Agriculture + Horticulture + Pastural Culture

2.2. Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography):

S. No	Agro-climatic Zone	Characteristics
1	Scarce rain fall zone	Low, scanty and erratic rainfall due to which successful crop production with good yield is unrespectable and dry land agriculture is predominant with a variety of rainfed crops in the zone.

2.3. Soil types:

S. No	Soil type	Characteristics	Area in ha
1	Black cotton soils	Heavy and deep to very deep belonging to vertisols.	3.69
2	Red Earths	Clayey sub soil (association of alfisols and inceptisols)	1.29
3	Red earths	Loamy sub soil i.e chalkas (association of inceptisols and alfisols)	3.18
4	Red sandy loam soils	Dubbas & Chalkas (association of entisols, inceptisols and alfisols)-Light textured soils, poor water holding capacity, poor fertility	0.54
5	Problem soils (Saline/sodic)	High pH more than 9.0	1.04
6	Rock land and others	Undulated sloppy lands. Very shallow soils.	0.47

2.4. Area, Production and Productivity of major crops cultivated in the district (or the jurisdiction as the case may be) for 2023:

Kharif:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	6081		49.4
2	Bajra	3316		7.5
3	Maize	3723		45
4	Korra	1289		7.5
5	Redgram	19170		8
6	Groundnut	38729		8.75
7	Sun Flower	341		10
8	Castor	6207		10
9	Soyabean	223		15
10	Cotton	183631		5
11	Chillies	25405		30
12	Onion	9851		30
13	Tomato	864		36.25
14	Other Crops	3322		-

Rabi:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	12075		51.5
2	Jowar	37769		7.5
3	Bajra	149		8
4	Maize	9432		42
5	Korra	653		7.5

6	Redgram	1976		10.625
7	Greengram	394		11.25
8	Blackgram	22193		13.75
9	Horsegram	113		6.25
10	Bengalgram	41647		8.12
11	Groundnut	1874		10.15
12	Sesamum	698		5
13	Rapeseed	950		5.15
14	Tobacco	3107		7.5
15	Chillies	1071		30.15
16	Onion	1004		32.5
17	Tomato	122		36.25
18	Other Vegetables	222		-
19	Fruits	366		-
20	Others	221		-

Summer:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)

Crops	Name	NDL Dist. (ac)	Crops	Name	NDL Dist. (ac)
Fruits	Mango	7725	**Vegetables**	Tomato	7927
	Banana	8747		G. chilli	2417
	S. Orange	2550		Bhendi	331
	Acid Lime	1141		Dolichos bean	543
	Papaya	678		Brinjal	150
	Guava	278			
Spices	Dry Chilli	51391	**Flowers**	Jasmine	481
				Chrysanthemum	175
				Crossandra	44
				Marigold	107
Total					**1,06,833 acres**

2.5. Weather data:

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
January, 2023	0.0	-	-	-
February, 2023	0.0	-	-	-
March, 2023	021.0	-	-	-
April, 2023	129.6 (3)	-	-	-
May, 2023	004.0 (1)	-	-	-
June, 2023	64.0	-	-	-
July, 2023	169.0	-	-	-
August, 2023	40.8	-	-	-
September,	98.2	-	-	-

2023				
October, 2023	4.7	-	-	-
November, 2023	8.4	-	-	-
December, 2023	7.8	-	-	-

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2023):

Category	Population	Production	Productivity
Cattle			
Crossbred	-	-	-
Indigenous	**159218**	-	-
Buffalo	**278559**	-	-
Sheep			
Crossbred	-	-	-
Indigenous	**692376**	-	-
Goats	**259328**	-	-
Pigs	-	-	-
Crossbred	-	-	-
Indigenous	**5402**	-	-
Rabbits	-	-	-
Poultry			
Hens	-	-	-
Desi	-	-	-
Improved	**685056**	-	-
Ducks	-	-	-
Turkey and others	-	-	-

Category	Area	Production	Productivity
Fish	-	-	-
Marine	-	-	-
Inland	-	-	-
Prawn	-	-	-
Scampi	-	-	-
Shrimp	-	-	-

2.7. Details of Adopted Villages (2023):

S. No.	Taluk/ Mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Allagadda	Gospadu Sirvella	Sreenivasapuram Govindapalli	2021	Rice, Sesame Blackgram	Low productivity in rice –rice system Low productivity in oilseeds	Introduction of rice based cropping systems (rice-Maize and rice-sunflower) Introduction of improved

							varieties of Sesame
2		Allagadda	Marripalle	2021	Blackgram, Groundnut, Citrus	Twig blight, Canker, die back in acid lime. Stem rot, LLS in Groundnut. Viral diseases in Blackgram	FLD and training programmes.
3		Allagadda	Marripalle Ramakrishnapuram	2021	Household food security and Kitchen gardening Women and child care Value Addition Drudgery reduction technologies	• Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu. • Non-availability of green leafy and other vegetables for daily consumption. • Nutritional deficiencies among adolescent girls, pregnant and lactating women & children. • Lack of awareness on PHT of fruits and vegetables. • Lack of awareness on product	Training programmes & Demonstrations Training programmes & Method Demonstrations Training programmes & Method Demonstrations FLD and OFTs

						diversification with emphasis on millets. • Drudgery among farm women in farm operations.	
4	Allagadda	Allagadda	Marripalle	2021	Dairy	• Poor milk production in milch buffaloes.	OFT-1,FLD-1, Trainings-2
5	Banaganapalli	Banaganapalli	Yerragudi Jolapuram Meerapuram	2021	Redgram Cotton	Low productivity	Integrated crop management in Redgram and Crop geometry in cotton
6			Yagantipalle	2021	Rice, Maize, Vegetables	Indiscriminate use of Fertilizers and Pesticides	INM and IPM
			Meerapuram, Jolapuram	2021	Redgram, Greengram, Korra	Indiscriminate use of Pesticides, Poor choice of varieties	ICM and IPM
7			Yagantipalle Jolapuram GB Pet Meerapuram	2021	Household food security and Kitchen gardening Development of nutrient efficiency diet with local foods Women and child care	• Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu. • Non-availability of green leafy and other vegetables for daily	Training programmes & Demonstrations Training programmes & Method Demonstrations

					Value Addition	consumption • Nutritional deficiencies among adolescent girls, pregnant and lactating women & children. • Lack of awareness on PHT of fruits and vegetables. • Lack of awareness on product diversification with local foods.	Training programmes & Method Demonstrations
8	Owk	Owk	K. Sunkesula	2021	Blackgram, Redgram and Chillis	Indiscriminate use of insecticides for management of pests in cotton & Chillis	IPM, IDM and ICM
					Groundnut Bengalgram Chillies	Non availability of improved varieties. Use of higher seed rate. Imbalanced nutrient management and increased cost of production.	FLDs
9	Dornipadu	Dornipadu	Ramachandrapuram	2021	Rice, Cotton, Blackgram	PBW in cotton is increasing. Bud necrosis in Blackgram is noticed.	FLD on Bt Cotton FLD on Blackgram
10			Dornipadu	2021	Bt. Cotton, Rice and Jowar	Indiscriminate and excess application of	FLDs

						chemical fertilizers and increased cost of production.	
11			Ramachandrapuram, Chakirajuvemula	2021	Household food security and Kitchen gardening Development of nutrient efficiency diet with local foods Women and child care Value Addition Stitching and Tailoring Rural crafts	• Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu. • Non-availability of green leafy and other vegetables for daily consumption. • Nutritional deficiencies among adolescent girls, pregnant and lactating women & children • Lack of awareness on PHT of fruits and vegetables. • Lack of awareness on product diversification with local foods with emphasis on millets. • Lack of awareness on income generating activities for off season.	Training programmes & Demonstrations Training programmes & Method Demonstrations Training programmes & Method Demonstrations Training programmes

12			Ramachandrapuram	2021	Dairy	• Reproductive problems and poor milk yield in milch Buffaloes. • Wastage of agricultural by products.	OFT-3, FLD-2, Training - 1
13					Poultry	• Non availability of improved breeds.	FLD-1, Trainings-1
			Giddaluru	2021	Rice	Blast, Sheath blight, Stem borer, BPH in rice.	OFT on Rice seedling dip with Pf for disease mgmt.
			Kotapadu Mangapalle Giddalur	2021	Brinjal Banana	Sucking pests shoot & fruit borer.	FLD: Integrated Crop Management in Brinjal. Integrated crop management in Brinjal INM in Banana and cost reduction techniques.
14	Bethamcherla	Bethamcherla	R.S. Rangapuram Rehmanpuram Bethamcherla Ambapuram Gutupalle H.Kottala	2021	Drudgery reduction technologies Development of nutrient efficiency diet with local foods Women and child care Value Addition	• Drudgery among farm women in farm operations. • Nutritional deficiencies among adolescent girls, pregnant and lactating women & children. • Lack of awareness on PHT of fruits and	FLD and OFTs Training programmes & Method Demonstrations Training programmes & Method Demonstrations

						vegetables. • Lack of awareness on product diversification with local foods.	
DFI villages							
1	Banaganapalle	Banaganapalle	Yerragudi	2018	Household food security and Kitchen gardening Value Addition Drudgery reduction technologies Development of nutrient efficiency diet with local foods Women and child care Stiching and Tailoring Rural crafts	• Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu. • Non-availability of green leafy and other vegetables for daily consumption. • Lack of awareness on PHT of fruits and vegetables. • Lack of awareness on product diversification with local foods with emphasis on millets. • Drudgery among farm women in farm operations. • Nutritional deficiencies among adolescent	Training programmes & Demonstrations Training Programmes Method Demonstrations Demonstrations Training Programmes Training Programmes

						girls, pregnant and lactating women& children. • Lack awareness on income generating activities for off season.	
2					Dairy	• Poor milk production. • Reproductive problems in milch buffaloes. • Mastitis	Demonstrations & Trainings.
3					Poultry	• No improved poultry breeds are available. • Poultry diseases	Demonstrations & Trainings.
4			Yerragudi	2018	Redgram, Paddy, Setaria, Jowar	• Pod borers and Pod fly in Redgram. • Stemborer in Rice.	IDM, IPM.
5	Bethamcherla	Bethamcherla	H.kottala		Groundnut setaria	Low productivity in oilseeds Due moisture stress	Introduction of Varieties tolerant Moisture stress , Balanced nutrition and weed management Alternate crops
6					Redgram, Bengalgram, Korra	Indiscriminate use of pesticides, poor knowhow on varieties suitable	ICM and IPM
7					Dairy	• Fodder shortage. • Poor milk	Demonstrations & Trainings.

						production. • Reproductive problems. • Mastitis	
8					Poultry	• Non availability of improved poultry breeds.	Demonstrations & Trainings.
9					Sheep	• Poor growth in ram lambs, high lamb mortality.	Demonstrations & Trainings.

2.8. Priority/thrust areas:

Crop/Enterprise	Thrust area
Tomato	Low yielding and susceptible varieties in tomato
Drip irrigation	Less usage of drip irrigation system in fruits & vegetables
Pesticides	More usage of chemical fertilizers/pesticides in vegetable crops
Varieties	Low yielding varieties in okra, onion and dolichos bean
Bio products	More usage of bio products, hormones and complex fertilizers
Chilli	Black thrips, mites and viral diseases in chilli
Brinjal	Pin worm incidence in tomato and soot and fruit borer in brinjal
Onion	More incidence of twister blight in onion
Mango	Lack of INM and pruning in mango, Flower & fruit drop, Fruit fly incidance in mango
Guava	High incidence of fruit fly, canker and anthracnose in guava
Banana	More usage of drip fertilizer in banana
Chrysanthemum	Fusarium wilt in chrysanthemum and mite in jasmine
Nutrition Education	Awareness on Nutritional Deficiency disorders, Food fads & Fallacies
Value addition to Local Foods	Design & Development of Minimum cost diet
Value Addition to millets	Design & development of high nutrient efficient diet
Nutrigardens	Household food security through nutri gardens
Location specific drudgery reduction technologies	Introduction of Improved implements for drudgery reduction
Income generation	Awareness on Skill training Programmes
Women Empowerment	Establishment of Mini Processing Units and Income Generation Units for Self Sustainability

3. Salient Achievements

Achievements of Mandated activities (1st January 2023 to 31st December 2023):

S. No	Activity	Target	Achievement
1.	Technologies Assessed and refined(No.)	21	16
2.	On-farm trials conducted (No.)	60	56
3.	Frontline demonstrations conducted (No.)	28	27
4.	Farmers trained (in Lakh)	0.02295	0.04746
5.	Extension Personnel trained (No.)	560	0.01960
6.	Participants in extension activities (in Lakh)	0.04534	0.90079
7.	Production and distribution of Seed (in Quintal)	3340	2834.1365
8.	Planting material produced and distributed (in Lakh)	1805000	2038484
9.	Live-stock strains and finger lings produced and distributed (in Lakh)	13610	6812
10.	Soil samples tested by Mini Soil Testing Kit (No)	0	0
11.	Soil samples tested by Traditional Laboratory (No)	2000	3812
12.	Water, plant,manure,and other samples tested (No.)	100	65
13.	Mobile agro-advisory provided to farmers (No.)	126	4094
14.	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	0	0
15.	No.of Soil Health Cards issued by Traditional Laboratory (No.)	4000	6116

4. TECHNICAL ACHIEVEMENTS

Details of target and achievements of mandatory activities by KVK during 2023:

OFT (Technology Assessment):

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials/ Replications / Beneficiaries	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
21	16	42	40	18	30	110	84

FLD (crop/enterprise/CFLDs):

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
28	27	68.8	68.8	275	295

Training (including sponsored, vocational, and other trainings carried under Rainwater Harvesting Unit):
:

Number of Courses			Number of Participants	
Clientele	Targets	Achievement	Targets	Achievement
Farmers and Farm Women	77	84	2295	2408
Rural youth	25	53	435	572
Extn.Functionaries	20	94	560	1074
Vocational	3	10	75	294

Extension Activities:

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
459	627	45164	90079

Seed Production (q):

Target	Achievement	Distributed to no. of farmers
3340	2834.1365	3294

Planting material (Nos.):

Target	Achievement	Distributed to no. of farmers
1805000	2038484	219

Bio inputs:

Particulars	Target	Achievement	Distributed to no. of farmers
Vermicompost (Tonnes)	300	300.5	466
Earthworms(Kg.)	1000	1749	31
PROM (Kg.)	3000	2750	16
Beauveria bassiana	-	1183	380
Trichoderma viridi	-	1453	436
Metarrhizium anisoplae	-	178	62
Psuedomonas	-	1669	455
Verticillum	-	727	294
Paecilomyces	-	107	35
Total	**4300**	**10116.5**	**2175**

Technology Assessments (OFTs) in Detail:

OFT: 1

S. No	Item		Particulars
1	Thematic Area	:	Integrated Nutrient Management
2	Title	:	Assessment of organic farming package Rice
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Kharif-2023. Irrigated black soils
5	Problem definition/description	:	Paddy is a major cereal crop cultivating in of Nandyal district during kharif season. Un availability of sufficient quantities of FYM and other organic inputs. Low organic carbon content in 71 % soils of Nandyal dist. Low fertility and productivity.
6	Technology assessed	:	T_1: Farmers practice : Chemical farming T_2: : Organic farming: Green manuring insitu,FYM-10 T/ha, Neem cake-500 kg, Castor cake-500 Kg.PSB -5 Kg/ha, Azotobacter- 5Kg/ha, Top dressing Vermicompost -500 Kg for 2 Splits, Pf, neem oil for spaying
7	Critical Inputs given	:	Neem cake-500 kg, Castor cake-500 Kg.PSB -5 Kg/ha, Azotobacter-5Kg/ha, Top dressing Vermicompost -500 Kg for 2 Splits, Pf, neem oil for spaying

8. Results :

Table: Performance of the technology:

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs. in Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice- Chemical farming	5	*71.25*	*180064*	*3.74:1*	*1.No.of effective tillers /1sqm* ***389*** *2.No. of grains /panicle* ***-242***
Technology1 – Organic farming		*58.12*	*192644*	*3.80:1*	*1.No.of effective tillers /1sqm* ***-298*** *2.No. of grains /panicle* ***-196***
Technology-2-Natural farming		*43.28*	*136780*	*3.36:1*	*1.No.of effective tillers /1sqm* ***-223*** *2.No. of grains /panicle* ***-154***

Description of the results:

The result indicated that the yield in both T_{-2} (57.18 q/ha) and T3 (43.28)were lower than farmer's practice -T_1 (71.25 q./ha). Wher as net income is higher in T2 than T1 dueto 30% premium for organic rice than market price

9. Constraints faced:

Farmers are reluctant on organic farming as yield reduction is more when comparative with farmers practice.

10. Feed back of the farmers involved:

Pre seasonal training conducted on soil sampling and testing, nutrient management and mid seasonal field visits finally field days were organized. It is low cost technology when procure locally available organic inputs.

11. Feed back to the scientist who developed the technology:

No yield advantage during second year also as it is conversion period for 3 years. However, application of organic inputs is effective for Soil health improvement.

OFT: 2

S. No	Item		Particulars
1	Thematic Area	:	Integrated Nutrient Management
2	Title	:	Assessment of nano urea application in Rice
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Kharif-2023. Irrigated black soils
5	Problem definition/description	:	Rice is major cereal crop in Nandyal distict. Indiscriminate and excess application of nitrogen in rice which leads soil health deterioration and more conducive to pest and diseases. Hence application of nano urea should avoid soil pollution and reduce subsidy burden on supply of urea.
6	Technology assessed	:	T_1: Farmers practice : N-280 kg./ha T_2: 75% of Recommended N at basal and PI stage and remaining 25 % N at tillering stage @0.25% as nano urea (N-240 Kg./ha T_3. Recommend N-240 kg/ha as per schedule of application at 3 splits
7	Critical Inputs given	:	Nano urea-500ml per acre

8. Results:

Table: Performance of the technology:

Technology Option	***No. of trials***	***Yield (q/ha)***	***Net Returns (Rs. in Rs./ha)***	***B:C ratio***	***Data on Other performance indicators****
Farmers Practice- Chemical farming (N-300 kg./ha)	*5*	*74.06*	*188551*	*3.82:1*	*1.No.of effective tillers /1sqm* ***-449*** *2.No. of grains /panicle* ***-252***
Technology1 T_1: 75% of Recommended N (240 Kg./ha)at basal and PI stage and remaining 25 % N at tillering stage @0.25% as nano urea		*72.58*	*183445*	*3.74:1*	*1.No.of effective tillers /1sqm-* ***436*** *2.No. of grains /panicle* ***-241***
T_2. Recommend N-240 kg/ha as per schedule of application at 3 splits		*73.28*	*185460*	*3.79*	*1.No.of effective tillers /1sqm-440* *2.No. of grains /panicle* ***-245***

Description of the results:

The result indicated that the yield of T_1, T_2, and farmers practice were on par irrespective of treatments

9. Constraints faced:

10. Feed back of the farmers involved:

Pre seasonal training conducted on soil sampling and testing, nutrient management and mid seasonal field visits finally field days were organized. Farmers expressed that application of nano urea reduce the soil and environmental pollution.

