ANNUAL PROGRESS REPORT 2020 (1st January 2020 to 31st December 2020)

1. GENERAL INFORMATION ABOUT THE KVK

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

a) Name of the KVK	:	Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle
b) Address	:	Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle (P) Banaganapalle (M) Kurnool (Dt.) A.P.
c) Landline Phone No.	:	
d) Fax No.	:	
e) Official Mobile No.	:	9440607424
f) email ID	:	pendekantikvk@rediffmail.com pendekantikvk@gmail.com

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

a) Name of the Host Organization	:	Shri Hanumantharaya Educational & Charitable Society
b) Status of the Host Organization	:	NGO
c) Address	:	Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle (P) Banaganapalle (M) Kurnool (Dt.) A.P.
d) Landline Phone No.	:	
e) Fax No.	:	
f) Official Mobile No.	:	9440607424
g) email ID	:	pendekantikvk@rediffmail.com pendekantikvk@gmail.com
h) Name of the Chairperson	:	**Sri. P. Balaji**

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Smt. G. Dhanalakshmi	Illurukothapeta (V & P), Banaganapalle (M), Kurnool (Dt.), Andhra Pradesh.	9440607424	dhanaguru12@gmail.com

1.4. Year of sanction: 1989

1.5. Month and Year of establishment: December, 1989

1.6. Total land with KVK (in ha) : 20 ha

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

1.7. Infrastructural Development:

B) Buildings:

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	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(6)	ICAR	1998	650	32.27	1992-93		
4.	Demonstration Units (3)	ICAR	1992-93	300	6.5	1992-93		
5	Fencing	ICAR	2005-06		6.5	2004-05		
6	Rain Water 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. Run	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) Equipments & 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 Casette 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

1.8. A). Details SAC meeting conducted in the year:

Scientific Advisory Committee meeting for the year 2021-22 was held under the chairmanship of Sri. **P. Balaji**, Secretary, KVK on 20.02.2021.

Field visit was made by ADR, DE Representative and other members to the demonstration units existing in KVK i.e. Vermicompost, IFS, Dairy, Custom Hiring center, Poultry etc.

The session began with the Presidential address of Sri. Pendekanti. Balaji, Secretary, KVK and opening remarks from Dr. T. Murali Krishna, ADR, RARS, Nandyal and Dr. T. Gopi Krishna, Principal Scientist (Agril. Extension), ANGRAU.

Smt. G. Dhana lakshmi, Senior Scientist and Head, KVK gave the presentation on the action taken on the minutes of the last SAC meeting, and overall achievements of KVK. Thereafter the Subject matter Specialists made their presentations.

Subject wise observations / Suggestions made by the House are as under:

SMS – Agronomy (Mr. M Sudhakar):

- K-1812 variety of Groundnut is included in CFLDs based on the recommendations of ARS, Kadiri.ADR pointed out that the variety was suitable for Kharif only.

SMS - Plant protection (Mr D. Balaraju):

- Management of Podfly in Redgram: Instead of Dimethoate, Novaluron may be included.
- Management of Pink Boll Worm in Cotton: Use of mating disruption paste instead of pheromone traps may be tested.

SMS – Extension (Mr. P. Nagarjuna Reddy):

- Suggested to change the title of technology interventions as technology spread.
- Suggested to identify the technology gap in CFLDs impact studies other than seed and the reasons of non adoption of other recommendations on a sustained basis

SMS Horticulture (Mr. M. Adinarayana):

- Dryland Horticulture model can be developed and established at KVK.

Dr. T. Murali Krishna, ADR, RARS, Nandyal:

- Action Plan should be prepared keeping in view the issues related to farmers.
- New Programmes of scientists should focus on technologies that double the farmers income.
- Farm mechanization should be given attention.
- Newly developed improved varieties should be introduced and popularized which increases the income of the farmers.
- KVKs should work with RBKs in implementing the activities and the agriproducts developed should be promoted through RBKs.
- Conclusion should be given to OFTs and FLDs that have been completed for three years with a tabular data.

Dr. T. Gopi Krishna, Principal Scientist ANGRAU: Informed the house that Diagnostic Bulletins for majority of the crops are available with ANGRAU to help the farmers in identifying pests and diseases they encounter. The same information bulletins will be made available through Rythu Bharosa Kendras of Department.

Dr. M.R. Sreenivasulu, ADR (Retired), RARS, Nandyal:

- KVK is performing well in varietal spread. Priority also should be given more on technology spread.

Dr. Varma, ADAH, BPL:

- Implementation of programmes in other villages of the mandal.
- More number of trials on hormone therapy can be conducted.
- Organization of health camps in convergence with KVK.
- Supply of concentrate feed through RBKs on cost basis.
- More trainings on ration balancing programmes should be taken up.

Smt. Srilatha, DPD, ATMA:

- Management of Gemini Virus in Chilli can be included in Action plan.

Dr. T. Srinivas, PC, KVK, Banavasi:

- OFTs and FLDs can be done in convergence as an Interdisciplinary approach with other Scientists of KVK for effective analysis of the yield component.
- In Oft/ FLD the farmer's should be given clearly.

Dr. Sujathamma, DAATTC, Banavasi:

- Seed production on super early varieties in Redgram was suggested.

Sri. Vijay Bhaskar Reddy, Farmer:

- Round the year production of vegetables and chilli nursery for supply to farmers.

Sri. Chinnapu Reddy, Farmer:

- Shared his innovative way of Management of Fall army worm in Maize.

List of participants:

S. No.	Name	Designation
1.	Sri. P. Balaji	Secretary, SHE&CS.
2.	Dr. T. Murali Krishna	ADR, RARS, Nandyal.
3.	Dr. T. Gopi Krishna	Principal Scientist, DE, LAM, Guntur.
4.	Dr. M.R. Sreenivasulu	ADR (Rtd.), Banaganapalle.
5.	G.M. Srilatha	DPD, ATMA, Kurnool.
6.	Dr. P. Sujathamma	Coordinator, DAATTC, Banavasi.
7.	Dr. D. Lakshmi Kalyani	Scientist (Agro.), RARS, Nandyal.
8.	M. Jyostna Kiranmai	Scientist (Agro.), RARS, Nandyal.
9.	S.K. Sameera	Scientist (GPBR), AICRP-Sorghum, RARS, Nandyal.
10.	Dr. T. Srinivas	PC, KVK, Banavasi.
11.	Dr. G. Prasad Babu	SMS (Ext.), KVK, Banavasi.
12.	Dr. C. Venkata Ramana Varma	AD (AH), Banaganapalle.
13.	Dr. B. Pedda Swamy	ADAH, Panyam.
14.	Dr. D. Chinna Babu	VAS, Tangutur.
15.	Dr. M. Rama Kumar Reddy	VAS, Palukur.
16.	G. Ramasubba Reddy	Manager, Vijaya Dairy, Banaganapalle.
17	G. Dhanalakshmi	Senior scientist & head

List of Farmers attended:

S. No.	Name	Designation
1.	Y. Jagadeesh	Farmer, H. Kottala.
2.	B. Chinna Rao	Farmer, H. Kottala.
3.	J. Hari Krishna	Farmer, Gumpramandinne.
4.	S. Vijay Bhaskar Reddy	Farmer, Yagantipalle.
5.	B. Siva Shankar Reddy	Farmer, Yagantipalle.
6.	B.V. Subba Reddy	Farmer, Banaganapalle.
7.	B. Dhanunjaya Reddy	Farmer, Mittapalle.
8.	C. Sudhakar	Farmer, Illurukothapeta.
9.	D. Chinnapu Reddy	Farmer, Banaganapalle.
10.	B. Pratap Reddy	Farmer, Yagantipalle.
11.	Ameer Vali	Farmer, Banaganapalle.

The meeting was ended with vote of thanks by the Senior Scientist & head, KVK, Yagantipalle.

2. DETAILS OF DISTRICT (2019-20)

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
Kurnool Dist.	-	27 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 for 2020:

Kharif:

S. No.	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	PADDY	71358	33, 00,092.4	51.66
2	JOWAR	706	5,614.76	14.36
3	BAJRA	7841	1, 13,115.84	17.44
4	MAIZE	31490	15, 43,510.98	41.49
5	KORRA	10245	27,307.36	8.24
6	REDGRAM	73539	2, 42,829.47	3.77
7	GREENGRAM	1434	3,071.74	5.18
8	BLACKGRAM	8531	35,741.16	8.19
9	HORSEGRAM	0	0	1.29
10	GROUNDNUT	88266	3, 75,168.41	4.19
11	SESAMUM	0	0	2.28
12	SUNFLOWER	1454	5,046.54	6.98
13	CASTOR	20545	92,560.92.	4.71
14	SOYABEEN	1328	12,244.16	9.22
15	OTHER OIL SEEDS	10		
16	CHILLIES	15584		
17	ONION	19454		
18	TURMERIC	1636		
19	SUGARCANE	642		
20	COTTON	233933		
21	TOBACCO	8		
22	OTHER CROPS	23532		
	TOTAL	**611536**		

Rabi:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	PADDY	28196	9,13,339.35	70.95
2	WHEAT	101		
3	JOWAR	55867	13,63,462.77	21.39
4	BAJRA	312	2,969.22	13.94
5	MAIZE	9531	575,251.56	78.78
6	KORRA	86	610.60	7.10
7	HORSEGRAM	203	1,006.88	4.96
8	GREENGRAM	952	1,518.05	4.85
9	BLACKGRAM	15631	67,356.38	6.37
10	REDGRAM	2268	12,860.98	5.83
11	BENGAL GRAM	173632	-	
12	COWGRAM	1	-	
13	CHILLIES	233	-	
14	CORIANDER	440	-	
15	GROUNDNUT	14030	234,485.28	26.64
16	SESAMUM	663	1,113.60	2.90
17	SAFFLOWER	75	-	
18	SUNFLOWER	1333	11,445.30	12.15
19	RAPE & MUSTARD	1190	-	
20	CASTOR	154	2,043.60	5.20
21	OTHER OIL SEEDS	0		
22	SUGARCANE	20		
23	ONION	2365		
24	COTTON	3		
25	TOBACCO	4653		
26	OTHERS	5349		
	Total	**317288**		

2.5. Weather data:

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
Jan	16.6	30.4	14.5	
Feb	0.4	32.7	19.1	
March	0.0	35.8	22.3	
April	11.5	39.4	25.4	
May	35.5	39.7	27.6	
June	148.8	37.2	24.3	
July	260.7	34.4	23.7	
August	132.1	34.4	24.5	
September	302.9	33.5	23.2	
October	140.4	33.5	21.5	
November	45.1	32.5	19.5	
December	3.3	33.0	18.1	

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

Category	Population	Production	Productivity
Cattle			
Crossbred	3,167	16,468	5.2
Indigenous	4,90,397	98,079	0.2
Buffalo	6,46,453	7,75,743	1.2
Sheep			
Crossbred			
Indigenous	13,91,474		
Goats	6,07,907		
Pigs			
Crossbred	-		
Indigenous	-		
Rabbits	-		
Poultry			
Hens			
Desi	12,25,241		
Improved			
Ducks			
Turkey and others			
	Area	**Production**	**Productivity**
Fish			
Marine			
Inland			
Prawn			
Scampi			
Shrimp			

2.7. Details of Adopted Villages (2020):

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 Servella	Sreenivasapuram Govindapalli		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	Banaganapalli	Banaganapalli	Yerragudi Jolapuram Meerapuram		Redgram cotton	Low productivity	Integrated crop management in Redgram and Crop geometry in cotton

3	Banaganapalli	Banaganapalli	Yagantipalle		Rice, Maize, Vegetables	Indiscriminate use of Fertilizers and Pesticides	INM and IPM
			Meerapuram, Jolapuram		Redgram, Greengram, Korra	Indiscriminate use of Pesticides, Poor choice of varieties	ICM and IPM
4	Owk	Owk	K. Sunkesula		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
5	Dornipadu	Dornipadu	Ramachandrapuram		Rice, Cotton, Blackgram	PBW in cotton is increasing. Bud necrosis in Blackgram is noticed.	FLD on Bt Cotton FLD on Blackgram
			Dornipadu		Bt.cotton, Rice and Jowar	Indiscriminate and excess application of chemical fertilizers and increased cost of production.	FLDs
6	Sanjamala	Sanjamala	Mangapalle		Bengalgram, Chilli, Rice	Dry root rot and wilt in bengalgram. Viral diseases and root rot in chillis.	OFT on Bengalgram seed treatment.
			Giddaluru		Rice	Blast, Sheath blight, Stem borer, BPH in rice.	OFT on Rice seedling dip with Pf for disease mgmt.
			Kotapadu Mangapalle Giddalur		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.

7	Allagadda	Allagadda	Marripalle		Blackgram, Groundnut, Citrus	Twig blight, Canker, die back in acid lime. Stem rot, LLS in Groundnut. Viral diseases in Blackgram	FLD and training programmes.
8	Banaganapalle	Banaganapalle	Yagantipalle Jolapuram GB Pet Meerapuram		Household food security and Kitchen gardening Development of nutrient efficiency diet with local foods Women and child care Value Addition	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.	Training programmes & Demonstrations Training programmes & Method Demonstrations Training programmes & Method Demonstrations
9	Bethamcherla	Bethamcherla	R.S. Rangapuram Rehmanpuram Bethamcherla Ambapuram Gutupalle H.Kottala		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 vegetables. Lack of awareness on product diversification with local foods.	FLD and OFTs Training programmes & Method Demonstrations Training programmes & Method Demonstrations
10	Allagadda	Allagadda	Marripalle Ramakrishnapuram		Household food security and Kitchen gardening	Lack of awareness on importance of consumption of green leafy and	Training programmes & Demonstrations

					Women and child care Value Addition Drudgery reduction technologies	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 emphasis on millets. Drudgery among farm women in farm operations.	Training programmes & Method Demonstrations Training programmes & Method Demonstrations FLD and OFTs
11	Sanjamala	Sanjamala	Giddalur Mangapalle		Development of nutrient efficiency diet with local foods Women and child care Household food security and Kitchen gardening Stiching and Tailoring Rural crafts Drudgery reduction technologies Value	• Lack of awareness on Diversified products and value addition to local foods. • Nutritional deficiencies among adolescent girls, pregnant and lactating women & children. • Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu. • Non-availability of green leafy and	Training programmes & Method Demonstrations Training programmes & Demonstrations Training programmes FLD and OFTs

					Addition	other vegetables for daily consumption. • Lack awareness on income generating activities for off season. • Drudgery among farm women in farm operations. • Lack of awareness on PHT of fruits and vegetables. • Lack of awareness on product diversification with local foods with emphasis on millets.	
12	Dornipadu	Dornipadu	Ramachandrapuram Chakirajuvemula		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	Training programmes & Demonstrations Training programmes & Method Demonstrations Training programmes & Method Demonstrations Training programmes

						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.	
13	Kurnool/ Dornipadu	Kurnool/ Dornipadu	Ramachandrapuram		Dairy	• Reproductive problems and poor milk yield in milch buffaloes. • Wastage of agricultural by products.	OFT-3, FLD-2, Training - 1
					Poultry	• Non availability of improved breeds.	FLD-1, Trainings-1
14	Kurnool/ Sanjamala	Kurnool/ Sanjamala	Mangapalle		Poultry	• Non availability of improved poultry breeds.	OFT-1, FLD-1 Trainings-1
			Giddaluru		Dairy	• Poor milk yield, reproductive problems in milch buffaloes	OFT-3, Trainings - 2
15	Allagadda	Allagadda	Marripalle		Dairy	• Poor milk production in milch buffaloes.	OFT-1,FLD-1, Trainings-2
DFI villages							
1	Banaganapalle	Banaganapalle	Yerragudi	2018	Household food security and Kitchen gardening	• Lack of awareness on importance of consumption of green leafy and other vegetables in daily menu.	Training programmes & Demonstrations

					Value Addition Drudgery reduction technologies Development of nutrient efficiency diet with local foods Women and child care Stiching and Tailoring Rural crafts	• 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 girls, pregnant and lactating women& children. • Lack awareness on income generating activities for off season.	Training Programmes Method Demonstrations Demonstrations Training Programmes Training Programmes
					Dairy	• Poor milk production. • Reproductive problems in milch buffaloes. • Mastitis	Demonstrations & Trainings.
					Poultry	• No improved poultry breeds are available. • Poultry diseases	Demonstrations & Trainings.

	Banaganapalle	Banaganapalle	Yerragudi	2018	Redgram, Paddy, Setaria, Jowar	• Pod borers and Pod fly in Redgram. • Stemborer in Rice.	IDM, IPM.
2	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
					Redgram, Bengalgram, Korra	Indiscriminate use of pesticides, poor knowhow on varieties suitable	ICM and IPM
3					Dairy	• Fodder shortage. • Poor milk production. • Reproductive problems. • Mastitis	Demonstrations & Trainings.
4					Poultry	• Non availability of improved poultry breeds.	Demonstrations & Trainings.
5					Sheep	• Poor growth in ram lambs, high lamb mortality.	Demonstrations & Trainings.

