PROFORMA FOR PREPARATION OF ANNUAL REPORT (April-2016-March-2017)

APR SUMMARY

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	93	2243	529	2772
Rural youths	7	125	60	185
Extension functionaries	16	297	337	634
Sponsored Training	25	595	130	725
Vocational Training	2	40	0	40
Total	**116**	**2665**	**926**	**3591**

2. Frontline demonstrations

Enterprise	No. ofFarmers	Area(ha)	Units/Animals
Oilseeds	130	100	
Pulses	182	122	
Cereals	55	24	
Vegetables			
Other crops	60	24	
Total	427	0	
Livestock & Fisheries	55	0	110
Other enterprises	85	0	85
Total	140		195
Grand Total	**567**	**270**	**195**

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	9	45	45
Livestock	4	20	20
Various enterprises	2	10	10
Total	**15**	**75**	**75**
Technology Refined			
Crops			
Livestock			
Various enterprises			
Total			
Grand Total			

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	62	2483
Other extension activities	83	-
Total	**145**	**2483**

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marke-ting	Aware-ness	Other Enterprise	Total
	Text only	22		48				
	Voice only							
	Voice & Text both							
	Total Messages	**22**		**48**				**70**
	Total farmers Benefitted	**1545**						**1545**

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	1271 (Q)	56,24,000
Planting material (No.)	4,00,000 seedling	1,20,000
Bio-Products (kg)	1707.29	10,57,800
Livestock Production (No.)	4007	5,07,940
Fishery production (No.)		

7. Soil, water & plant Analysis

	Samples	No. of Beneficiaries	Value Rs.
Soil	2993	2656	17,65,050
Water	21	11	2100
Plant	130	18	13050
Total	**3144**	**2685**	**17,80,200**

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	3
2	Conferences	1
3	Meetings	
4	Trainings for KVK officials	
5	Visits of KVK officials	
6	Book published	
7	Training Manual	
8	Book chapters	
9	Research papers	2
10	Lead papers	
11	Seminar papers	
12	Extension folder	4
13	Proceedings	
14	Award & recognition	1
15	Ongoing research projects	1

DETAIL REPORT OF APR-2016-17

1. GENERAL INFORMATION ABOUT THE KVK:

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

Address	Telephone		E mail	Website
	Office	FAX		
Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle (P) Banaganapalle (M) Kurnool (Dt.) A.P.	9440607424	----	pendekantikvk@rediffmail.com pendekantikvk@gmail.com	-----

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

Address	Telephone		E mail	Website
	Office	FAX		
Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra, Yagantipalle (P) Banaganapalle (M) Kurnool (Dt.) A.P.	9440607424	----	pb1961@rediffmail.com	-----

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Smt. G.Dhanalakshmi		9440607424	dhana66@rediffmail.com

1.4. Year of sanction: 1989

1.5. Staff Position (as on 30th March, 2017)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale	Present basic (Rs)	Date of joining	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1	Sr. Scientist & Head	G.Dhanalakshmi	Sr. Scientist & Head	Home Science	15,600-39,100	39,680	03-04-2003	Permanent	OC
2	Subject Matter Specialist	K.Venkata Ramanaiah	SMS (Soil Science)	Soil Science	15,600-39,100	34,500	10-07-1996	Permanent	BC
3	Subject Matter Specialist	M.Sudhakar	SMS (Agronomy)	Agronomy	15,600-39,100	34,500	23-09-1996	Permanent	OC
4	Subject Matter Specialist	D.Balaraju	SMS (Plant Protection)	Plant Protection	15,600-39,100	30,260	04-04-2003	Permanent	OC
5	Subject Matter Specialist	K.Rajeswar Reddy	SMS Horticulture	Horticulture	15,600-39,100	25,080	01-10-2008	Permanent	OC
6	Subject Matter Specialist	A.Krishna Murthy	SMS (Animal Husbandry)	Animal Husbandry	15,600-39,100	25,080	29-06-2010	Permanent	OC
7	Programme Assistant	K.Lakshmi Priya	Programme Asst. (Home Science)	Home Science	9,300-34,800	24,540	18-06-1996	Permanent	BC
8	Programme Assistant	B. Koteswar rao	Programme Asst. (Agronomy)	Agronomy				Temporary	Sc
9	Accountant / Superintendent	N. Nagaraju	Assistant		9,300-34,800	13,910	24.08.2015	permanant	OC

10	Jr.Asst. cum Typist (SK)	B.V.M.V.Prasad Rao	Jr. Asst. cum Typist	Jr. Asst. cum Typist	5,200-20,200	16,000	21-03-1990	Permanent	BC
11	Driver	Iqbal Basha	Driver cum Mechanic	Driver cum Mechanic	5,200-20200	12,220	20-09-1995	Permanent	OC
12	Driver	D.Obulesu	Driver cum Mechanic	Driver cum Mechanic	5,200-20200	12,220	01-08-1996	Permanent	SC
13	Attender	P.Raghava Reddy	Attender	Attender	4,440-20200	10,940	02-11-1990	Permanent	OC
14	Watchman	T.P.Gurappa	Watchman	Watchman	4,440-20200	10,690	30-12-1994	Permanent	BC
15	Cook	T.Rajeswari	Cook	Cook	4,440-20200	10,690	20-09-1995	Permanent	BC
16	Farm Attendant	A.Rama Subbaiah	Farm Attendent	Farm Attendent	4,440-20200	10,690	01-10-1996	Permanent	BC

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:

A) 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
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.	Soil Testing Laboratory	ICAR	2004-05	112.5	8.59	2004-05		
10.	Goat Shed	ICAR	2016-17	35.0	3.0	2016-17		

B) Vehicles:

Type of vehicle	Year of purchase	Cost (Rs.)	Total km. Run	Present status
TATA Sumo	2009	6,00,000-00	175948km	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 Mike	2005	5,800-00	OK

1.8. A) Details of SAC meeting held on 09.03.2017 for the year 2017-18 :

The SAC meeting was held on 3rd of March, 2016 at KVK. The meeting was presided over by Sri. P.Balaji, Secretary, SHE&CS. At the outset, Smt. G.Dhanalakshmi, Programme Coordinator has welcomed the SAC members, Guests. The programme started with ICAR Song.

A brochure on "Improved Production Technologies in Bengalgram" was released by the honourable members on the Dias. Significant Achievements of KVK, Future requirements of KVK and Action Taken Report was presented by Smt. G.Dhanalakshmi, Programme Coordinator, KVK followed by presentations of Work Done Report for 2016-17 and Action Plan for 2017-18 by individual Subject Matter Specialists Viz., Crop Production, Soil Science, Plant Protection, Horticulture, Animal Husbandary and Programme Assistant, Home Science.

The following observations, remarks and suggestions were made by the SAC members.

Sl. No.	Name and Designation of Participants	Salient Recommendations
1.	Dr. M.R.Sreenivasulu, Special Officer, SHE&CS.	• Farm waste should be used for vermicomposting along with FYM. • Verify the adoption of STCR by Rice farmers. • Seed village concept may be taken up in other than rice also. • All the seed produced in KVK should be tested for germination, before opening sales. • Pulse village programme may be tried. • Striga management in Jowar may be taken up in endemic areas. • Refugee crop in Bt cotton may be encouraged.
2	Mr. Krishna Reddy, Farmer, Kalugotla.	• Soil testing should be made compulsory for all the farmers. • Programmes should be formulated for awareness on Own Seed Production and storage. • The Jowar variety 2647 from RARS may be tested for its performance. • In Blackgram, LBG 787 and TPT 104 to be tested in farmers fields for its performance. So also LGG 574 of Greengram and LRG 52 of Redgram. • Control measures of Fruit and Shoot Borer in Brinjal need to be disseminated.

3	Dr. Y.Narasimhudu, Principal Scientist & Programme Coordinator, KVK, Yemmiganur.	• IFS should be promoted by KVK. • Mini Dairies and Sheep units are encouraging for farmers. And they can be taken up by farmers as part of IFS. • Crop diversification should be promoted.
4	Sri. Subba Reddy, MAO, Banaganapalle :	• Performance of ICPH 2740 needs to be evaluated. • Management strategies of Gemini Virus in chilli needs to be promoted. • Varieties for drought tolerance in Jowar need to be developed. • In Whatsapp groups of farmers, line department personnel also be included.
5	Dr. M.R.Sreenivasulu, Retd. ADR, RARS, Nandyal :	• IFS to be promoted as an important strategy. • Navadhanya cultivation to be promoted in Kharif. • Soil testing should be supported by NABARD.
6	Sri. P.Balaji, Secretary, SHE & CS	• Check whether information in Soil heath cards provided by KVK is sinking with the soil health cards provided by Govt. of India. • The target of soil samples should be at least 1500 for 2016-17 • Seed production by KVK should cover 10% of rice area of the district. • Third party evaluation should be taken up for STCR in Rice and for other KVK programmes also. • KVK should establish sub centres in Kurnool division to increase the outreach of KVK activities, employing Agri Diploma holders as coordinators. • Performance of use of organic inputs may be tested against farmers practice.
7	Gopal Reddy , ADR, RARS, Nandyal	• Recommended to include weed management in directed seeded rice, weed management in blackgram (pest emergence) .