11. Feed back to the scientist who developed the technology:

Application of nano urea is better to reduce soil and environmental pollution as the cost of nano urea and subsidized urea is same. Application of nano urea is not only reduces actual cost of urea and also reduce the soil and environmental pollution.

OFT: 3

S. No	Item		Particulars
1	Thematic Area	:	Varietal Assessment
2	Title	:	Assessment of Saline tolerant varieties in Rice
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Kharif-2023. Irrigated black soils
5	Problem definition/description	:	Rice is major cereal crop in Nandyal distict. Nearly 10 % of soils are alkaline in nature. Hence saline tolerant varieties to be assessed for Nandyal dist.
6	Technology assessed	:	T_1: Farmers practice : BPT-5204 T_2: MCM-100 T_3. MCM-103
7	Critical Inputs given	:	MCM-100 and MCM-103 seed supplied

8. Results:

Table: Performance of the technology:

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs. in Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice- Rice variety-BPT-5204	*5*	*12.48*	*2304*	*1.74:1*	*1.No.of effective tillers /1sqm* ***-102*** *2.No. of grains /panicle* ***-126***
Technology1 T_1: Rice variety- MCM-100		*42.48*	*43200*	*1.73:1*	*1.No.of effective tillers /1sqm-* ***326*** *2.No. of grains /panicle* ***-198***
Technology 2-T_2. - Rice variety-MCM-103		*29.52*	*43092*	*1.06:1*	*1.No.of effective tillers /1sqm-214 2.No. of grains /panicle* ***-162***

Description of the results:

The result indicated that the yield of T_1 , is higher than T_2, and farmers practice.

9. Constraints faced:

10. Feed back of the farmers involved:

Pre seasonal training conducted on soil sampling and testing for soil EC and pH, nutrient management and mid seasonal field visits finally field days were organized. Farmers expressed that MCM-100 is better yield than MCM-103 even though it is course grain

11. Feed back to the scientist who developed the technology:

Cultivation of MCM-100 and MCM-103 are better than BPT-5204 where soil is saline

OFT: 4

1. Thematic area: Cropping systems

2. Title: Assessment of Performance of Pigeon pea and small millets Inter cropping Systems under Rainfed situation.

3. Scientists involved: M. Sudhakar, SMS (Agronomy)

4. **Details of farming situation:** Rainfed, red soils

5. Problem definition / description:

Adverse weather conditions like delay onset of rains and prolonged dry spells during the crop period is very common in rainfed situation. Such situation results in economic losses to the farmers due to partial or total failure of the sole crops. Millet cultivation is declining due to several reasons of which are processing hardships, low economic gains and lack of awareness about the nutritional significance

6. Technology Assessed:

T1: Pigeonpea + Lilttle millet(1:5
T2: Pigeonpea + Prosomillet(1:5)
T3: Pigeonpea + Setaria(1:5)

7. Critical inputs given: Seed Rs. 7500/-

8. Results:

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs/./ha)	Data on Other performance indicators*	
				Redgram Equivalent yield	CB ratio
Pigeon pea + Lilttle millet	*6*	***656+1230***	98687	967	*3.75*
Pigeonpea + Prosomillet(1:5)		**638+1331**	89096	873	3.48
Pigeonpea + Setaria(1:5)		667+1316	104539	1024	3.91
Sole Pigeonpea		769	78438	769	3.35

Description of the results:

On farm testing on Performance of Pigeon pea and small millets Inter cropping Systems under Rainfed situation was conducted during the Kharif season of 2023 at Banaganapalli mandal. The results indicated that Inter cropping of Redgram with different small millet ie Little millet, Prosomillet and setaria resulted with maximum Redgram equivalent yield and net returns with Pigeonpea + Setaria(1:5) (1024 kg ha 104539 Rsa/ha) followed Pigeon pea + Lilttle millet (967kg ha 98687 Rs/na) and Pigeonpea + Prosomillet(1:5)(873 kg/ha,89096 Rs/ha)were obtained respectively than sole crop of Redgram)(769 kg/ha,78438 Rs/ha).

9. Constraints: -

10. Feed back of the farmers involved:

- Redgram + small millets intercropping system found to be remunerative than sole crop of paddy under rainfed situation
- While maintaining the Soil fertility, additional yields with Redgram + small millets intercropping system have been realized.
- Since, a food legume is involved in the system, it will not only enhance the income of the farmer, but also provide with the much-needed protein to supplement the predominantly cereal diet of farmers, besides adding fertility to the Soil.

11. Feed back to the scientist who developed the technology:

- ❖ Research on development of Short duration redgram varieties has to be strengthened.

OFT: 5

1. Thematic area: Crop Production and Management

2. Title: Assessment of Performance Maize based cropping Sequences,

3. **Scientists involved:** M. Sudhakar, SMS (Agronomy)

4. **Details of farming situation:** Irrigated, Red soils

5. Problem definition / description:

The Productivity of maize- Maize sequence (mono cropping) is very low and affects on soil quality. Therefore sustainable intensification is viable options to improve production and Soil quality and optimize the benefits that can be derived from better use of available natural resources..

6. Technology Assessed:

T1:Maize- Blackgram
T2:Maize Bengalgram
T3: Maize -Maize

7. Critical inputs given: seed Rs 6000/-

8. Results:

Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net (Rs/./ha)*	*Data on Other performance indicators**	
				Maize Equivalent Yield Kg/ha	*N fixation kg/ha*
T1:Maize- Blackgram	*6*	1981	124445	8961	22.10
T2:Maize Bengalgram		1952	71368	5763	60.0 0
T3: Maize -Maize		7237	78727	7237	-

Description of the results:

On farm testing on Assessment of Performance Maize based cropping Sequences was conducted during the Rabi season of 2023 at Banaganapalli & Nandikotkur mandals. The results indicated that Maize- Blackgram, has recorded with maximum Maize equivalent yield (8961kg/ha) and net returns 124445 Rs/ha followed by on par net retuns71368 Rs/ha with Maize- bengalgram and Maize- maize (Rs 78727) besides maintaining soil fertility.

Feed back of the farmers involved:

- Pulses are very important for their ability to fix nitrogen, diversified crop roration and improved soil health and biological activity.
- Pulses contribute to reducing the need for synthetic fertilizers.
- Growing of legume after maize is superior in terms of improvement in soil fertility and sustainability in Crop yield

10. Feed back to the scientist who developed the technology:

OFT: 6

1. Thematic area: Crop Production and Management

2. Title:, Assessment of Different sowing dates in Bt cotton

3. **Scientists involved:** M. Sudhakar, SMS (Agronomy)

4. **Details of farming situation:** Rainfed, Redsoils

5. Problem definition / description:

Cotton is the most important fiber crop of farming community, due to staggered planting of cotton from April to August has a large effect on growth, development and yield, but it also impact on insect pest management. Early sowing appears higher yield potential and alternatively, late planting of cotton crop shows more vegetative and difficult to manage resulting in lower yield

6. Technology Assessed:

T1: 1st fort night of june
T2: 2ndt fort night of June
T3:1st fort night of July

7. Critical inputs given: seed Rs. 6,000/-

8. Results:

Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net (Rs/./h*	*Data on Other performance indicators**		
				Bolls/plant	**Incidence pink boll worm (%)**	**CB ratio**
T1: 1st fort night of june	*6*	917	29700	34	11.76	1.83
T2: 2ndt fort night of June		1051	35812	39	12.82	2.00
T3:1st fort night of July		893	20969	31	19.35	1.52

Description of the results:

On farm testing on Assessment of Different sowing dates in Bt cotton under Rainfed situation was conducted during the Kharif season of 2023 at Nandikotkur mandal. The results indicated that among different **dates of sowing in Bt cotton** 2nd fort night of June has recorded highest yield 1051kg/ha followed by June 1st fort night of June (917 kg/ha) compared to 1st fort night of July sowing(893 kg/ha).

Feed back of the farmers involved:

- Optimum Sowing date plays key role in yield potential of cotton and highest cotton yield was obtained when cotton was sown during 2nd fort night of June.

10. Feed back to the scientist who developed the technology:

OFT: 7

1. Thematic area: Crop Production and Management

2. Title: Assessment of Performance of Real time contingency measures in Rainfed Redgram.

3. **Scientists involved:** M. Sudhakar, SMS (Agronomy)

4. **Details of farming situation:** Rainfed, Redsoils

5. Problem definition / description:

Rainfed/dry land Ecosystem is characterized by erratic and unpredictable rainfall, frequent drought, run-off, soil loss including shift of sowing and harvesting period of crops thus leading to reduced yield.

6. Technology Assessed

T1: In-situ moisture conservation measures + foliar spray of 1% of Kno3
T2: In-situ moisture conservation measures + foliar spray of 1% of Kno3+ supplemental irrigation
T3: No conservation measures (FP)

7. Critical inputs given: seed Rs. 3,000/-

8. Results:

Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net (Rs/./h*	*Data on Other performance indicators**		
				No of Pods/plant	**Available moisture**	**CB ratio**
T1: In-situ moisture conservation measures + foliar spray of 1% of Kno3	*6*	957	71489	108.0	Sufficiency	3.73
T2: In-situ moisture conservation measures + foliar spray of 1% of Kno3+ supplemental irrigation		1220	95815	184.0	Sufficiency	4.34
T3: No conservation measures(FP)		657	43639	62.0	Deficit	2.86

Description of the results:

On farm testing on Assessment of Performance of Real time contingency measures in Rainfed redgram was conducted during the Kharif season of 2023 at Banaganapalli mandal. The results indicated that In-situ moisture conservation measures + foliar spray of 1% of Kno3 has recorded (957 kg/ha) followed by In-situ moisture conservation measures + foliar spray of 1% of Kno3+ supplemental irrigation (1220 kg/ha) were obtained respectively than no conservation measures in Redgram (657 kg/ha,).

Feed back of the farmers involved:

Formation of furrow at 30-35DAS for in-situ moisture conservation, foliar spray of 1% of Kno3 and supplemental irrigation especially in the drought years with uneven rainfall distribution resulted in lower runoff and soil loss with higher yield, monetary returns in Redgram.

10. Feed back to the scientist who developed the technology:

OFT: 8

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Assessment of IPM and Organic Package on Yield and Pest Management in Foxtail millet -Redgram Intercrop**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Rainfed Light Black Soils
5	Problem definition/description	:	Foxtail millet is one of the important millet crop being cultivated in considerable area in recent years in the district both as pure crop and as intercrop in Redgram. In Kharif, Intercropping in Redgram is prevalent. Foxtail millet is being attacked by pests like stem borer and diseases like blast & Redgram is regularly being affected by Maruca and Pod borer apart from Helicoverpa. As the crop uses low inputs for its cultivation, complete avoidance of pesticides make it almost Organic. Hence, the organic pest management methods are tested for its efficacy against conventional chemicals in IPM and farmers practice.
6	Technology assessed	:	TO 1 – Organic Package :

			• Application of FYM @ 5 t / acre, Seed treatment with Trichoderma harzianum or Pseudomonas fluroscens 10 g and Azospirillam @ 10 g/kg of seed, • Spray azadirachtin 1500 ppm @ 1000ml/ac to manage early incidence of insect pests, • Spray Beauveria @ 5 ml/lt for stem borer & pod borers, • Spraying of Pseudomonas fluorescens @ 1000 g/ac at 10 days interval for management of Blast and other diseases (**ANGRAU)** TO 2 – IPM : • Recommended doses of fertilizer application on soil test basis, • Seed treatment with Mancozeb @ 2.5 g / kg seed of setaria and Trichoderma @ 10g/kg seed of Redgram, • Spray azadirachtin 1500 ppm @ 1000ml/ac to manage early incidence of insect pests, • Spraying need based chemicals for management of Stem borer in setaria and pod borers in redgram, • Spraying Tricyclazole @ 0.6 g/lt on noticing incidence of Blast in setaria. (**ANGRAU)** FP - Applying fertilizers and Spraying Insecticides indiscriminately
7	Critical Inputs given	:	Pseudomonas - 1500 ml, Azospirillum - 500 ml, Azadaractin 1500 ppm - 1000 ml, Beauveria - 1000 ml (Rs.1150/-)

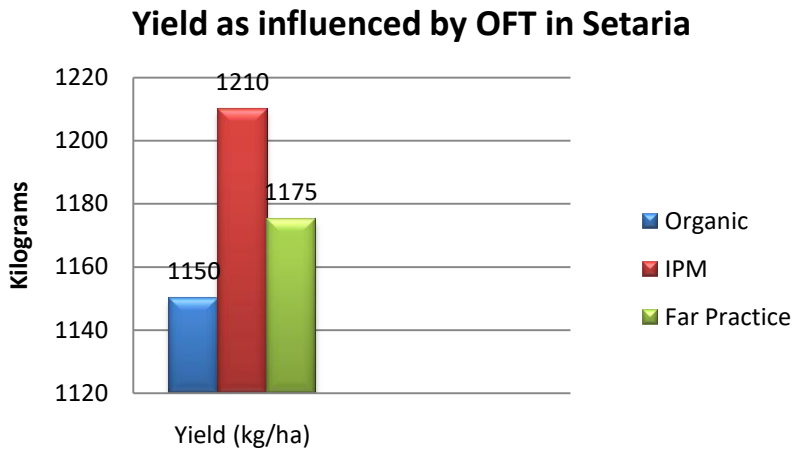
8. Resutls:

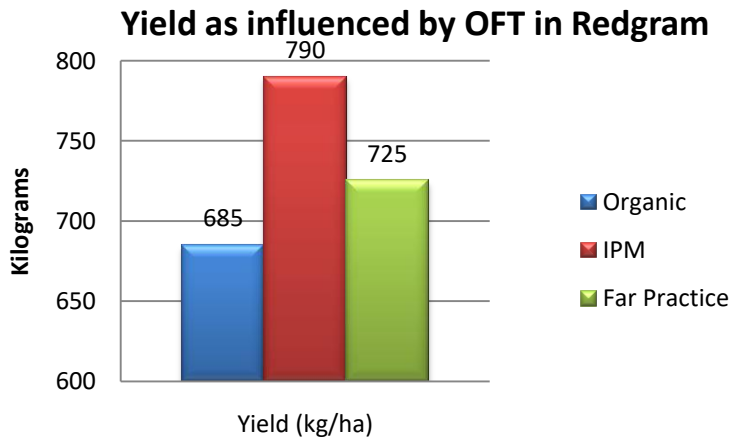
Table: Performance of the technology

Technology Option	***No. of trials***	***Yield (qha)***	***Net Returns(Rs./ ha)***	***B:C***	***Data on Other performance indicators****
TO 1 : Organic package	*5*	*Setaria : 11.5* *Redgram: 6.85*	*91600*	*3.85*	*Stem borer Incidence –5.5%* *Blast – 6.3 %* *Maruca - 7.5%* *Cost of PP – Rs. 6,000-00/ha*
TO 2 : IPM Package		*Setaria : 12.1* *Redgram : 7.90*	*99885*	*3.71*	*Stem borer Incidence –4.2%* *Blast – 5.0 %* *Maruca - 5.4%* *Cost of PP – Rs 9,000-00/ha*
Farmers Practice		*Setaria : 11.7* *Redgram : 7.25*	*91425*	*3.45*	*Stem borer Incidence – 5.1%* *Blast – 5.6 %* *Maruca - 6.6%* *Cost of PP - Rs.9,500-00/ha*

Description of the results:

The result indicated that IPM resulted in better yield than organic package and farmers practice, with better level of control of pests and diseases. Though the farmer incurred less investment in Organic method, the net returns are less than IPM but the Benefit Cost ratio is better than IPM.





9. Constraints faced:

Knowledge and adoption of bio fungicides is low with the farmers. There usage is slowly picking up against borers in redgram.

10. Feed back of the farmers involved:

- ✓ The farmers readily accepted some of the components viz., Seed treatment, Neem oil spray as they are familiar with these. But, they showed reluctance in adoption of soil application of pseudomonas, as they are new and have less confidence in them about their performance.
- ✓ Farmers were convinced with the control of pest / disease with chemical application and they readily agreed to spray recommended chemicals.

11. Feed back to the scientist who developed the technology:

- Management of Stem borer, Blast and pod borers through organic methods need to be standardized to reduce the rise of toxic chemical usage and also to reduce cost of production.

OFT: 9

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Assessment of different options for management of Black Thrips (*Thrips parvispinus*) in Chillis**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Irrigated Dry - Light Black Soils
5	Problem definition/description	:	Chilli is an important commercial spice crop in the district being cultivated in sizeable area in the district. Apart from regular pests and diseases, it is recently being attacked by an invasive thrips (Thrips parvispinus) with lot of damage to leaves, flowers and thus reducing the yield and quality. Affected about 30-40% of yields and quality last year. As currently there are no standard recommendations, it is proposed to evaluate different packages given by DrYSRHU for Thrips and Sucking pests for its efficacy.
6	Technology assessed	:	**TO 1 – IPM for Thrips** • Seed treatment with imidacloprid 600 FS @ 5 ml per kg of seed; Growing of 4-6 rows of maize/jowar as border crop; Application of Fipronil 0.3% granules 8 kg/ac; Installation of blue sticky traps @ 20 per acre. ; Azadiractin 10000 ppm @ 200ml/ac; Spraying Beauveria/Verticillium @ 1000 ml/ac; Need based application of insecticides for thrips - fipronil 80% @ 40 g/ac or imidacloprid 40%+fipronil 40% @ 40 g/acre or Difenthiuron @ 250 g/ac or cyantraniliprole 240 ml/acre or Spinosad 60 ml/acre; Use of hand sprayer for spraying on crop and on soil around the plants (**DrYSRHU-2021)** **TO 2 – IPM for Sucking Pests** • Border crop with Jowar/maize, Seed treatment with Imida 600 FS, Application of Fipronil 0.3% G @ 8 kg/ac; Yellow Sticky traps - 20/ac, need based spray of Fipronil @ 2 ml/lt or Acephate @ 1.5 g/lt or Acetamaprid @ 0.2 g/lt or Difenthiuron @ 1.5 g/lt **(DrYSRHU-2020))** **FP - Farmers Practice :** Spraying Insecticides indescriminately on scedule basis, applying 12-18 sprays in a season.
7	Critical Inputs given	:	TO 1 : Imida 600FS = 50 ml/ac, Blue sticky traps - 20/ac, Azadaractin 10000 ppm - 250 ml/ac, Beauveria & Verticillium - 1 lt each/ac (Rs.1550/- per ac) TO 2 : Imida 600FS- 50 ml/ac, Yellow sticky traps - 20/ac, Fipronil 5% SC - 500 ml/ac (Rs. 1050/- per ac)

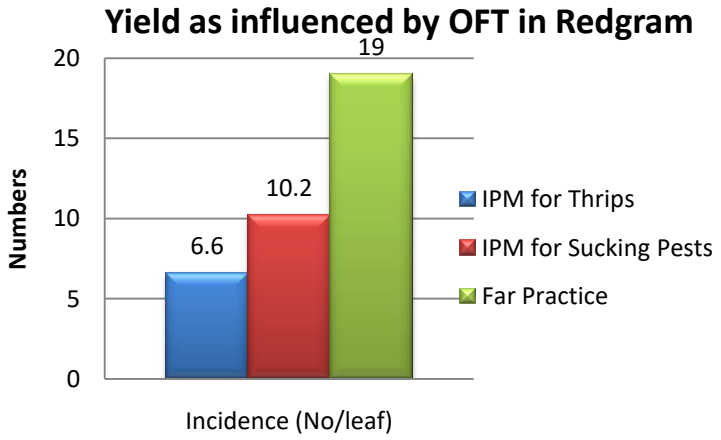
8. Results:

Table: Performance of the technology

Technology Option	***No.of trials***	***Yield (qha)***	***Net Returns(Rs./ ha)***	***B:C***	***Data on Other performance indicators****
TO 1 : IPM for Thrips	*5*	*54.0*	8,58,825	*4.25*	*Stem borer Incidence –5.5%* *Blast – 6.3 %* *Maruca - 7.5%* *Cost of PP – Rs. 6,000-00/ha*

TO 2 : IPM for Sucking Pests		*52.6*	8,18,665	*3.98*	*Stem borer Incidence –4.2%* *Blast – 5.0 %* *Maruca - 5.4%* *Cost of PP – Rs 9,000-00/ha*
Farmers Practice		*49.9*	7,46,045	*3.56*	*Stem borer Incidence – 5.1%* *Blast – 5.6 %* *Maruca - 6.6%* *Cost of PP - Rs.9,500-00/ha*

Description of the results: The result indicated that IPM package with intermittant Biopesticides resulted in better yield than IPM for sucking pests and farmers practice, with better level of control of Black Thrips and resulted in better yield. Hence, more net additional returns in TO 1 Compared to other treatments.