2.8 Priority/thrust areas:

Crop/Enterprise	Thrust area
Seed Production:	**Addressing the scarcity of quality seed:** Availability of quality seed to the farmer is one of the major constraint farmer is facing every year. They are depending on the private market / government agencies for their seed requirements. The supply is not meeting the demand in time and more over farmers are being cheated by different agencies with spurious seed. Awareness should be created about the production of own seed by the farmer. For this, seed village concept is required at least in direct varieties in crops like paddy, red gram, desi cotton, Bengal gram, which have huge demand in the market has to be promoted

Cropping system:	**Crop intensification in Rainfed black soils:** On black soils of Kurnool district generally one crop Bengalgram/fallow-Jowar is being taken during rabi (September - October) in an area of 3.02 laksh ha. Farmers are getting low net returns/ha. Foxtail millet (korra), crop being its short duration may fit well in double cropping sequence (Korra- Bengalgram/Jowar) under rainfed situation in black soils. In order to increase net returns Rs/ha and cropping intensity, Seteria- bengalgram can be successfully grown in rainfed black solis, if onset of monsoon are intime.
Varietal replacement:	The productivity of crops are lowest due to cultivation of old and traditional varieties due to non availability of improved varieties/hybrids .Seed is the vital and critical input for crop production. Crop productivity is highly influenced by selection of high yielding varieties. Among different components of recommended package of practices, improved variety contributes up to 30 percent to the overall yield improvement. Keeping this in view KVK, Yagantipalle is organized several FLDs in Cereals, Oil seeds, pulses and other crops in order to popularize improved varieties in different parts of Kurnool district
Resource conservation **Zero Tillage and Direct seeding in paddy with Drum seeder**	In Kurnool district Maize crop is being cultivated in an area of 14,604 ha and 10898 ha during kharif and rabi respectively with average productivity of 6250 kg /ha. In the district recently Rice followed by maize gaining popularity moreover their reaping good yields. There is a lot of scope to increase the acreage under this cropping system.
Redgram	Suitable Varietal selection, Integrated Pest Management
Rice	IPM for Stemborer, IDM for blast and sheathblight, Organic farming
Chillis	IPM for sucking pests and IDM for root rot
Cotton	IPM for sucking pests
Bengalgram	Varietal selection and ICM
Greengram	Varietal selection and ICM
Blackgram	Varietal selection and ICM
Jowar	IPM for shoot fly and stem borer

2.9 Salient Achievements of (2020) (Mandated activities/ Projects):

S. No.	Activity	Target	Achievement
1.	Technologies Assessed and refined(No.)	20	20
2.	On-farm trials conducted (No.)	20	20
3.	Frontline demonstrations conducted (No.)	44	44
4.	Farmers trained (in Lakh)	0.04	0.0452
5.	Extension Personnel trained (No.)	400	687
6.	Participants in extension activities (in Lakh)	0.07	0.0843
7.	Production of Seed (in Quintal)	2500	3016
8.	Planting material produced (in Lakh)	5	6.58

9.	Live-stock strains and finger lings produced (in Lakh)	0.04	0.055
10.	Soil, Water, plant, manures samples tested (in Lakh)	0.01	0.017
11.	Mobile agro-advisory provided to farmers (in Lakh)	0.1	0.13
12.	No. of Soil Health Cards issued by Mini Soil Testing Kits (No.)	250	292
13.	No. of Soil Health Cards issued by Traditional Laboratory (No.)	1000	1169

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2019-20

i) OFT (Technology Assessment)

Number of technologies		Total no. of Trials	
Targets	**Achievement**	**Targets**	**Achievement**
20	20	129	129

ii) FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers	
Targets	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**
44	44	580	580	554	554

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

Number of Courses			Number of Participants	
Clientele	**Targets**	**Achievement**	**Targets**	**Achievement**
Farmers	90	93	3000	4520
Rural youth	20	24	500	599
Extn. Functionaries	10	12	400	687

iv). Extension Activities

Number of activities		Number of participants	
Targets	**Achievement**	**Targets**	**Achievement**
300	397	6000	8438

v) Seed Production (q)

Target	Achievement	Distributed to no. of farmers
2500	3016	5154

vi). Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
500000	658328	264

v). Livestock (Nos.)

Target	Achievement	Distributed to no. of farmers
5000	5508	137

vii). Bio inputs (Nos.)

Particulars	Target	Achievement	Distributed to no. of farmers
Vermicompost (Tonnes)	250	251	206
Vermiwash(lit.)	500	520	28
Earthworms(Kg.)	800	891	24
Bio-urea(Kg.)	5000	7000	10

3.b. TECHNOLOGY ASSESSMENT

i) Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers
Integrated Nutrient Management	Redgram	Assessment of efficacy of Potassium and Zinc on Redgram productivity	ANGRAU 2016	6	6
	Bengalgram	Assessment of Phosphorus consortia for Phosphorus management inChick pea	ANGRAU 2018	6	6
	Banana	Assessment of fertigation schedule in tissue culture banana	Dr.YSRHU	6	6
	Onion	Soil test based fertilizer management in Onion	Dr.YSRHU	6	6
Varietal Evaluation	Redgram	Performance of Super early varieties of Redgram under rainfed situation	ICRISAT 2013	6	6
	Tomato	Assessing the performance of tomato Hybrid Arka Samrat and Arka Abhed	IIHR	6	6
Integrated Pest Management	Maize	Management of FAW in Maize	ANGRAU 2019	6	6
	Paddy	Evaluation of Organic package on yield and pest management in rice	ANGRAU 2017	6	6
Integrated Crop Management	Browntop millet	Evaluation of different millets under rainfed situation	ANGRAU 2015	6	6
Cropping Systems	Pearl millet + Redgram	Pearl millet based inter cropping system	ANGRAU	6	6
Integrated Disease Management	Paddy	Effect of seed/seedling treatment on rice blast	TNAU	6	6
	Bengalgram	Evaluation of different seed treatments for wilt and dry root rot in Bengalgram	ANGRAU	6	6
Resource Conservation Technology	Bengalgram	Assessment of different in-situ moisture conservation methods in Bengalgram	CRIDA 2016	6	6
Drudgery Reduction	Mango	Assessment of Mango Harvestors for harvesting of Mango Crop	IIHR&DrBS Rao Konkan Krishi Vidya Peeth	5	5
Storage Technique		Assessment of Hermatics Storage bags &PICS Bags	ICRISAT	5	5
Organic inputs production		Assessment of efficacy of waste decomposer for recycling of farm waste	NCOF 2017	6	6
Total				**94**	**94**

ii) Summary of technologies assessed under livestock by KVKs:

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease Management				
Evaluation of Breeds	Poultry	Evaluation of different poultry breeds at backyard	5	5
Feed and Fodder management				
Nutrition Management	Buffalo	Supplementation of bypass fat to milch animals	10	10
	Buffalo	Balanced feeding to milch buffaloes	10	10
Production and Management	Buffalo	Improvement of breeding efficiency through hormones	10	10
Others (Pl. specify)				
Total			**35**	**35**

3. c. TECHNOLOGY ASSESSMENT IN DETAIL

OFT: 1

1. Thematic area: Cropping systems

2. Title: Assessment of Pearl millet based intercropping systems under Rainfed situation

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

4. **Details of farming situation**: Rainfed, Medium black soils, During the period (June- December) a total quantity of 679.3mm rain fall was received as against normal rainfall of 604.7mm. Kharif sowings were taken up with the rain fall received during last week of July and crops faced severe moisture stress during August. Rabi sowings i.e. Bengalgram was delayed due to excess rainfall received during September. Uneven distribution of rainfall affected the crop yields.

5. Problem definition / description:

The principle rainy season crops, grown as sole crop at times are found to be rather risky due to delayed monsoon accompanied with prolonged intermittent dry spells. The system aimed at increasing productivity per unit area and it guarantee insurance against total crop failure, particularly aberrant weather conditions.

6. Technology Assessed:

T1. Pearlmillet + Redgram

T2. Pearlmillet + Castor

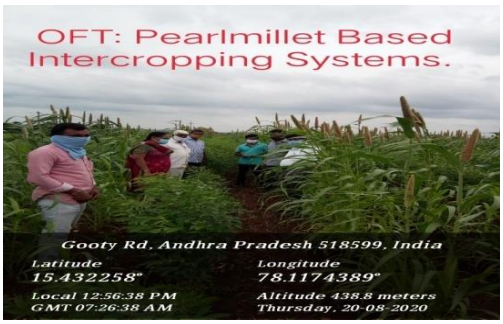
FP. Pearlmillet (sole)

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*
pearmillet		*815*	*28205*	*1.0*
Pearmillet +Redgram		1452	44710	1.42
Pearmillet +Castor		1112	36769	1.47

Description of the results: Description of the results: The results indicated that among the cropping systems, intercropping of pearlmillet with pigeon pea and castor resulted in maximum pigeonpea equivalent yield (1452 kg ha^{-1}) and 1112 kg ha^{-1}respectively over other intercropping system.. The LER is high with Pearlmillet +castor and pearlmillet + Redgram.



9. Constraints: -

10. Feed back of the farmers involved:

- Pearlmillet based intercropping system found to be remunerative than sole crops of redgram/Castor /pearlmillet even under drought conditions.
- 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.

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

❖ Research on development of medium duration Redgram varieties has to be strengthened.

OFT: 2

1. Thematic area: Resource conservation

2. Title: Assessment of different in-situ moisture conservation methods and plant densities in Bengalgram

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

4. Details of farming situation: Irrigated, black soils,

5. Problem definition / description:

In Kurnool district Bengalgram being cultivated in an area of 200000 ha under rainfed situation. The productivity levels are low due to high plant densities, less no of Primary & secondary branches, terminal moisture stress. Insurance against total crop failure, particularly aberrant weather conditions.

6. Technology Assessed:

T1: Farmers practice

T2: Sowing with Paired row planter

T3: Sowing with BBF planter)

7. Critical inputs given: seed Rs 7500/-

8. Results:

Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net Returns (Rs/./ha)*	*B:C ratio*	*Data on Other performance indicators**
T1: Farmers practice	*6*	1935			
T2: Sowing with Paired row planter		2030			
T3: Sowing with BBF planter		2367			

Description of the results:

On farm testing on **Assessment of different in-situ moisture conservation methods** was conducted during the Rabi season of 2019 at Yagantipalli and K.Sunkesula villages of Banaganapalli and Owk mandal. The results indicated that among the conservation and plant densities, Sowing with BBF planter has recorded highest yield 2267kg/ha followed by Sowing at 90 cm and furrow between rows 2130 kg/ha and Farmers practice 1805 kg/ha.

Feed back of the farmers involved:

- ❖ No of pods plant were more in 90 cm spacing, but number of ill filled pods and seed size was less.
- ❖ The increased yield (18.0 per cent) was recorded with BBF planter compared Farmers practice due to more no of filled pods and seed size.

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

- ❖ Research on development of varieties tolerant to moisture stress has to be strengthened.

OFT: 3

1. Thematic area: Varietal Evaluation

2. Title: Evaluation of super Early Varieties of Redgram

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

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

5. Problem definition / description:

In Kurnool district generally Redgram is being cultivated in an area of 45,000 ha and yields are limited by the amount and distribution of rainfall during monsoon period and also long duration varieties are affecting due to terminal moisture stress..

6. Technology Assessed:

TO-1	**I**CPL-20325
TO-2	ICPL-11225
TO-3	ICPL-20338

7. Critical inputs given: seed Rs 6000/-

8. Results:

Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net Returns (Rs/./ha)*	*B:C ratio*	*Data on Other performance indicators**
T1: ICPL-20338	*6*	557	12170	1.57	
T2-ICPL-20325		754	23990	2.17	
T3-ICPL-11225		622	16070	1.75	

Description of the results:

The results indicated that among different **super early varieties of Redgram** ICPL-20325 and 11225, ICPL-20325 has recorded 754kg/ha followed by ICPL-1125 622 kg/ha .The highest net returns and CB ratio was realized with ICPL-20325 followed by ICPL-1125 due to number pods/plant.

Feed back of the farmers involved:

- Super early Varieties of Redgram in Redsoils under rainfed Performed well than long duration Varieties i.e Asha and LRG-41.

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

- ❖ Research on development of super early varieties tolerant to moisture stress has to be strengthened.

OFT: 4

1. Thematic area: Crop diversification

2. Title: Evaluation of Different Minor millets under Rainfed situation

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

4. **Details of farming situation:** Rainfed, Redsoils/Black soils

5. **Problem definition / description:** Abnormal occurrence of drought is one of the important factors for crop production under rainfed conditions. The productivity levels are low due to terminal moisture stress with long duration crop and varieties.

6. Technology Assessed:

TO-1	**Prosomillet**
TO-2	Browntop millet/Smallmillet
FP	Setaria

7. Critical inputs given: seed Rs 6000/-

8. Results:

Performance of the technology

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs/./ha)*	*B:C ratio*	*Data on Other performance indicators**
T1: Farmers practice(Setaria)	*6*	1810	21800	1.92	
T2-Prosomillet		1287	40900	1.2.7	
T3-Browntop millet/Smallmillet		2352	9478	1.4	

Description of the results:

On farm testing on **Evaluation of Different minor Millets ie** Setaria, Prosomillet, Browntop millet was conducted during the Kharif season of 2020 at Yagantipalli village of Banaganapalli mandal. The results indicated that among different **millet crops** Browntop millet has recorded highest Yield 2512 kg/ha followed by setaria 1810kg/ha and prosomillet 1287 kg/ha.

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Feed back of the farmers involved:

- Adverse weather conditions like delay onset of rains and prolonged dry spells during the crop period is very common in rain fed situation. In Such situation Performance of small millets is good compared to other crops.

OFT: 5

S. No	Item		Particulars
1	Thematic Area	:	Integrated Nutrient Management
2	Title	:	Assessment of efficacy of Humic acid for yield maximization in Rice
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Kharif-2020. Irrigated black soils
5	Problem definition/description	:	Paddy is a major cereal crop cultivating in of Kurnool district during kharif season. Un availability of sufficient quantities of FYM and other organic inputs. Low organic carbon content 71 % soils of Kurnool dist.Low fertility and productivity.
6	Technology assessed	:	T_1: Farmers practice : No FYM and Humic acid+RDF T_2: : Humic acid-20 Kg/ha+RDF T_3 FYM-10 MT/ha +RDF
7	Critical Inputs given	:	Humic acid-20 Kg/ha Value- Rs.800/ha

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- No FYM and Humic acid+RDF)	6	*45.2*	*23473*	*1.35:1*	
Technology1 - Humic acid-20 Kg/ha+RDF		*47.06*	*25667*	*1.38:1*	
Technology2- FYM-10 MT/ha +RDF		*46.84*	*21397*	*1.30:1*	

Description of the results:

The result indicated that the yield in both T_{-2} (47.06 q/ha) and T_3 (46.84 q/ha) were on par and higher than farmer's practice -T_1 (45.2 q./ha)

9. Constraints faced:

10. Feed back of the farmers involved:

Pre seasonal training on soil sampling and testing, fertilizer application and mid seasonal field visits finally field days were organized. However, application of humic acid is effective in yield improvement.

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

Efficacy of humic acid was observed in organic carbon deficient soils when compared sufficient range soils.

OFT: 6

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Nutrient Management
2	Title	:	**Assessment of Phosphorus consortia for Phosphorus management**
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Rabi-2020. Rainfed black soils .Soils of OFT plots were high in Phosphorus content and medium to high potassium.
5	Problem definition/description	:	Bengalgram is major rabi pulse crop in Kurnoo district. It was observed that high P content in 85 % bengalgrm growing areas .Farmers were applying excess dose of complex fertilizers than recommendation. Hence P consortia is required to solublise fixed P thereby reduce P application and cost of production on phosphotic fertilizers.
6	Technology assessed	:	Check: Farmers practice : No PSB consortia-NPK-42-78-0 Kg./ha T_1- Basal application of PSB consortia +N-20 Kg/-ha T_2-50 % RDP+ PSB consortia-NPK-20-25-0 Kg./ha
7	Critical Inputs given	:	PSB consortia-PSB+PSF+VAM @5 Kg/ha each along with FYM-500 Kg Value- Rs.3600/ha

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- **no PSB consortia**	*6*	*18.97*	*50713*	*2.10:1*	
Technology 1-- **Basal application of PSB consortia**		*17.73*	*48425*	*2.15:1*	
Technology 2- **50 % RDF+ PSB consortia**		*20.17*	*58931*	*2.19:1*	

9. Description of the results:

The result indicated that the yield of T2 $_{17.73}$ q/ha) is lowerr than -T_3 (20.17q/ha) and farmers Practice (18.97q./ha) Constraints faced:

10. Feed back of the farmers involved:

Pre seasonal training on soil sampling and testing, fertilizer application and mid seasonal field visits finally field days were organized at initial stages, but application of PSB consortia is more effective in P availability and cost reduction on phosphoric fertilizers.

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

Efficacy of Phosphorus consortia was observed in high phosphorus soils when compared low range soils.

OFT: 7

S. No.	Item		Particulars
1	Thematic Area	:	Production of organic inputs
2	Title	:	**Assessment of waste decomposer for recycling of farm waste**
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Rabi-2019.
5	Problem definition/description	:	Most of the farmers are not following proper recycling of farm waste and crop residues are being burnt at road sides after threshing. Hence, waste decomposer technology is more potential to meet the organic manure requirement in both irrigated and rainfed areas. It has tremendous prospects in converting agro-wastes/ crop residues through waste decomposer into valuable agricultural organic input. Burning and removing crop residues decreases SOC.
6	Technology assessed	:	T_1- Drenching of farm waste with diluted waste decomposer @200 lit/ 1 tonne of farm waste at 10 days interval T_2 (Farmers practice) : No Waste decomposer application for recycling-drenching with water
7	Critical Inputs given	:	**Jaggary-48kg-** Value- Rs.2400/-

8. Results:

Table: Performance of the technology:

Technology Option	No. of trials	Time taken for complete decomposition(Days)-and decomposition percentage							
		15 days	**30 days**	**45 days**	**60 days**	**75 days**	**90 days**	**105 days**	***115 days***
Farmers Practice-No Waste decomposer application for recycling-drenching with water	6	No	Started decomposition	20%	30%	40%	60%	80%	*100%*
Technology 1 Drenching of farm waste with diluted waste decomposer @200 lit/ 1 tonne of farm waste at 10 days interval		No	Started decomposition	20%	40%	60%	80%	100%	

9. Constraints:

The result indicated that the decomposition rate in both technology and control was on par and paddy straw residue used for recycling in both treatments Constraints faced.