List of participants attended the SAC Meeting :

S.No	Name	Designation
1.	Sri. P.Balaji	Secretary, KVK, Yagantipalle
2.	Dr. B. Gopal Reddy	ADR RARS Nandyal
3.	Sri. C. Subba Reddy	M.A.O, Banaganapalle
4.	Dr M R srinivasulu	Treasurer SHE&CS
5.	Dr. C.Venkata Ramana Varma	ADAH (Rep. of JDAH, Kurnool)
6.	S. Konda Reddy	Special officer SHE&CS
7.	Dr. Y. Narasimhulu	PC, KVK, Banavasi.
8.	Dr V.Jjaya lakshmi	RARS, Nandyal
9.	Dr. B. srikanth Reddy	VAS yagantipalle
10.	Sri. M. Srinivasa Reddy	BTM, ATMA, Nandyal.
11.	Dr. M raghavendra reddy	VAS Pasupula
12.	Dr. ram kumar reddy	Vas, palukur
13.	Smt. G. Dhanalakshmi	Programme Coordinator
14.	Sri M. Thirupam Reddy	Farmer, Kaipa
15.	Sri. B.V.Subba Reddy	Farmer, Banaganapalle
16.	Sri M. Krishnudu	Farmer, Yagantipalle
17.	Sri K. Pani Bhushan	Farmer, Utakonda
18.	Sri. P.B. Hari Krishna	Farmer, Nandavaram
19.	Sri. M.V.Krishna Reddy	Farmer, Kalugotla
20.	Sri. M.Veerabhadra Reddy	Farmer, Bethamcherla
21.	Sri. K. Venkateswar Reddy	Farmer, Owk Mittapalle
22.	Sri. D. Siva Shankar Reddy	Farmer, Yagantipalle
23.	Sir. D. Chennapa Reddy	Farmer banaganapalle
24.	Smt. B. Rajeswari	Women farmer, YPL
25.	Smt. Maheswaramma	Woman Entrepreneur, YPL
26.	Smt. Lakshmi Devi	Woman Farmer, Banaganapalle

2. DETAILS OF DISTRICT (2016-17)

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 unexpectable and dry land agriculture is predominant with a variety of rainfed crops in the zone.

Agro-ecological situations:

S. No	Agro ecological situation	Characteristics
1	K.C canal irrigated red soils	Paddy-Paddy, Greengram-Paddy Paddy-Groundnut, Vegetables Paddy-Fallow
2	T.B.Low level canal irrigation Red soils	Paddy-Paddy, Paddy-Groundnut Greengram-Paddy, Vegetables Groundnut/Fallow
3	T.B. High level canal irrigation Red soils	Greengram-Paddy, Paddy/Groundnut/ Vegetables-Fallow
4	K.C.Canal irrigation Black soils	Paddy-Greengram-Paddy Paddy/Groundnut-Vegetables Sunflower/Groundnut-Fallow Groundnut/Cotton-Fallow
5	T.B.Low level canal irrigation-Black soils	Greengram/Paddy-Paddy Paddy-Groundnut/Vegetables Sunflower-Groundnut Groundnut-Sunflower Cotton-Fallow
6	T.B.High level canal irrigation Black soils	Paddy-Fallow, Sunflower/Groundnut-Fallow

7	Problem soils	Greengram-Paddy, Fallow-Paddy Fallow-Paddy
8	Tank irrigation Red soils	Paddy-Sunflower/Fallow Paddy/Sunflower-Fallow
9	Tank irrigation Black soils	Paddy-Paddy/Groundnut Sunflower-Fallow, Fallow-Paddy/Groundnut/Sunflower
10	Well irrigation Red soils	Paddy-Paddy/Sunflower/Groundnut Sunflower-Groundnut/Greengram Groundnut – Groundnut/Sunflower Cotton/Onion-Fallow
11	Well irrigation Black soils	Paddy-Paddy/Sunflower/Groundnut Sunflower/Vegetables Cotton/Onion/Chillies-Fallow
12	Rainfed Red soils	Sunflower, Groundnut+Redgram Groundnut+Jowar, Cotton Cotton+Redgra, Jowar, Korra, Redgram-Fallow
13	Rainfed-Black soils	Paddy-Fallow Sunflower/Bengalgram/Coriander fallow Jowar/Bengalgram/Tabacco Jowar/Groundnut/Cotton-Fallow
14	SRBC – Redsoils	B.t. Cotton, Jowar, Redgram, Groundnut,Korra
15	SRBC – Black soils	Rice, Jowar, Maize
16	TGP – Red soils	G.nut, Vegetables,Sunflower, Chillis, Cotton
17	TGP –Black soils	Rice, B.t. Cotton, Chillis

2.3 Soil types:

S. No	Soil type	Characteristics	Area in lakh 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

Kharif : 2016

Sl.no	Crop name	Normals	Area sown during the corresponding period kharif 2015-16 final	Kharif 2016-17 actual	percentage
1	Paddy	79018	46316	79264	100
2	Jowar	14062	13518	6869	49
3	Bajra	7844	9765	8413	107
4	Maize	30154	18240	27874	92
5	Sateria	13613	23119	11601	85
6	Redgram	48228	56949	111296	231
7	Greengram	1648	2736	2098	127
8	Blackgram	3544	6061	13542	382
9	Horsegram	21	98	0	0
10	Groundnut	104237	73370	113447	109
11	Sesamum	33	11	29	88
12	Sunflower	5420	2101	2988	55
13	Castor	54406	33571	19915	37
14	Soyabeen	185	503	593	321
15	Other oil seeds	14	0	0	0
16	Chillies	15567	16626	26477	170
17	Onion	20746	26624	24502	118
18	Turmeric	2535	1654	1861	73
19	Sugarcane	976	929	406	42
20	Cotton	192248	200123	176195	92
21	Mestha	219	12	20	9
23	Other crops	17138	26720	28824	168
	TOTAL	**621155**	**559046**	**656214**	**106**

Rabi -2016:

Sl. No	Crop name	Normal	Area sown during the corresponding period 2015-16	Area sown 2016-17	percentage of coverage
1	Paddy	19296	8626	25152	130.35
2	Wheat	245	143	25	10.20
3	Jowar	62203	73698	47191	75.87
4	Bajra	371	93	205	55.26
5	Maize	8528	4899	7153	83.88
6	Ragi	0	0	0	0.00
7	Korra	342	239	364	106.43
8	Bengal gram	192744	201550	172508	89.50
9	Redgram	1002	2429	1929	192.51
10	Greengram	1610	2917	1364	84.72
11	Blackgram	9251	20824	19644	212.34
12	Horsegram	503	258	83	16.50
13	Other pulses	31	0	0	0.00
14	Groundnut	16796	12590	15241	90.74
15	Sesamum	1187	461	164	13.82
16	Sunflower	15140	3079	1458	9.63
17	Safflower	144	66	13	9.03
18	Castor	661	21	30	4.54
19	Rape & mustard	2481	708	3163	127.49
20	Other oil seeds	26	0	0	0.00
21	Cotton	240	7	4	1.67
22	Chillies	554	417	289	52.17
23	Onion	2292	3154	1304	56.89
24	Tobacco	6637	6552	5596	84.32
25	Coriander	5222	3403	1771	33.91
26	Potato	25	0	0	0
27	Others	6810	10378	8568	125.81
	TOTAL	**354341**	**356512**	**313219**	**88.39**

2.5. Weather data

Month	Rainfall (mm)	Temperature ^{0} C	
		Maximum	Minimum
Apr -16	0.9	42.35	27.87
May-16	70.8	39.95	27.02
Jun -16	153.1	34.43	24.93
Jul -16	131.8	33.39	24.46
Aug -16	79.8	34.13	24.96
Sep -16	162.4	31.64	23.32
Oct -16	8.9	33.25	20.71
Nov-16	2.2	31.07	17.97
Dec -16	1.6	31.07	17.17
Jan -17	0.0	30.56	15.57
Feb -17	0.0		
Mar -17	0.0		
Total:			

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district

Category	Population	Production	Productivity
Cattle			
Crossbred	6452	3.98 lakh metric tonnes of milk	6-8 lt
Indigenous	409575		1.5-2.5
Buffalo	410783		2-3
Sheep& Goat			
Crossbred	-	19,087 metric tonnes of meat	
Indigenous	1504038		12.5 kg
Goats	505112		
Pigs	16949		
Crossbred			
Indigenous			
Rabbits			
Poultry			
Hens	2,74,957	857 lakh No.s eggs	
Desi	6,41,218		60-70 eggs
Improved	3,35,127		245-260 eggs
Ducks	942		
Turkey and others			