12. **Constraints faced**: Knowledge and adoption of bio pesticides is low with the farmers. But, with the result witnessed the acceptance slowly increasing year by year.
13. **Feed back of the farmers involved:**
    - ✓ The farmers readily accepted some of the components viz., Seed treatment, sticky traps and use of chemical pesticides.
    - ✓ Farmers were convinced with the performance of Blues sticky traps against thrips than yellow sticky traps.
14. **Feed back to the scientist who developed the technology:** Management of Black thrips is very important in successful chilli production and the recommendations need to be standardised at the earliest to stop the farmers from using heavy doses and mixtures of all available pesticides in the market with the fear and greed.

OFT: 10

S. No	Item		Particulars
1	Thematic Area	:	Varietal evaluation
2	Title	:	Assessing the performance of okra varieties
3	Scientists Involved	:	M. Adinarayana SMS Horticulture
4	Details of Farming Situation	:	Irrigated red soils
5	Problem definition/description	:	Local varieties producing lower yields and susceptible to YVMV. Farmer using varieties are less branching type and fruits are having with spines and medium length fruits.
6	Technology assessed	:	T_1: Arka Nikita T_2: COBH-4

			T_3 : Thakath
7	Critical Inputs given	:	Arka Nikita and COBH-4 Seeds

8. Results:

Table: Performance of the technology

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice: Thakath	*5*	*143.5*	*148111*	*2.26*	
Technology 1(Arka Nikita)		*183.6*	*225897*	*2.99*	
Technology 2(COBH-4)		*172.3*	*206323*	*2.84*	

Parameters	A. Nikita	CoBH-4	Thakath
Plant height (m)	124.32	102.23	102.34
Ag. Fruit wt (g)	21.77	18.19	15.14
Fruit length (cm)	16.83	13.22	11.76
No of primary branches	5.56	5.03	4.85
Days to first harvest	43	44	47

Photos of OFT okra fields and varieties

9. Constraints: Not supplying seeds in timely by IIHR, Bengaluru. Lack of seed source in local markets.

10. Feedback of the farmers involved: Arka Nikita and COBH-4 varieties are early, good branching type and fruits are spineless as it is easy to harvest. COBH-4 variety is resistant to bhendi Yellow Mosaic Virus disease.

11. Feed back to the scientist who developed the technology: Make availability of seeds for conducting assessments at farmers' fields. They must be given first priority to KVKs. Research on development of resistant hybrids for powdery mildew and YVMY.

OFT: 11

S. No	Item		Particulars
1	Thematic Area	:	Varietal evaluation
2	Title	:	Assessing the performance of dolichos bean varieties
3	Scientists Involved	:	M. Adinarayana SMS Horticulture
4	Details of Farming Situation	:	Irrigated red soils
5	Problem definition/description	:	Local varieties producing lower yields and unknown varieties
6	Technology assessed	:	T_1: Arka Krishna T_2: Dr.YSR Shresta T_3: Alok (Ashoka seeds)
7	Critical Inputs given	:	Arka Krishna and Dr.YSR Shresta

8. Results:

Table: Performance of the technology

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice: Alok	*5*	*143.5*	*148111*	*2.26*	
Technology 1(Arka Krishna)		*183.6*	*225897*	*2.99*	
Technology 2(Dr.YSR Shresta)		*172.3*	*206323*	*2.84*	

Characteristics	Arka Krishna	Dr.YSR Shresta	Alok
Anthocyanin pigmentation	Absent	Present	Absent
Primary branches	5-7	6-9	5-7
Flower colour	White	Purple	White
Branch Orientation	Upright	Spreading	Upright
Raceme position	Above the canopy	Throughout the canopy	Above the canopy
Pod shape	Curved	Curved	Curved
Pod Colour	Thick green	Purple	Light green
Pod length (cm)	12-15	8-10	13-17
Pod width (cm)	Broad (> 4)	Narrow (< 2)	Narrow (< 2)
Number of seeds/pods	3-4	4-5	4-5


Photos of OFT dolichos bean fields varieties

9. **Constraints:** Very few farmers are cultivating these pole type varieties because of high cost of cultivation for stacking and harvesting
10. **Feedback of the farmers involved:** Dolichos bean variety Arka Krishna is good yielder but having very less market acceptability because of the pods are very broad in size & thick green when compared to local farmers variety i.e Alok. Whereas Dr YSR Shresta is compared to very less yielding variety with having minimum market acceptability and pods are light purple color.
11. **Feed back to the scientist who developed the technology:** It is necessary to develop very thin, narrow and light green pod varieties for Rayalaseem zone of A.P.

OFT: 12

S. No.	Item		Particulars
1	Thematic area	:	Nutrition management
2	Title	:	**Assessing the effect of distillery stillage supplementation on growth performance in post weaned ram lambs**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Rainfed
5	Problem definition / description: (one paragraph)	:	Poor growth rate in lambs due to protein deficiency and high cost of concentrate feed.
6	Technology Assessed:	:	TO1:Grazing / Roughages + Recommended feed (18%CP) 200g/day+ Distillery stillage (20% replacement of feed on DM basis) TO2: Grazing / Roughages + Recommended feed (18%CP) 200g/day FP:Grazing / Roughages + Grain feeding (200g/day)
7	Critical inputs given:	:	Feed and Distillery stillage
8	Results	:	

Table: Performance of the technology

Technology Option	*No. of trials*	*Body weight gain (kg in 60 days)*	*Net Returns/animal (Rs.)*	*B:C ratio*	*Data on Other performance indicators**
Grazing / Roughages + Recommended feed (18%CP) 200g/day+ Distillery stillage (20% replacement of feed on DM basis)	*5*	*8.38*	*2902*	*7.45*	
Grazing / Roughages + Recommended feed (18%CP) 200g/day		*8.16*	*2814*	*7.25*	
Grazing / Roughages + Grain feeding (200g/day)		*5.76*	*1854*	*5.12*	

Description of the results:

Distillery stillage costs of 25% CP on DM basis. Supplementation of stillage with replacement of 20% feed resulted in 45.5% increase in body weight gain over farmers practice. Similarly supplementation of feed with 18% CP was resulted in increase of 41.2% body weight gain over farmers practice of grain feeding.

9. Constraints if any: Availability of distillery stillage

10. Feed back of the farmers involved: increase in appetite of the animals was observed

11. Feed back to the scientist who developed the technology: Nil

OFT: 13

S. No.	Item		Particulars
1	Thematic area	:	Nutrition management
2	Title	:	**Assessing the effect of probiotic yeast (*S.cereviceae)* supplementation on growth performance in calves**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Rainfed
5	Problem definition / description: (one paragraph)	:	Poor growth rate in calves due to insufficient milk feeding and not supplementing calf starter
6	Technology Assessed:	:	TO-1: Roughages + Calf starter + Probiotic yeast 5g/calf /day TO-2: Roughages + Calf starter (20%CP) FP: Roughages + Rice bran
7	Critical inputs given:	:	Calf starter and probiotic yeast
8	Results	:	

Table: Performance of the technology

Technology Option	*No. of trials*	*Body weight gain in 60days (kg)*	*Net Returns in per lamb (Rs.)*	*B:C ratio*
TO-1: Roughages + Calf starter + Probiotic yeast 5g/calf /day	*5*	*30.56*	*4564.00*	*4.00*
Roughages + Calf starter (20%CP)	*5*	*29.1*	*3030*	*3.3*

Roughages + Rice bran	*5*	*19.44*	*1476*	*2.03*

Description of the results: On supplementation of creep feed (20% CP) along with probiotic yeast (5g/day) resulted in 57.2% increase in body weight gain and creep feed alone resulted in 49.2% increase in body weight gain over farmers practice of rice bran feeding. Supplementation of probiotic yeast improved the rumen which increases the digestibility and also calves can be weaned early compared to farmers practice.

9. Constraints if any:

10. Feed back of the farmers involved: Cost of creep feed if high

11. Feed back to the scientist who developed the technology: Nil

OFT: 14

1. Thematic area: Varietal assessment

2. Title: Assessment of Bio-Fortified varieties for Nutritional Security

3. Scientists involved: K. LakshmiPriya, PA (H. Sc),M. Sudhakar, SMS (Agro)

4. Details of farming situation: Rainfed -Black soils

5. Problem definition / description: Malnutrition led to poor health and increased susceptibility to various diseases. Malnutrition emerged as a Major health challenge in 21st century and is aptly addressed through Sustainable development goals.(SDGs) chartered by United Nations. In India, 58.4% of the children (6-59 months), 53% of the adult women and 22.7% of adult men are affected due to anaemia. 70% of children (<5 years) are estimated to be iron deficient. Various strategies viz,.Food Fortification, medical Supplementation and dietary diversity are used to alleviate malnutrition. Introduction of Biofortification of Millet crop is cost effective, Sustainable, Nutrients reach the people in natural form and alleviate malnutrition as the Millets are highly nutritious being rich sources of Fibre, proteins, vitamins, and minerals.

6. Technology Assessed : T1: Farmers Practice: Non descriptive
T2: Finger Millet: VR CFMV1 (Indravathi)
T3: Finger Millet: Var: 929 (Vegavathi) (AICRP on SmallMillets)

7. Critical inputs given : T2: Seed + Bio Agents (Pseudomonas, Trichoderma Viridae)

Treatments	Critical Inputs	Observations Recorded	Nutritional Properties	Results
T-1:Finger Millet Variety : CFMV1 (Indravathi)-AICRP,ARS,Vizayanagaram, ANGRAU	Seed + Bio Agents	*Nutrient availability *Inclusion In daily menu (qty/week) • Yield: 18.75qtls/hac	Rich in Calcium (428mg/100g), Iron (58.0ppm),Zinc(44.0ppm)in comparison to 200mg/100g ca, 25ppm iron and 16 ppm zinc in popular varieties	Inclusion of ragi 1kg/month in breakfast, lunch and snacks

T-2:Finger Millet: var 929 (Vegavathi)	Seed + Bio Agents	*Nutrient availability *Inclusion In daily menu (qty/week) • Yeild:25.0qtls/hac	Rich in Iron(131.8ppm) in comparison to 25.0ppm in popular varities	
FP:		Consumption of ragi in the form of Java/Porridge in summer, Ragi ball with specials occasionally		1-2 kgs/annum

T3: Seed + Bio Agents (Pseudomonas, Trichoderma Viridae)

8. Results:

Table: Performance of the technology

Technology Option	***No. of trials***	***Yield (q/ha)***	***Net Returns (Rs./ha)***	***B:C ratio***	***Data on Other performance indicators****
Farmers Practice	2				Introduction of Biofortified Finger Millet varieties i.e, Indravathi (CFMV1) rich in Rich in Calcium (428mg/100g), Iron (58.0ppm), Zinc(44.0ppm)in comparison to 200mg/100g ca, 25ppm iron and 16 ppm zinc in popular varieties and (var.929) Vegavathi Rich in Iron(131.8ppm) in comparison to 25.0ppm in popular varieties to the farm women in two locations with an objective to promote nutritional security among farm families.
Technology : Finger Millet: VR CFMV1 (Indravathi)		*18.75*	*55750*	*1:2.9*	
Technology 2: Finger Millet: Var: 929 (Vegavathi)		*25.0*	*81875*	*1:3.9*	

9. Constraints:-

10. Feedback of the farmers involved:

Inclusion of ragi 1kg/month in breakfast, lunch and snacks was observed than regular usage1-2kgs/annum.

11. Feed back to the scientist who developed the technology: -

OFT: 15

1. Thematic area: Varietal Assessment for Value Addition

2. Title: Assessment of Foxtail Varieties for Value Addition

3. Scientists involved: K. LakshmiPriya, PA (H. Sc)
M. Sudhakar, SMS (Agro.)

4. Details of farming situation: Rainfed –Black/Red Soils

5. Problem definition / description: Though millets consumption in rural area is better than urban population, knowledge regarding the performance of various types of foxtail millets is meager. At present there are varieties are cultivated by farmers with duration ranging from 55 to 90 days. Knowledge regarding the cooking and keeping quality is not known.

6. Technology Assessed: **TO-1:** Seteria : Var: Suryanandi
TO-2: Seteria : Var: Renadu
FP: Non descriptive

7. Critical inputs given: Foxtailrice

8. Results: Performance of the technology

- Suryanandi and Renadu with 2hrs soaking time For Rice and Breakfast and Lunch Items is with 8 points (Like verymuch).
- Mahanadi with 2 hrs soaking time For Sweets and savories with 8 Points (Like Verymuch).

Observations	FP	TO: I Variety: Suryanandi			TO:II Variety: Renadu			TO: III Variety: Mahanadi		
Soaking time	15-30min	2 hrs	4 hrs	6 hrs	2 hrs	4 hrs	6 hrs	2 hrs	4 hrs	6 hrs
Taste, Appearance, Texture, Colour, Odour (Sensory evaluation by Using hedonic Scale)		9	7	6	9	7	6	8	4	3

9. Constraints: Poor consumption of Foxtail millet due to lack of knowledge on Value Added recepies

10. Feedback of the farmers involved: Value added recopies with foxtail helps them for incorporation in daily menu.

11. Feed back to the scientist who developed the technology: Nil

OFT: 16

1. Thematic area: Value Addition

2. Title: Assessment of different processing techniques for making green chilli powder

3. Scientists involved: K. LakshmiPriya, PA (H. Sc)

4. Details of farming situation: Nill

5. Problem definition / description: Green chillies are used as fresh in cooking and its Consumption is very high in daily culiminery preparations. Processing of green chillies reduces losses and it is very much essential to avoid lengthy drying operation because the chillies are more prone to affect with high amounts of pesticidal sprays if the crop continues for drying.

6. Technology Assessed: T1: Farmers Practice: Non descriptive

T2: Destalking-blanching (90^oC/4mts-crushing-dehydration (4% moisture)

T3: Destalking-blanching (80^o C /5 mts -dehydration (% moisture)

7. Critical inputs given: Green Chillies

8. Results:

Table: Performance of the technology

Treatments	Critical Inputs	Observations to be Recorded	Results
T-1: Destalking-blanching(90^o C /4 mts -crushing-dehydration (4% moisture)-	Green Chillies	Shelf Life(days), Sensory Evaluation Income generation (Rs.)	10-11 months 8points: Like Very Much 380/kg
T-2:Destalking-blanching(80^o C /5 mts -dehydration (% moisture)	Green Chillies	Shelf Life(days), Sensory Evaluation Income generation (Rs.)	10-11 months 8points: Like Very Much 380/-/Kg
FP: Use of green chiilies or red chilli powder for pungency	-	-	250/-kg

9. Constraints: Usage of Red chillie Powder is traditional practice in daily culimenory preparations than green chillie powder.

10. Feedback of the farmers involved: Non availability of greenchillie powder

11. Feed back to the scientist who developed the technology: -

Frontline Demonstrations in Detail

S. No.	Crop/ Enterprise	Thematic Area	Technology demonstrated as a follow-up from OFT	Feedback sent to the Research System	Details on the performance of the technology sent to the Extension Department	Horizontal spread of the technology		
						No. of villages	No. of farmers	Area in ha
1	Bengalgram	Varietal Evaluation	Demonstration Bengalgram with NBeg-452 and NBeG-49	yes	Performing well in Rainfed situation. Tolerant to drought. Tolerant to wilt.	25	2000	23000
2	Paddy	Resource conservation	Direct Seeding	yes	Water saving and Cost reduction technology	15	5000	27500
3	Maize	Resource conservation	Zero tillage	yes	Water saving , time saving and Cost reduction technology	10	500	1500
4	Redgram Seteria	Cropping system	Redgram+ seteria Inter cropping System	yes	Remunerative cropping system under rainfed situation	20	300	3500
5	Redgram	Varietal Evaluation	Varietal Demonstration in Redgram-PRG-176& LRG-52	yes	Performing well in Rainfed situation. Suitable for light to medium black soils. Tolerant to wilt	50	5000	32000
6	Seteria	Varietal Evaluation	Varietal Demonstration in Setaria varieties Renadu and SIA-3156	yes	Performing well in Rainfed situation and as sole crops and inter crops.	25	500	7000
7	Redgram/ Bengalgram	Conservation Agriculture	Raised bed planter	yes	In-situ moisture consevation	10	200	1000
8	Jowar	Varietal Evaluation	Varietal Demonstration in Jowar varieties NTJ-5, C-43 and N-15	yes	Performing well in Rainfed situation in black soils.	15	250	1500
9	Bt Cotton	IPM	IPM	Ph. traps from square formation is effective for PBW monitoring.	Use of Ph traps, spray of Neem oil and Profenophos for PBW	18	472	1265

10	Redgram	IPM	Realtime contingent mgmt. of pests & diseases	Green pesticides with Thiomethoxam as two sprays at pod initiation and development - good control of pod fly.	Spray of Novaluron, Emamectin benzoate and Thiomethoxam for Maruca, Podborers and Pod fly.	17	428	305
11	Bengalgram	IDM	Biopriming for soil borne disease management	Seed treatment with Th with 30 g of FYM powder per kg seed supports establishment of Th in soil and effective in mgmt of Wilt.	T.harzianum seed treatement and soil application @ 2 kg/ac	28	515	724
12	Chillis	IDM	Mgmt of viral diseases	Installing Yellow/blue sticky traps at 25 DAT is effective in checking thrips and viral diseases.	Seed treatement(Imidacloprid 600 FS), Installation of Sticky traps, Spray of Fipronil, Difenthiuron and Acetamaprid .	13	165	128
13	Onion	IPM	Thrips& Leaf blight	Sticky traps from 15 DAT effective in mgmt of thrips.	Sticky traps, Fipronil, Chlorothalonil	8	106	85
14	Blackgram	IPM	Realtime contingent mgmt. of pest s & diseases	Seed treatment and Sticky traps gave good control of viral disease spread.	Seed treatement (Imida 600 FS), Sticky traps, Emamectin, Difenconazole.	17	316	338
15	Chilli	ICM	ICM whole package		Demonstrations, Exposure visits, and Field Days	41	2560	4856
16	Acid lime	IDM	Dry root rot management with bio agents and fungicides		Demonstrations, Exposure visits, and Field Days	5	195	254
17	Brinjal	ICM	ICM whole package		Demonstrations, Exposure	18	238	312

					visits, and Field Days			
18	Pomegranate	ICM	Best management practices from pruning to harvest		Demonstrations, Exposure visits, and Field Days	5	51	145
19	Horticulture crops	Cropping system	Two or more crops in the same piece of land and inter cropping systems in fruit orchards		Demonstrations, Exposure visits, and Field Days	25	175	270
20	Tomato	Variety	Arka Samrat		Demonstrations, Exposure visits, and Field Days raising of seedling at KVK and supplied	12	134	56
21	Banana	Bunch management practices	Bunch covers, spraying of micronutrients, spraying of 0.0.50		Demonstrations, Exposure visits, and Field Days	15	276	136

b. Details of FLDs implemented during the reporting period.