10. Feed back of the farmers involved:

Farmers expressed that usage waste decomposer may be continued with different crop residues.

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

Efficacy of waste decomposer was observed that more time taken for decomposition (115 days) than recommended time (40-45 days).Three years dated revealed same, hence it may be concluded.

OFT: 8

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Evaluation of Organic Package on Yield and Pest Management in Rice (2nd Yr)**
3	Scientists Involved	:	D. Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Rice is generally grown under Canal Aycut area and under bore wells both in black soils and red soils of the district in about 1 lakh ha. Annually.
5	Problem definition/description	:	Indiscriminate use of chemical fertilizers and pesticides for management of soil fertility and pest and disease management in rice, leading to pesticide residues in grain and deterioration of soil health and fertility over years. There is a serious concern among the consumers too with regard to pesticide residues in rice. To revive the lost health of soil and to produce the quality rice on sustainable basis the there needs some new intervention.
6	Technology assessed	:	Organic package of crop and pest management in Rice will be assessed against conventional indiscriminate use of fertilizers and pesticides followed by farmers. T1 – Farmers practice – Indiscriminate use of pesticides. • No FYM or Green Manuring. • NPKS (kg/ha) – 365 – 188 – 110 – 85 • Zinc Sulphate (kg/ha) - 50 • 1 granule application and 5 rounds of pesticide application. o Carbofuron @ 25 kg/ha basal or PI stage o Mono 36% SL or Chloro 50 EC or L-cyhalothrin spray @ 1 lt/ha + 19-19-19 2.5 kg/ha or Zinc 12% @ 250 g/ha o Cartap Hydrochloride 50 % SP @ 1 kg/ha + Carbendazim @ 500 g/ha or Car+Maco @ 1 kg/ha o Profenophos @ 1 lt/ha + Hexaconazole @ 1 lt/ha / o Buprofezen @ 1 lt/ha or Dinotefuron 20% SC @ 250 g/ha + Tricyclazole @ 300 g/ha o Pymetrozine 50% WG @ 120 g/ac + Tricyclazole @ 300 g/ha T2 – Assessment – Organic package • FYM/Green manure, Neem cake (100 kg/ac); • Pseudomonas /PSB /Azospirillum (1 kg each) seed/seedling/soil treatment; • Neem oil, Botanical extracts, Pf, Jeevamrith, Beauveria for PP,
7	Critical Inputs given	:	Neem cake @ 100 kg/ac = Rs. 1500/ac Pseudomonas 2 kg, PSB, Azospirillum @1 kg each/ac = Rs.300/ac Neem oil @ 1 lt/ac = Rs. 400/ac and Beauveria @ 1 lt/ac = Rs.300/ac Total of Critical inputs Rs. 2500-00 per ac.

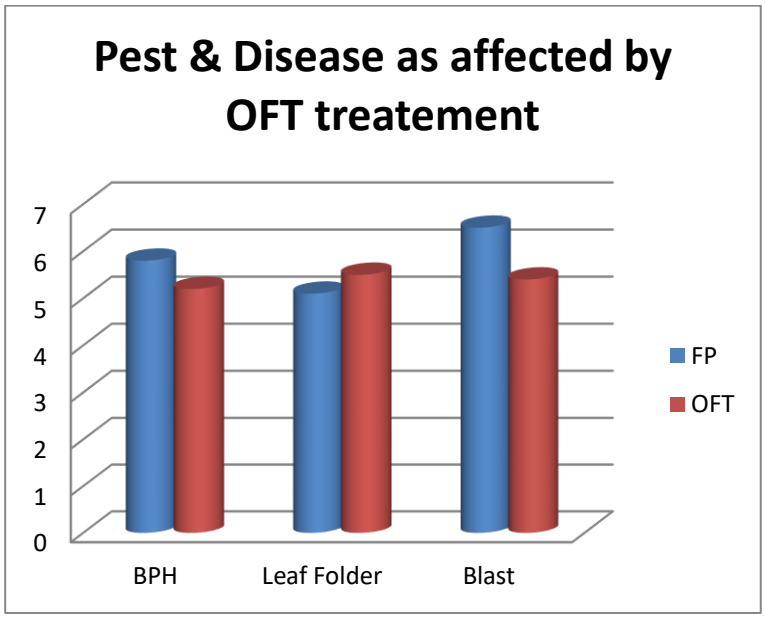
8. Results :

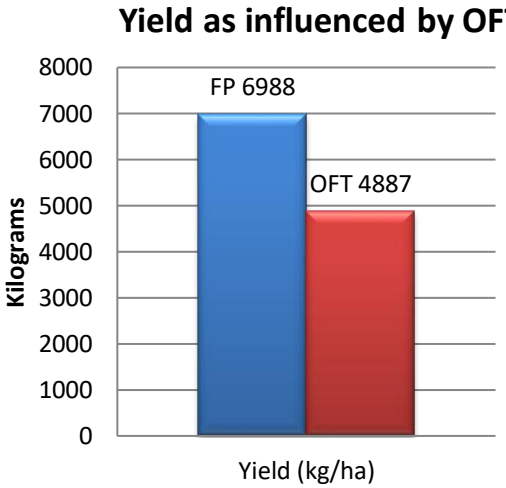
Table: Performance of the technology

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net Returns(Rs. lakh./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice : Indiscriminate use of pesticides.	*6*	*6.988*	*0.60122*	*1.83*	*BPH-5.8/plant* *Leaf folder–5.1 %* *Blast - 6.5 %* *Cost of PP – Rs. 7,400/ha*
Technology 1 : Organic package • FYM/Green manure, Neem cake (100 kg/ac); • Pseudomonas /PSB /Azospirillum (1 kg each) seed/seedling/soil treatment; • Neem oil, Botanical extracts, Pf, Jeevamrith, Beauveria for PP.		*4.887*	*0.68523*	*1.94*	*BPH - 5.2/plant* *Leaf folder–5.5 %* *Blast - 5.4 %* *Cost of PP – Rs. 4,200/ha*

Description of the results:

The result indicated that organic practice gave 30.0% lower yield compared to farmers practice. But the cost benefit ratio in organic products is better (1.94) as it fetched premium price. Incidence of pests and diseases is also low.





Constraints faced:

8. Feed back of the farmers involved:

- ✓ The farmers are not readily accepting the technology as it involves lot of labour, patience and there is no readymade solution for all pest / disease problems and basically the fear of reducing yields due to non application of fertilizers.
- ✓ Farmers were to some extent convinced that with no fertilizer regime, the incidence of pest and diseases itself will be low.

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

- Uniform biological or organic interventions for pest and disease management should be tested and standardised for specific land types and regions.
- Organic manurial applications to be quantified per unit of area of different soil types.
- Organic Package of Practices suitable for the State need to be standardized.

OFT: 9

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Disease Management
2	Title	:	Assessment of rice seedling dip in Pseudomonas for blast disease management
3	Scientists Involved	:	D. Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Rice is generally grown under Canal Aycut area and under bore wells both in black soils and red soils of the district in about 1 lakh ha. Annually.
5	Problem definition/description	:	Incidence of pests and diseases is a common phenomenon in rice in Kurnool district, especially during Kharifseason. Of the diseases, Blast and sheath blight are very prevalent. Farmers resort to 2 to 3 fungicide sprayings for disease management with moderate efficiency. As seed treatment or seedling treatment are not practiced by the farmers, the incidence of blast is resulting in guaranteed losses to the crop. As the concerns of pesticide residues are increasing in the crop, and as the seedling treatment with Bio-fungicide i.e. Pseudomonas is showing good efficacy in containing the blast incidence (TNAU) in the crop, the present OFT is proposed.
6	Technology assessed	:	**T1 – Farmers practice** – No seed/seedling treatment and 2-3 fungicide sprays (Carbendazim, Hexaconazole and Tricyclazole) after disease appearance. **T2- Seed treatment** : Soak 1 kg seed in 1 lt water mixed with 1 g. Carbendazim (Soaking rice seed for 24 hours, incubate for next 24 hrs., till sprouting before sowing) **T3 - Assessment :** Rice seedling dip in Pseudomonas solution @ 5 g/lt water for 30 minutes before transplanting (i.e Dipping in water containing 1 kg Pseudomonas formulation filled upto 10' L x 10' W x 1" H of nursery bed for 30 minutes)
7	Critical Inputs given	:	Carbendazim 100 g, Pseudomonas 1 lt Total of Critical inputs Rs. 300-00 per ac.

8. Results:

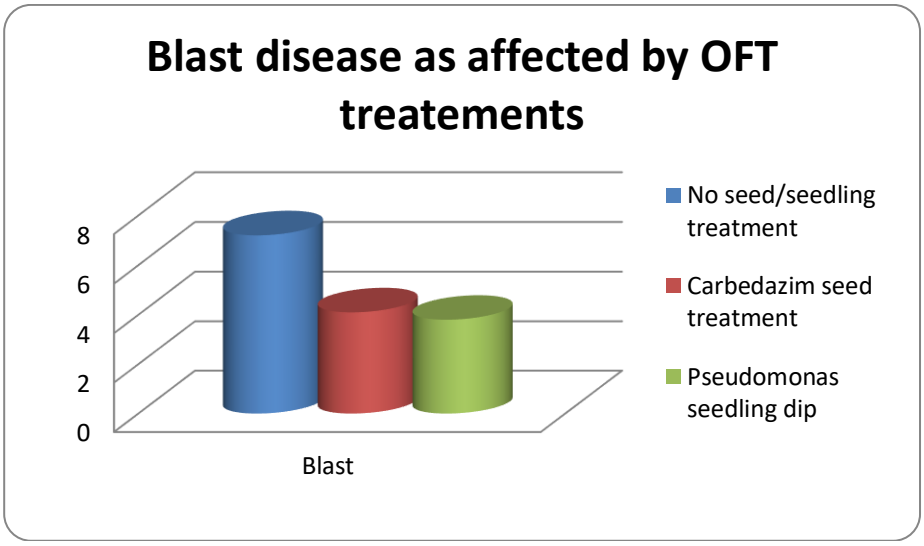
Table: Performance of the technology

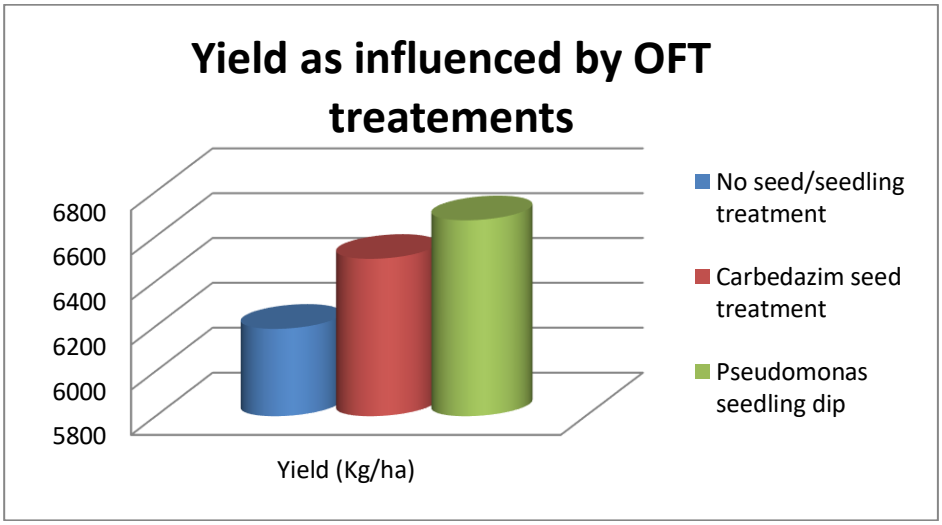
Technology Option	*No. of trials*	*Yield (t/ha)*	*Net Returns(Rs . lakh./ha)*	*B:C*	*Data on Other performance indicators**
Farmers Practice : No seed/seedling treatment and 2-3 fungicide sprays (Carbendazim, Hexaconazole and Tricyclazole) after disease appearance.	*6*	*6.188*	*0.3992*	*1.51*	*Blast - 7.2 %* *Cost of PP – Rs. 7,650/ha*
Technology 1 : Soak 1 kg seed in 1 lt water mixed with 1 g. Carbendazim (Soaking rice seed for 24 hours, incubate for next 24 hrs., till sprouting before sowing)		*6.500*	*0.4637*	*1.60*	*Blast - 4.1 %* *Cost of PP – Rs. 7,125/ha*

Technology 2 : Rice seedling dip in Pseudomonas solution @ 5 g/lt water for 30 minutes before transplanting (i.e Dipping in water containing 1 kg Pseudomonas formulation filled upto 10' L x 10' W x 1" H of nursery bed for 30 minutes)		*6.672*	*0.4952*	*1.64*	*Blast - 3.8 %* *Cost of PP – Rs. 7,250/ha*

Description of the results:

The result indicated that seedling dip in pseudomonas and need based spray of fungicides gave 7.8 % higher yield compared to farmers practice/no seed treatment. And the cost benefit ratio is better (1.64) as against 1.51 in farmers practice. The Incidence of blast disease is also 48.2% less compared to farmers practice.





9. Feed back of the farmers involved:

- ✓ The farmers are not readily accepting the technology as it involves extra labour, patience and mostly the transplanting is taken up on contract basis.
- ✓ Farmers were convinced to appreciate the efficiency of this treatment on disease management.

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

Efficacy of Pseudomonas seedling treatment along with its foliar application on all the important diseases on rice need to be tested and a standard best recommendation may be advised to farmers.

OFT: 10

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Management of Fall Army Worm in Maize (New)**
3	Scientists Involved	:	D. Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Irrigated Dry Black Soils
5	Problem definition/description	:	Maize is an important crop in the district, the area of which is recently increasing both in Kharif and Rabi seasons. In recent years, the crop is suffering with incidence of Fall Army Worm, the migrant pest which is causing considerable yield loss (40-60%). The average yield recorded is (50 q/ha) due to incidence of the FAW, while the potential is about 85-87 q/ha. At present the farmers are resorting to indiscriminate use of chemical insecticides for FAW management. As the subject is new and research in India is still continuing, the suggested IPM package for Management of FAW is being tested as OFT for managing the pest efficiently and cost effectively. Hence, the trail is taken up
6	Technology assessed	:	**Farmers practice** – Spraying Insecticides advised by pesticide dealers or peers. **T1-Assessment : IPM Package** : • Summer ploughing, • Seed treatment with Cyantraniliprole 19.8% + Thiamethoxam 19.8% FS @ 6ml/kg • Installation of Pheromone traps (*S. frugiperda*) @ 4 traps/ac at the time of sowing • Intercrop maize with legumes *viz.*, pigeonpea, cowpea in 2:1 to 4:1 ratio • Collection & Destruction of egg masses • Spray with 5% neem seed kernel extract (NSKE)^ or azadirachtin, 1500 ppm (1 litre/acre) @ 5ml /litre after observation of one moth/trap/day or 5% FAW infestation/Davis score 2.0 on main crop(14-15 DAG) given) • At 5-10% infestation, spray *Bacillus thuringiensis* formulations @ 2g/litre (400g/acre) or *Metarhizium anisopliae* or *Beauveria bassiana* (1×10^{8} cfu/g) @ 5g/litre (1 kg/acre) or *Sf*NPV ($1.5X10^{12}$ POBs/ha) @4ml/litre (800 ml/acre) or EPN (*Heterorhabditis indica*) @ 20g/litre of water (4kg/acre) is recommended. • If infestation is more than 10%, whorl application of any one of the recommended insecticides for FAW, *viz.*, Chlorantraniliprole 18.5 % SC (80 ml/acre) @ 0.4 ml/litre; Spinetoram 11.7 % SC (100ml/acre) @ 0.5 ml/litre; Emamectin benzoate 5% SG (80g/acre) @ 0.4g/litre is recommended
7	Critical Inputs given	:	Fortenzduo (700/-), Ph traps for S.fugiperda (250/-), Seed of Redgram/Cowpea (200/-), Azadaractin 1500 PPM (450/-), Bt/Metarhizium (500/-), Emamectin benzoate (500/-) and Chlorantraniliprole (800/-) = Total 3400/- per acre/location

8. Results:

Table: Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs. lakh./ha)	B:C ratio	Data on Other performance indicators*
Farmers Practice : – Spraying Insecticides advised by pesticide dealers or peers.	6	6.167	0.4971	1.90	FAW Incidence - 21.0 % Cost of PP – Rs. 8,125/ha.
Technology 1 : IPM Package • Summer ploughing, • Seed treatment with Cyantraniliprole 19.8% + Thiamethoxam 19.8% FS @ 6ml/kg • Installation of Pheromone traps (S. frugiperda) @ 4 traps/ac at the time of sowing • Intercrop maize with legumes viz., pigeonpea, cowpea in 2:1 to 4:1 ratio • Collection & Destruction of egg masses • Spray with 5% neem seed kernel extract (NSKE)^ or azadirachtin, 1500 ppm (1 litre/acre) @ 5ml /litre after observation of one moth/trap/day or 5% FAW infestation/Davis score 2.0 on main crop(14-15 DAG) given) • At 5-10% infestation, spray Bacillus thuringiensis formulations @ 2g/litre (400g/acre) or Metarhizium anisopliae or Beauveria bassiana (1×10^{8} cfu/g) @ 5g/litre (1 kg/acre) or SfNPV ($1.5X10^{12}$ POBs/ha) @4ml/litre (800 ml/acre) or EPN (Heterorhabditis indica) @ 20g/litre of water (4kg/acre) is recommended. • If infestation is more than 10%, whorl application of any one of the recommended insecticides for FAW, viz., Chlorantraniliprole 18.5 % SC (80 ml/acre) @ 0.4 ml/litre; Spinetoram 11.7 % SC (100ml/acre) @ 0.5 ml/litre; Emamectin benzoate 5% SG (80g/acre) @ 0.4g/litre is recommended		6.917	0.6428	2,21	FAW Incidence - 9,0 % Cost of PP – Rs. 6,300/ha

Description of the results:

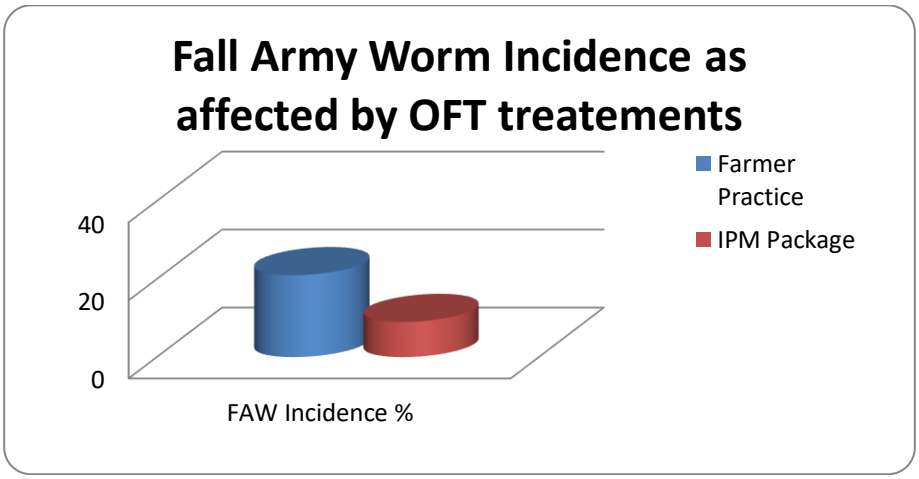
The result indicated that adoption of IPM Package gave 12.2 % higher yield compared to farmers practice with 57.4% reduction on FAW Incidence in IPM (9.0%) over farmers practice (21.0%). And the cost benefit ratio in IPM (2.21) is better compared to 1.90 in farmers practice.