2.7 Details of Adopted Villages (2016-17)

Year of adoption:

Sl.No.	Taluk / mandal	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Midthur	Midthur	Jalakanur	Cotton, Chillis, Rice, Redgram	Indiscriminate use of Fertilizers and Pesticides in Rice, Chillis and Cotton,	IPM, INM and ICM
2				Milch animals	Fodder Scarcity, Mineral deficiency and non availability of concentrate feed	Hydroponic fodder production; Supplementation of RSMM and Feed from agricultural by products.
3				Bt cotton	Low Yields due to low plant density	Crop geometry
4				Cotton, Paddy	Nutrient disorders	Nutrient management
5	Midthur	Midthur	Sunkesula	Cotton, Redgram	Indiscriminate use of insecticides for management of pests in cotton	IPM
6	Owk	Owk	Junuthala Ligambodu	Groundnut	Low productivity in oilseeds Due moisture stress	Introduction of Varieties tolerant Moisture stress
7			Vemulapadu	Fodder	Improved fodder varieties not available	Introduction of new fodder varieties.
8	Banaganapalle	Banaganapalle	Illur Kothapet	Bengalgram, Chillis, Jowar	Indiscriminate use of Fertilizers, Pesticides	INM and IPM

9			Bhanumukkala	Rice, Maize, Vegetables	Indiscriminate use of Fertilizers and Pesticides	INM and IPM
10		Banaganapalli	Nandavaram	sunflower	Low productivity in oilseeds	Integrated crop management in sunflower
11				Sheep	Lamb mortality and poor growth rate in post weaned ram ram lambs	Creep feeding to pre weaned lambs; Supplementation of concentrate feed to ram lambs
12				Milch animals	Mineral deficiency	Supplementation of RSMM
13			Hussainapuram	Paddy	Micronutrient deficiencies	Nutrient management
14			I Kothapet	Bengalgram Jowr	Micronutrient deficiencies	Nutrient management
15	Gospadu	Gospadu Servella	Sreenivasapuram Govindapalli	Rice, Sesame	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
16	Pagidyal		Arjunapuram	Paddy, Maize	Indiscriminate use of chemical fertilizers and micronutrient disorder	Nutrient management
17	Bethamcherla	Bethamcherla	Seetaramapuram	Milch animals	Mineral deficiency	Supplementation of UMMB and RSMM

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 farmers 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. Inorder 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**	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. Direct seeding in paddy has to be promoted as more than one lakh ha of area is under paddy. Direct seeding paddy saves time , water and labour. Farmers should be educated about this technology.
Redgram	IPM for Pod Borers and Pod Fly
Chillis	Sucking pest and Viral disease management
Rice	IPM for Leaf folder, Stem borer and IDM for blast and Sheath blight
Cotton	IPM for sucking pest management
Blackgram & Greengram	YMV management

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2016-17

OFT (Technology Assessment)				FLD (crop/enterprise/CFLDs)			
1				2			
Number of technologies		Total no. of Trials		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
15	15	75	75	270	270	577	577

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers & farm women	93	93	2772	2772	9	9	3200	3200
Rural youths	7	7	185	185				
Extension functionaries	16	16	634	634				

Seed Production (Qtl.)			Planting material (Nos.)		
5			6		
Target	Achievement	Distributed to no. of farmers	Target	Achievement	Distributed to no. of farmers
1000	1271	565	500000	420000	10

3.b. TECHNOLOGY ASSESSMENT

Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	No. of trials	No. of farmers
Integrated Nutrient Management	Paddy	Yield maximization through boron application	10	10
	Maize	Yield maximization maize through boron	10	10
Varietal Evaluation	Blackgram	Evaluation of new varieties against YMV	5	5
Integrated Pest Management	Onion	Management of Thrips and Leaf Blotch		5
	Redgram	Management of Pod borers with special reference to pod fly	5	5
	Jowar	Management of Shoot fly and Stem borer	5	5
Integrated Crop Management	Red gram	Assessment of nipping on yield of rain fed red gram	6	6
Post Harvest Technology / Value addition	Red gram Jowar	Assessment the performance of triple layer hermatic storage bags for storing of Rice, Redgram dal & Jowar at household level	60	60

Drudgery Reduction	Chillies	Assessment of fertilizer dispenser for applying fertilizers in chillies to reduce drudgery of farm women	5	5
Cropping systems	Red gram	Assessment of redgram based intercropping systems in rain fed situation	6	5
	Paddy	Assessment of alternate crops for paddy under irrigated conditions in paddy cropping sequences	6	5
Total			**118**	**118**

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
Feed and Fodder management	Buffaloes	Assessment of different hybrid Napier varieties	5	5
	Sheep	Feeding of GNH supplemented feed to ram lambs	5	5
	Buffaloes	Assessment of different feeds prepared from agriculatural by products	5	5
Nutrition Management	Buffaloes	Concentrate feed supplementation along with wet distillery grains	5	5
Total			**20**	**20**

3.c. TECHNOLOGY ASSESSMENT IN DETAIL

OFT : 1

S.No	Item		Particulars
1	Thematic Area	:	**Cropping systems**
2	Title	:	Assessment of redgram based intercropping Systems in rainfed situation
3	Scientists Involved	:	M.Sudhakar, SMS(Agronomy)
4	Details of Farming Situation	:	Rainfed, Medium black soils, fertility Status
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. There is limited scope for increasing pulse productivity by increasing the area. The increasing demand can be met by increasing the productivity through adopting appropriate agronomic practices of which intercropping is one of the best way to increase production.
6	Technology assessed	:	T1: Redgram + Greengram (1:5) T2: Redgram + blackgram(1:5) T3: Redgram + setaria 1:5) Farmers practice: Redgram (Sole)
7	Critical Inputs given	:	Seed

8. Results :

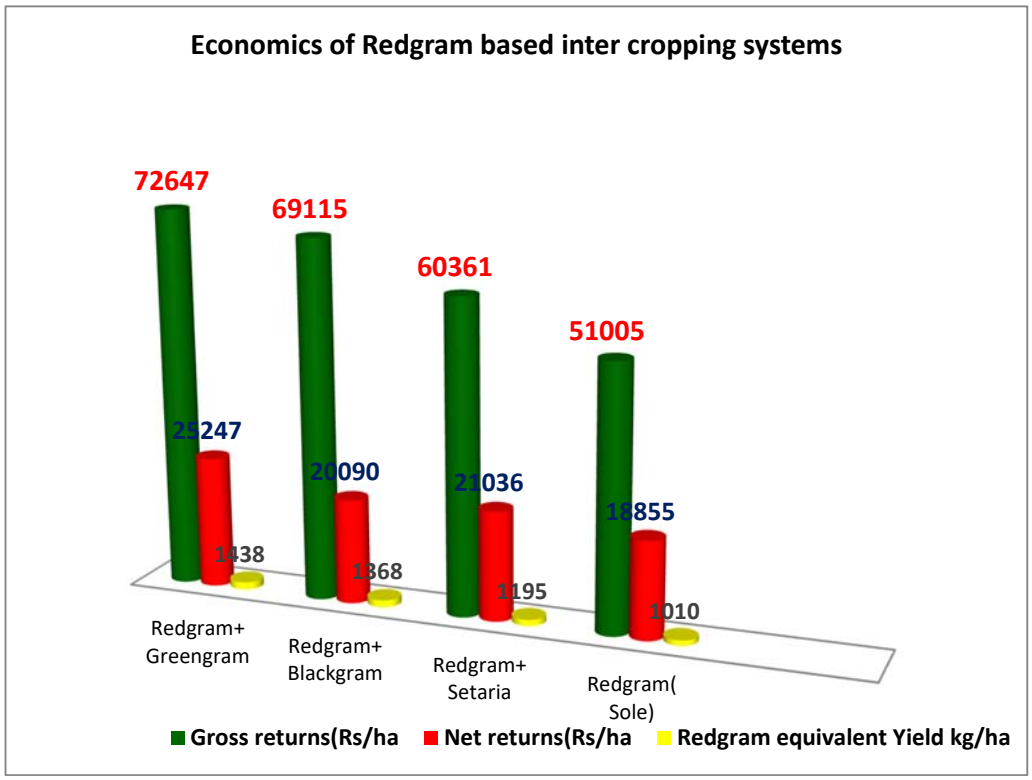
Table: Performance of the technology:

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs. inlakh./ ha)*	*B:C*	*LER*	*Redgram Equivalent Yield(Kg/ha)*
Farmers practice: Redgram (Sole)	*6*	*1010*	18855-00	*1:1.52*	*1.0*	*1010*
T1: Redgram + Greengram (1:5)		854	25247-00	*1:153*	1.53	1438
T Redgram + blackgram(1:5)		830	20090-00	*1:153*	1.43	1368
T3: Redgram + setaria 1:5)		790	21036-00	*1:1.4*	1.64	1195

Description of the results:

On farm testing on **Assessment of redgram based intercropping Systems in rainfed situation** was conducted during the kharif 2017 at Yagatipalli and Krishnagiri villages of Banaganapalli mandal. The results indicated that growing of Redgram as sole crop recorded higher grain yield (1495 kg ha-1) over Redgram in intercropping system. Among the cropping systems, intercropping of Greengram and Blackgram with pigeonpea resulted in maximum pigeonpea equivalent yield (2406 kg ha-1) and 2932 kg ha-1) net returns (Rs.23,793 ha-1and Rs.23,039 ha-1) and B:C ratio (2.89 and 2.99, respectively) over other intercropping system and sole pigeonpea.