FLD: 01 Soil test based Nutrient management in Bt. Cotton

Sl. No.	Item		Details
1	**Crop**	:	Cotton
2	**Thematic area**	:	INM
3	**Technology demonstrated**	:	STBR- Nutrient dosage(NPK Kg./ha)-160-44-40 and foliar application of KNO3 (2%), MgSO4-(1%), ZnSO4(0.2%), Borax (0.15%)
4	**Season and year**	:	Kharif-2022
5	**Farming situation**	:	Irrigated black- Sandy clay loam soil
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	5
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	

13	**Feedback from farmers**	**:**	Farmers were satisfied with crop performances and expressed that Soil test based nutrient management is a viable technology in Bt. Cotton, because of less cost on chemical fertilizers and without reduction in yield compared to their own practice. They realized that they are resorting to higher expenditure on fertilizers in absence of soil testing of their fields
14	**Feedback of the Scientist**	**:**	Soil test based nutrient management and foliar application of K,Mg,Zn and B improved the productivity of Bt. Cotton where zinc and Boron are deficient in soils
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 02 Integrated nutrient management in Groundnut

Sl. No.	Item		Details
1	**Crop**	**:**	Groundnut
2	**Thematic area**	**:**	INM
3	**Technology demonstrated**	**:**	NPK-20-40-50 Kg / ha PSB-2.5 lt /ha, Gypsum – 500 Kg /ha, FYM-5 tonnes/ha
4	**Season and year**	**:**	Kharif-2023
5	**Farming situation**	**:**	Rainfed - Red soil
6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	4
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any:**	**:**	
13	**Feedback from farmers**	**:**	Farmers were satisfied with crop performances and expressed that Integrated nutrient management is a viable technology in groundnut, because of less cost on chemical fertilizers and without reduction in yield compared to their own practice. They realized that they are resorting to higher expenditure on fertilizers in absence of soil testing of their fields
14	**Feedback of the Scientist**	**:**	Integrated nutrient management and application of gypsum would improve the productivity of groundnut
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 03 Soil test based nutrient management in Chickpea

Sl. No.	Item		Details
1	**Crop**	:	Chickpea
2	**Thematic area**	:	INM
3	**Technology demonstrated**	:	STBR-NPK 28-36-0 Kg/ha, PSB-2.5 lit, Gypsum-250 kg and Zinc sulphate-25 Kg/ha
4	**Season and year**	:	Rabi-2022
5	**Farming situation**	:	Rainfed - Black soil
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	4
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	
13	**Feedback from farmers**	:	Farmers were satisfied with crop performances and expressed that Soil test based nutrient management is a viable technology in chickpea because of without reduction in yield compared to their own practice.
14	**Feedback of the Scientist**	:	Soil test based nutrient management and basal application of zinc sulphate and gypsum for sulphur improved the productivity of Chickpea
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	:	Field days-1 Training-1

FLD: 04 Soil test based nutrient management in Maize

Sl. No.	Item		Details
1	**Crop**	:	Maize
2	**Thematic area**	:	INM
3	**Technology demonstrated**	:	STBR NPK-242-42-5450 Kg/ha Zinc sulphate-50 Kg/ha and foliar spraying of borax @ 0.2 % for 2 times at 30 and 45DAS
4	**Season and year**	:	Rabi-2022
5	**Farming situation**	:	ID - Black soil
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	4
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4

12	**Justification for shortfall if any**	**:**	
13	**Feedback from farmers**	**:**	Farmers were satisfied with crop performances and expressed that Soil test based nutrient management is a viable technology in Maize, because of less cost on chemical fertilizers and without reduction in yield compared to their own practice. They realized that they are resorting to higher expenditure on fertilizers in absence of soil testing of their fields.
14	**Feedback of the Scientist**	**:**	Soil test based nutrient management and basal application of zinc sulphate and foliar application of boron increased productivity of Maize
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Training-1

FLD: 05

Sl. No.	Item		Details
1	**Crop**	**:**	Maize
2	**Thematic area**	**:**	Resource conservation
3	**Technology demonstrated**	**:**	**Zero tillage Maize**
4	**Season and year**	**:**	Kharif-2022
5	**Farming situation**	**:**	Irrigated black- Sandy clay loam soil
6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	2
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	3
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any**	**:**	-
13	**Feedback from farmers**	**:**	Maize can be successfully grown without any primary tillage under no-till situation with less cost of cultivation, higher farm profitability and better resource use efficiency**.**
14	**Feedback of the Scientist**	**:**	The results indicated that **Zero tillage method has** recorded Yield 6720 kg /ha and net returns of Rs95340 as compared to Farmers practice (6512kg/ha.) with net returns of Rs 87014/
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 06

Sl. No.	Item		Details
1	**Crop**	**:**	Pearlmillet +Redgram
2	**Thematic area**	**:**	Cropping system
3	**Technology demonstrated**	**:**	**Demonstration on Redgram+ Pearlmillet**
4	**Season and year**	**:**	Kharif-2023
5	**Farming situation**	**:**	Rainfed Red

6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	5
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any:**	**:**	-
13	**Feedback from farmers**	**:**	Intercropping of **Redgram+ Pearlmillet** is to stabilize the productivity and enhance the returns in terms of increased net returns And also the intercropping act as a insurance against total crop failures.
14	**Feedback of the Scientist**	**:**	The additional net income of the farmers was increased in Rs. Rs 19292 /- more in Redgram+ Pearlmillet Intercropping than sole crops of Redgram.
15	**Extension activities on the FLD**	**:**	Field days-1 Training-1 

FLD: 07

Sl. No.	Item		Details
1	**Crop:**	**:**	Setaria + Redgram- bengalgram
2	**Thematic area:**	**:**	Cropping system
3	**Technology demonstrated**	**:**	**Demonstration on minimum tillage Bengalgram in Setaria+ Redgram Intercropping.**
4	**Season and year:**	**:**	Kharif-2022 and Rabi
5	**Farming situation:**	**:**	Rainfed black
6	**Source of fund:**	**:**	CRIDA
7	**No of locations (Villages):**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries):**	**:**	10
9	**No of SC/ST Farmers and women farmers:**	**:**	5
10	**Area proposed (ha):**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any:**	**:**	-
13	**Feedback from farmers:**	**:**	Farmers were impressed with Introduction Bengalgram with minimum **tillage in Setaria+ Redgram intercropping system after harvest of Setaria.** The additional net income of the farmers was also increased in Rs. Rs 32135 more than the in Setaria+ Redgram Intercropping.

14	**Feedback of the Scientist:**	**:**	The results indicated that highest net returns was obtained with minimum tillage Bengalgram in Korra+ Redgram intercropping (Rs **154803**/ha) than Korra+ Redgram intercropping (Rs **122688** ha).
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 08

Sl. No.	Item		Details
1	**Crop**	**:**	Setaria -Bengalgram
2	**Thematic area**	**:**	Cropping system
3	**Technology demonstrated**	**:**	**Setaria- Bengalgram cropping sequence with minimum Tillage.**
4	**Season and year**	**:**	Kharif-2022 and Rabi
5	**Farming situation**	**:**	Rainfed black
6	**Source of fund**	**:**	CRIDA
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	5
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any**	**:**	-
13	**Feedback from farmers**	**:**	Farmers were impressed with minimum **tillage in Setaria followed Bengalgram sequence.**
14	**Feedback of the Scientist**	**:**	Setaria-Bengalgram sequence has recorded 122301Rs/ha additional returns over sole crop of Bengalgram. This shows the increased profitability through Korra- Blackgram and Setaria-Bengalgram sequence with minimum tillage. Foxtail millet (korra), crop being its short duration may fit well in double cropping sequence under rainfed situation in black soils. Inorder to increase net returns Rs/ha and cropping intensity.
15	**Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 09

Sl. No.	Item		Details
1	**Crop**	:	Soybean- Bengalgram
2	**Thematic area**	:	Cropping system
3	**Technology demonstrated**	:	Soybean- Bengalgram sequence with minimum tillage in rainfed black soils.
4	**Season and year**	:	Kharif-2022 and Rabi
5	**Farming situation**	:	Rainfed black
6	**Source of fund**	:	CRIDA
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	5
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	-
13	**Feedback from farmers**	:	Farmers were impressed with minimum **tillage in Soybean followed Bengalgram sequence** .
14	**Feedback of the Scientist**	:	The results indicated that highest net returns was obtained with Soyabean- Bengalgram sequence (Rs. 72590/ha) than fallow – Bengalgram (Rs. 38054 /ha). The additional net income of the farmers was also increased in Soyabean- Bengalgram sequence which is calculated as Rs. 37546 more than the Fallow- Bengalgram .
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	:	Field days-1 Training-1

FLD: 10

Sl. No.	Item		Details
1	**Crop**	:	Maize
2	**Thematic area**	:	Weed management
3	**Technology demonstrated**	:	Post emergence application of Tembotrione & 285ml/ha at 15-20 DAS .
4	**Season and year**	:	Kharif-2023
5	**Farming situation**	:	Irrigated- black
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	5
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	-
13	**Feedback from farmers**	:	**Post emergence application of Tembotrione & 285ml/ha Atrazine at 15-20 DAS** effective control of weeds in Miaze and cost effective compared manual weeding.

14	**Feedback of the Scientist**	**:**	The results indicated that highest net returns was obtained with Post emergence application of Tembotrione 285ml/ha Atrazine at 15-20 DAS (Rs. 72590/ha) and effective **control of weeds in Maize.**
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Field days-1 Training-1

FLD: 11 Management **of Fruit fly in Mango**

S. No.	Item		Details
1	**Crop**	**:**	Mango
2	**Thematic area**	**:**	IPM
3	**Technology demonstrated**	**:**	IPM Package : • Destroy All Fallen Fruits At Weekly Intervals, • Install Six Methyl Eugenol Plywood Traps Per Acre. • Plough The Soil At The Tree Basin At Frequent Intervals, • 3 Weeks Before Harvest, Spray Decamethrin 2.8 EC @ 0.5 Ml/L + Azadirachtin (0.3%) 2 Ml/Lt And Take Up Timely Harvest, • If Fruit Fly Is Very Serious (> 5/Surveillance Trap), Give Bait Sprays On The Tree Trunks At Weekly Interval: (Bait Spray Is Prepared By Mixing 100g Of Jaggery In One Litre Of Water To Which 2 ML Of Deltamethrin (2.8 EC) Is Added)
4	**Season and year**	**:**	Kharif-2023
5	**Farming situation**	**:**	Irrigated Light Black Soil
6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	3
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any**	**:**	
13	**Feedback from farmers**	**:**	Erection of fruit fly traps reduced the fruit fly incidence and damage to a greater extent and gave good control of the problem, as they are installed early in the season during April, 2022.
14	**Feedback of the Scientist**	**:**	Installation of sufficient number of fruit fly traps during April, 2022 followed by prophylactic spray of lower branches and canopy with Decamethrin twice at one month interval, removal and destruction of fallen damaged fruits at regular intervals is working efficiently in checking the fruit fly incidence and damage.
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Training-1 Field Visits – 2

Component	FLD	Farmer Practice	Remarks
Yield (q/ha)	137.9	120.9	14.04 % higher yield
Cost of Cultivation (Rs/ha)	1,26,875	1,31,600	
Cost of Plant Protection (Rs/ha)	13,350	15,240	Rs. 4,725 saving
Gross income (Rs./ha)	4,13,700	3,62,775	
Net Income (Rs./ha)	2,86,825	2,31,175	55,650/- addl net income
Cost Benefit ration	3.26	2.76	
Fruit fly Damage%	7.8	20.9	62.5 % reduction

FLD: 12 Demonstrating CREMIT for PBW management in Cotton

S. No.	Item		Details
1	**Crop**	:	Bt Cotton
2	**Thematic area**	:	IPM
3	**Technology demonstrated**	:	CREMIT (Controlled Release Enhanced Mating Disruption Technology) application @ 30,60 & 90 DAS + Ph traps @ 4/ac, Need based PP chemical spray.
4	**Season and year**	:	Kharif-2023
5	**Farming situation**	:	Rainfed Light Black Soil
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	4
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	
13	**Feedback from farmers**	:	CREMIT Paste application at 30, 60 and 90 DAS ensured good confusion of male adults of PBW and thus reduced incidence is seen .
14	**Feedback of the Scientist**	:	The incidence of PBW in the field applied with CREMIT paste is far below than the check. Just about 6-10% incidence is noticed in the FLD against 15-23% incidence in check.
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	:	Training-1 Field Visits – 2

Component	FLD	Farmer Practice	Remarks
Yield (q/ha)	11.04	9.08	10.61 % higher yield
Cost of Cultivation (Rs/ha)	70,500	64,750	
Cost of Plant Protection (Rs/ha)	15,500	12,250	Rs. 3,250 additional cost
Gross income (Rs./ha)	80,300	72,600	
Net Income (Rs./ha)	9,800	7,850	Rs. 1,950/- addl net income

Cost Benefit ration	1.14	1.12	
PBW Damage%	7.12	17.3	58.8 % reduction

FLD: 13 Demonstrating Drone spraying for Pest management in Redgram

S. No.	Item		Details
1	**Crop**	:	Redgram
2	**Thematic area**	:	IPM
3	**Technology demonstrated**	:	Using drone for spraying recommended PP chemicals @ 80% of recommendation and comparing it with spraying 100% dose of pesticide with Taiwan sprayer.
4	**Season and year**	:	Kharif-2023
5	**Farming situation**	:	Rainfed Light Black Soil
6	**Source of fund**	:	KVK
7	**No of locations (Villages)**	:	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	:	10
9	**No of SC/ST Farmers and women farmers**	:	4
10	**Area proposed (ha)**	:	4
11	**Actual area (ha)**	:	4
12	**Justification for shortfall if any**	:	
13	**Feedback from farmers**	:	Spraying with Drone ensures better chemical application on all parts of the crop
14	**Feedback of the Scientist**	:	Drone spraying reduces the dose of the chemical by 20%
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	:	Training-1 Field Visits – 2

Component	FLD	Farmer Practice	Remarks
Yield (q/ha)	8.88	8.13	9.23 % higher yield
Cost of Cultivation (Rs/ha)	40,498	41,250	
Cost of Plant Protection (Rs/ha)	5,250	4,495	Rs. 755 saving
Gross income (Rs./ha)	84,313	77,188	
Net Income (Rs./ha)	43,818	35,938	7,880/- addl net income
Cost Benefit ration	2.08	1.87	
Maruca Damage%	5.8	8.6	33.1 % reduction

FLD: 14 Integrated Disease Management in Bengalgram

S. No.	Item		Details
1	**Crop**	:	Bengalgram
2	**Thematic area**	:	IDM
3	**Technology demonstrated**	:	• Seed treatment with Tebuconazole @1.5 g/Kg followed by T.viride @ 10 g/kg of seed • Soil application of T.viride @ 2 kg/ac with 90 kg FYM

			and 10 kg Neem cake • Spraying Hexaconazole @ 2 ml/lt or Propiconazole @ 1 ml/lt alternately at 7 days interval.
4	**Season and year**	**:**	Rabi-2023
5	**Farming situation**	**:**	Rainfed Black Cotton Soil
6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	2
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4
12	**Justification for shortfall if any**	**:**	
13	**Feedback from farmers**	**:**	Seed treatment with Tebuconazole @ 1.5 g/kg followed by Seed treatment with T.viride @ 10 g/kg gave good control of Wilt and Dry root rot. And this year incidence of blight and rust were not noticed.

Component	FLD	Farmer Practice	Remarks
Yield (q/ha)	9.02	8.39	7.48 % higher yield
Cost of Cultivation (Rs/ha)	43,250	44,625	
Cost of Plant Protection (Rs/ha)	5,250	6,625	Rs. 1,375 saving
Gross income (Rs./ha)	56,826	52,857	
Net Income (Rs./ha)	13,576	8,232	Rs. 5,344/- addl net income
Cost Benefit ration	1.31	1.18	
Wilt incidence%	3.0	4.3	30.6 % reduction
Dry root rot incidence %	4.0	11.5	65.0% reduction

FLD: 15 Management of Pin worm (*Tuta absoluta*) in Tomato

S. No.	Item		Details
1	**Crop**	**:**	Redgram
2	**Thematic area**	**:**	IPM
3	**Technology demonstrated**	**:**	1. Installation of light traps right from transplanting. 2. Erection of Ph traps @ 35 per ha. 3. Need based spray of Spinosad/Flubendiamide in rotation at 3 weeks interval 4. Spray Decamethrin 2.5% EC for killing Adult moths.
4	**Season and year**	**:**	Rabi-2023
5	**Farming situation**	**:**	Irrigated Red Soil
6	**Source of fund**	**:**	KVK
7	**No of locations (Villages)**	**:**	1
8	**No. of demonstrations (replications/farmers/beneficiaries)**	**:**	10
9	**No of SC/ST Farmers and women farmers**	**:**	4
10	**Area proposed (ha)**	**:**	4
11	**Actual area (ha)**	**:**	4

12	**Justification for shortfall if any**	**:**	
13	**Feedback from farmers**	**:**	Installation of Pheromone traps and spraying of Decamethrin reduced the incidence of Pin Worn significantly.
14	**Feedback of the Scientist**	**:**	Installation of Ph traps for pin worm ahead of incidence, reduced the incidence significantly and the damage is also limited.
15	**Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)**	**:**	Training-1 Field Visits – 2

Component	FLD	Farmer Practice	Remarks
Yield (q/ha)	216.3	182.5	18.49 % higher yield
Cost of Cultivation (Rs/ha)	1,29,000	1,35,625	
Cost of Plant Protection (Rs/ha)	12,600	15,250	Rs. 2,650 saving
Gross income (Rs./ha)	3,46,000	2,92,000	
Net Income (Rs./ha)	2,17,000	1,56,375	Rs. 60,625/- addl net income
Cost Benefit ration	2.68	2.15	
Pinworm Damage%	7.4	14.3	47.95 % reduction

FLD: 16 Demonstration of Gebberrellic acid in chrysanthemum

Crop: Chrysanthemum

Thematic area: ICM

Technology demonstrated: Spraying of Gebberrellic acid 100ppm at 30, 45 and 60 days after transplanting for vegetative growth, early flowering and high yield.