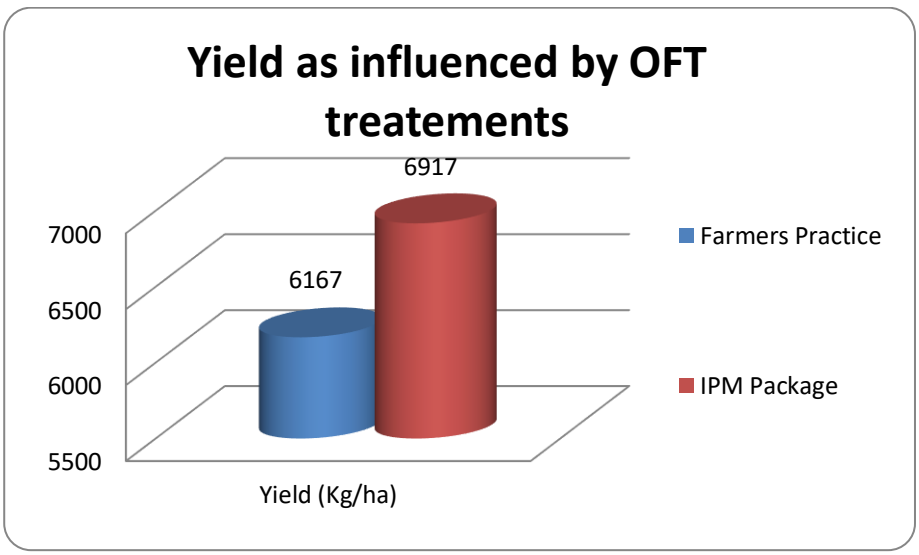
9. Feed back of the farmers involved:

- ✓ The farmers are not readily accepting the technology as it involved border crop and intercrops and more number of sprays.
- ✓ Farmers were convinced with the level of control of the pest, but worried about the cost of treatments.

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

- Research may be done with cheaper, more readily available formulations in the market and to reduce the number of interventions.





OFT: 11

S. No.	Item		Particulars
1	Thematic Area	:	Integrated Disease Management
2	Title	:	**Evaluation of different Biofungicide seed treatments for wilt and dry root rot management in Bengalgram (New)**
3	Scientists Involved	:	D. Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Rainfed Black Cotton Soils
5	Problem definition/description	:	Bengalgram is cultivated in about 2.5 lakh ha of land in the district during Rabi season. Majority of the area is susceptible to wilt and dry root rot diseases. The yields also get affected due to regular incidence of these two diseases. The average yield is low (15.25 q/ha) due to regular incidence of these diseases while the potential is about 20.00 q/ha. The use of Biopesticides especially *Trichoderma viride* or *T. harzianum* has got the potential to control both the diseases. Hence the trial is proposed.
6	Technology assessed	:	**T1- FP:** Seed treatement with Mancozeb + Carbendazim @ 3 g/kg **T2 -** Trichoderma viride @ 10 ml/kg - Seed treatment (Biopriming) with T.viride @ 10 mlg/kg along with 30 g of powdered FYM mixed with sufficient water to make paste and it is uniformly smeared on the seed and shade dried overnight before sowing. T3 - Trichoderma harzianum @ 10 ml/kg - Seed treatment (Biopriming) with T.viride @ 10 ml/kg along with 30 g of powdered FYM mixed with sufficient water to make paste and it is uniformly smeared on the seed and shade dried overnight before sowing.
7	Critical Inputs given	:	Mancozeb + Carbendazim 250 g, T.viride – 1 lt and T.harzianum – 1 lt. Total of Critical inputs Rs. 600-00 per ac.

8. Results:

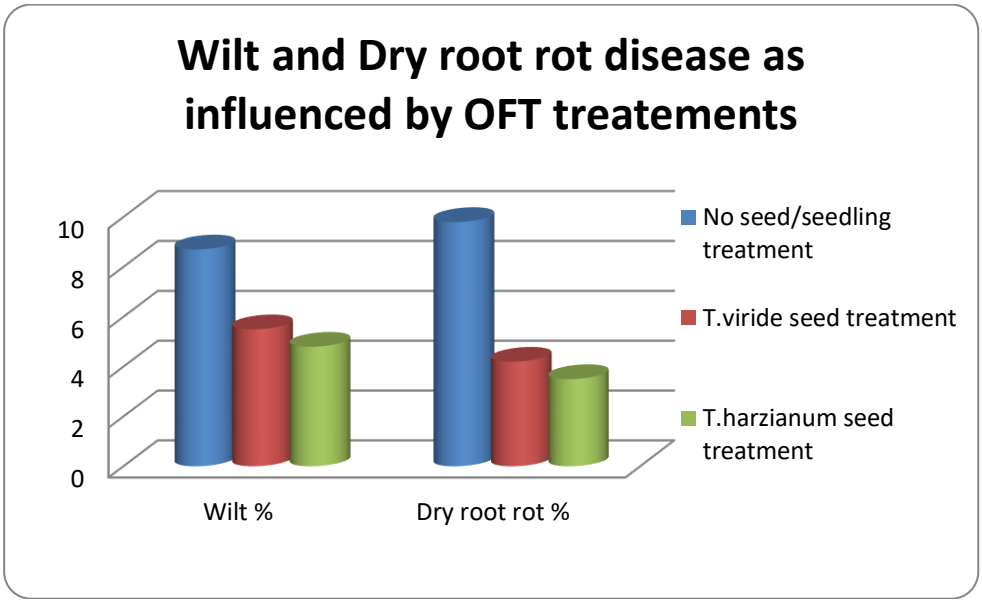
Table: Performance of the technology

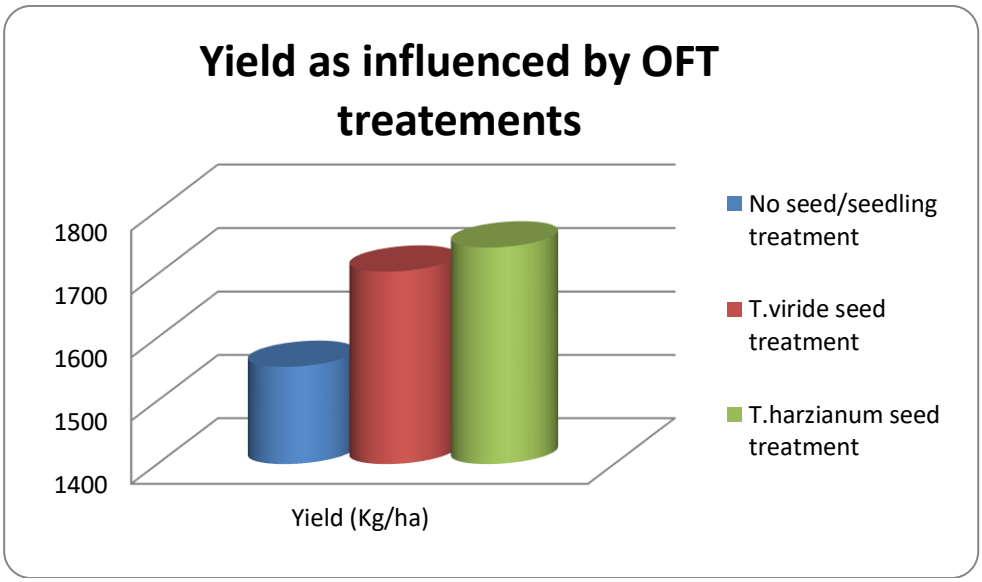
Technology Option	***No. of trials***	***Yield (t/ha)***	***Net Returns(Rs. lakh./ha)***	***B:C ratio***	***Data on Other performance indicators****
Farmers Practice : Seed treatment with Mancozeb + Carbendazim @ 3 g/kg	*6*	*1.554*	*0.1643*	*1.39*	*Wilt - 8.7 %* *Dry root rot – 9.8%* *Cost of PP – Rs. 5,625/ha*
Technology 1 : Trichoderma viride @ 10 ml/kg - Seed treatment (Biopriming) with T.viride @ 10 mlg/kg along with 30 g of powdered FYM mixed with sufficient water to make paste and it is uniformly smeared on the seed and shade dried overnight before sowing.		*1.704*	*0.2238*	*1.53*	*Wilt – 5.5 %* *Dry root rot – 4.2 %* *Cost of PP – Rs. 5,375/ha*

Technology 2 : Trichoderma harzianum @ 10 ml/kg - Seed treatment (Biopriming) with T.viride @ 10 mlg/kg along with 30 g of powdered FYM mixed with sufficient water to make paste and it is uniformly smeared on the seed and shade dried overnight before sowing.		*1.742*	*0.2382*	*1.56*	*Wilt - 4.8 %* *Dry root rot – 3.5%* *Cost of PP – Rs. 5,375/ha*

Description of the results:

The result indicated that seed treatment (Biopriming) with Trichoderma harzianum gave 12.1 % higher yield followed by Trichoderma viride which gave 9.7% higher yield compared to farmers practice/no seed treatment with better management of wilt and root rot in both the treatments.





9. Feed back of the farmers involved:

- ✓ The farmers were new to this kind of seed treatment along with FYM powder and showed some sort of reluctance initially.
- ✓ Farmers were convinced to appreciate the efficiency of this treatment on disease management.

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

- Methodology and doses of seed treatment and soil application combinations may be standardized for all pulses.

OFT: 12

1. Thematic area: varietal evaluation

2. Title: Assessing the performance of tomato hybrids Arka Samrat & Arka Abhed

3. Scientists involved: M. Adinarayana, SMS (Horticulture)

4. Details of farming situation: Irrigated, Sandy loam & clay loam

5. Problem definition / description: The local varieties are producing lower yields and they are susceptible to ToLCV and bacterial wilt, blight diseases.

6. Technology Assessed: T_1 – Arka Samrat, T_2 – Arka Abhed, T_3 – PHS-448 (FP)

7. Critical inputs given: 18000 tomato seedlings Rs. 10800/-

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 PHS-448	*6*	37.50	108833	2.42	
Technology 1(Arka Samrat)		36.10	101834	2.33	
Technology 2(Arka Abhed)		28.45	35604	1.45	

Variety	BW%	EB%	ToLCV%
AS	4.5 %	6.1%	2.3%
AA	3.8 %	7.4%	2.1%
448	21 .1	34.5	18.5

Description of the results: With the on farm testing on assessing the performance of tomato Hybrids Arka Samrat & Arka Abhed, it is found that the higher yield was observed in Arka Samrat (31.81%) and Arka Abhed (26.88%), when compared to farmers practice with PHS-448 and fruit weight 110-165g, 100-130g and 60-100g was recorded. Observed Arka Samrat & Arka Abhed resistance to bacterial wilt, early blight and leaf curl virus compared to PHS-448.

9. **Constraints:** lack of availability of hybrids in local areas. Arka Samrat and Arka Abhed hybrids are semi determinate and it needs stacking. Farmers are not interested to stacking due to high cost of cultivation and fluctuations of market prices.

10. **Feedback of the farmers involved:** farmers are happy with the hybrids, its having more keeping quality (15 days), good market price and high yielding then the local varieties.

11. **Feed back to the scientist who developed the technology:** farmers are spent less cost on diseases management because of its having triple disease resistance. These hybrids are suitable to Kurnool district and high yielding hybrids then the local hybrids. Lack of seed source/availability to the farmers.

OFT: 13

1. **Thematic area:** Nutrient Management
2. **Title:** Assessment of fertigation schedule in tissue culture Banana
3. **Scientists involved:** M. Adinarayana, SMS (Horticulture)
4. **Details of farming situation:** Irrigated, Sandy loam & clay loam
5. **Problem definition / description:** The cost of cultivation in banana is very high due to high cost of soluble fertilizers that are being indiscriminately used in banana cultivation, which is resulting in low or at times negative net returns.
6. **Technology Assessed:** Dr. YSRHU fertigation schedule, T2 – TNAU fertigation schedule, T3 – indiscriminate use of soluble fertilizers (FP)
7. **Critical inputs given:** Urea and MOP cost Rs.6000/-
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: indiscriminate use of soluble fertilizers	*6*	67.75	421352	3.78	
Technology 1(Dr.Ysrhu fertigation schedule)		68.61	426922	3.79	
Technology 2(TNAU fertigation schedule)		64.34	327752	2.81	

Description of the results: With the on farm testing on assessment of fertigation schedule in banana, it is found that the highest yield was recorded in Dr.YSRHU fertigation schedule (5.29%) and TNAU fertigation schedule (6.63%) then the farmers practice and saving amount (Rs. 30,000/ha) on soluble fertilizers compared to farmers practice.



9. **Constraints:** Most of the farmers are following different complex water soluble fertilizers which are available in markets.

10. **Feedback of the farmers involved:** Farmers are accepted the fertigation schedule and easy to adopt, which involves very less cost and gives better yield. Farmers are exported to iron country with the help of Desai Company because of good attractive color, size and quality of fruits.

11. **Feed back to the scientist who developed the technology:** Need to develop fertigation schedule with different complex water soluble fertilizers with low cost.

OFT: 14

1. Thematic area: varietal evaluation

2. Title: Assessing the performance of ridge gourd varieties

3. Scientists involved: M. Adinarayana, SMS (Horticulture)

4. Details of farming situation: Irrigated, Sandy loam & clay loam

5. Problem definition / description: The local varieties are producing lower yields and late flowering varieties

6. Technology Assessed: T1 Arka Prasan, T2 – Arka Vikram, T3 Saniya-4 (FP)

7. Critical inputs given: Seeds of Arka Prasan & Arka Vikram cost Rs. 16350/-

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: Saniya-4	*6*	246.5	185863	2.38	
Technology 1 Arka Prasan		263.2	218618	2.77	
Technology 2 Arka Vikram		287.5	240206	2.80	


9. Constraints: lack of seed availability in IIHR

10. Feedback of the farmers involved: farmers are faced bitterness in Arka Prasan variety.

11. Feed back to the scientist who developed the technology: Timely supply of seeds from the source. Highly demand for Arka Prasan variety but the seed availability is very less from the source.

OFT: 15

1. Thematic area: Varietal evaluation

2. Title: Cultivation of Dolichos bean during the rabi as alternate to other vegetables

3. Scientists involved: M. Adinarayana, SMS (Horticulture)

4. Details of farming situation: Irrigated, red sandy loam soils

5. Problem definition / description: Tomato cultivation during Rabi season resulted in less price realization due to glut in the market.

6. Technology Assessed: T1 Arka Amogh, T2 – Gold, T3 Tomato (FP)

7. Critical inputs given: Seeds cost Rs. 6000/-

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: Tomato	*6*	363.25	68039	1.60	
Technology 1 Arka Amogh		121.43	177612	3.72	
Technology 2 Gold		113.40	156585	3.23	

Parameters	
Days to 50% flowering (Days)	42
First harvest (days)	58
No of spikes per plant	5.38
Average pod length (cm)	11.10
Average pod width (cm)	1.82
Pod yield per plant (g)	348.63

9. Constraints: lack of seed availability from IIHR, they supplied during Feb and flower drop is observed during crop period.

10. Feedback of the farmers involved: farmers are accepted the Dolichos bean crop cultivation during rabi

11. Feed back to the scientist who developed the technology: Arka Amogh is early and high yielding variety then the local varieties.