The LER is high with Pigeonpea + Setaia intercropping system compared to inter cropping systems. Ahmad and prasad (1996) also reported higher LER with little millet + Pigeonpea intercropping system.



9. Feed back of the farmers involved:

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

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

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

OFT: 2

S.No	Item		Particulars
1	Thematic Area	:	Cropping systems
2	Title	:	Assessment of alternate crops for paddy under limited irrigated conditions in paddy-paddy cropping sequences
3	Scientists Involved	:	M.Sudhakar, SMS(Agronomy)
4	Details of Farming Situation	:	Irrigated, black soils, fertility Status:
5	Problem definition/description	:	Rice is one of the popular food crops being grown in canal, tank fed and under bore wells of the kurnool district. In recent years farmers are growing winter crops. But still majority of farmers grow rice as summer crop if the water is available. It is established that rice requires more water along with more quality farm inputs and low net returns/ha due to high cost of cultivation
6	Technology assessed	:	*Padd-Paddy(Farmers Practice)* T1: Paddy- Mustard T2: Paddy- Setaria T3: Paddy- Blackgram
7	Critical Inputs given	:	Seed

8. Results : **Table : Performance of the technology :**

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs. In lakh./ha)*	*B:C ratio*	*Paddy*
Padd-Paddy(Farmers Practice)	*6*	6375	37978-00	1:1.63	6375
T1: Paddy- Mustard		787	41525-00	1:3.02	4106
T2: Paddy- Setaria		2837	31886-00	1:2.66	3331
T3: Paddy- Blackgram		1437	40844-00	1:1.84	6092

Description of the results:

In the present study, the yields of crops considered were converted into a common standard Rice equivalent yield. Based on Rice equivalent yield the results shows that among all the rice based cropping sequences, Rice-rice sequence found to be superior followed by Paddy- Blackgram and Paddy- Mustard. But the CB ratio was highest with Paddy- Mustard sequence followed by paddy-setaria. But the net returns were highest in case of Paddy- Blackgram and Paddy- Mustard followed by Paddy-paddy. The CB ratio analysis showed that the paddy sequence with mustard gave highest returns followed by paddy-setaria.

9. Feed back of the farmers involved:

Among all Paddy based sequences Paddy- Mustard followed by paddy-setaria will immense use for the farmers to reap maximum net returns per unit area and time.

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

Research on development High yielding Mustard varieties suitable for relay cropping/Rice fallows has to be strengthened.

OFT: 3

S.No	Item		Particulars
1	Thematic Area	:	Integrated crop management
2	Title	:	Assessment of Nipping on Yield of Rainfed Redgram
3	Scientists Involved	:	M.Sudhakar, SMS(Agronomy)
4	Details of Farming Situation	:	Irrigated, black soils, fertility Status
5	Problem definition/description	:	Redgram is an important pulse crop. The crop is largely grown under rainfed situation, its agronomic practices are required to be standardized for realizing yield potential. Among them plant population and the number reproductive sink/plant are the key factors for determining the yield. In Kurnool district Redgram being cultivated in an area of 45000 ha under rainfed situation. The productivity levels are low due to high plant densities, increased plant height, less no of Primary & secondary branches, terminal moisture stress.
6	Technology assessed	:	T1: Farmers practice T2: Sowing at 180cm and Nipping at 50 DAS T3: Sowing at 180cm and Nipping at 50 DAS and 70DAS
7	Critical Inputs given	:	Seed

8. Results :

Performance of the technology:

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs. in lakh./ha)*	*B:C ratio*
T1: Farmers practice	*6*	2075	69037-00	1:2.9
T2: Sowing at 180cm and Nipping at 50 DAS		2340	81670-00	1:3.23
T3: Sowing at 180cm and Nipping at 50 DAS and 70DAS		2380	82940-00	1:3.22

Description of the results:

The results indicated that Nipping of terminal bud at 50DAS &70DAS and Nipping at 50DAS were recorded on-par yield. Nipping of terminal bud significantly reduced the plant height and increased the number of primary and secondary branches, pods per plant and test weight. The increased yield components may be attributed to activation of lateral dormant buds. The increase in yield due to nipping was 14.6 per cent over control. The low yields in farmers practice may be attributed to reduction in yield components.

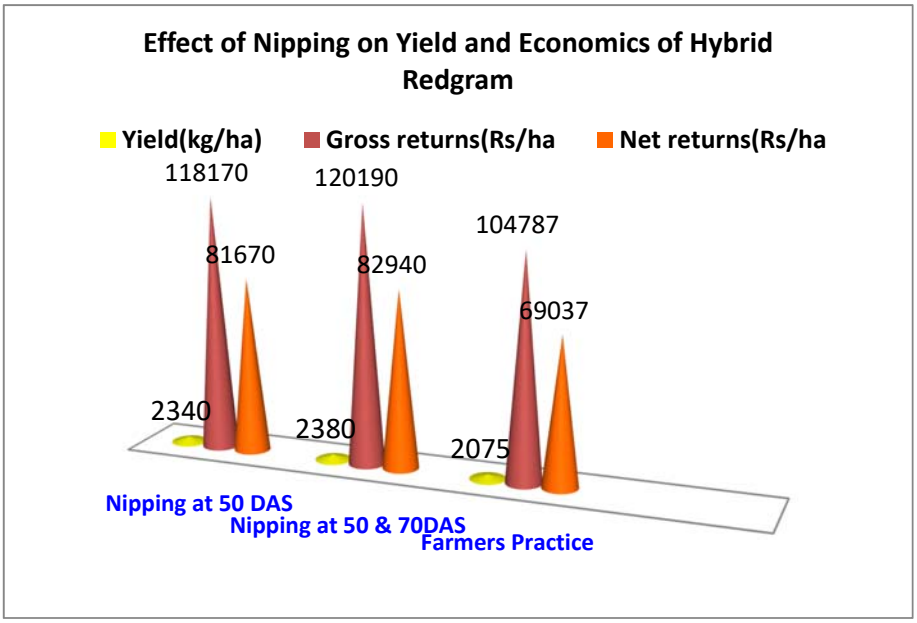
The highest net returns and CB ratio was realized when nipping was done at 50DAS & 70DAS followed by nipping at 50DAS.

9. Feed back of the farmers involved:

- Nipping of terminal bud at 50DAS &70DAS and Nipping at 50DAS were recorded higher yields than farmers practice, but it is labour intensive.

- Farmers opined that, if nipping machinery is available, it is advantageous.

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



Development of power operated machinery for nipping operation is necessary to overcome labor scarcity during peak season.

OFT: 4

S.No	Item		Particulars
1	Thematic Area	:	Nutrient Management
2	Title	:	Yield maximization through Boron application in Rice
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Kharif-2016. Irrigated black soils. Soils of OFT plots was high in Phosphorus content and medium to high potassium. Boron deficiency was observed in these soils.
5	Problem definition/description	:	Micronutrients are essential for the normal growth of plants. Deficiencies of micronutrient drastically affect the growth, metabolism and reproductive phase in plants, animal and human beings. About 50 % soils of Kurnool district were deficient in boron content. Boron helps in pollination and seed formation, so application of Boron is helpful in better pollination, seed filling and yield

			enhancement.
6	Technology assessed	:	T_1- Farmers practice (No Boron application) T_2- Basal application of Borax-7.5 Kg/ha T_3- Foliar application of Borax @0.1% at tillering, panicle initiation and panicle emergence phases.
7	Critical Inputs given	:	along with quantity as well as value)-Borax 7.5 Kg/ha and solu Boron -1Kg/ha Value- Rs.2450/ha

8. Results:

Performance of the technology:

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs.inlakh./ha)*	*B:C*	*Data on Other performance indicators**
Farmers Practice- No boron application	10	*7.088*	*0.85*	*1:2.20*	
Technology 1- Basal application-7.5 Kg/ha		*7.677*	*0.963*	*1:2.35*	
Technology 2-Foliar application of Borax @0.1% at tillering ,panicle initiation and panicle emergence phases		*7.659*	*0.964*	*1:2.36*	

Description of the results:

The result indicated that the yield in both T_{-2} (7.677t/ha) and T3 (7.659t/ha) were on par and higher than farmer's practice -T_1((7.088 t./ha)

Constraints faced:

9. 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 boron is more effective in yield improvement.