Season and year: Kharif, 2023

Farming situation: Irrigated red soils

Source of fund: KVK

No of locations (Villages): 2

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 10

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Farmers are not aware about the spraying of GA3 and stage of the spraying in chrysanthemum.

Feedback from farmers: Farmers are accepted this technology.

Feedback of the Scientist: Good technology, cost of spraying is very less and farmers are getting good yields.

Extension activities on the FLD: Farmers training programmes, field days training to Extension Functionaries and social media.

(Field days, Farmers training, media coverage, training to Extension Functionaries)

Photos of chrysanthemum demo and control

FLD: 17 Demonstration of ridge gourd variety Arka Prasan

Crop: Ridge gourd

Thematic area: varietal evaluation

Technology demonstrated: demonstration of high yielding OP variety Arka Samrat

Season and year: Kharif 2023

Farming situation: irrigation red soils

Source of Fund: KVK

No of locations (Villages): 2

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 4

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Local hybrids are very cost effective and compared to low yielders.

Feedback from farmers: Arka Prasan is a good market acceptance and compared to less seed cost and collected seed for next season. Stacking is good method to getting higher yields and observed less pest and diseases incidence.

Feedback of the Scientist: Most of the farmers are following stacking for ridge gourd cultivation. So that farmers are getting good and quality yields. Observed fruit drop during fruit setting.

Extension activities on the FLD: farmers training, filed days, field visits and media coverage

(Field days, Farmers training, media coverage, training to Extension Functionaries).

Photos of ridge gourd fields and varieties

FLD: 18 Technology-3 Demonstration of Dolichos bean during the rabi as alternate to traditional vegetables

Crop: Dolichos bean

Thematic area: varietal evaluation

Technology demonstrated: demonstration of high yielding OP variety Arka Amogh in Dolichos bean

Season and year: Rabi 2023

Farming situation: irrigation red soils

Source of fund: KVK

No of locations (Villages): 3

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 10

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Tomato cultivation during Rabi season resulted in less price realization due to glut in the market and the cost of cultivation is compared to very high.

Feedback from farmers: Arka Amogh is a good market acceptance and compared to less seed cost and collected seed for next season.

Feedback of the Scientist: Less cost of investment, short duration and good market prices around the year Extension activities on the FLD: farmers training, filed days, field visits and media coverage (Field days, Farmers training, media coverage, training to Extension Functionaries).

Photos of Dolichos bean variety Arka Amogh

FLD: 19 Demonstration on influence of nutrient supplementation on incidence of mastitis

Crop	**:**	
Thematic area	**:**	Nutrient management
Technology demonstrated	**:**	Supplementation of Se+Vit E, Vit A and mineral mixture
Season and Year	**:**	Rabi 2023
Farming situation	**:**	-
Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	30
No. of SC/ST farmers and women farmers	**:**	10
Area proposed	**:**	-
Actual area	**:**	-
Justification for short rainfall if any	**:**	-
Feedback from farmers	**:**	The technology is good as it reduces the incidence of mastitis
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Health camps, Field visits and group discussions

FLD: 20 Mixed fodder production (CoFS-29 + Hedge lucerne)

Crop	**:**	Fodder
Thematic area	**:**	Feed and fodder management
Technology demonstrated	**:**	Cultivation of CoFS-29 and Hedge lucerne in 2:1 ratio and fed to milch buffaloes
Season and Year	**:**	Rabi 2023
Farming situation	**:**	-
Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	10

No. of SC/ST farmers and women farmers	**:**	4
Area proposed	**:**	2.0 ha
Actual area	**:**	2.0ha
Justification for short rainfall if any	**:**	-
Feedback from farmers	**:**	The technology is good for milk production as it improved the protein value in the fodder
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Field visit, Method demonstration

FLD: 21 Supplementation of milk replacer to pre weaned lambs

Crop	**:**	Sheep
Thematic area	**:**	Animal Nutrition management
Technology demonstrated	**:**	Supplementation of milk replacer developed by NIANP @ 50g/day
Season and Year	**:**	2023
Farming situation	**:**	Rainfed
Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	10
No. of SC/ST farmers and women farmers	**:**	4
Area proposed	**:**	-
Actual area	**:**	-
Justification for short rainfall if any	**:**	
Feedback from farmers	**:**	The technology is well accepted by the farmers
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Field visit, Method demonstration

FLD: 22 Demonstration of Ghagus poultry breed at backyards

Crop	**:**	Backyard Poultry
Thematic area	**:**	Evaluation of breeds
Technology demonstrated	**:**	Ghagus poultry breed
Season and Year	**:**	2023
Farming situation	**:**	Rainfed
Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	25
No. of SC/ST farmers and women farmers	**:**	25
Area proposed	**:**	500nos
Actual area	**:**	-
Justification for short rainfall if any	**:**	
Feedback from farmers	**:**	The birds are well acclimatized to the local environment
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Field visit, Method demonstration

FLD: 23 Demonstration on supplementation of probiotic yeast to milch buffaloes

Crop	**:**	Buffaloes
Thematic area	**:**	Nutrition Management
Technology demonstrated	**:**	Supplementation of probiotic yeast (15g/day) + sodium bicarbonate (40g/day)
Season and Year	**:**	2023
Farming situation	**:**	Rainfed

Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	20
No. of SC/ST farmers and women farmers	**:**	7
Area proposed	**:**	20 animals`
Actual area	**:**	-
Justification for short rainfall if any	**:**	
Feedback from farmers	**:**	The digestibility and milk yield improved. Overall improvement of animal health was observed
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Field visit, Method demonstration
Technology6	**:**	Summer stress management in buffaloes
Crop	**:**	Buffaloes
Thematic area	**:**	Dairy Management
Technology demonstrated	**:**	Wallowing / sprinkling of water + Niacin (6g/day) + Yeast (10g/day) + 150ml mustard oil/day
Season and Year	**:**	2023
Farming situation	**:**	Rainfed
Source of Fund	**:**	KVK
No. of locations (villages)	**:**	3
No. of demonstrations	**:**	10
No. of SC/ST farmers and women farmers	**:**	3
Area proposed	**:**	10 animals`
Actual area	**:**	-
Justification for short rainfall if any	**:**	
Feedback from farmers	**:**	The heat stress was reduced and also improvement of milk yield was observed. Panting of animals was not observed.
Feedback of the scientist	**:**	-
Extension activities on the FLD	**:**	Field visit, Method demonstration

FLD: 24

Crop: Millets

Thematic area: Value Addition

Technology demonstrated: Puffed Sorghum+ powdered bajra + partially ground finger millet grit+ roasted and coarsely gritted groundnuts +jiggery.

Season and year: 2023

Farming situation: --

Source of fund: KVK

No of locations (Villages): 2

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: - 10

Area proposed (ha): --

Actual area (ha): --

Justification for shortfall if any: --

Feedback from farmers: 90% Expressed Colour, Taste, Smell, Texture, Appearance, Overall **Acceptability:** Scale Points: 8 (Like Verymuch).

Feedback of the Scientist:

Extension activities on the FLD: Training Programmes and Method Demonstrations were carried out. (Field days, Farmers training, media coverage, training to Extension Functionaries).

Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD: 25

Crop: Green leafy and Vegetables

Thematic area: Nutrition Garden

Technology demonstrated: Household food security by kitchen gardening and nutrition gardening

Season and year: Kharif & Rabi 2023

Farming situation: Irrigated Medium Black soils

Source of fund: KVK

No of locations (Villages): 5

No. of demonstrations (replications/farmers/beneficiaries):10

No of SC/ST Farmers and women farmers: 5

Area proposed (ha): 1.5 hac

Actual area (ha): 1.5hac

Justification for shortfall if any: Feedback from farmers: With the Introduction of Nutrigardens consumption of greens and other vegetables Increased (10.5Kgs /week) in daily menu than their regular usage i.e, 3-4kgs/week helps in dietary diversity and income generated Rs. 1660.00/week (Rs.5,810 /season) on sales of surplus production.

Feedback of the Scientist:

Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD: 26

Crop: Onions

Thematic area: Value Addition

Technology demonstrated: Demonstration on Solar Dryer for drying of Onions (ODOP)

Season and year: Kharif & Rabi 2023

Farming situation:

Source of fund: KVK

No of locations (Villages): 1

No. of demonstrations (replications/farmers/beneficiaries):

No of SC/ST Farmers and women farmers: 5

Area proposed (ha):

Actual area (ha):

Justification for shortfall if any: Feedback from farmers: Introduction Of Solar dryers for preparation of onion dehydrated flakes, net income of Rs.10,875/- is obtained and Rs.800/-/qtls (Rs.4800/-/ac) On leftover onions in the field as an additional Income for farmers.

Feedback of the Scientist:

Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD: 27

Crop: Millets

Thematic area: Value Addition

Technology demonstrated: Fruit Based Millet Nutri Mix

Season and year:

Farming situation: -

Source of fund: KVK

No of locations (Villages): 1

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 10

Area proposed (ha): -

Actual area (ha): -

Justification for shortfall if any: -

Feedback from farmers: 90% Expressed Colour, Taste, Smell, Texture, Appearance, Overall **Acceptability:** Scale Points: 8 (Like Verymuch).

Feedback of the Scientist: -

Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)

Extension Studies

Study-1

Impact of CFLDs on chickpea conducted by KVK Yagantipalle in Nandyal district of A.P

Present study was carried out in 6 villages of three mandals which was implemented the CFLDs in chickpea from 2019-20, 2020-21, 2021-22. Out of it 20 Farmers were selected randomly from each selected village and made the sample size 120. The yield data were collected from both the demonstration and farmers practice and analyzed by using simple statistical tools. Calculated gross income, net income and B:C ratio to finding profitability of the technology.

During three years of technologies results obtained are presented in Table 1. The results revealed that the demonstration on chickpea an average yield recorded 5.99 qtl/ac under demonstrated plots as compare to farmers practice 4.87 qtl/ac. The highest yield in the demonstration plot was 6.19 qtl/ac during 2021-22. The average yield of chickpea increased 22.84 per cent (Table 1).

Table 1: Economic impact of chickpea cultivated under CFLD and farmer practice

S. No	Year	Production (q/ac)		% Increase	Gross income (Rs)		Net income (Rs)		B:C Ratio	
		Demo	F.P		Demo	F.P	Demo	F.P	Demo	F.P
1	2019-20	6.15	4.96	23.99	37515	30256	18615	11756	1.98	1.63
2	2020-21	5.64	4.75	18.73	27072	22800	10197	8220	1.60	1.55
3	2021-22	6.19	4.92	25.81	33426	26568	13876	7068	1.70	1.36
	Average	5.99	4.87	22.84	32671	26541	14229	9014	1.76	1.51

Price: 2019-20-:6100, 2020-21: 4800, 2021-22: 5400.

Table 2: Impact of frontline demonstrations on adoption of chickpea Varieties/technologies

S. No	Technology	Number of adopters			
		Before Demonstration	After Demonstration	Change in no. of adopters	Impact (% change)
1	NBeG-452	24	121	97	404.16
2	NBeG-3	11	42	31	281.81

Table 3: Impact of frontline demonstrations on horizontal spread of varieties/technologies

S. No.	Crop (variety)	Area (ha)			
		Before Demonstration	After Demonstration	Change in Area (ha)	Impact (% change)
1	NBeG-452	14.4	58.08	43.68	303.33
2	NBeG-3	5.28	15.12	6.84	129.54

Table 4: Reasons for Non-Adoption of recommended technologies

Recommended Technologies	Reasons for Non/lower -Adoption
NBeG-3	Large grain size and less market preference leads in lower adoptability of the variety comparatively to other varieties
NBeG-452	Less market preference

Study-2

Impact of Soil Health Card recommendations in Paddy cultivation at KC Canal area of Nandyal Dt.

The study was conducted in K-C canal belt of Nandyal dist. For the study purpose selected the farmers of those who taken soil testing under the KVK in 2019-20. Out of Selected 100 farmers only 40 percent of farmers were found adopting SHC recommendations in partial mode. Hence final sample size of the analysis was 40 respondents. The collected data was analyses using percentage and mean. The impact of STCR was calculated by production with and without STCR, Percentage change of with and without STCR by using following formula.
= (Production with STCR-Production without STCR)*100/Production without STCR. Later calculated B:C Ratio for the paddy crop for finding profitability of the technology.

The major objective of the study was to assess the impact of SHC recommendations on nutrient consumption patterns and crop yields in paddy. This impact was analyzed in paddy by the selected farmers as STCR and Non STCR recommendation of SHC. The responses obtained from the study were recorded and presented in Table 1.

1. Impact of Soil health card (SHC) results on farmers

1. change in dosage of fertilizers, manures and soil amendments (n=40)

Before-after/before*100

Particulars	Quantity (Kg/ac)		% change	Cost on Fertilizers (Rs./Ac)		Price deference	Production (qtl /ac)	
	Non STCR	STCR		Non STCR	STCR		Non STCR	STCR
N	138	90	53.26	930	620	310		
P	102	46	32.35	5400	2700	2700	**32.50**	**35.20**
K	30	26	13.33	2205	1470	735		
Micro Nutrients (Zn)	10	20	100	225	450	-225		
Sulfur	13	7		150	80	70		
Total				**8910**	**5320**	**3590**		
Total Cost of cultivation				**24860**	**20650**			

2. Economic impact of SHC Recommendations

Sl. No.	Reduction in cost/ac (Rs)	Production increase q/ac	Price of increased product (Rs.)	Net increase
1	3590	2.7	5600	9190

Table -2 reflecting that after using SHC Recommendations farmer get net increase of Rs. 9190/- per acre in paddy.

3. Economic impact of cultivation

Sl. No.	Yield (kg/ac)		Gross income		Net income		B:C Ratio	
	Non STCR	STCR	Non STCR	STCR	Non STCR	STCR	Non STCR	STCR
1	3250	3520	68250	73920	43390	53270	1.74	2.57

Price: 2100

The cultivation of paddy under SHC based fertilizer application gave high net returns Rs. 53270 per acre than non STCR method of fertilizer management received Rs. 43390.

4. Impact on incidence of pest and diseases

Particulars	Non STCR	STCR	Deference	% change
1. Incidence of Pest	32	18	14	43.00
2. Incidence of disease	21	19	2	9.52

5. Perceived constraints of respondents in adoption of SHC recommendations (n=40)

S. No.	Constraints	F	%
1	Less benefit	18	45
2	**Less knowledge**	**36**	**90**
3	**Fear on yield loss**	**38**	**95**
4	Complex to adopt the recommendations	16	40
5	Peers do not follow	29	72.5
6	**No visible results**	**32**	**80**
7	Unscientific method of collecting soil samples	19	47.5
8	**Un availability of straight fertilizers**	**36**	**90**
9	Unavailability of green manure seed	28	70
10	**Less credibility/faith on results of SHCs**	**32**	**80**

It is depicted (Table 5) that among the various constraints, the Fear on yield loss (95%) is the major constraint and which is followed by the less knowledge, un availability of straight fertilizer (90%) tempting farmers to non adoption of SHC recommendations found major constraints.

6. Suggestions to increase adoption level of SHC recommendations

S. No.	Suggestions	F	%
1	All farmers need to be covered under the SHC Scheme	21	52.5
2	Regular follow up on adoption of soil test reports	14	35
3	**Conduct of more number of demonstrations**	**38**	**95**
4	**Training on soil sampling and use of SHC to farmers and VAAs**	**32**	**80**
5	Quick distribution of Soil Test report	18	45
6	**Fertilizers should supply based on SHC Reports only**	**36**	**90**
7	Improve soil testing facilities	29	72.5

Apart from major constraints in the adoption of the SHC recommendations certain important suggestions were also provided by the farmers (Table 6). Most of the farmers (95%) suggested that require more no. of field

level demonstrations to get confidence on yield loss. Apart from it, farmers (90%) proposed to supply the fertilizers based on the SHC reports only.

Study-3

"SWOT Analysis on Drone Technology in Agriculture"

Internal Factor Evaluation (IFE) Matrix is a strategy tool used to evaluate drone technology to reveal its strengths as well as weaknesses. According David, F.R. (2009). The internal and external factor evaluation both tools are used to summarize the information gained from drone's external and internal environment analyses.
Based on pre designed questionnaire data was collected from 60 farmers those who are taking drone spraying more than twice, converted opinions as a coefficient and given the rating for the same.

Each key factor should be assigned a weight ranging from 0.0 (low importance) to 1.0 (high importance). The sum of all the weights must equal 1.0. The ratings in internal matrix refer to how strong or weak each factor is in a firm. The numbers range from 4 to 1, where 4 means a major strength, 3 – minor strength, 2 – minor weakness and 1 – major weakness. Strengths can only receive ratings 3 & 4, weaknesses – 2 and 1. The score is the result of weight multiplied by rating. Each key factor must receive a score. Total weighted score is simply the sum of all individual weighted scores.

The firm can receive the same total score from 1 to 4 in both matrices. The total score of 2.5 is an average score, 1 is low score, and 4 is high score. In internal evaluation a low score indicates that the technology is weak against its competitors.
For external factor evaluation rating number range from 4 to 1, indicates that 4-major, 3-Medium, 2-Low, 1-Very low.

Results: Indicated that IFE was found 2.51 average score and EFE found 2.86 also reflected that opportunities and threats are more than strength and weakness of the drone spraying in agriculture.

I. Strength and weakness of drone technology.

Table-1 Strength and weakness of the drone technology

S.No	Strength	Response		
		Coefficient	Rating	Score
S1	Uniform spraying of chemicals	0.07	4	0.28
S2	Usage of agriculture drone is time effective (10 min./ac)	0.05	4	0.20
S3	Cover large area in short period	0.06	4	0.24
S4	Useful in reducing the impact of pesticides on environment	0.02	3	0.06

S5	Reduce the cost on pesticides.	0.03	3	0.09
S6	It more effective and easy in tall and dense crops i.e. Maize, Jowar, Redgram and Paddy	0.12	4	0.48
S7	Best alternative to overcome labor scarcity	0.08	4	0.32
S8	Drone utilization helps to reduce drudgery	0.04	4	0.16
S9	Area of operations can understand by farmer	0.01	3	0.03
S10	It can operate at undulated areas	0.02	3	0.06
	Total strength score			**1.92**
	Weakness			
W1	High initial investment	0.03	1	0.03
W2	Low payload (10 lit.)	0.06	1	0.06
W3	Operation of drone require technical skill	0.05	2	0.10
W4	Battery discharging is very speed	0.06	1	0.06
W5	Need charging point for spraying larger area	0.10	1	0.10
W6	Availability of Spare parts is very low	0.07	1	0.07
W7	Repair and Maintenance services was poor	0.07	1	0.07
W8	If applied during the crop's flowering and fruiting stages, it could result in yield losses	0.04	2	0.08
W9	Poor maintenance leads to increase the drone maintenance cost	0.02	1	0.02
	Total weakness score			**0.59**
		1	**-**	**2.51**

4- Major strength, 3-Minor strength, 2-Minor weakness, 1- Major weakness

II. Opportunities and threats of drone technology

Table-2 Opportunities and threats of drone technology

S. No	Opportunities	Response		
		Coefficient	Rating	Score
O1	Drone helps in crop health management decision	0.10	4	0.40
O2	Promotion of drone may create jobs for unemployed rural youth	0.12	4	0.48
O3	Agril. drone enable precise and targeted crop monitoring & treatment	0.08	3	0.24
O4	Drones could be highly effective in assessment of crop	0.07	3	0.21

	losses			
O5	Broadcasting of Seed and fertilizer can also possible with drone	0.08	3	0.24
O6	Pest and diseases forecasting can possibly with drone data base	0.10	2	0.20
	Threats			
T1	Possibility of spray drift to the nearby crop fields	0.06	1	0.06
T2	> 12 mph wind speed affect the drone spraying	0.10	3	0.30
T3	Adverse weather conditions limit the effective use of drone	0.13	3	0.39
T4	It will be dangerous for the birds and pollinators	0.07	2	0.16
T5	Cannot operate nearby electricity lines (3 phase), Railway tracks and gas stations	0.05	2	0.10
T6	Increasing of competition for similar services	0.04	2	0.08

4-major, 3-Medium, 2-Low, 1-Very low

TOWS Matrix:

According to the Heinz Weihrich in 1999, developed suitable strategies by using the TOWS matrix with expanding the SWOT analysis data.