OFT: 16

1	Thematic area	:	Breed evaluation
2	Title	:	**Assessment of different poultry breeds at backyards**
3	Scientists involved	:	A. Krishna Murthy, SMS (AH)
4	Details of farming situation	:	Backyard poultry providing additional income and nutritional security to the small farmers.
5	Problem definition / description	:	The existing desi/ND poultry have low egg production capacity and growth rate.
6	Technology Assessed	:	T_1 – Vanasri T2- Srinidhi T3- Rajasri
7	Critical inputs given	:	Chicks of five weeks age
8	Results	:	

Table: Performance of the technology

Technology Option	***No. of trials***	***Body weight gain in 5 months age (g)***	***No. of eggs (in 3 months)***	***Net Returns/bird***	***B:C ratio***	***Mortality (%)***
Vanasri	5	*1226.8*	*26*	*320.3*	*1.26*	*28*
Srinidhi		*1401.1*	*48*	*87.2*	*1.07*	*32*
Rajasri		*1485.8*	*63*	*363.2*	*1.32*	*16*

Description of the results:

The body weight gain in 150 days was observed in Vanashri, Srinidhi and Rajasri was 1226.8g, 1485.8g and 1401.1g respectively. It was observed that the mortality rate is high in Srinidhi (40%) followed by Vanashri (36%) and Rajasri (28%).

9. Constraints:

10. Feed back of the farmers involved: Rajasri breed found adaptable and the other breeds are easily caught by the predators.

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

OFT: 17

1	Thematic area	:	Nutrition management
2	Title	:	**Assessing the affect of probiotic yeast supplementation on milk production in milch buffaloes**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Dairy farming provides sustainable income to the farmers and the cost of milk production completely depends on concentrate feeding.
5	Problem definition / description: (one paragraph)	:	Low milk production in existing feeding practices in milch buffaloes
6	Technology Assessed:	:	TO-1: Concentrate feed + Probiotic yeast (15g/day) + 2% Sodium bi carbonate TO-2: Concentrate feed + Probiotic yeast (15g/day) FP: Concentrate feed
7	Critical inputs given:	:	Probiotic yeast and Sodium bicarbonate
8	Results	:	

Table: Performance of the technology

Technology Option	***No. of trials***	***6%FCM yield/day (kg)***	***Net Returns for 90 days (Rs.)***	***B:C ratio***	***Data on Other performance indicators****
Concentrate feed + Probiotic yeast (15g/day) + 2% Sodium bi carbonate	*10*	*9.7*	*16918.00*	*4.26*	
Concentrate feed + Probiotic yeast (15g/day)		*9.97*	*17654.00*	*4.48*	
Concentrate feed (FP)		*8.15*	*13698.00*	*3.8*	

Description of the results:

On supplementation of probiotic yeast @15g/day along with concentrate feed resulted in 17% increase in milk yield while on supplementation of probiotic yeast (15g/day) along with Sodium bicarbonate (40g/day) resulted in 14.7% increase in milk yield over farmers practice of concentrate feed only.

9. Constraints if any: Availability of probiotic yeast

10. Feed back of the farmers involved: Well accepted the technology by the farmers.

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

OFT: 18

1	Thematic area	:	Nutrition management
2	Title	:	**Assessing the effect of moringa leaf meal incorporated (20%) feed on body weight gain in post weaned lambs**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Ram lamb rearing is the subsidiary income source under rainfed situation. The ram lambs are mostly rear on grazing with or without supplementation of grains.
5	Problem definition / description: (one paragraph)	:	Low protein value in the diet of lambs resulting in poor body weight gain.
6	Technology Assessed:	:	TO-1: Concentrate feed + Moringa leaf meal (20%) TO-2: Concentrate feed (200g/day) FP: Grain feeding
7	Critical inputs given:	:	Concentrate feed
8	Results	:	

Table: Performance of the technology

Technology Option	***No. of trials***	***Body weight gain in 90days***	***Net Returns in per lamb (Rs.)***	***B:C ratio***
Concentrate feed + Moringa leaf meal (20%)	*5*	*4.76*	*762.5*	*2.78*
Concentrate feed (200g/day)	*5*	*4.99*	*865.0*	*3.26*
Grain feeding (FP)	*5*	*4.06*	*677.5*	*3.01*

Description of the results: On supplementation of concentrate feed (15% CP) resulted in 22.91% increase in body weight gain and moringa leaf meal incorporated feed resulted in 20.48% increase in body weight gain over farmers practice of grain feeding.

9. Constraints if any: Cost of moringa leaf meal was high

10. Feed back of the farmers involved: Palatability of moringa leaf meal incorporated feed is low.

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

OFT: 19

1. Thematic area: Post harvest Technology

2. Title: Assessment of different coating methods to improve the shelf life of fruits

3. Scientists involved: K. LakshmiPriya, PA (H. Sc)
M. Adinarayana, SMS (Horti.)

4. Details of farming situation:

5. Problem definition / description: The losses in Post harvest sector estimated in fruits and vegetables is 10 to 25% to 40% due to lack of proper storage facilities, accessibility of market, lack of proper transportation facilities.

6. Technology Assessed: TO-1: ICAR-IINRG Fresh Coat

TO-2: TNAU Fruity fresh

FP: No practice in applying coating methods to improve shelf life

7. Critical inputs given: ICAR-IINRG Freshcoat, TNAU Fruity Fresh

8. Results:

Table: Performance of the technology: Under Progress

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice					
Technology 1(Mention details)					
Technology 2(Mention details)					

9. Constraints:

10. Feedback of the farmers involved:

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

OFT: 20

1. Thematic area: Nutritional Security

2. Title: Assessment of Nutri Smart farming systems

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

M. Sudhakar, SMS (Agro.)

4. Details of farming situation:

5. Problem definition / description: Malnutrition is widely prevalent among different sectors of the population mainly micronutrient deficiencies. One of the reason for the intensity of the problem lies with the changes in Agriculture from Integrated Farming system to Monocropping / Commercial cropping led to poor supply of nutrients from farm to plate. Hence, integrated approach with the system can solve the problem of malnutrition as well as improves soil health status and monitory benefit to the farmers.

6. Technology Assessed: TO-1: Pearl Millet, Nutri Kitchen garden, Moringa, Greengram, Fodder crops

TO-2: FoxtailMillet+Redgram, Nutri Kitchen garden, Moringa, Border Fodde

FP: Suryanandi as sole crop/redgram as sole crop

7. Critical inputs given: Seed + Bio Agents + Vermicopost + Fodder Strips+Moringa

8. Results:

Table: Performance of the technology: Under Progress

Technology Option	*No. of trials*	*Yield (q/ha)*	*Net Returns (Rs./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice					6.5 kgs/month/family Greens:300gms/week Other Vegetables:3kgs/week
Technology 1(Mention details)					Inclusion of Bajra and Seteria 4kgs/month/family apart from regular usage. Inclusion of greens and other vegetables increased by 3 times. (Greens: 2kgs/week/family Vegetables: 7kgs/week/ (1kg/day to 1.5 kgs/day) Monthly saving on Greens and Vegetables: Rs.700/-/month and addition of Rs.4400/-month on sale
Technology 2(Mention details)					

Treatments	Critical Iputs	Observations to be Recorded	Results
T-1:Pearl Millet, Nutri Kitchen garden, Moringa, Greengram, Fodder crops (IARI,2018)	Seed + Bio Agents + Vermicompost + Fodder Strips	Inclusion of Millets In daily menu (qty/day): Inclusion of green leafy and other vegetables in daily menu (qty/day) Income generation(Rs.)	Inclusion of Bajra and Seteria 4kgs/month/family apart from regular usage. Inclusion of greens and other vegetables increased by 3 times. (Greens: 2kgs/week/family Vegetables: 7kgs/week/ (1kg/day to 1.5 kgs/day) Monthly saving on Greens and Vegetables: Rs.700/-/month and addition of Rs.4400/-month on sale
T-2:FoxtailMillet +Redgram, Nutri Kitchen garden, Moringa, Greengram, Fodder crops (KVK-NICRA, 2019)			
FP: Suryanandi as sole crop/redgram as sole crop			6.5 kgs/month/family Greens:300gms/week Other Vegetables:3kgs/week

9. Constraints: Farmers are not interested to cultivate all the crops in a single block

10. Feedback of the farmers involved: The Farming System is remunerative and helped the in increased incorporation and consumption of greens and other vegetables in daily menu

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

3.d. FRONTLINE DEMONSTRATION

Frontline Demonstrations in Detail

a. Follow-up of FLDs implemented during previous years

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details on the performance of the technology sent to the Extension Department	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Bengalgram	Varietal Evaluation	Demonstration Bengalgram with NBeg-49 and Nandyala sanaga-1	Performing well in Rainfed situation. Tolerant to drought. Tolerant to wilt.	20	1500	35000
2	Cotton and Paddy	Weed management	Post-emrgence herbicides	Effective weed control during labour scarcity period.	15	2000	25000
3	Paddy	Resource conservation	Direct Seeding	Water saving and Cost reduction technology	20	5000	15000
4	Maize	Resource conservation	Zero tillage	Water saving , time saving and Cost reduction technology	8	350	1000
5	Redgram Seteria	Cropping system	Redgram+ seteria Inter cropping System	Remunerative cropping system under rainfed situation	35	6000	35000
6	Redgram	Varietal Evaluation	Varietal Demonstration in Redgram-PRG-176& LRG-52	Performing well in Rainfed situation. Suitable for light to medium black soils. Tolerant to wilt	50	3000	27000
7	Rice	Soil testing	Soil testing crop response based nutrient application in rice	Demonstration, exposure visits, Field Days .	30	5689	127 50
8	Chilli	ICM	ICM whole package	Demonstrations, Exposure visits, and Field Days	41	4532	532 1
9	Acid lime	IDM	Dry root rot management with bio agents	Demonstrations, Exposure visits, and Field Days	5	148	217
10	Brinjal	ICM	ICM whole package	Demonstrations, Exposure visits, and Field Days	21	153	283
11	Pomegranate	ICM	Best management practices from pruning to harvest	Demonstrations, Exposure visits, and Field Days	6	45	124
12	Horticulture crops	Cropping system	Two or more crops in the same piece of land	Demonstrations, Exposure visits, and Field Days	6	113	86

b. Details of FLDs implemented during the reporting period:

FLD-1

Sl. No.	Item	Details
1	Crop:	Paddy
2	Thematic area:	Weed management in Direct seeded paddy
3	Technology demonstrated	Pre- emergence application of pendimethalin @2.5 lit /ha followed by post-emergence application of Bispyribac sodium @ 200ml /ha.
4	Season and year:	Kharif-2020
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:	The hand weeding is laborious and generally more expensive. **Application of herbicide along with one hand weeding most economic method for weed control in direct sown paddy.** weed density was also Significantly reduced and achieved 82.5.0 per cent weed control efficiency
14	Feedback of the Scientist:	Application of pre-emergence herbicide pendimethalin @2.5lit/ha followed by Post emergence application of Bispyribac sodium @200ml/ha. For effective weed management at early crop growth stage.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD-2

Sl. No.	Item	Details
1	Crop:	Jowar
2	Thematic area:	Varietal
3	Technology demonstrated	**Yellow Jowar variety NJ-15**
4	Season and year:	Maghi-20
5	Farming situation:	Meduim black siol, Rainfed
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 performance of Yellow jowar variety N-15 compared to existing non descriptive varieties.

14	Feedback of the Scientist:	Yellow jowar variety NJ-15 with Improved production technologies gave higher yield(1342kg/ha) which was 23.4 per cent more than that of non-descriptive variety (1087 kg/ha in black soils.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD-3

Sl. No.	Item	Details
1	Crop:	Maize
2	Thematic area:	Crop geometry
3	Technology demonstrated	**paired row method of Maize cultivation**
4	Season and year:	Kharif-2020
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 impressed with increased yield with paired row method of Maize cultivation, low weed density, easy intercultural operations between pairs.
14	Feedback of the Scientist:	Paired row method of Maize cultivation has recorded highest Yield 6405 kg /h and net returns than Farmers practice (5792kg/ha.) with 10.5 % increased Yield.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD: 4

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-2020 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 21487/- more than the in Setaria+ Redgram Intercropping.
14	Feedback of the Scientist:	Highest net returns was obtained with minimum tillage Bengalgram in Korra+ Redgram intercropping (Rs 77237/ha) than Korra+ Redgram intercropping (Rs 56750 ha). The additional net income of the farmers was also increased in minimum tillage Bengalgram in Korra+ Redgram intercropping which is calculated as Rs. Rs 21487/- more than the in Setaria+ Redgram Intercropping.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD: 5

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-2020 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	The additional net income of the farmers was also increased in Korra- Bengalgram sequence which is calculated as Rs. Rs 9762/- more than the Fallow- Bengalgram This shows the increased profitability through Korra- Bengalgram sequence with minimum tillage.
15	Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD: 6

Sl. No.	Item	Details
1	Crop:	Bengalgram
2	Thematic area:	Mechanization
3	Technology demonstrated	Mechanical harvesting of **Benagalgram variety NBeG-47**
4	Season and year:	Rabi-20
5	Farming situation:	Rainfed 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:	Farmers were impressed with mechanical harvesting of Benagal gram variety NBeG-47 due to Labour and time saving, coverage of more area and less shattering loss of grain.
14	Feedback of the Scientist:	For mechanical harvesting of Benagalgram variety NBeG-47 with combine harvester the hire charges are Rs. 5500/ha compared to Manual Harvesting and threshing charges are Rs 9750/ha. Increased Yield- 14.4.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD-7: Integrated nutrient management in BT. Cotton

Sl. No.	Item	Details
1	Crop:	Cotton
2	Thematic area:	INM
3	Technology demonstrated	Integrated nutrient management -FYM-5 T/ha,VAM-5 Kg/ha, Vermicompost-500 Kg/ha, Foliar application of Potassium nitrate(2%),Magnesium sulphate-1%, Zinc chelamin-0.2%, Borax-0.15%.
4	Season and year:	Kharif-2020
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 would improve the productivity of Bt. Cotton
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Field days-1 Training-1

FLD-8: Reclamation of Sodic soils with gypsum under irrigated condition

Sl. No.	Item	Details
1	Crop:	Rice
2	Thematic area:	INM-Reclamation
3	Technology demonstrated	Reclamation of sodic soils with gypsum @2.5 tonnes/ha
4	Season and year:	Kharif-2020
5	Farming situation:	Irrigated black- 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:	3
10	Area proposed (ha):	4
11	Actual area (ha)	4
12	Justification for shortfall if any:	
13	Feedback from farmers:	Farmers were well impressed with gypsum application in sodic soils. They got higher yield than their practice i.e. without gypsum application
14	Feedback of the Scientist:	Increased No. of tillers and yield enhancement. Observed soil physical properties improvement.
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Training-1

FLD-9: Sulphide injury management in Rice

Sl. No.	Item	Details
1	Crop:	Rice
2	Thematic area:	INM-Sulphide injury
3	Technology demonstrated	Sulphide injury management: Alternate wetting and drying, Foliar application of 1% NPK-19-19-19 and 0.5 % formula-4 for 2 spyaings at 25DAT and 40 DAT
4	Season and year:	Kharif-2020
5	Farming situation:	Irrigated black- 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:	Alternate wetting and drying and foliar application nutrients helped in reduce sulphide toxicity i.e. roots damage.
14	Feedback of the Scientist:	No. of tillers increased and recorded higher yield .
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Training-1

FLD-10: Zinc management in Sorghum (Jowar)

Sl. No.	Item	Details
1	Crop:	Jowar
2	Thematic area:	INM-Micronutrient deficiency
3	Technology demonstrated	Basal application of Zinc sulphate@50 Kg./ha
4	Season and year:	Rabi-2020
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:	4
10	Area proposed (ha):	4
11	Actual area (ha)	4
12	Justification for shortfall if any:	
13	Feedback from farmers:	They revealed that application of Zinc is required to enhance yield of Jowar.
14	Feedback of the Scientist:	Application of zinc helped in getting higher yield in demonstrations than farmers practice
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Training-1

FLD-11: Sulphur and Zinc management in Chickpea (Bengalgram)

Sl. No.	Item	Details
1	Crop:	Chickpea (Bengalgram)
2	Thematic area:	INM-Nutrient deficiency
3	Technology demonstrated	Sulphur and Zinc management -Sulphur-40 Kg/ha-Zinc sulphate-25 Kg/ha
4	Season and year:	Rabi-2020
5	Farming situation:	Irrigated black- 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		4
11	Area proposed (ha):	4
12	Justification for shortfall if any:	
13	Feedback from farmers:	Farmers were satisfied with Bengal gram yield increments due to sulphur and Zinc application
14	Feedback of the Scientist:	Productivity enhancement due to application of sulphur and zinc in respective nutrient deficient soils
15	Extension activities on the FLD: (Field days, Farmers training, media coverage, training to Extension Functionaries)	Training-1 Field day-1

FLD-12: Integrated Crop Management in chilli

1. **Crop:** Chilli
2. **Thematic area:** ICM
3. **Technology demonstrated:** ICM whole package
4. **Season and year:** Rabi 2020
5. **Farming situation:** Irrigated
6. **Source of fund:** KVK
7. **No of locations (Villages):** 3
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:** pheromone traps and sticky traps are not available in pesticide shops
13. **Feedback from farmers:** farmers are accepted this technology & less cost of cultivation on pesticides and good quality fruits.
14. **Feedback of the Scientist:** most of the chilli farmers are having good awareness on seed treatment, traps, border/trap crops
15. **Extension activities on the FLD:** Farmers training, Field days and training to Extension Functionaries (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD-13: Soil test based fertilizer management in onion

1. **Crop:** Onion
2. **Thematic area:** INM
3. **Technology demonstrated:** INM
4. **Season and year:** Kharif 2020
5. **Farming situation:** Irrigated
6. **Source of fund:** KVK
7. **No of locations (Villages):** 3
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:** most of the farmers are using complex fertilizers not following RDF
13. **Feedback from farmers:** farmers are accepted this technology & less cost of cultivation on fertilizers and getting good marketable quality bulbs.
14. **Feedback of the Scientist:** Some farmers are not applying straight fertilizers and also they are applying fertilizers upto 70-80 days after transplanting.
15. **Extension activities on the FLD:** Farmers training, Field days and training to Extension Functionaries (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD-14: Dry root rot management in Acid lime

1. **Crop:** Acid lime
2. **Thematic area:** IDM
3. **Technology demonstrated:** *Tricoderma* culture as soil application
4. **Season and year:** Kharif/Rabi 2020
5. **Farming situation:** Irrigated
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:** 5
10. **Area proposed (ha):** 4
11. **Actual area (ha):** 4
12. **Justification for shortfall if any:** Farmers are using fungicides as foliar spray for dry root rot
13. **Feedback from farmers:** farmers are accepted this technology & they are multiplying *tricoderma* culture and applying to soil
14. **Feedback of the Scientist:** Good technology for management of dry root rot disease
15. **Extension activities on the FLD:** Farmers training, Field days and training to Extension Functionaries (Field days, Farmers training, media coverage, training to Extension Functionaries)



FLD-15: Integrated crop management in pomegranate

1. **Crop:** Pomegranate
2. **Thematic area:** ICM
3. **Technology demonstrated:** Spraying schedule of Dr.YSRHU
4. **Season and year:** Kharif/Rabi 2020
5. **Farming situation:** Irrigated
6. **Source of fund:** KVK
7. **No of locations (Villages):** 3
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:** Farmers are using fungicides as foliar spray for dry root rot
13. **Feedback from farmers:** farmers are accepted this technology & this year not observed any flowering and fruiting due to continues heavy rains and least disease incidence was observed
14. **Feedback of the Scientist:** This schedule having more number of sprayings around 15 sprayings. Need to reduce based on the incidence
15. **Extension activities on the FLD:** Farmers training, Field days and training to Extension Functionaries (Field days, Farmers training, media coverage, training to Extension Functionaries).