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

Efficacy of boron was observed in boron deficient soils when compared sufficient range soils

OFT: 5

S.No	Item		Particulars
1	Thematic Area	:	Nutrient Management
2	Title	:	Yield maximization through Boron application in Maize
3	Scientists Involved	:	K.V. Ramanaiah
4	Details of Farming Situation	:	Rabi-2016. Irrigated black soils .Soils of OFT plots was high in Phosphorus content and medium to high potassium. Boron deficiency was observed in these soils.
5	Problem definition/description	:	Micronutrients are essential for the normal growth of plants. Deficiencies of micronutrient drastically affect the growth, metabolism and reproductive phase in plants, animal and human beings. About 50 % soils of Kurnool district were deficient in boron content. Boron helps in pollination and seed formation, so application of Boron is helpful in better pollination, seed and yield enhancement.
6	Technology assessed	:	T_1- Farmers practice (No Boron application) T_2- Basal application of Borax-7.5 Kg/ha
7	Critical Inputs given	:	(along with quantity as well as value)- Borax 7.5 Kg/ha Value- Rs.1450/ha

8. Results :

Performance of the technology:

Technology Option	*No. of trials*	*Yield (t/ha)*	*Net Returns (Rs. in lakh./ha)*	*B:C*	*Data on Other performance indicators**
Farmers Practice- No boron application	*10*	*4.90*	*0.259*	*1:1.54*	
Technology 1- Basal application-7.5 Kg/ha		*5.65*	*0.352*	*1:1.71*	

Description of the results:

The result indicated that the yield of T_{-2} (5.65 t/ha) is higher than farmer's practice -T_1 (4.90 t./ha)

Constraints faced:

9. 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 boron is more effective in yield improvement.

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

Efficacy of boron was observed in boron deficient soils when compared sufficient range soils.

OFT 6:

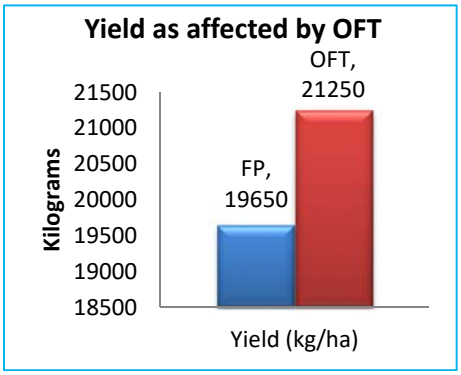
S.No	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Management of Thrips and Blotch in Onion**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Onion crop is being cultivated both in Kharif and Rabi Seasons, both under Rainfed and Irrigated Conditions in the selected village. The soils are red with moderate P and K and low N content. Normal rainfall of this mandal is 550-600 mm, which is mostly received in SW Monsoon period especially from July to September.
5	Problem definition/description	:	The farmers here are adapted to Indiscriminate use of pesticides for management of Thrips and Purple blotch in Onion, leading to increased cost of plant protection.
6	Technology assessed	:	Recommended module of pest management in Onion is assessed against indiscriminate use of pesticides followed by farmers. T1 – Farmers practice – **Spraying Carbosulfon @ 2 ml/lt and COC @ 3 g/lt** T2 – Recommended – • **Use of Sticky traps.** • **Spraying of Fipronil 5% @ 2 ml/lt + Chlorothalonil @ 2 g/l at 30, 45 DAS and 60 DAS (3 sprays).**
7	Critical Inputs given	:	1. Yellow sticky traps @ 20/ac = Rs. 300/ac 2. Fipronil 5% EC @ 500 ml/ac = Rs.300/ac 3. Chlorothalonil @ 500 g/ac = Rs. 600/ac . Critical inputs of worth Rs. 1200/- per ac or Rs. 3000/- per ha were provided to the trial farmers.

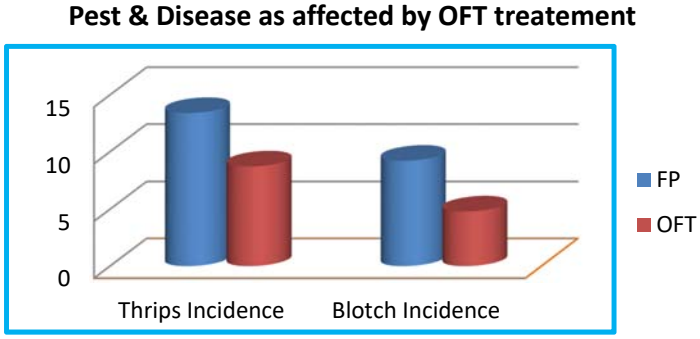
8. Results: Performance of the technology

Technology Option	No. of trials	Yield (t/ha)	Net Returns (Rs.lakh./ha)	B:C ratio	Data on Other performance indicators*
Farmers Practice : Spraying Carbosulfon @ 2 ml/lt and COC @ 3 g/lt	5	*19.65*	*4,225-00*	*1.06*	*Thrips -13.4/plant Blotch – 9.2 % Cost of PP – Rs. 20,000/ha*
Technology 1 : • Use of Sticky traps. • Spraying of Fipronil 5% @ 2 ml/lt + Chlorothalonil @ 2 g/l at 30, 45 DAS and 60 DAS (3 sprays).		*21.25*	*15,375-00*	*1.22*	*Thrips -8.7/plant Blotch – 4.8 % Cost of PP – Rs. 15,950/ha*

Description of the results:

Timely observation of incidence of Thrips and Blotch and taking up necessary spray as recommended in OFT, i.e. spray of Fipronil 5% SC @ 2 ml/lt and Chlorothalonil @ 2 g/lt at 30 DAT, 45 DAT and 60 DAT gave better management of both pest and disease (35% better control of thrips and 48% better control of Blotch than farmers practice) and gave 8.1% higher yield compared to farmers practice of indiscriminate use of Pesticides viz. spraying schedule of chemicals starting with Carbosulfon @ 2 ml/lt and COC @ 3 g/lt.





Constraints faced:

9. Feed back of the farmers involved:

- ✓ The farmers have accepted the technology, where in now they can reduce the cost of PP in onion, as the recommended schedule could manage the thrips and blotch more effectively than the farmers practice.
- ✓ Installation of Yellow Sticky traps is useful for early monitoring of incidence of thrips and to some extent for its management too.

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

On Farm Testing 7:

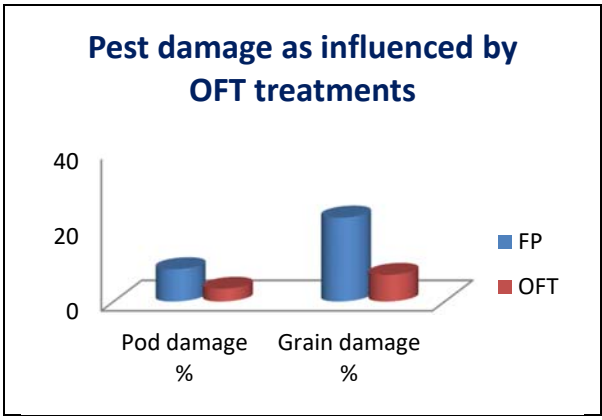
S. No	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Management of pigeonpea pod borers with special reference to pod fly (*Melanagromyza obtusa*).**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Redgram crop is being cultivated both in Kharif under Rainfed Conditions in the selected village. The soils are black soils with medium to high P and K and low N content. Normal rainfall of this mandal is 600-630 mm, which is mostly received in SW Monsoon period especially from July to September. In case of necessity, the fields can be given supplemental irrigation, from nearby SRBC Canal that boosts the yields.
5	Problem definition/description	:	In Kurnool district, in recent times, pod fly assumed as a major pest contributing to increasing losses in grain yield of Pigeonpea year by year. It was reported in Maharashtra that, with the advent of Bt cotton and its large scale cultivation the podfly assumed as important biotic constraint in increasing production and productivity in Pigeonpea and the damage by pod fly ranged from 25.5% to 36% (Anonymous 2008).
6	Technology assessed	:	Recommended module of Borer and Pod fly management in Redgram is assessed against indiscriminate use of pesticides followed by farmers. T1 – Farmers practice – Spraying New generation molecules starting from flowering till pod maturation at 15-20 days interval. Thus, 3 – 5 sprays are given depending on the duration of the crop. T2 – Recommended – • Spraying of Neem oil (300 ppm) @ 5ml/lt at bud formation stage of the Crop. • Spraying chlorpyriphos @ 2.5 ml/lt or Acephate @ 1.5 g/lt at 50% flowering stage. • Spraying Emamectin benzoate 5% @ 0.5g/lt + Thiomethoxam 25WG @ 0.25 g/lt 15 days after 2nd spray and • Spraying Flubendiamide 39.35% SC @ 0.25 ml/lt + Acetamaprid 20 SP @ 0.2 g/lt 15 days after 3rd spray.
7	Critical Inputs given	:	✓ Neem oil 300 ppm @ 1 lt /ac = Rs. 300/ac ✓ Acephate 75% SP @ 500 g/ac = Rs.300/ac ✓ Emamectin benzoate @ 100 g/ac = Rs. 600/ac . ✓ Thiomethoxam 25 WG @ 40 g/ac = Rs. 175/ac ✓ Flubendiamide 39.35% SC @ 50 ml/ac = Rs. 450/ac ✓ Acetamaprid 20 SP @ 40 g/ac = Rs. 175/ac Critical inputs of worth Rs. 2000/- per ac or Rs. 5000/- per ha were provided to the trial farmers.