Table-3: TOWS matrix of drone technology in agriculture

TOWS	Strength (S)	Weakness (W)
Opportunities (O)	**SO Strategy** ☞ Improving the Location specific chemical spraying	**WO Strategy** ☞ Impart technical skill to rural youth for drone operation
Threats (T)	**ST Strategy** ☞ Plan to spray on morning times will improve drone efficiency	**WT Strategy** ☞ Maintain power banks/extra batteries to cover larger areas

III. Suggestions to improve the adoption of technology

a) Individual subsidy for purchasing of drone

b) SOP/ standard protocol for dosage

c) Providing of more drone service centers

d) Batteries capacity should be increase

Technology Week Celebrations

Types of Activities	No. of Activities	Number of Participants	Related crop/livestock technology
Gosthies	-	-	-
Lectures organized	8	-	-
Exhibition	3	-	-
Film show	2	-	-
Fair	0	-	-
Farm Visit	8	251	-
Diagnostic Practical	4	-	-
Distribution of Literature (No.)	1	251	Climate resilient technologies
Distribution of Seed (q)		-	-
Distribution of Planting materials (No.)	90	55	Distributed drumstick, dragon fruit and acid lime seedlings to the farmers
Bio Product distribution (Kg)	-	-	-
Bio Fertilizers (q)	-	-	-
Distribution of fingerlings	-	-	-
Distribution of Livestock specimen (No.)	-	-	-
Total number of farmers visited the technology week	-	268	Crop
Others	-	-	-

Training/workshops/seminars etc. attended by KVK staff:

Trainings attended in the relevant field of specialization (Mention Title, duration, Institution, location etc.)

Name of the staff	Title	Dates	Duration	Organized by
G. Dhanalakshmi	Soil Microbiology (In relation to Water use efficiency)	March, 2023	3 years	WASSAN
D.Balaraju	International Conference on Plant Health Management	15th to 18th Nov, 23 at PJTSAU, Hyd	4 days	PPAI
D.Balaraju	XII Biennial National Symposium of Agronomy	22-24, Nov, 2023 at ICAR-CCARI, Ela, Goa	3 days	ISA
D.Balaraju	Review and capacity building workshop of KVKs implementing the project “Outscaling of natural farming "	15-16, Dec.,23 at RARS, Chintapalli	2 days	ATARI, Zone 10 and ANGRAU
M. Adinarayana	HRD training programme on crop improvement in chilli	23.11.2023	1 day	HRS Lam Guntur Dr. YSRHU
M. Adinarayana	Best management practices in mango cultivation	21.11.2023	1 day	DE, Dr.YSRHU
E. Ravi Goud, SMS, (Agril. Extn.)	Value chain based agricultural extension by FPOs and Agri- startups	June-12-16, 2023	5 days	MANAGE
E. Ravi Goud, SMS, (Agril. Extn.)	National conference on NexGen Extension for Evolving Resilient Ecosystems	Sept. 25-27, 2023	3 Days	Extension Education Institute, Hyderbad

K. LakshmiPriya	Millet Conclave 2023 – Online	15/09/2023	-	NABARD and The Hindu Business Online
K. LakshmiPriya	E – Commerce for effective Agri-Food Business Management-Online	04/11/2023	-	College of Community Science, ANGRAU, Guntur
K. LakshmiPriya	Personal and Professional Management for Better Living-Online	08/12/2023	-	College of Community Science, ANGRAU, Guntur
K. LakshmiPriya	National Conference on Agri. Startups "KVK-A Technical Backstop For Innovations-Online"	27/05/2023	-	MYRADA KVK & NABARD, Chennia

Details of collaborative / externally funded / sponsored projects/programmes implemented byKVK.(2023)

S. No.	Title of the programme / project	Sponsoring / collaborating agency	Objectives	Duration	Amount (Rs.)
1	SPECIAL PROJECT ON COTTON	ICAR-CICR, Nagpur	Targeting Technology to Agro-Ecological Zones Large Scale Demonstrations of Best Practices to Enhance Cotton Productivity Through HDPS Cotton technology	1 year	7,81,950.00
2	Out scaling of Natural farming	ICAR	To create awareness on Natural farming to farmers in general. To impart training and exposure to Natural farming. To demonstrate Crop Based Natural Farming models in farmers fields.	5 years	Sanctioned 4.5 lakhs for 2nd year), till now released 1.71 lakhs only.
3	SCSP	NAARM	Promotion of Backyard Poultry	1 year	3,00,000.00
4	SCSP	CRPCA	Promotion of Conservation Agriculture practices	1 year	3,25,000.00
5	SCSP	C-SUCSeS	For Scalingup Climate Resilient Technologies in Rainfed Agriculture	1 year	3,00,000

Detailed report of each project/programme separately with objectives, nature of collaboration / programme, outcome of the collaboration etc.

- During this year, Implemented 12 field demonstrations of Natural Farming in different crop systems in Nandyal district for the year 2023-24 (Crops: Rice, Acidlime, Chillis, Blackgram, Sweet Orange, Cotton, Redgram and Multiple Horticulture Cropping, Turmeric and Banana).
- Conducted 2 training programmes and 5 awareness programmes on Natural farming and covered 360 farmers in the district.
- Established a Natural Farming Vegetable Block in 0.32 ha and Natural farming Rice block in 0.8 ha at KVK Demonstration Fields.

Cotton Project:

- **Name of Technology:** High Density Planting System in Cotton.
- **Under the Guidance of:** ICAR-CICR, Nagpur.
- **Objectives:** To enhance cotton Productivity.

  To make cotton cultivation suitable for Red and Light soils under rain fed conditions.

  To produce export quality kapaas.
- **Demonstrations conducted at:** Nandikotkur, Devanur, Pudicherla and Jalakanur villages.
- **Area of Demonstration :** 20 Ha. (50 Acres).
- **No. of Farmers involved :** 19
- **Targeted farmers group:** Small and marginal farmers.

Sl. No.	Activity	No. of Activities	No. of Participants
1	Farmer trainings	3	148
2	Field day	1	350
3	Work shop	1	450
4	Kisan mela	1	730
5	Online Review meetings by CICR members	4	Nodal officers, YPs.
6	Diagnostic Filed visits	24	220

Performance of technology Vs Local check (Increase in productivity and returns)

Practices	Plant Population (No./ha)	Yield q/ha	Gross cost (Rs./ha)	Gross Income (Rs./ha)	Net income (Rs./ha)	B:C
Farmer practices (120x30)	27777	9.25	41,373	61,235	19,862	1:1.48
Demonstration (90x15)	74072	10.82	39,965	68,980	29,015	1:1.72
% increase in yield		17 %				

S. No.	Cotton Yield		Farmers Practice	% increase in productivity	Technology gap (Kg /ha)	Extension gap (Kg/ha)	Tech. Index (Kg/ha)
	Potential Yield	Demo					
1.	22.5	10..82	9.25	17	11.68	1.57	51.91

Success stories

Success Story 1:

"Nutrient Management in Rice based on Soil Test Crop Response equation" in irrigated domains of Nandyal district of Andhra Pradesh

The agricultural production technologies of late are dovetailed with fertilizer application. Farmers have been using chemical fertilizers from mid fifties as part of soil fertility management and crop production.

The crops require sixteen essential nutrient elements for growth. Out of which thirteen elements are received from soil. The inadequate nutrition for plants is being supplied through fertilizers. Soil tests help in quantifying the nutrients that are expected to be available to the crop plants throughout its life cycle and in identifying the possible nutrients that might limit the crop growth and yield. The soil tests do not exactly measure the quantity of nutrient that will be available from the soil. Therefore, it is necessary to calibrate the nutrient status as 'available' by a given soil test with that of the response to applied nutrient through fertilizers or manures. Hence, success of any soil testing programme, as a diagnostic tool to quantify the kind and amount of nutrients that need to be applied in order to get the desired yield level, depends how precisely calibration is done.

It is well known that while soil fertility is concerned with the availability of nutrients from the soil to plant, crop growth and yield depend on several factors including variety, management practices, climatic conditions, disease and pest incidence and soil fertility. Hence, the deviation from the expected yield, even when various fertilizer nutrients are applied, must be understood from this angle. Soil test based fertilizer application indeed avoids wasteful expenditure on nutrient(s) that need not be applied and in rationalizing the apportionment of different nutrient quantities that need to be applied to reap maximum returns from the investment on fertilization. Hence, soil test based fertilizer application has to be popularized among the farmers.

Objectives:

1. To motivate the farmers towards soil testing.
2. To optimize nutrient application in rice based on STCR formula.
3. To improve soil health by reducing chemicals and by adding organics.
4. To improve productivity of rice by technology dissemination.
5. To reduce the cost of cultivation.

Methodology:

- The Demonstrations were organized in the KVK adopted villages of Allagadda, Gospadu, Dornipadu, Nandyal and Sirivella mandals of Nandyal district. The villages were selected based on PRA conducted in major crops in that particular village.
- All the farmers of the village along with farm women, and youth were involved in awareness meetings and campaigns on ill effects of excess usage of chemical fertilizers.

- Selected groups of farmers, women and youth were given training on soil sampling procedure and nutrient management in Rice before starting of the season at village level. The successful farmers who adopted the STCR recommendation were utilized for capacity building of new farmers.
- Demonstrations were conducted in farmer's fields to practically show them effectiveness of STCR technologies in reduction of cost of chemical fertilizers.
- Demonstrations were conducted in consultation with target group of adopted villages, local Water User Associations (WUAs) and Adharsa Rythus.
- STCR technology could be replicated in neighboring villages through awareness campaigns, trainings, exposure visits, mass media coverage, field visits, farmer's interaction meetings, field days etc.
- The Local Agriculture Extension personnel were involved in technology spread and adoption through trainings, field visits, field days etc.

Problem identification:

During the year 1950-51 fertilizer consumption in India was 0.065 million tonnes and by 2001-02 it reached to 17.54 million tonnes. The future requirement by 2025 is 35.00 million tonnes. This alarming situation may create lot of problems in soil health, cost of production, subsidies on chemical fertilizers and environmental degradation.

Farmers are continuously applying higher doses of chemical fertilizers than recommended particularly for irrigated crops like Paddy, Cotton, Chilies etc., which in turn increase the cost of production. It is also noticed that poor soil health is due to presence of inert/filled material in the chemical fertilizers/low soil organic matter content which results in leads to low fertilizer efficiency. Farmers are resorting to top dressing of complex fertilizers which was not recommended. Due to indiscriminate usage of phosphorus complex fertilizers, the "Phosphorus build up" in soil has been increased from low to high (as per bench mark survey of RARS, Nandyal in the command areas of Kurnool district, the soil testing reports of KVK, Yagantipalle and Yemmiganur .High Phosphorus in soil induces zinc deficiency in crops and increases the cost of production towards "P" nutrient.

Present knowledge on problem:

Rice is one of the major cereal crops and staple food crop grown in Nandyal district in an area of 79,484 ha in both *Kharif* and R*abi* seasons. Farmers are applying higher doses of fertilizers for rice crop i.e nitrogen (320 kg/ha) and phosphorus (160-200 kg/ha) against recommended doses of N (160 kg/ha) and P (80 kg/ha). It is also observed that cost benefit ratio is low i.e. 1:1.5 to 1:1.75. The increase in cost of production is due to excess application of chemical fertilizers and pesticides.

Due to low fertilizer use efficiency of the soil, blanket recommendation of fertilizers were inadequate for getting satisfactory yield i.e. 6.5 to 7.5 tones/ha. Hence, the farmers are resorting higher doses of chemical fertilizers.

Technology available to overcome the problem:

Fertilizer adjustment equations developed by All India Coordinated Research Project on Soil Test Crop Response, Hyderabad centre, are available for adoption now for major crops growing in different parts of the state. The equations are applied only when methods of analyses for N, P and K are the same as those indicated in the table 1.

Table- 1: Equations for soil test based major nutrient application:

S. No.	Crop	Season	Applicable soil test laboratory area	Soil type	Fertilizer adjustment equations (STCR formula)	Yield target up to q/ha
1	Rice	Kharif	Yemmiganur Anantapur Kadapa	Black soil	FN=3.35T-0.33 SN FP_2O_5=2.52T–4.53SP F K_2O =1.24T–0.12 SK	75

Note: FN, F $P_2O_5$and F K_2O represent fertilizer nitrogen, phosphorus and potassium respectively in kg ha^{-1} respectively.

- SN is available nitrogen estimated by Alkaline permanganate method expressed in kg N ha^{-1}
- SP is available phosphorus estimated by Olsen's method expressed as kg P ha^{-1}
- SK is estimated by neutral normal ammonium acetate method and expressed as kg K ha^{-1}
- T is targeted yield in q/ha ; STLs – Soil Testing Laboratori.

Implementation of demonstrations on Nutrient management in Rice based on STCR

Theme: Soil testing

Intervention: Nutrient management in Rice based on Soil Test Crop Response formula.

Location: KC Canal ayacut villages.

Trainings: Pre-seasonal trainings were organized on soil sampling procedure and soil test based nutrient management in all demonstration villages. Participatory demonstration was conducted on soil sampling. Training was given on time, dosage and method of application of chemical fertilizers in Rice.

Implementation of demonstrations

By using STCR formula, the KVK, Yagantipalle had conducted 300 demonstrations on Nutrient management in Rice @0.4 ha unit area at different villages of Dornipadu, Gospadu, Sirivella, Koilkuntla, Allagadda, Nandyal and Bandi Atmakur mandals of Kurnool district under KC canal and TBLLC since Kharif-2007 with a target yield of 75q/ha. As per the soil test reports, the N content in all soils was low, 'P' and K were medium to high. There was a wide difference in nutrient application i.e nitrogen and phosphorus were high in farmer's practice than STCR demonstrations where as potash was in reverse trend. Details of Soil nutrient status,

nutrient application in STCR demonstrations and farmer's practice are given in table-2.and graphically depicted in Fig. 1.

Table-2. Soil Nutrient Status, nutrient application in STCR demonstrations and farmer's practice (Check)

Year& season	No. of demo.	Area (Ha)	Soil available nutrient status(Kg/ha)			STCR based nutrient Recommendation in demo.(Kg./ha)			Nutrient application in Check /FP (Kg./ha)			Remarks
			N	P_2O_5	K_2O	N	P	K	N	P	K	
Kharif 2019	100	40	165	183	181	213	15	80	243	143	35	KC Canal area
Kharif 2020	100	40	180	186	349	211	31	75	310	200	38	
Kharif 2021	100	40	110	237	410	215	10	58	326	238	36	
Total/ Mean	**300**	**120**	**152**	**202**	**313**	**213**	**19**	**71**	**293**	**194**	**36**	

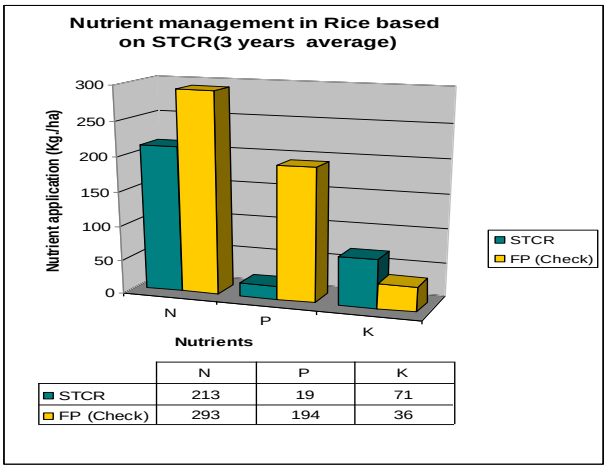


Fig.1

Field visits:

Visited demonstration plots at regular intervals along with farmers. During field visits explained about time, dosage, method of application of fertilizers, identification of pest and diseases and their control. It was observed that number. of effective tillers/ m^2 and number of grains/panicle were more in demo plots as compared to the check. Timely visiting of fields helped in early diagnosis of pest and disease problems and in their control. It was also noticed that the pest and disease incidence was high in check plots compared to demonstrations particularly BPH and blast incidences. Farmers were convinced on STCR based nutrient application in rice and expressed that number of sprayings (pesticides and fungicides) were less in demonstration plots as compared to check plots.

Field Days:

Field-Days were organized in each demonstration village. Technical Assistants, Subject Matter Specialists and Programme Co-ordinator participated in all the Field days. During the Field -day Importance of soil testing and how soil test based nutrient application (STCR) enhanced the yields and higher net returns per hectare in demonstrations were well explained. In each Field day WUA president and around 65-75 farmers were participated and shown interest to adopt Soil test based nutrient management in subsequent seasons.

Field- Day conducted at Dornipadu (vi.),

Yield and Economics

Yield:

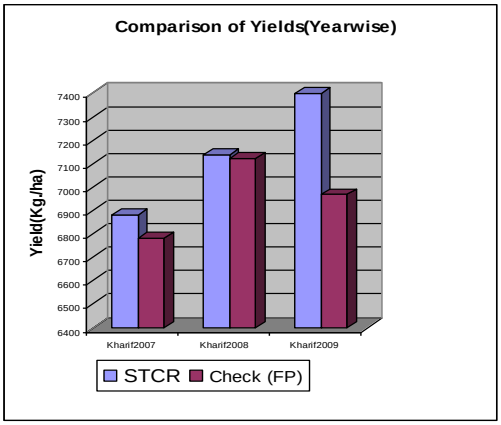
There is no significant difference in the yields recorded in STCR demonstrations and Farmer's practice (Check).However numerical increase in yield by 2.61 percent (3years average was observed in STCR over check (Table-3 & fig.2) due to more number of effective tillers/sq.mt and number of grains/panicle.

Crop cutting experiment at Kondapuram village

Table 3.Yields recorded in STCR demonstrations and farmers practice (Check) from 2019-2021.