FLD-16: Multiple cropping system in horticulture crops

1. **Crop:** Vegetables
2. **Thematic area:** Cropping system
3. **Technology demonstrated:** multiple cropping system
4. **Season and year:** Kharif/Rabi 2020
5. **Farming situation:** Irrigated
6. **Source of fund:** KVK
7. **No of locations (Villages):** 2
8. **No. of demonstrations (replications/farmers/beneficiaries):** 5
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:** most of the farmers are growing mono cropping. Only small holding farmers are interested to grow multiple crops in horticulture
13. **Feedback of the Scientist:** farmers are benefited by growing with multiple crops
14. **Extension activities on the FLD:** Farmers training, Field days and training to Extension Functionaries (Field days, Farmers training, media coverage, training to Extension Functionaries)



FLD-17: Improved fodder variety

Crop	Fodder Jowar
Thematic area	Feed and fodder management
Technology demonstrated	CoFS-29 fodder variety
Season and Year	Kharif 2020
Farming situation	Rainfed black
Source of Fund	KVK
No. of locations (villages)	1
No. of demonstrations	10
No. of SC/ST farmers and women farmers	5
Area proposed	2.0ha
Actual area	2.0ha
Justification for short rainfall if any	
Feedback from farmers	The fodder yield and palatability is good
Feedback of the scientist	-
Extension activities on the FLD	Field visit and Field day

FLD-18: Incorporation of agricultural waste in concentrate feed

Crop	Dairy
Thematic area	Feed and fodder management
Technology demonstrated	30% Blackgram haulms supplemented feed
Season and Year	Rabi 2020
Farming situation	Rainfed black
Source of Fund	KVK
No. of locations (villages)	2
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 feed quality is good but the palatability is low
Feedback of the scientist	Preparation of feed required separate equipment
Extension activities on the FLD	Field visit

FLD-19: Rearing of improved poultry breeds at backyard

Crop	Poultry
Thematic area	Breed evaluation
Technology demonstrated	Kadaknath poultry
Season and Year	Kharif 2020
Farming situation	Rainfed
Source of Fund	KVK
No. of locations (villages)	1
No. of demonstrations	10
No. of SC/ST farmers and women farmers	6
Area proposed	-
Actual area	-
Justification for short rainfall if any	
Feedback from farmers	The breed performance if far better than ND poultry but it require market facility
Feedback of the scientist	-
Extension activities on the FLD	Field visit and Group discussion

FLD-20: Balanced feeding in milch buffaloes

Crop	Dairy
Thematic area	Animal Nutrition management
Technology demonstrated	Formulation of balanced feed using SVVU android application
Season and Year	Rabi 2020
Farming situation	Rainfed
Source of Fund	KVK
No. of locations (villages)	2
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 but require thorough training
Feedback of the scientist	-
Extension activities on the FLD	Field visit, Method demonstration

FLD 21: Supplementation of bypass fat to milch buffaloes

Crop	Dairy
Thematic area	Animal Nutrition management
Technology demonstrated	Bypass fat
Season and Year	Rabi 2020
Farming situation	-
Source of Fund	KVK
No. of locations (villages)	2
No. of demonstrations	10
No. of SC/ST farmers and women farmers	5
Area proposed	-

Actual area	-
Justification for short rainfall if any	-
Feedback from farmers	The technology is good for milk production
Feedback of the scientist	-
Extension activities on the FLD	Field visit, Method demonstration

FLD 22: Improving reproductive efficiency though hormones

Crop	Dairy
Thematic area	Dairy management
Technology demonstrated	Double PgF2alpha protocol
Season and Year	Rabi 2020
Farming situation	-
Source of Fund	KVK
No. of locations (villages)	3
No. of demonstrations	50
No. of SC/ST farmers and women farmers	15
Area proposed	-
Actual area	-
Justification for short rainfall if any	-
Feedback from farmers	The technology is good as it reduces the inter calving period
Feedback of the scientist	-
Extension activities on the FLD	Health camps, Field visits and group discussions

FLD-23:

1. **Crop:** Oilseeds
2. **Thematic area:** Drudgery Reduction
3. **Technology demonstrated:** Three Pronged Wheel Hoes
4. **Season and year:** Rabi 2020
5. **Farming situation:** Rainfed Redsoils
6. **Source of fund:** KVK
7. **No of locations (Villages):** 2
8. **No. of demonstrations (replications/farmers/beneficiaries):** 5
9. **No of SC/ST Farmers and women farmers:** 5
10. **Area proposed (ha):** 2.5hac
11. **Actual area (ha):** 2.5hac
12. **Justification for shortfall if any:** - -
13. **Feedback from farmers:** With three pronged Wheel hoes for weeding in Groundnut crop, labour Saved and cost on weeding was reduced by Rs.1200/- /ac for one time Weeding and drudgery was recorded as **moderate** than manual weeding which was recorded from **moderate to max..**
14. **Feedback of the Scientist:**
15. **Extension activities on the FLD:** (Field days, Farmers training, media coverage, training to Extension Functionaries)

Details of FLDs implemented during the reporting period:

FLD-24:

1. **Crop:** Greenleafy and Vegeables
2. **Thematic area:** Nutrition Garden
3. **Technology demonstrated:** Household food security by kitchen gardening and nutrition gardening
4. **Season and year:** Kharif & Rabi 2020
5. **Farming situation:** Irrigated Medium Black soils
6. **Source of fund:** KVK
7. **No of locations (Villages):** 2
8. **No. of demonstrations (replications/farmers/beneficiaries):** 5
9. **No of SC/ST Farmers and women farmers:** 5
10. **Area proposed (ha):** 1.5 hac
11. **Actual area (ha):** 1.5hac
12. **Justification for shortfall if any:** - -
13. **Feedback from farmers:** With the Introduction of Nutrigardens Increased (11.5 kgs /week) consumption of greens and other vegetables in daily menu than their regular usage i.e, 3-4 kgs/week helps in improvement of nutritional status and income generated Rs.1115/- /week (Rs.7,990/season).
14. **Feedback of the Scientist: -**
15. **Extension activities on the FLD:** - (Field days, Farmers training, media coverage, training to Extension Functionaries)

Frontline demonstrations on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
Value Addition	Demonstration Of Millet Based Moringa Biscuit	10	Sensory Evaluation by Using Hedonic Scale	60% Expressed Colour, Taste, Smell, Texture, Appearance, Overall Acceptability : Scale Points: 6 (Like slightly).	-
Drudgery Reduction	Three Pronged Wheelhoe	5	Labour required/ac/day	8	15
			Reduction on Cost on weeding/ac	Rs.1200	Rs.2250
			Feed Back on work related Stress factors **:**Drudgery Index parameters	With three pronged Wheel hoes for weeding in Groundnut crop, labour Saved and cost on weeding was reduced by	With manual weeding drudgery was recorded and it is ranged from **moderate to maximum.**

				Rs.1200/- /ac for one time Weeding and drudgery was recorded as **moderate** than manual weeding which was recorded from **moderate to max..**	
Nutrtional Security	Demonstration on Nutrigarden For Ensuring Year Long Availability of Vegetables	5	Qty. Harvested/Week	47kgs	-
			Frequency of Consumption /Week	11.5kgs	3-4kgs
			Income generation/Week (Rs.)	1115.00 (Rs.7,990/season)	-
				With the Introduction of Nutrigardens Increased (11.5 kgs /week) consumption of greens and other vegetables in daily menu than their regular usage i.e, 3-4 kgs/week helps in improvement of nutritional status and income generated Rs.1115/- /week (Rs.7,990/season).	

Cluster FLDs on PULSES:

Crop	Variety	Area (ha)		Average Yield (q/ha)		Increase (%) (Demo-Check)* 100/check	Yield Gap (Demo-Check)	Increase (%) Over District average (q/ha)	Increase (%) Over State average (q/ha)
		Target	Achievement	Demo	Check				
Kharif									
Redgram	PRG-176	10	10	1280	1062	20.5	218	261	165.56
	LRG-52	10	10	1567	1187	31.5	380	342	255.10

Blackgram	TBG-104	20	20	1402	1117	25.5	285	51.7	29.09
Rabi									
Bengalgram	NBeG-49	10	10	1917	1625	17.9	292	50	57.38
Total (K+R+S)		50	50						

Redgram: Redgram variety LRG-52 with Improved production technologies (Improved variety, seed treatment, pre-emergence application of pendimethalin against weeds, Soil test based fertilizer application and IPM measures against Helicoverpa gave higher grain yield(1567Kg/ha), which was 31.5 per cent than that of obtained with farmers practice in medium black soils under rainfed situation.

Similarly the variety PRG-176 has recorded 1280 kg/ha, which was 20.5 per cent increased than local variety (ICPL-87119) 1062kg/ha under rainfed red soils.

Blackgram: In Blackgram variety TBG-104 with Improved production technologies (Improved variety,seed treatment, pre-emergence application of pendimethalin against weeds, Soil test based fertilizer application and IPM measures against sucking pest management) gave higher grain yield(1402kg/ha), which was 13.6 per cent than that obtained with farmers practice yields of 1117 kg/ha in rainfed situation.

Bengalgram: In Bengalgram variety NBeG-49 with Improved production technologies (Improved variety,seed treatment, pre-emergence application of pendimethalin against weeds, Soil test based fertilizer application and IPM measures against Helicoverpa and S.exigua) gave higher grain yield(1917kg/ha), which was 25.5 per cent than that obtained with farmers practice yields of 1625kg/ha in black soils under rainfed situation.

The increased grain yield with Improved production technologies was mainly because of more no of pods/plant and higher 100 grain weight.

Cluster FLDs on oil seeds:

Crop	Variety	Area (ha)		Average Yield (q/ha)		Increase (%) (Demo-Check)* 100/check	Yield Gap (Demo-Check)	Increase (%) Over District average (q/ha)	Increase (%) Over State average (q/ha)
		Target	Achievement	Demo	Check				
Kharif									
Groundnut	Kadiri Amaravathi	10	10	985	786	25.3	199	392	103
Rabi									
Safflower	ISF-764	30	30	1190	956	24.4	234		
Groundnut	KadiriAmaravathi & Harithandra	40	40	Results are awaited, Crop is at pod maturity Stage.					
Sesamum	JCS-1020	30	30	Results are awaited, Crop is at Flowering to pod formation stage.					
Total (K+R+S)		110	110						

Groundnut: In groundnut variety Kadiri Amaravathi with Improved production technologies (Improved variety, seed treatment, Soil test based fertilizer application, weed management and IPM measures against sucking pest) gave higher grain yield (985Kg/ha), which was 25.3 per cent higher than that of local variety K6 (786kg/ha) under rainfed situation.

Rabi Groundnut: During Rabi Groundnut variety Kadri Harithandra and Kadiri Amaravathi with Improved production technologies (Improved variety, seed treatment, Soil test based fertilizer application, Foliar spray of Zn and IPM measures against spodoptera). **Results are awaited.**

Safflower: The results indicated that Safflower variety ISF-764 with Improved production technologies (Improved variety, Pre-emergence application of pendimethalin @ 2.5 lit/ha, Soil test based fertilizer application, thinning at 10-15 DAS, and sucking pest management) gave higher yield(1190kg/ha), which was 24.4 per cent than that of farmers practice (956 kg/ha) in black soils under rainfed condition.

Sesame: The results indicated that sesame variety JCS-1020 with improved production technologies (Improved variety, Pre-emergence application of pendimethalin @ 2.5 lit/ha, Soil test based fertilizer application, thinning at 10-15 DAS, and sucking pest management). **Results are awaited.**

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
M. Adinarayana	EDII- Periyakulam Horti business incubation forum	25th – 28th August 2020	4	HE&RI, TNAU, Periyakulam, by virtual
M. Adinarayana	National webinar on boosting immunity through horticulture	Sep 1st – 9th 2020	9	Society for horticultural research and development, Ghaziabad, UP by virtual
M. Adinarayana	Recent advances in mango production	August 5th -7th 2020	3	UHS, College of Horticulture Bidar, by virtual
A. Krishnamurthy	Recent protocols in management of repeat breeding in dairy animals	28.06.2020	1 day	Vetoquinol pvt ltd.
A. Krishnamurthy	National webinar on Prospects and challenges in poultry sector	28.07.2020	1 day	Nanaji Deshmukh veterinary science university, Jabalpur
A. Krishnamurthy	International webinar on Recent trends in animal welpafe	31.07.2020	1 day	PVNR TVU, Hyderabad
A. Krishnamurthy	National workshop on Climate smart livestock production	05.08.2020 to 07.08.2020	3days	West Bengal University of veterinary and fishery sciences, Kolkata
A. Krishnamurthy	National webinar on climate smart integrated farming systems	18.09.2020	1 day	ICAR-National Institute of Abiotic stress management, BAramati
A. Krishnamurthy	Webinar on Lumpy Skin disease in bovine	12.09.2020	1 days	Maharashtra Animal & Fishery Science University, Nagpur
A. Krishnamurthy	Lumpy skin disease therapeutic and preventive approach	13.09.2020	1 day	Vetoquinol Pvt.Ltd
A. Krishnamurthy	Food planet health	23.09.2020	1 day	Indian Society of Animal production Management
A. Krishnamurthy	Webinar on Updates in treatment and control of mastitis	03.10.2020	1 day	Alembic pharmaceuticals pvt Ltd
A. Krishnamurthy	National webinar on current status and future prospects of poultry industry in India	16.10.2020	1 day	Madras Veterinary College, TANUVAS

A. Krishnamurthy	National webinar on revisiting backyard and small scale poultry in India	20.10.2020	1 day	Indian Society of Animal Production management
A. Krishnamurthy	International webinar on Animal waste: Opportunities and challenges	12.01.2021	1 day	Indian Society of Animal Production Management
K.Lakshmipriya	GrammenGirijanamahilalaku naipunyatha pempu, adaya karyakramalu	28/8/2020	1 Day	DrYSR Horticulture University, TPGudem
K.Lakshmipriya	The emerging challenges For women in Agriculture organised	2/9/2020	1 Day	APMAS
P. Nagarjuna Reddy	Online training programme on "Participatory training methods for effective learning"	1st - 5th December, 2020	5 Days	MANAGE, Hyderabad
P. Nagarjuna Reddy	Online training programme on "Video Production and dissemination skills for Agricultural Extension and Advisory Services"	14th - 18th December, 2020	5 Days	MANAGE, Hyderabad
P. Nagarjuna Reddy	Online training programme on "Best practices in Agrilogistic"	29th July, 2020	1 Day	Ch. Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan
P. Nagarjuna Reddy	Webinar on "Coping with COVID-19 – Strategies for Farmer Producer Organizations (FPOs)"	6th July, 2020	1 Day	MANAGE, Hyderabad
P. Nagarjuna Reddy	Webinar on "Formation and Effective Functioning of Farmer Producer Organizations"	18th August, 2020	1 Day	ICAR – Research Complex for Eastern Region, Patna, Bihar
P. Nagarjuna Reddy	Webinar on "EXPORT CHALLENGES AND MITIGATION STRATEGIES FOR FRESH AND PROCESSED F&V IN COVID-19 TIMES"	8th August, 2020	1 Day	National Institute of Food Technology Entrepreneurship & Management Kundli, Sonipat (Haryana)

Details of sponsored projects/programmes implemented by KVK:

S. No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs.)
1	ABF Biotech KISAN	DBT	1. To popularize use of Bio-fertilizers and Bio-pesticides 2. To capacitate farmers for on-farm production of Bio-inputs 3. To establish farmer level vegetable nursery as income generation activity 4. To popularize organic farming in vegetables	2 years	17,00,000.00
2	Establishment of Bioresource Centers in APDMP clusters	APDMP	1. To facilitate establishment of Bioresource centers (BRC) in an enterprise mode. 2. To capacitate BRC owners in production and handling of various bioresources dealt through BRC 3. To provide mother cultures of Biofertilizers and Biopesticides 4. To monitor and handhold the BRCs for their smooth running	2 years	8,64,000.00

Success stories

Success Story-I

Promotion Of Eco-Friendly Jute Bag a Success of SHG Women

Situation analysis/Problem statement:

Plastic bags made from petrochemical products such as Polyethylene and Polypropylene was extensively used for manufacturing carry bags. The disposable bags are convenient but they are major source of waste and pollution in the nature. The materials are not bio-degradable and also threat to the humans health. Over the years disposal of carry bags in the face of houses, waterways, sewage, parks, beaches or streets showing harmful effects on the Ecosystem. Reuasable cloth bags/Biodegradable bags are very strong and highly durable, **100% biodegradable** (it degrades biologically in 1 to 2 years), Eco-friendly, **low-energy recyclable** help to protect the environment concerns. It is a time to encourage the usage of Biodegradable/natural material bags, so that it contributes to the environment to make our planet clean and healthy place to live in.