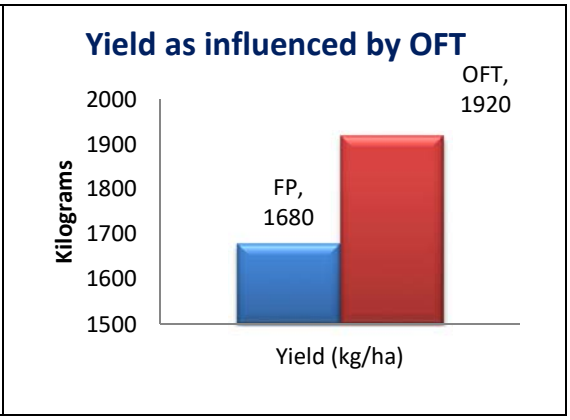
Results: Performance of the technology

Technology Option	No.of trials	Yield (t/ha)	Net Returns (Rs. lakh./ha)	B:C ratio	Data on Other performance indicators*
Farmers Practice : Spraying New generation molecules starting from flowering till pod maturation at 15-20 days interval. Thus, 3 – 5 sprays are given depending on the duration of the crop.	5	*16.80*	*51,610-00*	*2.44*	*Pod damage – 8.6 %t Grain damage – 22.3 % Cost of PP – Rs. 12,550/ha*
Technology 1 : ✓ Spraying of Neem oil (300 ppm) @ 5ml/lt at bud formation stage of the Crop. ✓ Spraying chlorpyriphos @ 2.5 ml/lt or Acephate @ 1.5 g/lt at 50% flowering stage. ✓ Spraying Emamectin benzoate 5% @ 0.5g/lt + Thiomethoxam 25WG @ 0.25 g/lt 15 days after 2nd spray and ✓ Spraying Flubendiamide 39.35% SC @ 0.25 ml/lt + Acetamaprid 20 SP @ 0.2 g/lt 15 days after 3rd spray.		*19.20*	*66,965-00*	*3.04*	*Pod damage - 3.4 % Grain damage – 7.1 % Cost of PP – Rs. 9,675/ha*

Description of the results:

In addition to the farmers knowledge and adoption of spraying new generation chemicals viz., Emamectin benzoate, Flubendiamide starting from flowering in schedules of 15 – 20 days interval for management of pod borers, the farmers have added one conventional systemic insecticide in each spray to check the incidence of pod fly, which is normally observed from pod formation stage. With adoption of treatments in OFT, the farmers could effectively manage both the pests that resulted in less damage of pods and grains (62% less damage of pods and 68% less damage of grain) respectively.





Constraints faced:

11. Feed back of the farmers involved:

It is easy to adopt the package, as it needs only few combinations of chemicals to be sprayed compulsorily at flowering and pod initiation stages of the crop, which involves very less cost and gives better yield, by effective management of both pod borers and pod fly.

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

On Farm Testing 8:

S.No	Item		Particulars
1	Thematic Area	:	Integrated Pest Management
2	Title	:	**Integrated Management of Shoot fly and Stem borer in Jowar**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Jowar is being cultivated in late Kharif or Maghi Season, mostly under Rainfed Conditions in the selected village. The soils are light black soils with moderate P and K and low N content. Normal rainfall of this mandal is 550-600 mm, which is mostly received in SW Monsoon period especially from July to September.
5	Problem definition/description	:	In Kurnool district, shoot fly and stem borer are the regular pests occurring on Jowar. The farmers are not adopting recommended PP measures, hence the initial loss is more and leaving less plant population in the field which has direct bearing on yield.
6	Technology assessed	:	Recommended module of pest management for shoot flyl and stem borer is assessed against indiscriminate use of pesticides followed by farmers. T1 – Farmers practice – **Indiscriminate use of pesticides.** T2 – Recommended – • Increased seed rate @ 6 kg/ac • Seed treatment with Imidacloprid @ 3 ml/kg seed. • Spraying of Thiodicarb @ 1.5g/lt and Lambda Cyhalothrin 5% SC @ 2 ml/lt alternately at 7, 14 and 21 days after sowing.

			• Whorl application of Carbofuron 3G @ 4 kg /ac at 30-35 DAS. T3 - Seed treatement with Imidacloprid @ 3 ml/kg + Chlorantraniliprole @ 0.3 ml/lt at 15 DAS.
7	Critical Inputs given	:	• Imidacloprid @ 50 ml /ac = Rs. 100/ac • Thiodicarb @ 500 g/ac = Rs.500/ac • Carbofuron @ 4 kg/ac = Rs. 400/ac . • Chloranthraniliprole @ 60 ml/ac = Rs. 800/ac Critical inputs of worth Rs. 1800/- per ac or Rs. 4500/- per ha were provided to the trial farmers.

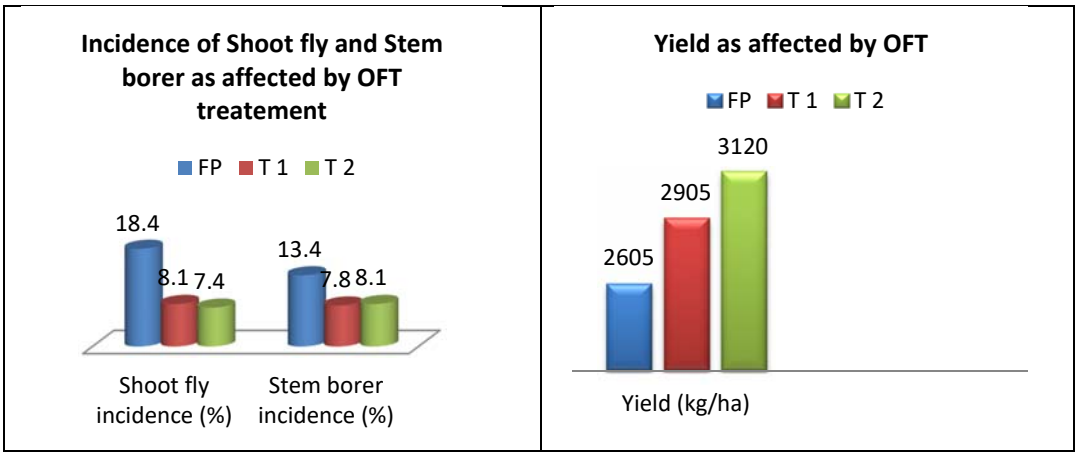
Results: Performance of the technology

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.	5	*26.05*	*25,060-00*	*1.78*	*Shoot fly – 18.4 %* *Stem borer - 13.4 %* *Cost of PP – Rs.2,375/ha*
Technology 1 : • Increased seed rate @ 6 kg/ac • Seed treatment with Imidacloprid @ 3 ml/kg seed. • Spraying of Thiodicarb @ 1.5g/lt and Lambda Cyhalothrin 5% SC @ 2 ml/lt alternately at 7, 14 and 21 days after sowing. • Whorl application of Carbofuron 3G @ 4 kg /ac at 30-35 DAS.		*29.05*	*31,160-00*	*1.95*	*Shoot fly – 8.1 %* *Stem borer - 7.8 %* *Cost of PP – Rs.2,875/ha*
Technology 2 : Seed treatement with Imidacloprid @ 3 ml/kg + Chlorantraniliprole @ 0.3 ml/lt at 15 DAS.		*31.20*	*36,640-00*	*2.15*	*Shoot fly – 7.4 %* *Stem borer - 8.1 %* *Cost of PP – Rs.2,125/ha*

Description of the results:

Seed treatment with Imidacloprid followed by Spraying of Thiodicarb and Lambda Cyhalothrin at weekly intervals for shoot fly management and whorl application of Carbofuron 3 G granules at 30 DAS for stem borer management has given better plant stand and better yield

compared to farmers practice. But, it gave lesser yield compared to Seed treatment followed by Spray of Rynaxypyr at 15 DAS.



Constraints faced:

9. Feed back of the farmers involved:

✓ Farmers were convinced about the seed treatment with Imidacloprid followed by spraying with Rynaxypyr as it could greatly reduce the incidence of both shoot fly and stem borer.