Sl. No.	Season &Year	No .of demos.	Yield (Kg./ha)		% increase over check
			Demo (STCR)	Check (FP)	
1	Kharif 2019	100	6880	6783	1.43
2	Kharif 2020	100	7138	7122	0.22
3	Kharif 2021	100	7399	6968	6.19
	Total/Mean	**300**	**7139**	**6958**	**2.61**

Fig.2



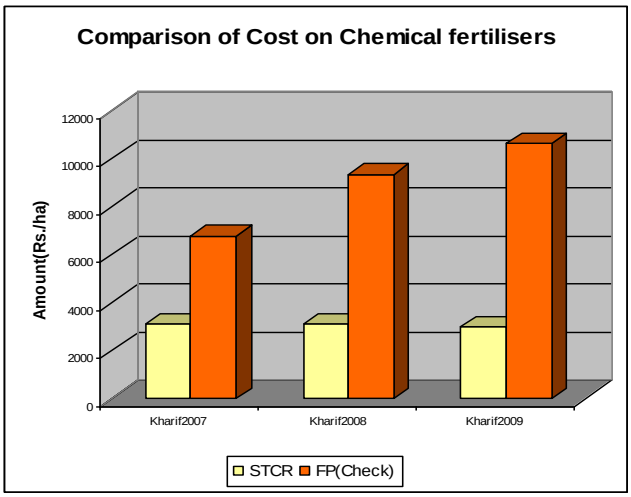
Sl. No.	Season &Year	No .of demos.	Fertilizer Cost (Rs./ha)		Saving on fertilizers (Rs./ha)
			Demo (STCR)	Check (FP)	
1	Kharif 2019	100	5865	12788	6923
2	Kharif 2020	100	6100	13575	7475
3	Kharif 2021	100	6980	14650	7670
	Total/Mean	**300**	**6315**	**13671**	**7356**

Cost of Chemical Fertilizers:

Cost on chemical fertilizers is too high in Farmers practice (Rs.13671/ha) when compared to STCR demonstration(Rs.6315/ha) which is 200 % higher than STCR due to indiscriminate application of chemical fertilizers particularly complex fertilizers as a top dressing .Net saving on chemical fertilizers was Rs.7356/ha in demonstration over check due to judicious application of fertilizers based on STCR.(Table.4 &Fig.3) which has been reflected in cost of cultivation(Shown inTable.5).

Table: 4 Cost of Chemical Fertilizer in STCR demonstrations and farmers practice (Check)

Fig.3



Cost of Production:

The cost of production was less in demonstration (Rs.62392/ha) as compared to check (Rs.68672/ha) and net difference in cost of production was Rs.6279-00 /ha (3 years average) due to judicious application of chemical fertilizers (STCR based recommendation) and pesticides. (Table.5)

Table.5: Comparison of Cost of Production in STCR demonstrations and farmers practice (Check)

Sl. No.	Season &Year	No .of demos.	Cost of production (Rs./ha)	
			Demo (STCR)	Check (FP)
1	Kharif 2019	100	60168	67222
2	Kharif 2020	100	62975	68250
3	Kharif 2021	100	64035	70544
	Total/Mean	**300**	**62392**	**68672**

Gross income, Net income & additional income: Gross and net income were high in STCR demonstrations than Check (FP). It was also noticed that an amount of Rs.10087/ha was a additional income (3years average) in demonstration due to low cost of production and yield increments. (Table.6)

Table.6.Comparison of Gross income & Net income in STCR demonstrations and farmers practice (Check)

Sl. No.	Season &Year	No .of demos.	Gross income (Rs./ha)		Net income (Rs./ha)		Additional income (Rs./ha)
			Demo (STCR)	Check (F P)	Demo (STCR)	Check (FP)	
1	Kharif 2019	100	144480	142443	84312	75221	9091
2	Kharif 2020	100	149898	149562	86923	81312	5611
3	Kharif 2021	100	155379	146328	91344	75784	15560
	Total/Mean	**300**	**149919**	**146111**	**87526.**	**77439**	**10087**

Cost-benefit ratio: Cost-benefit ratio was high in STCR demonstrations (1:2.40) than Farmer's practice (1:2.13) due to low cost of production and higher gross income in STCR demonstrations than check (Table.7).

Table.7.Comparison of additional income and C:B ratio in STCR demonstrations and farmers practice (Check)

Sl. No	Season &Year	No .of demos.	C.B Ratio	
			Demo (STCR)	Check (FP)
1	Kharif 2019	100	01:2.40	01:2.12
2	Kharif 2020	100	01:2.38	01:2.19
3	Kharif 2021	100	01:2.43	01:2.07
	Total/Mean	**300**	**1:2.40**	**1:2.13**

Farmer's feedback: Farmers were satisfied with crop performances and expressed that Soil test based nutrient management in Rice is a viable technology, because of less cost of chemical fertilizers and without reduction in yield compared to their own practice. Further, they felt that availability of complex fertilizers is inadequate and indiscriminate usage as top dressing in rice without knowledge of recommended fertilization and soil nutrient

status. They finally realized that they are resorting to higher expenditure on fertilizers in absence of soil testing of their fields. They are now willing to adopt the STCR technology in succeeding seasons for raising crops.

Extent of Adoption: So far STCR based nutrient management adopted 300 farmers of KC Canal ayacut villages covering 415 ha .The reduction in cost of fertilizers is around Rs.31 lakhs and also noted an amount of Rs.45 lakhs

Sl. No	Season & Year	No. of farmers adopted	Adoption in ha	Saving on fertilizers cost (Rs.)	Additional income for adopted farmers(Rs.)
1	Kharif 2019	100	112	775376	1018192
2	Kharif 2020	100	125	934375	701375
3	Kharif 2021	100	178	1365260	2769680
Total		**300**	**415**	**3075011**	**4489247**

as a additional income to farmers due to adoption of soil test based nutrient management in Rice. Area of adoption, no.of farmers adopted, saving on fertilizers cost and additional income were depicted in table 8)

Table.8: Adoption of Soil test based nutrient management in rice (year wise).

Summery and conclusion: The STCR based nutrient management in rice taken up in Kurnool district where the Paddy is grown as major crop under KC canal and TBLLC. As per the base line survey, the cost of cultivation was higher due to indiscriminate use of chemical fertilizers and pesticides resulting in low benefit cost ratio and built up of Phosphorus in soil (Shown in Table-2). Farmers are in look out for low cost and sustainable methods for better soil health and to reduce the cost of production without hampering yields. In search of effective methods, the Soil Test Crop Response (STCR) formulas have been derived by research scientists for different crops for precise nutrient management and reduce cost of production.

The STCR based fertilizer recommendations were tested as demonstration in the selected villages and it has been successfully proved that, in fields of high phosphorus built up, even without applying phosphotic fertilizers especially complexes, farmers got the same yields similar to that of applied ones. In other words, saving costs on fertilizers to the tune of Rs, 7356 per ha. (3 Years average shown in table.4) which is almost 50% of costs on fertilizers and also got an additional income of Rs.10087/ha(3 Years average shown in table.6). Farmers of the other villages through exposure visits have seen these demonstrations and one to one farmer interactions arranged effectively.

Further, paddy is a major crop in all canal areas is about 400-800ha per village and hence, there is scope to replicate the same technology in all paddy growing areas and thereby reduce cost of production especially on fertilizers cost i.e Rs.6500 to 7500 per ha.

Contributors: K.V.Ramanaiah,G.Dhanalakshmi and M.Sudhakar, Krishi Vigyan Kendra, Yagantipalle

Success Story 2:

Redgram/setaria intercropping system for drought mitigation

Introduction:

Small millets are grown on marginal lands with poor management practices, and their growing is limited to dry lands. Pulses in general and redgram in particular provide more stability and ensure better monetary returns. However to provide stability in the returns, it is always advisable that an cereal or short duration pulse crop is introduced as a component crop with pigeon pea without any considerable reduction in the yield of main crop.

Intercropping is an age old practice being followed by subsistence farmers to meet their domestic needs. The main advantage of the intercropping is that the component crops are able to use the growth resources differently and make better overall use of growth resources than grown separately. Pigeon pea is a late maturing, tall growing, wide spaced crop with deep root system can accommodate rapidly growing, short duration and short statured crops like millets and would prove to be a viable intercropping system.

Adverse weather conditions like delay onset of monsoon and prolonged dry spells during the crop period is very common in rainfed situation. Such situation results in economic losses to the farmers due to the partial or total failure of the sole crops.

Intervention:

To develop climate resilient alternative crop management systems and to insure against crop failure due to drought during crop growth, KVK adopted, Redgram + Seteria based intercropping systems. This practice has emerged as a significant drought coping strategy and resulted higher yields per unit area through better use of the bi-model distribution of rainfall.

Table No: Mean Yield and Economic Returns of Redgram and Setaria Intercropping for the last three years-2018-21

Treatments	Crop	Yield Kg/ha	Cost of Cultivation (Rs/ha)	Gross Returns (Rs/ha)	Net Returns (Rs/ha)	BC ratio	Redgram equivalent Yield (kg/ha)
Farmers Practice	Redgram (Sole)	937	21250	59031	37781	1:2.77	937
	Setaria (sole)	1875	16250	46875	30625	1:2.8	744
Improved Practice	Pigeon pea +Setaria Inter cropping(1:5)	607 (Redgram) 1605(Setaria)	25250	78372	53122	1:3.10	1242

Output:

Results of demonstration on intercropping of Red gram + Setaria in row ratio of 1:5 indicated that the net income was higher (Rs.53122/-) than sole crop of Red gram (37781Rs/ha) and Setaria (Rs. 30625/ha).The results on cropping system oriented demonstrations against drought mitigation clearly indicated that above inter cropping systems are economically advantageous than sole crops under rainfed situations.

From the results it is evident that the principle objective of intercropping in rainfed areas is to stabilize the productivity and enhance the returns in terms of increased net returns and benefit cost ratio as well. And also the intercropping acts as insurance under the changing monsoon conditions.

Farmers' feedback:

- Redgram and seteria intercropping system found to be remunerative than sole crop of seteria/redgram even under drought conditions.
- Fodder needs of cattle and milch animals were met.
- While maintaining the yield levels of the sole crop, additional yields with the intercropping component have been realized.
- Since, a food legume is involved in the system, it will not only enhance the income of the farmer, but also provide with the much-needed protein to supplement the predominantly cereal diet of farmers, besides adding fertility to the Soil.

Outcome:

Intercropping of Red gram and setaria in 1:5 row proportion resulted in the highest LER value of 1.49 coupled with highest yield of Redgram equivalent Yield. This practice was taken well by farmers of Kurnool district. Awareness on different Redgram based inter cropping systems was created and nearly 30 % of rainfed farmers were adopting the intercropping systems.

Contributors: M. Sudhakar, SMS (Sgronomy) and Smt. G. Dhanalakshmi, Senior Scientist & Head.

Success Story 3:

Performance of Pigeon pea based intercropping Systems in Rainfed Situation of Scarce Rainfall Zone of Kurnool district, A.P.

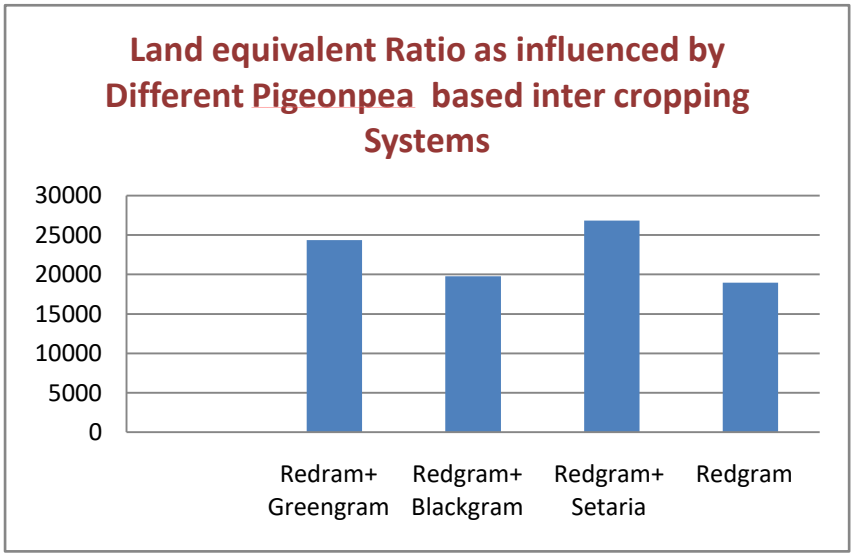
Introduction:

Adverse weather conditions like delay onset of rains and prolonged dry spells during the crop period is very common in rainfed situation. Such situation results in economic losses to the farmers due to partial or total failure of the sole crops. Pigeon pea is being cultivated in an area of 45,000 ha and yields are limited by the amount and distribution of rainfall during monsoon period. Pigeon pea is a late maturing, tall growing, wide spaced crop with deep root system can accommodate rapidly growing, short duration and short statured crops like millets and medium duration.

Interventions:

To develop climate resilient alternative crop management systems and to ensure against crop failure due to drought during crop growth. During the years 2016-2018 eighteen On-farm testings on Pigeon pea based intercropping systems were assessed under rainfed situation i.e. Pigeon pea + Greengram (1:5), Pigeon pea + Blackgram(1:5),T3: Pigeon pea + Setaria(1:5) and T4: Pigeon pea (Sole).

The results indicated that, among the cropping systems, intercropping of Greengram, setaria and Blackgram with pigeonpea resulted in maximum pigeonpea equivalent yield (1263 kg ha-1), 1244 and 1198 kg ha-1) over other intercropping system and sole Pigeonpea (986 kg /ha). The LER is high with Pigeonpea + Setaria intercropping system (1.67) compared to other inter cropping systems. Ahmad and Prasad (1996) also reported higher LER with little millet + Pigeonpea intercropping system.

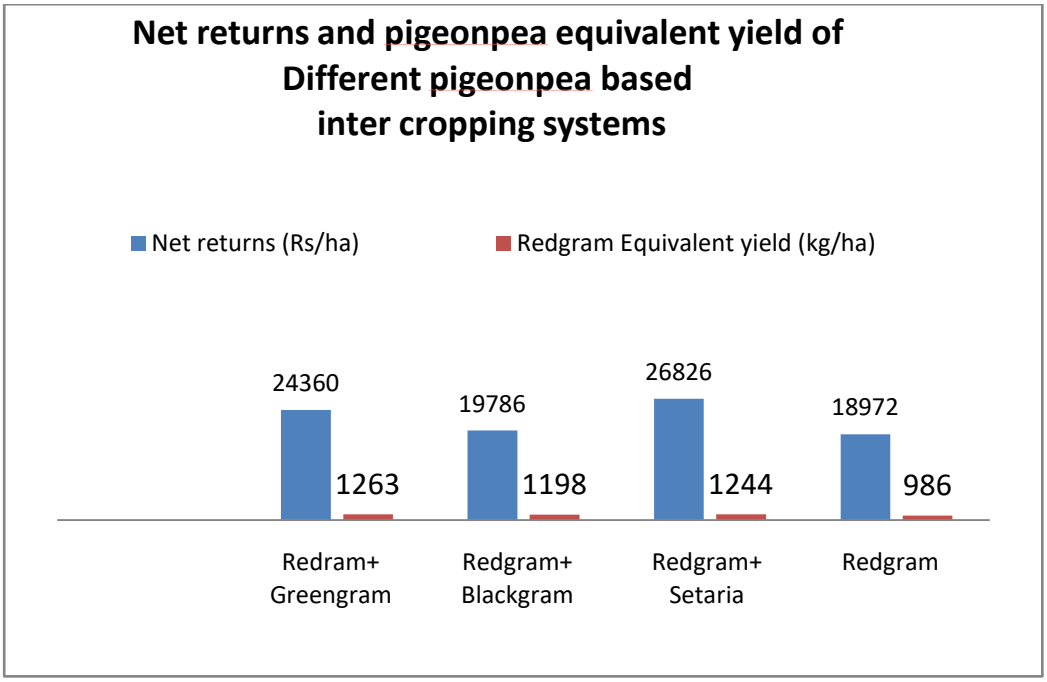


Among all intercropping Systems Pigeonpea + Setaria recorded highest net returns (26826 Rs/ha) followed by Pigeonpea + Greengram (24360Rs/ha) compared to Pigeon pea + Blackgram and Sole crop of Pigeon pea. From the results it is evident that the principle objective of intercropping in rainfed areas is to stabilse the productivity and enhances the returns in terms of increased net returns and benefit cost ratio as well. And also the intercropping act as a insurance under the conditions of Crop failures due to pest incidence, weed problems and changing monsoon conditions.

Table: **Pigeon pea based intercropping Systems in rainfed situation**

Mean Yield and Economic Returns of Redgram based for the last three years-2016-18

Treatments	Yield (Kg/ha)		LER	Gross returns (Rs/ha)	Redgram Equivalent yield (kg/ha)
	Redgram	Inter crop			
Redram+ Greengram	876	411	1.50	24360	1263
Redgram+ Blackgram	854	333	1.40	19786	1198
Redgram+ Setaria	840	1117	1.67	26826	1244
Redgram	986	-	-	18972	986



Redgram + Greengram

Redgram + Blackgram

Redgram + Setaria

Outcome:

Intercropping of Redgram with Greengram and Setaria in 1:5 row proportion resulted in the highest LER value of 1.24 coupled with highest yield of Redgram equivalent Yield. This practice was taken well by farmers of Kurnool district. Awareness on different Redgram based inter cropping systems was created and nearly 30 % of rainfed farmers were adopting the intercropping systems.

Success Story 4:

Success story of a Natural Farmer from Nandyal district

Introduction /Situation Analysis:

Sri. B. Jaya Rami Reddy, an educated progressive farmer from Chakravarthulapalli village of Chagalamarri mandal with a land holding of 7 ac of which 2 acres is under Acid Lime and the remaining is under bore well irrigation where he used to grow rice and jowar as field crops every year. He says that in most of the years, he was getting very low net income from this holding i.e. Rs. 2,20,000 as the yield of acid lime is poor (4600 kg) due to diseases and poor nutrition, costs were at increase year by year and fluctuations in market price for farm produce.

Figure 1 Navadhanya (cover crop)

Support & Implementation:

During 2018, when he was made part of KVK trainings on Natural and Organic farming, he was impressed by the idea of taking of intercrops in empty or vacated places in his orchard with multiple/mixed vegetable and other crops. He started practicing it from 2019 itself and saw better returns than past years both in the main crop and as additional income through intercrops. Inspired by this he made it compulsory in his field to grow intercrops in every crop he takes up. We have seen that his Acid lime orchard is also not giving economic returns, as few of the plants were lost due to citrus decline and few are severely diseased with blight and gummosis. We suggested corrective measures, which he took up from 2019 onwards in his orchard. We also recommended him to go for intercrops in the orchard to fill the gaps in them and to get some income from them. Later during the year, he attended our trainings on Natural/Organic farming and decided to convert his land slowly into Natural farming, as he is having sufficient cattle at his farm.

Figure 2 Preparing Jeevamrith

Figure 3 Intercrop of pulses in Maize

From 2020 onwards he is being practicing all the Natural farming principles in his field viz. Inter/Multiple cropping, Mulching to avoid exposure of land to sun, Use of farm prepared Jeeva/Ghana Jeevamrith, Various decoctions for pest and disease management and intensive cropping without leaving his field vacant even in summer.