Plan, Implement and Support:

With an aim to initiate and promote Eco friendly Jute bags, KVK took Initiative in imparting training to two SHG women groups consisting of 25 women members in collaboration with Indira Kranthi Patham, Bethamcherla on Jute Bag Making. Jute bag Making was selected because of its availability in different colours and designs and is more acceptable by consumers for its durability and appearance. The training duration was for a period of one month and this was organized at Mandal Mahila Samakhya, Bethamcherla. After the training, four SHG women came forward to establish Jute Bag Making Unit. KVK was behind the group in purchasing Jute Bag making stitching machine and jute materials from National Jute Board, Hyderbad . They Invested Rs.40,000/- initially by hiring loan from Mandal Mahila Samakhya.

Output:

Stitched different types of Jute bags of various sizes with value addition of laces, patch work with ethnic cotton materials etc.

Outcome:

The bags are being sold under the brand name of Siva Shanthi Eco friendly Jute & Cloth Bags. They are Stitching 250-300 bags/month and selling in retails shops, local markets, shandys and Rural Retail Stores opened by DRDA in five mandals and realizing an net income of Rs.3200/-/each. Jute bags catalogue also placed in “e Bharathi.org website” created by the Government of Andhra Pradesh with the support of TATA Trust to help the rural entrepreneurs in selling their products on e-platform.

Impact of Intervention:

First Jute Bag Making Unit established with SHG Women in the district in 2018 and running successfully. The Jute bags stitched by this unit got very good demand and line departments came forward to order also for cloth bags for seed packing, Jute bags & Pouches for meetings.

The unit stitched 15000 cloth bags for KVK seed for last two years. To meet the increased demand two more new machines were purchased.

Training SHG Women on Jute Bag Making At Mandal Mahila Samakhya, Bethamcherla

Trained SHG Women With Different models of Jute Bags

Inauguration of Jute Bag Making Unit

Jute Bag Making Production Unit

Cutting Of Jute Materials For Bag Stiching

Stiching of Jute Bags

Success Story II

Doubling of farmers income through Integrated Farming

Name: Venu Gopal Raju

Village: Chinnarajupalem

Mandal: Banaganapalle

Venu Gopal Raju was a farmer from a village Chinnarajupalem of Banaganapalle mandal, Kurnool district in Andhra Pradesh. He was an illiterate farmer who doesn't have basic education with 10 acres of land holding and 5 buffaloes. Traditionally he used to cultivate Redgram. Due to low yields the income obtained was not able to meet the expenditure of his family.

KVKs Intervention:

Chinnarajupalem village was selected as one of the adopted villages of KVK. He was selected as one of the beneficiary of horticulture interventions. Under the guidance of KVK, he has started cultivating vegetables (Brinjal and tomato) for getting higher income and Jowar as cattle feed. To increase the yield levels of Redgram, KVK suggested to cultivate medium duration and high yielding Redgram variety like LRG-52. He started following the recommended management practices in cultivation of crops and established a sericulture unit. In an area of 10 acres, he is cultivating Jowar (2 acres), Redgram (3 acres), Mulberry (3 acres), Brinjal (0.5 acres) and Tomato (0.5 acre). Instead of using Chemical fertilizers, he applied dung obtained from buffaloes as Organic manure.

Output and Outcome:

After adopting the technical interventions and adopting integrated farming he was able to double his income levels sufficient to meet his all basic requirements of family & educate his children.

Economics:

S. No.	Crop	Area (acre)	Cost of cultivation (Rs.)	Income (Rs.)	Net Income (Rs.)
1	**Field Crops**				
	Redgram	3	28,600	61,400	32,800
	Jowar	2	35,000	60,000	25,000
2	**Horticulture**				
	Brinjal	0.5	21,500	54,400	32,900
	Tomato	0.5	17,500	38,250	20,750

3	Sericulture (3 crops)	3	10,000	37,200	27,200
			28,000	64,000	36,000
			36,000	93,000	57,000
4	Livestock (Buffaloes)	5 no.	Rs.1,20,000	3,36,000	2,16,000
	Total		**2,96,600**	**7,44,250**	**4,47,650**




Details of innovative methodology, innovative technology and transfer of Technology developed and used during the year by the KVK

1. Formation of whatsapp group:

Created whatsapp group separately for the farmers actively involved in livestock farming in the district. Presently the group is having 190 active members. The problems facing in the livestock rearing are sharing in the group and getting potential solution. This also become a platform for the famers for cross learning, sale of the animals and products etc.

Night school for livestock owners:

Training programmes were organized to the group member on every Thursday from 7.30 to 9.00PM and discussed about current plan of action in livestock and clarified the doubts. 16 programmes of such were organized during the year.

1	05.07.2020	Livestock diseaes and preventive measures
2	19.07.2020	Feeding management of dairy animals
3	26.08.2020	Improving reproductive efficiency in milch animals
4	03.09.2020	Feeding management of dairy animals (Zoom meeting) 03.09.2020
5	10.09.2020	Feeding management of dairy animals - 2nd session (Zoom meeting) 10.09.2020
6	17.09.2020	Profitable poultry farming
7	25.09.2020	
8	30.09.2020	
9	09.10.2020	Prevention of mastitis in milch animals
10	15.10.2020	Reduction of mortality in calves and lambs
11	27.10.2020	Profitable sheep production
12	05.11.2020	Commercial sheep farming
13	26.11.2020	Management of livestock during rainy and winter seasons
14	10.12.2020	Preventive measures against diseases in livestock during winter
15	19.12.2020	Advance technologies in Livestock feeding
16	08.01.2021	Avian influenza (Bird flu) in poultry and preventive measures

2. Created farmers and extension personnel Whatsapp groups:

A total of 12 Whatsapp groups comprising of 1204 farmers of different crops and VAAs working at RBKs of Village panchayats were created for timely dissemination of information and provide agro advisories to farmers during COVID 19 pandemic.

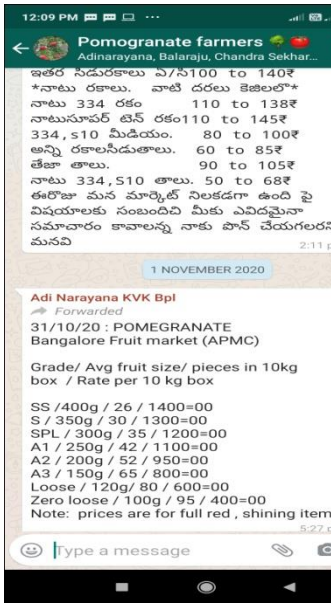
Efficacy of Whatsapp Groups:

		Whatsapp Groups									
		Ask KVK	**Paddy Farmers**	**Chilli farmers**	**Pulses growing farmers**	**Pomogrante farmers**	**Seed Hub farmers**	**BRC-APDMP**	**Biotech Kisan**	**KVK-YPL-AH**	**VAAs**
No. of Participants		136	126	245	103	40	24	119	188	192	35
Types of Chats (Content)	**a. Information**	More Frequent	Frequent	More Frequent	Frequent	Frequent	Frequent	More Frequent	More Frequent	More Frequent	Frequent
	b. Queries/ problems	Frequent	More Frequent	More Frequent	Less Frequent	Less Frequent	Less Frequent	More Frequent	More Frequent	More Frequent	Less Frequent
	c. Advisory	Frequent	More Frequent	More Frequent	Frequent	Frequent	Frequent	More Frequent	More Frequent	More Frequent	Frequent
	d. Market info	Less Frequent	Less Frequent	More Frequent	Less Frequent	More Frequent	Less Frequent	Less Frequent	Less Frequent	Frequent	More Frequent

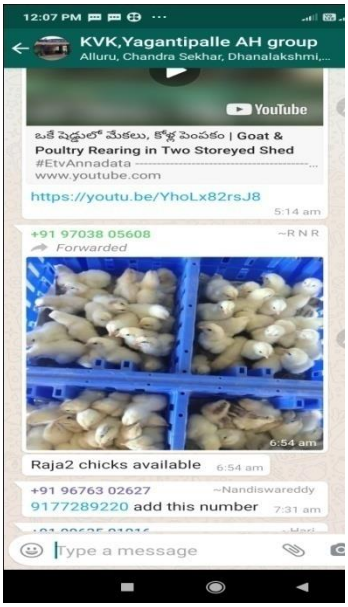
	e. Diagnosis	Frequent	More Frequent	Frequent	Less Frequent	Less Frequent	Less Frequent	More Frequent	More Frequent	More Frequent	Less Frequent
	f. Agri related information audio and video	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent

ASK KVK

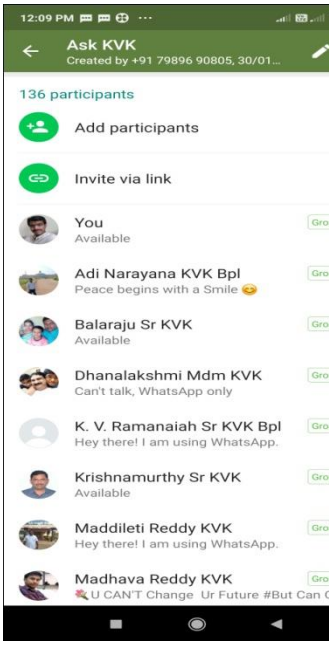
Chilli Farmers

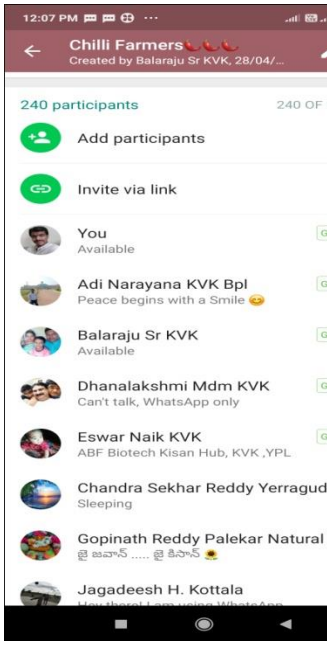


Pomogranate Farmers



KVK, Yagantipalle AH group





Farmers Innovative Practices:

1. Cultivation of Bengalgram using Raised Bed method of sowing:

Name of the farmer: Venkata Rami Reddy

Village: Kotapadu

Mandal: Owk

Introduction: In Kurnool district Bengalgram is being cultivated in an area of 1,46,353 ha during Rabi season and returns are limited due to low yield, high cost of cultivation (due to high seed rate).

Innovation: In order to increase the returns from Bengalgram cultivation the farmers has started Raised Bed method of sowing instead of traditional line sowing method. In Bed method for every two rows farmer has left an irrigation channel.

Bed Method	Traditional Method
C C X C C X C C X C C	C C C C C C C C C C C
C C X C C X C C X C C	C C C C C C C C C C C

C – Crop

X – Irrigation channel

Advantages of Bed method:

1. Low seed rate required: Compared to traditional line sowing method (35kg/acre) seed rate is low in Bed method (10 kg/acre).
2. Due to irrigation channel the excess moisture is drained out and growth of the plants on the bed observed was more vigorous.
3. Even though Plant population was found less compared to traditional method, the existing plants have more number of branches and more number of pods observed (300-500 pods observed/plant).
4. Through Bed method the farmer obtained an average yield of 13 quintals/acre where as through traditional method 8-10 quintals was observed.



2. Protecting the crops from Wild boars and birds attack through Audio recorder and speaker:

Farmers of Chinnarajupalem village protecting their crops from Birds and Wild boars attack by using this instrument innovatively (playing different sounds to scare birds and wild boars) which only costs Rs.650/-

- 12 hours battery charge with USB support
- Crop loss was 25% earlier which was reduced to < 5%.


Details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

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)

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Basic & Advanced Tailoring	26	73.07		2,800.00
Jute Bag Making	22	68.18	1950	3,300.00
Millet Value Added Products	28	67.85	-	4,800. 00

Study 1: Impact of COVID-19 on agricultural activities

- **Objectives:**

  1. To study the impact COVID 19 on farming operations perceived by the farmer.
  2. To elicit the Constraints faced by farmers during COVID 19 in agriculture and allied sectors.
  3. To identify the Suggestions to overcome constraints expressed by the farmers.

- **Research design:** Ex-post facto research design
- **Total sample size:** 120
- **Statistics included:** Frequency, percentage, mean and standard deviation

Results:

1. **Personal Characteristics of farmers:**
   - Majority of the respondents belongs to middle age (52.50 %) category followed by old (28.34 %) and young (19.16 %) age respectively.
   - Majority of the farmers were illiterate (26.66 %) with medium farming experience (37.08 %).
2. They also felt that during COVID 19 pandemic it was difficult in receiving inputs and services and selling of produce for remunerative price.

Table 1. Personal characteristics of farmers **(n=120)**

Sl. No.	Variables	Frequency	Per cent
1.	Age		
	Young (<30 years)	23	19.16
	Middle (31-50 years)	63	52.50
	Old (>50 years)	34	28.34

2.	Education		
	Illiterate	32	26.66
	Primary school	26	21.66
	Secondary school	28	23.33
	Intermediate	19	15.83
	Graduation	15	12.50
3.	Farming experience		
	Low (<15 years)	35	28.75
	Medium (15 – 30)	44	37.08
	High (>30)	41	34.17
4.	Land Holding		
	Marginal	22	18.33
	Small	48	40.00
	Medium	32	26.67
	Large	18	15.00
5	Extension Contact		
	Low	28	23.34
	Medium	73	60.83
	High	19	15.83
6	Family Size		
	Upto 5	67	55.83
	Above 5	53	44.16
7	Family type		
	Joint	46	38.33
	Nuclear	74	61.67

2. Impact of COVID 19 on farming operations perceived by the farmers:

It was observed from Table 2 that majority of the respondents expressed that due to the impact of COVID-19 there were changes in availability of labour (85.00%) followed by market price, psychological issues, economic status, income levels, marketing of produce etc. Table 3 indicated that overall impact of COVID 19 on farming was found high.

Table 2: Impact of COVID 19 on farming operations perceived by the farmers (n=120)

S.No	Impact items	Agree		Disagree	
		F	%	F	%
1	Changes observed in economic status	82	68.33	38	31.66
2	Changes observed in income levels	78	65.00	42	35.00
3	Changes observed in cultivated area	24	20.00	96	80.00
4	Changes observed in cropping pattern/ crop area planning based on market demand	64	53.33	56	46.66
5	Changes observed in choosing the crops	49	40.83	71	59.16
6	Changes observed in leased in /leased out	65	54.16	55	45.83
7	Changes observed in leased amounts	86	71.66	34	28.33
8	Changes observed in availability of labour (supply/demand)	102	85.00	18	15.00
9	Changes observed in marketing of produce	81	67.50	39	32.50
10	Changes observed in information receiving methods	88	73.33	32	26.66
11	Changes observed in rearing of milch animals	74	61.66	46	38.33
12	Changes observed in rearing of sheep and goat	53	44.16	67	55.83
13	Changes observed in rearing of poultry birds	62	51.66	58	48.33
14	Changes observed in supply chain	83	69.16	37	30.83
15	Changes observed in price	95	79.16	25	20.83
16	Changes observed in expenditure on agriculture	46	38.33	74	61.66
17	Changes observed in demand and supply of inputs/produce	52	43.33	68	56.66
18	Changes in psychological issues (risk taking ability/frustration/fear/depression/confidence)	92	76.66	28	23.33
19	Changes in new social and behavioural norms (social distancing, wearing masks, maintaining hygiene)	76	63.33	44	36.66
20	Changes observed in consumer habits	79	65.83	41	34.16
21	Changes observed in agricultural operations (please mention)	75	62.50	45	37.50
22	Changes observed in adoption of technology (please mention)	32	26.66	88	73.33
23	Changes observed in adoption of organic fertilizers	29	24.16	91	75.83

24	Changes observed in adoption of plant protection chemicals	0	0.00	120	100.00
25	Changes observed in adoption of irrigation methods	0	0.00	120	100.00
26	Changes observed in adoption of herbicide application	0	0.00	120	100.00

Table 3: Overall Impact **(n=120)**

Overall Impact	Frequency	Percentage
Low	22	18.33
Medium	31	25.83
High	67	55.83
Mean: 12.56 SD: 5.72		

Constraints faced by farmers during COVID 19 in agriculture and allied sectors:

Majority of the respondents faced difficulty in selling the produce at remunerative prices (61.66%) during COVID pandemic followed by difficulty in receiving inputs and services (56.66%).

Table 4: Constraints faced by farmers during COVID 19 in agriculture and allied sectors: (n=120)

Sl. No.	Constraints	Frequency	Percentage
1	Difficulty in receiving inputs and services	68	56.66
2	Difficulty in selling the produce at remunerative prices	74	61.66
3	Selling of produce due to fear of market closure	51	42.50
4	Higher level of labour shortage	59	49.16
5	Reduced movement to farm land	29	24.16
6	Lack of protective equipment for individual and workers	24	20.00
7	Unable to access technological services	19	15.83

Suggestions to overcome Constraints:

Majority of the farmers suggested to arrange supply chain (Procurement and Marketing of produce) (45.00%) followed by providing crop based advisory services through social media (35.00 %).