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

On Farm Testing 9:

S.No	Item		Particulars
1	Thematic Area	:	Varietal Selection and Integrated Disease Management
2	Title	:	**Assessing the Performance of different varieties of Blackgram against YMV.**
3	Scientists Involved	:	D.Balaraju, SMS – Plant Protection
4	Details of Farming Situation	:	Blackgram crop is being cultivated both in Kharif (as intercrop with redgram) and Rabi Seasons, both under Rainfed and Irrigated Conditions in the district. It is mostly grown in Black soils with moderate P and K and low N content. Normal rainfall of the area of blackgram is 600-630 mm, which is mostly received in SW Monsoon period especially from July to September.
5	Problem definition/description	:	In Kurnool district, the major diseases of Blackgram occurring regularly are YMV, powdery mildew and leaf spots. YMV can cause damage more than 50% in severe cases.
6	Technology assessed	:	Various varieties released in recent times by different universities for YMV tolerance are being tested. T1 – Farmers practice – LBG 752 T2 – PU 31 T3 – MASH 338 Management of whitefly with yellow sticky traps and need based pesticide sprays.
7	Critical Inputs given	:	• Cost of 8 kg seed (4 kg of PU 31 and 4 kg of MASH 338 per beneficiary to cover 0.4 ha) @ 200/- per kg. = Rs.1600/- per ac. • Yellow sticky traps @ 20/ac = Rs. 300/ac Critical inputs (Seed) of worth Rs. 1900/- per ac or Rs. 4,750/- per ha were provided to the trial farmers.

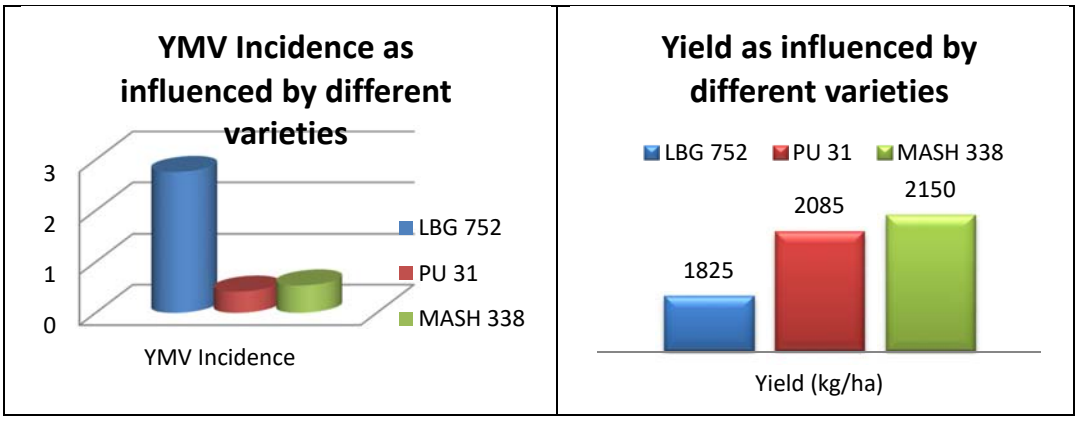
Results: Performance of the technology

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs. lakh./ha)*	*B:C ratio*	*Data on Other performance indicators**
Farmers Practice : LBG 752	*5*	*18.25*	*66,300-00*	*2.68*	*YMV – 2.76 %* *Cost of PP – Rs. 10,400/ha*
Technology 1 : PU 31 + Mgmt. of whitefly (Yellow sticky traps @ 20/ac and spray of Acetamaprid or Triazophos).		*20.85*	*81,380-00*	*3.06*	*YMV – 0.42%* *Cost of PP – Rs. 10,400/ha*

Technology 1 : MASH 338 + Mgmt. of whitefly (Yellow sticky traps @ 20/ac and spray of Acetamaprid or Triazophos).		*21.50*	*85,150-00*	*3.15*	*YMV – 0.54 % Cost of PP – Rs. 10,400/ha*

Description of the results:

Both the varieties of Blackgram viz., PU 31 and MASH 338 outperformed the variety LBG 752 being sown by farmers, with regard to incidence of YMV as well as yielding. The yields obtained in PU 31 and MASH 338 were 2085 kg/ha and 2150 kg/ha respectively which are higher than the yield of variety LBG 752 (Farmers practice). Almost negligible incidence of YMV is noticed in the introduced varieties, which is better than that of LBG 752.



Constraints faced:

9. Feed back of the farmers involved:

✓ The farmers have accepted both the varieties PU 31 and MASH 338 and now they are widely cultivating these varieties, in preference to LBG 752 which showed some YMV incidence and leaf crinkle virus incidence.

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

OFT:10

S.No	Item		Particulars
1	Thematic area	:	Feed & Fodder technology
2	Title	:	**Feeding of groundnut haulms supplemented feed to post weaned ram lambs.**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Farmers usually rear ram lambs for fattening. Supplementation of sorghum gains in the evening is the general practice along with open grazing and farmers are unaware of complete feed technology.
5	Problem definition / description:	:	The growth rate in post weaned ram lambs is low due to low protein value in the ration.
6	Technology Assessed:	:	T_1- Farmers practice(grain feeding) T_2 –Feeding of GNH supplemented (50%) feed (CP-17%)
7	Critical inputs given:	:	GNH feed @ 250g/day/lamb
8	Results	:	

Table: Performance of the technology

Technology Option	*No.of trials*	*Body weight gain in 90 days (kg)*	*Net Returns (Rs. /lamb)*	*B:C ratio*	*Data on Other performance indicators**
Sole grain feeding	*10*	*5.95*	*1150.00*	*4.41*	
GNH supplemented feed		*7.92*	*1641.70*	*5.86*	

Description of the results:

The results indicated that 33.05% increased body weight gain by feeding groundnut haulms supplemented feed (7.92kg) over farmers practice of sorghum grain feeding (5.95).

9. Feed back of the farmers involved:

Incorporation of groundnut haulms in the feed improves the growth rate of ram lambs. But the feed has to made available.

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

OFT: 11

S.No	Item		Particulars
1	Thematic area	:	Feed & Fodder technology
2	Title	:	**Assessment of performance of Phule Jayavanth and CO-4 fodder varieties.**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Under irrigated black and red soils, farmers allocate small area for fodder cultivation especially perennial fodder. Most of the varieties existing are old varieties and low yielders.
5	Problem definition / description:	:	Farmers cultivating APBN-1 hybrid Napier variety which is spiny and moderate fodder yield.
6	Technology Assessed:	:	T_1 –APBN-1 T_2 – CO-4 T_3 – Phule Jayavanth
7	Critical inputs given:	:	Fodder stem cuttings of CO-4 and Phule Jaywanth @ 10000 cuttings per acre.
8	Results	:	

Table: Performance of the technology

Technology Option	*No.of trials*	*Fodder yield (t/ha)*	*%*	*Data on Other performance indicators**
APBN-1	*10*	*162.6*	-	
CO-4		*174.86*	*16.62*	
Phule Jaywanth		*189.64*	*7.54*	

Description of the results:

On the assessment of three improved fodder varieties, CO-4 recorded 16.62% increased yield over APBN-1 and Phule Jaywanth recorded 7.54% increased yield over APBN-1. The leaf portion has fewer spines in Phulejaywanth and also winter dormancy was not observed, so the farmer preferred Phule Jayawanth.

9. Feed back of the farmers involved: Among the three varieties, phulejaywanth is good.

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

OFT: 12

S.No	Item		Particulars
1	Thematic area	:	Animal Nutrition
2	Title	:	**Effect of brewers grain supplementation in concentrate feed on milk production performance in milch buffaloes**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	The dairy farmers are feeding wet distillery grains as concentrate feed to milch buffaloes. As this is in wet form, it is more prone to growth of mould and cannot preserve for more than 2 days.
5	Problem definition / description: (one paragraph)	:	Farmers are feeding sole wet distillery grain as concentrates which is low in all essential nutrients. The protein and energy are not balanced which lead to metabolic disorders.
6	Technology Assessed:	:	T_1 – Wet distillery grains (Farmers practice) T2- wet distillery grains (50%) + Concentrate feed (50%) (1:1)
7	Critical inputs given:	:	Concentrate feed @ 3kg / animal/day
8	Results	:	

Table: Performance of the technology

Technology Option	*No.of trials*	*Avg. milk yield in 60 days*	*Net Returns (Rs. /lamb)*	*B:C*	*Data on Other performance indicators**
Wet distillery grains (Farmers practice)	*10*	*476.4*	*11,121.00*	*1:4.4*	
Wet distillery grains (50%) + Concentrate feed (50%) (1:1)		*528.1*	*14,318.00*	*1:3.0*	

Description of the results:

The results indicated that 10.92% increased milk yield was observed with supplementation of 50% concentrate feed along with wet distillery grains over farmers practice on whole wet distillery grain feeding as concentrates.