Now, he is cultivating more than 10 intercrops in his 2 acres of Acid Lime orchard viz., Papaya, Banana, Drumstick, Guava, Sapota, Turmeric, Sugarcane, Vegetables, Castor, Blackgram, Greengram and Cow pea. The orchard is sown with Redgram as border crop.

Output:

He is applying FYM, Jeevamrith regularly to the orchard and could able to harvest the produce as under:

Produce	Yield (Kg)	Price (Rs/kg)	Revenue (Rs)	Expenditure (Rs)	Net Income (Rs.)
Acid Lime fruits	8,600	40/-	3,44,000-00	1,43,000-00	2,01,000-00
Vegetables, Cow pea, Papaya, Guava, Banana, Redgram			32,000-00	8,000-00	24,000-00
TOTAL			**3,76,000-00**	**1,51,000-00**	**2,25,000-00**

Figure 4 Intercrops in Acidlime Orchard

In agriculture land he is taking up Navadhanya sowing in summer as cover crop to save carbon, Maize and pulses as intercrop in Kharif in 3 ac and rice in 2 ac and black gram in entire 5 ac during Rabi.

Figure 5 Visit of Director, ATARI to Bioculture preparation site

And the agriculture crop production is as under:

Produce	Yield (Kg)	Price (Rs/kg)	Revenue (Rs)	Expenditure (Rs)	Net Income (Rs.)
Rice in 2 ac	4,200	25/-	1,05,000-00	56,000-00	49,000-00
Maize in 3 ac	8,400	17/-	1,42,800-00	66,000-00	76,800-00
Blackgram in 2nd season	3,000	60/-	1,80,000-00	1,20,000-00	60,000-00
Intercrops			15,000-00	5,000-00	10,000-00
TOTAL			4,42,800-00	2,47,000-00	**1,95,800-00**

Total net income = 225000 + 195800 = Rs. 420800

Thus, Sri. B. Jayarami Reddy is getting an income advantage of Rs. 2,00,800-00 from the same land holding with the adoption of Natural farming in his farm. Apart from this, his land quality is improving due to continuous addition of carbon to soil.

Outcome:

He is not only producing high quality, toxin free produce but also saving and improving the quality and health of his soil by adopting Natural Farming Methods. By seeing the success he got on continuous basis by adopting low or no cost Natural farming interventions, the other farmers of the village are attracted towards it and practicing some of Natural farming interventions like Use of Jeevamrith, Intercropping with Vegetables, Multiple crops for getting higher net income from their fields.

Success Story 5:

Multiple cropping systems in horticulture crops

SHE&CS –KVK, Yagantipalle has been working with farmers for converting to multiple cropping system in horticulture crops. In this context, the KVK has noticed many mono crop paddy farmers are getting lower yields and less net income; it's due to the soil become compact/hard and less organic carbon. Due to low yields and less market the income obtained was not able to meet the expenditure of his family. With multiple cropping the risk of total loss from drought, pests and diseases are reduced. Some of the crops can survive and produce yield. It gives maximum production from small plots.

Approaches, interventions and outcomes:

Mr. Masum Saheb, was a farmer from a village Chinnarajupalem of Banaganapalle mandal, Nandyal district in Andhra Pradesh. He was selected as one of the beneficiary of horticulture interventions during 2021-22. Chinnarajupalem village was selected as one of the adopted village of KVK, Yagantipalle. Under the guidance of KVK, Yagantipalle, he has converted 6 acres from mono cropping paddy to growing of multiple crops in horticulture like tomato, ridge gourd, dolichos bean, coriander and gogu for getting higher income throughout the year. To increase the yield levels of tomato and ridge gourd, KVK has supplied triple disease resistant hybrid of Arka Samrat seedlings in tomato, high yielding variety of Arka Prasan in ridge gourd and high yielding short duration variety of Arka Amogh in dolichos bean from IIHR, Hessarghatta, Bengaluru and recommended good ICM practices. He started following the recommended management practices in cultivation of different crops as per advised by the KVK, Yagantipalle. In an area of 6 acres, he is cultivating Tomato (2 acres), Ridge gourd (2 acres), Coriander (0.5 acres), Gogu (0.5 acres) and dolichos bean (1 acre). Instead of using chemical fertilizers/pesticides he adopted integrated nutrient management and integrated pest & disease management practices, he applied dung obtained from buffaloes and vermicompost as organic manure. He also used Jeevamrutha, Panchagavya, neem oil, Ghana Jeevamrutha for growth, pest and disease control.

After adopting the high yielding varieties and technical interventions he was able to double his income levels. Based on the previous experience of relatively lower yields, net returns and CB ratio (125q, Rs. 1,12,000 & 1.62 respectively) in mono cropping of paddy cultivation in 6 acres of land (Table 1). However, he was getting good yields, net returns, and CB ratio by adoption of multiple cropping system in horticulture after interventions and technical support by KVK Yagantipalle. It was observed that tomato hybrid Arka Samrat recorded maximum yield (493.2q), net income (Rs.136796) and CB ratio (2.24) in 2 acres of land. Another intervention by cultivation of high yielding ridge gourd variety Arka Prasan recorded good yields (223.5q), net income (Rs.2,30,852) and CB ratio (3.16) in 2 acres land. Adoption of short duration high yielding variety Arka Amogh in dolichos bean has recorded maximum yield (51.64q), net income (Rs.78560) and CB ratio (2.95) in 1 acre. Meanwhile, adoption of leafy vegetables like coriander and gogu has recorded good yields (16.24q, 27.57q), net income (Rs.22486, Rs. 25504) and CB ratio (4.81, 6.18) respectively (Table 1). He is selling produce to local villages and Banaganapalle market as organic produce. He is investing less cost on fertilizers and pesticides. However, by seeing these

interventions nearby villages of Cherlokkothuru, Krishnagiri, Yagantipalle farmers are following multiple cropping systems in horticulture.

Table 1: Adoption practice and economics of before & after interventions

Crops	Area (Acre)	Production (Q.)	Cost of cultivation (Rs.)	Gross Income (Rs.)	Net Income (Rs.)	CB ratio
Before intervention						
Paddy	6ac	125Q	130500	212500	112000	1.62
After intervention						
Tomato (Arka Samrat)	2ac	493.2Q	109804	246600	136796	2.24
Ridge gourd (Arka Prasanna)	2ac	223.5Q	106498	337350	230852	3.16
Coriander	0.5ac	16.24 Q	5899	28385	22486	4.81
Gogu	0.5ac	27.57Q	4923	30427	25504	6.18
Dolichos bean (Arka Amogh)	1ac	51.64Q	40230	118790	78560	2.95
Total	**6ac**		**267354**	**761552**	**494198**	**2.84**

Fig 1: Performance of Arka Samrat in tomato and multiple cropping system

Fig2: Performance of Arka Amogh in dolichos bean and Arka Prasan in ridge gourd crop

Contributors: M. Adinarayana, SMS (Horticulture) and G. Dhanalakshmi, Senior Scientist & Head.

Success Story 6:

Gender Main Streaming in Promotion of Millets for Economic Sustainability–A Success Story of Women Agripreneurs of Nandyal dt., Andhra Pradesh

Millets are important traditional Crops in Andhra Pradesh growing in sizeable area. Particularly in Nandyal district Jowar is grown in an area of 43884 ha, Foxtail732 ha, Bajra 2884 ha. Millets are high energy, nutritious foods with good amount of dietary fiber and essential minerals compared to other cereals. The added advantage of Millets is the slow digestibility and it is good diet for people with lifestyle disorders.

The decentralized, small scale house hold based economy of food production and food processing is advantageous for young rural farmers for Economic Sustainability. Keeping this in view, KVK focused on Secondary Agriculture i.e., Value Addition in establishment of small scale food processing units at village level by motivating and involving Farm and SHG Women in rural areas.

- **Approaches, Interventions and outcomes:**
- **Plan, Implement and Support:**

Smt. K. LakshmiDevi w/o Sivaiah of Banaganapalle Village of Banaganapalle mandal was interested in establishing Millet Food Processing unit at Banaganapalle and brings the Millet products at the door steps of the public with ensured quality supply.

KVK suggested the entrepreneur to establish the millet processing unit with high end technology with high put and technically guided for the procurement of machineries. KVK extended technical guidance right from the purchase of machineries, training and till the processing of millets. She purchased Millet processing machineries i.e., destonner, grader cum Aspirator, dehuller, pulveriser, suji making machine by investing an amount of Rs. 15.0 lakh on machineries and Rs.25.0 lakh on shed Construction and electricity supply by hiring loan from bank.

Output:

She underwent training on installation and product preparation at Millet unit established by KVK. She was also taken to exposure visit to Indian Institute of Millet Research, Rajendra Nagar for further strengthening her skills and knowledge in running millet processing unit. She started processing activities of all millet primary, secondary and tertiary products.

Outcome:

"AYURGUNA" was the outcome of her hard work. All the products were labeled on the brand name of Ayurguna under the manufacturing company "Lakshmi Foods". All millets (Sorghum, Ragi, Bajra, Seteria, Kodo ,Proso, and Little Millet) primary and secondary products prepared are Rice, Suji, Flours, Mixed Millet Suji, Mixed Millet flours etc with turnover of 218 qtls/annum on total sale of all millet products realizing an

net income of Rs. 2,39,800/-. Ayurguna Raagi Malt reached many stores across the state.

Impact of Intervention:

Millet Unit established by her is an inspiration to many enthusiastic entrepreneurs throughout the district and the State. New entrepreneurs across the State are approaching her in establishing millet units. Students from Agri clinics and Agri business Colleges, SHG women members, FPO Members, Students from Agriculture colleges visited the unit and inspired with her success.

Supporting Images:







Impact of KVK activities (Not to be restricted for reporting period).

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Basic & Advanced Tailoring	30	90.0	-	4500.00
Jute Bag Making	30	45.83	-	3700.00
Millet Value Added Products	55	32.72	-	4200.00
Production and use of various bioinputs for natural farming	104	28%	15,000/-/ one village outlet	50,000/- one village outlet.
FAW management in Maize	32	22%	25,000/- per ac.	35,000/- per ac.
Use of cow based inputs in Rice under Natural farming	80	25%	28000/- per ac	48000/- per ac

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

Impact of five select technologies assessed/demonstrated/popularized by the KVK in the district (in QRT format)

1. Semi dry Rice cultivation K.C .canal area of Scarce Rainfall Zone of Kurnool district, A.P.

Situation analysis/Problem statement:

Transplanted rice has deleterious effects on the Soil environment and nearly 30% of total Water used (1,400 – 1,800 mm) in rice culture is consumed mainly during Puddling and transplanting Operations. Puddling requires lots Water at a time when there is little Water in the reservoirs, destroys Soil structure and adversely affects Soil Productivity. Therefore, a key concern is how the farmers can avoid Puddling and transplanting operations without yield penalty.

Plan, Implement and Support:

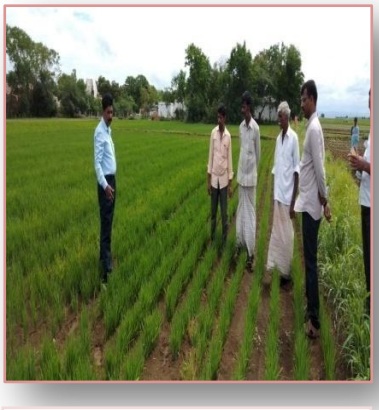
After assessment of technology for three years, the successful result of the technology is considered for large scale adoption in the district. In order to create awareness on semi dry cultivation In Rice trainings were conducted to the farmers, adarsha rythus and extension personnel and results were published in Daily news papers. Extensive coverage through mass media also helped to reach more number of farmers in the district. Organized Demonstrations on semi dry cultivation In Rice in different locations of Kurnool district provided critical inputs i.e seed, herbicides to the selected farmers. During the crop period field visits were organized to the farmers and others farmers from different villages to show the performance of the technology.

Intervention:

Direct Seeded rice which removes Puddling and drudgery of transplanting the young rice Seedlings provides an option to resolve the adaphic conflict and enhance the Sustainability of rice and Subsequent cropping system. DSR overcomes the problem of Seasonality in labour requirement for rice nursery raising and transplanting operations. DSR facilitates timely establishment of rice and Succeeding crops.

Mean Yield and Economic Returns of Semi Dry rice cultivation:

Particulars	Yield (kg/ha).	Cost of production (Rs)	Net returns (Rs/ha	CB ratio
Semi Dry **Rice**	7453		79154	1:2.43
Farmers practice	7125		56700	1:1.79



- **Output and Outcome:**
- The results revealed that semi dry cultivation In Rice has recorded increased net returns of Rs 22454/ha.
- **This technology has spread very quickly in the district due to:**
- Approx. 50% reduction in seed rate compared to transplanted method is observed in DSR.
- 20-40% of reduction in water usage compared to transplantation method.
- Harvesting can be done in 7 to 10 days ahead.
- As seeding is done by the tractor, nursery and the transplantation labour is not required.
- In the transplantation method we need 10-15 labourers, where as in the direct-seeding method one person per one hour is enough to finish the seeding process.
- Because of the recent advances in improved efficiency of pesticides and herbicides, initial growth phase of the weeds can also be eradicated.
- Optimum plant population can be maintained.

Impact of Intervention:

Semi dry cultivation of Rice has spread very quickly not only to the interior pockets of the district. Farmers are reaping good returns due to less cost of cultivation and higher net returns. The impact was spread to different parts the district. Awareness on semi dry cultivation was created and nearly 15-20 % of Command area farmers were adopting the method.

Direct sown paddy with Drum seeder - A success story:

Transplantation is one of the component involving labour, time and money in cultivation of paddy. Due to scarcity of labor in peak season sowings are often delayed resulting in yield reduction due to transplanting of aged seedling and also running short of time for second crop. Changed scenario of resources availability was noticed by the farming community and it lead KVK for introduction of conservation technologies which can be feasible viable and adoptable. Thus drum seeder was chosen for on farm testing in kharif 2008. Eight rowdrum seeder from TNAU was brought and on farm testing was organized in 2 ha with 5 farmers besides on station trail at KVK farm in 2008-09 and 2009-10 and 2010-11.

As seeing is believing farmers were invited to KVK on the day of sowing to build their confidence. Hands on experience was gained by them and sowing with drum seeder was done despite of the disagreement with the

fellow farmers. Capacity building on use of weedicides was also done to arrest the weed growth which is a major constraint in direct sown paddy. Duration of the crop reduced by 15 days(135 days) and the yield was enhanced by 10%.This created confidence among them during the first year it self which lead to adoption of this technology in rabi season.

Based upon the success, farmers from nearby villages have purchased five drum seeder from TNAU, Coimbatore for their use with the facilitation of KVK .This technology has attracted all categories of farmers due to easy operation, less weight, line sowing with less seed rate (15 kg / acre) more tillers, early maturity etc., apart from savings in transplanting cost. This paved the way for usage of cono weeder for weeding.

Box item for APR 2023

(Similar to APR 2022)

Name and contact details of farmer, few lines of farmers statement / achievement, good quality photo.

Name	:	Bala Maddilety
Contact Details	:	8465953244
Farmers Statement/Achievements	:	• Farmer is growing Rice under Natural Farming since 2016-17 in an area of 3 acres during Kharif. • In the same field, he is taking up Blackgram/ Greengram/ Mustard (during rabi) and Navadhanya (during summer) as cover crop. • He is getting an average yield of 24 to 26 qtls. of Rice/acre, which he mills as Rice and marketing to his peers and relatives at a premium of Rs. 800/qtls thus realizing Rs. 19,200/- additional net income per acre.
Photo	:	

Name	:	M. Harinath
Contact Details	:	9618974717
Farmers Statement/Achievements	:	• He established Millet Food Court at Nandyal (3 branches) after attending training at KVK in preparation of breakfast, lunch, dinner, sweets and savouries with Millets. • He is preparing breakfast, lunch, dinner, sweets and savouries with Millets and serving to the public. With this food court he also created employment for 10 people. • He also started Home deliveries for supply of Millet foods in tie up with Zomato. • He is getting a net income of Rs. 90,000/month.

Photo	**:**	

One case of successful technology application and dissemination:a technology which has passed through OFT, FLD, Trainings, Mainstream Extension (State Department of Agriculture), large scale adoption by farmers (in terms of area, additional income, input savings, saving of natural resources *etc*.**)**

Linkages

Functional linkage with different organizations

Name of organization	Nature of linkage
ICAR-CICR, Nagpur	Implementing special project on cotton at KVK jurisdiction
NAARM, Hyderabad	SCSP
CRPCA	SCSP
C-SUCSeS	SCSP

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, and participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

AWARDS and RECOGNITIONS

KVK, KVK Staff, KVK Contact Farmers etc. at district, state, national and international level supported by copies of certificates and photographs

KVK

Smt G. Dhanalakshmi,
Senior Scientist & Head, KVK, Yagantipalle receiving
Best Institutional Film – ICAR-KVK Award- 2023

KVK Staff

Sri M. Sudhakar, SMS (Agronomy)
RYTHUNESTHAM AWARD – 15.10.2023

Sri A. Krishnamurthy, SMS (AH)
Best Extensional Professional – Veterinary Extension Progessional Award – 19.08.2023.

KVK Contact Farmers received following award

Sri Dhonapati Chinnapu Reddy,
District Millionaire Farmer of India Award - Dec-6-8-2023.

Important Visitors to KVKs during 2023 (with photographs)

Interface Meet with Director, ICAR-ATARI, Zone-X.

PHOTOS

OFTs

OFT- Assessment of saline tolerant crops in Rice

OFT- Assessment of Nano urea in Rice

Assessment of Performance Maize based cropping Sequences

OFT onAssessment of Performance of Pigeon pea and small millets Inter cropping Systems under Rainfed situation

KVK, Yagantipalle_OFT_Assessment of different options for management of Black Thrips (Thrips parvispinus) in Chillis1

KVK, Yagantipalle_OFT_Assessment of different options for management of Black Thrips (Thrips parvispinus) in Chillis2

Assessing the performance of okra varieties

Assessing the performance of dolichos beanvarieties

Probiotics to calves

OFT on Distillary stillage supplementation to ram lambs1

OFT On Assessment Of Foxtail Varieties For Value addition

OFT On Ragi Varities

FLDS

FLD - Soil test based nutrient management in Maize

FLD - Soil test based nutrient management in Chickpea

Redgram + setaria- Bengalgram

FLD_Demonstrating CREMIT for PBW management in Cotton

FLD on Demonstration of GA3 on chrysanthemum.

FLD on Dolichos bean Arka Amogh

FLD on Mixed fodder production

FLD On Nutrigarden1

Farmers and Farm Women

Training PF. Management practices of chrysanthemum and banana

Training programme on Sheep and Goat management

Rural Youth

Rural youth.Skill Training Nursery worker

Skill Training for rural youth on Drone operations and maintenance

Extension Functionaries

Inauguration of DAESI Programe 2023

One day training programme to RBK staff

One photo for Annual Zonal Award

BEST KVK ROLING TROPHY AWARD - 2022