Table 5: Suggestions to overcome Constraints : (n=120)

Sl. No.	Suggestions	Frequency	Percentage
1	Crop based advisory services through social media	42	35.00
2	Awareness on Government based schemes and services	31	25.83
3	Encouraging FIGs and FPOs	33	27.50
4	Arranging supply chain (Procurement and Marketing of produce)	54	45.00
5	Value addition of produce	28	23.33
6	Farm labour recruiting service by Govt.	46	38.33

Study 2: Impact of CFLDs in Pulses

- **Objectives:**
  1. To assess the Knowledge and Adoption levels of recommended cultivation practices by farmers
  2. To analyze the economic impact of CFLD Pulses on farmers
  3. To find the constraints faced by the farmers in adopting the practices.
- **Research design:** Ex-post facto research design
- **Sampling:** Beneficiaries of CFLDs in pulses for the three years *i.e* (2016-17, 2017-18, 2018-19) and Non-beneficiaries will be selected using stratified random sampling.
- **Total sample size:** 120
- **Statistics included:** Frequency, percentage, mean and standard deviation

Results: Redgram

Knowledge:

It was evident from the table that knowledge on new varieties of Redgram like PRG-176 and LRG-52 was found high in beneficiaries of the programme compared to Non-beneficiaries. There is a difference in the Knowledge levels between beneficiaries and non-beneficiaries with regard to seed rate, spacing, seed treatment, Nutrient management and Plant protection measures to be followed.

a. Knowledge **(n=60)**

S.No.	Particulars	Beneficiaries (n=30)		Non-Beneficiaries (n=30)	
		Frequency	Percentage	Frequency	Percentage
1	Variety	27	90.00	16	53.33
2	Seed rate and spacing	23	76.66	15	50.00
3	Seed treatment	26	86.66	11	36.66
4	Nutrient management	22	73.33	13	43.33
5	Plant protection measures	23	76.66	11	36.66

Adoption:

It was seen from the table that adoption of seed treatment activity in Redgram was found high in beneficiaries of the programme compared to Non-beneficiaries. There is a difference in the adoption levels between beneficiaries and non-beneficiaries with regard to Varieties, seed rate, spacing, Nutrient management and Plant protection measures to be followed.

b. Adoption **(n=60)**

S. No.	Particulars	Beneficiaries (n=30)		Non-Beneficiaries (n=30)	
		Frequency	Percentage	Frequency	Percentage
1	Variety	18	60.00	12	40.00
2	Seed rate and spacing	16	53.33	11	33.66
3	Seed treatment	19	63.33	6	20.00
4	Nutrient management	14	46.66	8	26.66
5	Plant protection measures	12	40.00	9	30.00

Bengalgram

Knowledge:

It was evident from the table that knowledge on new varieties of Bengalgram like NBeG-49 and NBeG-3 was found high in beneficiaries of the programme compared to Non-beneficiaries. There is a difference in the Knowledge levels between beneficiaries and non-beneficiaries with regard to seed rate, spacing, seed treatment, Nutrient management and Plant protection measures to be followed.

a. Knowledge **(n=60)**

S.No.	Particulars	Beneficiaries (n=30)		Non-Beneficiaries (n=30)	
		Frequency	Percentage	Frequency	Percentage
1	Variety	24	80.00	13	43.33
2	Seed rate and spacing	19	63.33	10	33.33
3	Seed treatment	22	73.33	12	40.00
4	Nutrient management	17	56.67	10	33.33
5	Plant protection measures	16	53.33	11	36.67

Adoption:

It was seen from the table that adoption of seed treatment activity in Bengalgram was found high in beneficiaries of the programme compared to Non-beneficiaries. There is a difference in the adoption levels between beneficiaries and non-beneficiaries with regard to Varieties, seed rate, spacing, Nutrient management and Plant protection measures to be followed.

b. Adoption **(n=60)**

S.No.	Particulars	Beneficiaries (n=30)		Non-Beneficiaries (n=30)	
		Frequency	Percentage	Frequency	Percentage
1	Variety	16	53.33	11	36.67
2	Seed rate and spacing	12	40.00	8	26.67
3	Seed treatment	18	60.00	11	36.67
4	Nutrient management	14	46.67	7	23.33
5	Plant protection measures	13	43.33	9	30.00

Economic impact

a. Redgram

	Pod Yield (q/Ha)	Cost of cultivation (Rs./Ha)	Gross Returns (Rs./Ha)	Net Returns (Rs./Ha)
Before	13.13	28,520	55,214	26,694
After	14.30	28,279	62,108	33,829

It was resulted that there is a significant difference in the Pod yield, Cost of cultivation, Gross returns and net returns in Redgram cultivation before and after implementation of Cluster Frontline Demonstrations in Redgram.

b. Bengalgram

	Pod Yield (q/Ha)	Cost of cultivation (Rs./Ha)	Gross Returns (Rs./Ha)	Net Returns (Rs./Ha)
Before	12.77	38,631	64,225	25,593
After	14.44	35,541	72,780	37,239

It was resulted that there is a significant difference in the Pod yield, Cost of cultivation, Gross returns and net returns in Bengalgram cultivation before and after implementation of Cluster Frontline Demonstrations in Bengalgram.

Reasons for Non-adoption

Sl. No.	Constraints
1	High Cost of seed
2	Non-availability of improved seed
3	Lack of availability of quality Bio-fertilizers and Bio-fungicides

Suggestions to overcome the constraints:

Sl. No.	Suggestions
1	Subsidy on cost of improved seed from line departments
2	Timely availability of improved seed
3	Availability of Bio-fertilizers and Bio-fungicides at each RBK

Study 3: Extent of utilization of ICTs by farmers

- **Objectives:**

  1. To determine the extent of utilization of ICTs by the farmers
  2. To identify the constraints faced by the farmers
  3. To know the suggestions given by the farmers

- **Research design:** Ex-post facto research design
- **Total sample size:** 120
- **Statistics included:** Frequency, percentage, mean and standard deviation

Results:

The results presented in the Table 1. clearly indicate the Extent of ICT tools used for information seeking in agriculture.

Television was used frequently for information seeking pertaining to inputs availability and prices (18.33%), Weather forecasting (84.17%), Soil Health Management (15.83%), Pest and Disease management (36.67%), Market information (21.67%), credit and finance information (23.33%) and Government schemes (61.67%).

Mobile was used frequently for information seeking pertaining to inputs availability and prices (9.17%), Weather forecasting (35.00%), Pest and Disease management (7.50%), Market information (9.17%), credit and finance information (8.33%) and Government schemes (1.67%).

Table 1: Extent of Use of ICTs: **(n=120)**

Sl. No.	Type of Information	ICT Tools	Information seeking pattern					
			Frequently		Occasionally		Rarely	
			F	%	F	%	F	%
1	Inputs availability and prices	Television	22	18.33	57	47.50	41	34.17
		Mobile	11	9.17	25	20.83	84	70.00
		Computer/Internet	-	0.00	-	0.00	120	100.00
2	Weather Forecasting	Television	101	84.17	5	4.17	14	11.67
		Mobile	42	35.00	31	25.83	47	39.17
		Computer/Internet	-	0.00	-	0.00	120	100.00

3	Soil Health Management	Television	19	15.83	62	51.67	39	32.50
		Mobile	-	0.00	16	13.33	104	86.67
		Computer/Internet	-	0.00	-	0.00	120	100.00
4	INM	Television	14	11.67	62	51.67	44	36.67
		Mobile	6	5.00	11	9.17	103	85.83
		Computer/Internet	-	0.00	-	0.00	120	100.00
5	Pest and Disease Management	Television	44	36.67	71	59.17	5	4.17
		Mobile	9	7.50	14	11.67	97	80.83
		Computer/Internet	-	0.00	12	10.00	108	90.00
6	Post harvest technology	Television	-	0.00	13	10.83	107	89.17
		Mobile	-	0.00	-	0.00	120	100.00
		Computer/Internet	-	0.00	-	0.00	120	100.00
7	Market information	Television	26	21.67	58	48.33	36	30.00
		Mobile	11	9.17	18	15.00	91	75.83
		Computer/Internet	-	0.00	9	7.50	111	92.50
8	Crop Insurance	Television	-	0.00	6	5.00	114	95.00
		Mobile	-	0.00	8	6.67	112	93.33
		Computer/Internet	-	0.00	-	0.00	120	100.00
9	Credit and Finance Information.	Television	28	23.33	74	61.67	18	15.00
		Mobile	10	8.33	16	13.33	94	78.33
		Computer/Internet	-	0.00	-	0.00	120	100.00
10	Government programmes and schemes	Television	74	61.67	24	20.00	22	18.33
		Mobile	26	21.67	38	31.67	56	46.67
		Computer/Internet	-	0.00	-	0.00	120	100.00

Constraints faced by farmers in utilization of ICT tools:

Among the constraints faced by the respondents in use of ICTs, Lack of knowledge in usage of ICT tools was ranked I, followed by Low level of education (II rank), Insufficient training and exposure towards ICTs (III rank), Difficulty in understanding and language of ICT gadgets (IV rank), Information not received in time (V rank), High cost of ICT gadgets (VI rank), Sometimes right and appropriate information not received (VII rank), Poor economic condition (VIII rank), Non-availability of ICT tools (IX rank) and Inadequate internet facilities (X rank).

Table 2: Constraints faced by farmers in utilization of ICT tools (n=120)

S.No.	Constraint	Frequency	Percentage	Rank
1	Low level of education	78	65.00	2
2	High cost of ICT gadgets	62	51.66	6
3	Lack of knowledge in usage of ICT tools	89	74.16	1
4	Inadequate internet facilities	54	45.00	10
5	Insufficient training and exposure towards ICTs	73	60.83	3
6	Non-availability of ICT tools	55	45.83	9
7	Poor economic condition	58	48.33	8
8	Difficulty in understanding and language of ICT gadgets	67	55.83	4
9	Sometimes right and appropriate information not received	61	50.83	7
10	Information not received in time	65	54.16	5

Suggestions to overcome the constraints in utilization of ICTs:

A perusal of the Table 3. indicated that, among the suggestions given by the respondents to overcome the constraints, always right and appropriate information should be provided was ranked I, followed by ICT tools/ Mobile apps should be user friendly (II rank), Equipment should be maintained properly (III rank), Every farmer should be trained for making ICT tools user-friendly (IV rank), Information about ICT sources should be provided by officers (V rank), Education status of farmers should be improved (VI rank), Information should receive in time (VII rank), Information centres should be established and properly maintained in the village (VIII rank).

Table 3: Suggestions to overcome the constraints in utilization of ICTs (n=120)

S.No.	Suggestion	Frequency	%	Rank
1	Always right and appropriate information should be provided	63	52.50	1
2	ICT tools/ Mobile apps should be user friendly	58	48.33	2
3	Equipment should be maintained properly	55	45.83	3
4	Every farmer should be trained for making ICT tools user-friendly	54	45.00	4
5	Information about ICT sources should be provided by officers	52	43.33	5
6	Education status of farmers should be improved	48	40.00	6
7	Information should receive in time	42	35.00	7
8	Information centres should be established and properly maintained in the village	46	38.33	8

Linkages

Functional linkage with different organizations:

Name of organization	Nature of linkage

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

Name of organization	Nature of linkage
Acharya N.G. Ranga Agricultural University, Guntur	• Technical backstopping for KVK activities • Supply of Breeder seed–Paddy 5204, NDLR-7, NBeG-3 and NBeG-47 • Seed production programme of varieties in farmers field. • Capacity building of KVK scientists • As member in regional council
Rashtriya Krishi Vikas Yojana (RKVY) through ANGRAU	• Promotion of mechanization through custom hiring centre. • Strengthening of soil testing lab for more outreach. • Establishment of spawn and mushroom production unit for entrepreneurship. • Sustaining farmers income through integrated farming system • Strengthening of information and communication centre for wider dissemination of technologies-
Regional Agriculture Research Station (RARS)	• Seasonal work shops • T&V meetings • Procurement of foundation seed • Updation of technical know how
Agriculture Research Station, Anantapur	• Implementation of All India Coordinated Research Project on Agro meteorology (ACRPAM) in Kurnool district
Central Research Institute for Dry Land Agriculture, Hyderabad	• Capacity building of scientists • Implementation of NICRA Project(National Innovations on Climate Resilient Agriculture) • Implementation of Conservation Agriculture project.
International Crop Research Institute for Semiarid Tropics(ICRISAT)	• Seed Production of Hybrid Pigeon pea ICPH 2740
National Institute for Agriculture Extension Management, Hyderabad	• Capacity building of **Scientists** on innovations in extension and marketing
National Bank for Agriculture & Rural development, Hyderabad	• Capacity building of farmers. • Conducting Farmers Technology Transfer fund project (FTTF project) in soil test based nutrient application in250 ha covering five villages in K.C canal ayucut.
Agriculture Technology Management Agency	• Assessment and refinement of the technologies • Demonstration of the latest technologies • Capacity building of farmers, and farm women • Organization of exposure visits and interstate training programs to farmers for getting firsthand experience in latest technologies being available with progressive farmers and institutes.

List of special programmes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies:

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Establishment of Bio Resource Centres in APDMP Cluster villages of Andhra Pradesh	Oct, 2018	APDMP, Andhra Pradesh	8,64,000.00
ABF Biotech KISAN Project	Jan, 2019	DBT Through ABF, Hyderabad	17,00,000.00

Important Visitors to KVKs during 2020 (with photographs)

Sri P. Behra, CGM, NABARD, Smt. P. Ramalakshmi, DGM, NABARD and Sri. A. Parthava, AGM, NABARD, Kurnool visited KVK during the workshop organized on Climate Resilient Agriculture on Jan 21st 2021.

Sri. K. Viswanatha Reddy, ADA, Koilakuntla division of Kurnool Dist. visited Seed Processing Unit at KVK along with Mandal Agriculture Officers

PHOTOS

Photos on performance of technologies in OFTs and FLDs, Trainings, Extension Programmes, Other Extension Activities, Important Visitors, Awards and Recognitions (KVK, Staff, Farmers)*etc*.

SHE&CS,KVK,YPL: OFTs – Homescience

Assessment of Nutri Smart Farming System

Assessment of Nutri Smart Farming System

SHE&CS, KVK, YPL: FLDs-Homescience

FLD ON NutriGardens

FLD On Moringa Based Millet (Foxtail) Biscuits

FLD ON Three Pronged Wheelhoes

SHE&CS, KVK, YPL: Training Programmes

Importance of Raising of homestead nutrition gardens

Awareness on nutritional deficiency disorders among pregnant and lactating mothers

Preparation of Value added products with millets

Drudgery reducing implements for farm women

Preparation of Masala Powders as IG Activity for SHG women

Awareness On EDP Training Programmes For SHG Women

SHE&CS,KVK,YPL: Training Programmes On Nutri Gardens & Nutri Thaali in Collaboration With Dept Of Women Development&Child Welfare

Training Pregnant and Lactating Mothers

Training Anganwadi Workers

Training Programme to Pregnant And Lactating Mothers

Training Anganwadi Workers

Training Programme to Pregnant And Lactating Mothers

Training Anganwadi Workers On Bio Fortified Crops

Training Anganwadi Workers

Training Anganwadi Workers

SHE&CS, KVK, YPL: Promotion of Nutri Gardens At Anganwadi Centres and With FarmWomen In The Villages

NutriGardens In Amadala Village

NutriGardens In GB Pet Viilage

NutriGardens In Cherlopalli Village

NutriGardens In Yagantipalle Village

Nutri Gardens In AWC of H.Kottala Village

NutriGardens In Bhaghyanagaram Village

NutriGardens In AWC At Bijinivemula Village

NutriGardens In Venkateswaranagar Village

NutriGardens In AWC At Amadala Village

NutriGardens In AWC At Cherlopalli Village

SHE&CS, KVK, YPL: Programmes on Poshan Maah in Collaboration with Dept Of Women Development & Child Welfare

Inaguration Of Poshanmaah

Address By Chief Guest Sri. Pochabrahmananda Reddy Garu, MP, Nandyal

Address By Sri Y.G. Prasad Garu, Director, ATARI

Orientation On Importance Of Nutri Gadens & NutriThali to Farm Women & Anganwadi Teachers

Orientation On Importance Of Bio-Fortified Crops to Farm Women & Anganwadi Teachers

Distribution Of Nutri Garden Kits to Farm Women & Anganwadi Teachers In Collaboration With IFFCO

Nutri Rangoli Depicting Food Groups i.e, Cereals, Pulses, Greens, Oils & Nuts Millets, Vegetables, Fruits and Eggs

Recepies Depicting with Millets and Low Cost Nutrient Rich Diets

According Prizes For Best Millet Based Nutrient Rich Diets To Anganwadi Teachers

According Prizes For Best Low Cost Nutrient Rich Diets To Anganwadi Teachers

SHE&CS, KVK, YPL: Extension Activities

Organized World Food Day Celebrations and Release Of 17 Bio-Fortified Crops By Honourable Prime Minister Of India

Organized World Food Day Celebrations and Address By Senior Scientist & Head

Adress By Chief Guest Sri. PamaReddy, Principal Scientist,RARS,Nandyal Mahila Kisan Diwas

Addressing Farm Women on Empowerment In Agriculture And Allied Sectors during Mahila Kisan Diwas celebrations

Addressing Students On Hazards Of Single Use Plastics

Campaign On Hazards Of Single Use Plastics

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