9. Feed back of the farmers involved:

Well accepted the technology by the farmers. Brewers waste was completely eliminated from the ration.

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


OFT: 13

S.No	Item		Particulars
1	Thematic area	:	Feed and fodder technology
2	Title	:	**Evaluation of different feed formulations using agricultural by products.**
3	Scientists involved	:	A.Krishna Murthy, SMS (AH)
4	Details of farming situation:	:	Under irrigated black soils, Ground nut, Black gram and sunflower are cultivating in the district.
5	Problem definition / description	:	Heavy wastage of valuable agricultural by products was observed in Kurnool dist. These can be utilized in animals feeding to reduce the cost of concentrates.
6	Technology Assessed:	:	T_1 – SF heads (30%) + Concentrate feed (70%) T_2 –SF heads (10%) + Black gram haulms (20%) + Concentrate feed (70%) T3-SF heads (10%) + G.N.Haulms (20%) + Concentrate feed (70%)
7	Critical inputs given:	:	Concentrate feed @ 3kg / animal/day
8	Results	:	

Table: Performance of the technology

Technology Option	*No. of trials*	*Avg. milk yield in 30 days*	*Net Returns (Rs. /animal)*	*B:C*	*Data on Other performance indicators**
SF heads (30%) + Concentrate feed (70%)	*10*	*138.6*	*3812.50*	*1:4.7*	
SF heads (10%) + Black gram haulms (20%) + Concentrate feed (70%)		*158.7*	*4515.00*	*1:5.3*	
SF heads (10%) + G.N.Haulms (20%) + Concentrate feed (70%)		*160.4*	*4572.50*	*1:5.4*	

Description of the results:

The trial was conducted to assess the three different feed formulated incorporating legume haulms to reduce the cost of concentrate feed and tested at 5 farmers. The results indicated that more milk yield recorded on feeding of GNH supplemented feed followed by BGH feed and 30% SFH feed. There is no significant difference in the milk yield on feeding of GNH and BGH feeds.

9. Feed back of the farmers involved:

Palatability of the feed is less compare to regular concentrate feed.

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

OFT: 14

S.No	Item		Particulars
1	Thematic Area	:	Post harvest technology
2	Title	:	Assessment of performance of Triple layer hermatic storage bags for storing of Rice, Redgram dhal & Jowar at household level.
3	Scientists Involved	:	K. Lakshmi Priya
4	Details of Farming Situation	:	-
5	Problem definition/description	:	In Cereals and pulses, post harvest losses occurred due to incidence of storage pests. In the villages farm women usually store their farm produce in conventional methods i.e, polyethelene bags/gunny bags. Due to this type of storing method, there is lot of storage losses and also more drudgery of farm women for repeat cleaning and change of produce.

6	Technology assessed	:	T1: Farmers Practice (Storing of produce in Polyethlene/Gunny Bags) T2: Storing of Rice in hermatic bags T3: Storing of Redgram dhal in hermatic bags T4: Storing Of Jowar in hermatic bags
7	Critical Inputs given	:	Triple layer hermatic storage bags@Rs60/-Bag

8. Results:

Observations	Farmers practice	Demo.
Incidence of Storage Pest	Rice-4months Redgram-6months Jowar-5months	Rice-6months Redgram-6months Jowar-Under Progress
Percentage of damaged grains	Under Progress	
Cost effectiveness	Rs.150/qt	Rs.60/-/bag
Feed back of farm women about storage in hermatic bags	With the use of hermatic storage bags, pest incidence was not observed up to six months. Drudgery was reduced on frequent cleaning and storing of grains and it was recorded as minimum. And it was also noticed that, for cleaning of grains Rs.150/-/qt has to be paid as labour charges. One time purchasing of triple layer hermatic bags have longetivity for storing of food grains and helps to save amount on labour charges on cleaning.	

Description of the results:

With the use of hermatic storage bags, pest incidence was not observed up to six months. Drudgery was reduced on frequent cleaning and storing of grains and it was recorded as minimum. And it was also noticed that, for cleaning of grains Rs.150/-/qt has to be paid as labour charges. One time purchasing of triple layer hermatic bags have longetivity for storing of food grains and helps to save amount on labour charges on cleaning.

Constraints faced: --

Feed back of the farmers involved:

Farm women expressed that, with the use of hermatic bags reduced repetitive cleaning of grains thereby reduced drudgery and cost on labour for cleaning purpose.

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

OFT: 15

S.No	Item		Particulars
1	Thematic Area	:	Drudgery Reduction
2	Title	:	Assessment of fertilizer dispenser for applying fertilizer in chillies to reduce drudgery of farm women
3	Scientists Involved	:	K. Lakshmi Priya
4	Details of Farming Situation	:	Kharif/Irrigated/Black soils
5	Problem definition/description	:	1.Farm women face lot of strain and body pains in applying fertilizers in agriculture operations by wrong postures. 2. Farm women are not aware of improved implements for agriculture operations.
6	Technology assessed	:	T1 – Manual Application T2 – Application with fertilizer dispenser in chillie crop
7	Critical Inputs given	:	**Fertilizer dispenser** @Rs2000/-each

8. Results:

Observations	T1:Manual	T2: Applying with Fertilizer Dispenser	Remarks
Labour required/ac/crop period	16	12	• Uniform distribution of fertilizer • Avoids improper application • Fertilizer use efficiency is good due to application of correct qty. of fertilizer at root zone.
Cost Saving on labour for application of fertilizer/ac	Rs.2400/-	Rs.1800/-	
Saving Of Fertilizer/Ac	-	Rs.2000/-	
Feed Back on work related Stress factors	Fertilizer Dispenser was introduced for applying fertilizer in chillies crop, labour saving was by Rs.600/- and cost on fertilizer was saved by Rs.2,000/-. With the use of fertilizer dispense, the drudgery was reduced from **minimum to moderate** than manual application, which was recorded from **moderate to maximum.** It was also noticed that, With the use of fertilizer dispenser the time taken for the activity, energy spent for the work and area covered was ranged from satisfied to moderately satisfied.		

Description of the results:

Fertilizer Dispenser was introduced for applying fertilizer in chillies crop, labour saving was by Rs.600/- and cost on fertilizer was saved by Rs.2,000/-. With the use of fertilizer dispenser, the drudgery was reduced from **minimum to moderate** than manual application, which was recorded from **moderate to maximum.** It was also noticed that, with the use of fertilizer dispenser the time

taken for the activity, energy spent for the work and area covered ranged from satisfied to moderately satisfied.

- Fertilizer dispenser helps in Uniform distribution, proper application of fertilizer and improves efficiency fertilizer due to its application in root zone.

Constraints faced:-

1. Feed back of the farmers involved: Farm women expressed that, with the use of fertilizer dispenser, drudgery reduced than their regular practice but they need practice with dispenser.
2. Feed back to the scientist who developed the technology:-
   - Dispenser handle contains ridges and it hinders smooth flow of the fertilizer during application
   - Plain handle without any design may helps for smooth flow.

3.d. FRONTLINE DEMONSTRATION

a. Follow-up of FLDs implemented during previous years

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Bengalgram	Varietal Evaluation	Varietal Demonstration in Bengalgram with Jaki-9218, digvijay and Nandyala sanaga-1	Demonstrations, Exposure visits, Field Days Seed village Concept	25	20000	50000
2	Cotton and Paddy	Weedmanagement	Post-emrgence herbicides	Demonstrations, Exposure visits, Field Days, Seed village Concept	15	15000	55000
3	Paddy	Resource conservation	Direct Seeding	Demonstrations, Exposure visits, and Field Days	10	120	300
4	Paddy	Resource conservation	Zero tillage	Demonstrations, Exposure visits, and Field Days	8	200	300
5	Seteria	Varietal Evaluation	Varietal Demonstration with Suryanandi	Demonstrations, Exposure visits, and Field Days	50	8000	15000
6	Redgram Seteria	Cropping system	Redgram+ seteria Inter cropping System	Demonstrations, Exposure visits, and Field Days	35	5000	25000
7	Redgram	Varietal Evaluation	Varietal Demonstration in Redgram-PRG-158 & LRG-41	Demonstrations, Exposure visits, Field Days Seed village Concept	50	6000	20000
8	Rice	Soil testing	Soil testing crop response based nutrient application in rice	Demonstration, exposure visits, Field Days.	20	696	1250
9	Bt Cotton	IPM	IPM	Demonstrations, Exposure visits, and Field Days	10	250	850

10	Redgram	IPM	Realtime contingent mgmt. of pests & diseases	Village Action Plan meetings, Rythu Chaitanya Yatras.	8	180	150
11	Bengalgram	IDM	Biopriming for soil borne disease management	Method Demonstration, Rythu Chaitanya Yatras	20	320	350
12	Brinjal	IPM	Mgmt of fruit & shoot borer	Exposure visit, Farmers trainings	7	50	30
13	Onion	IPM	Thrips & Leaf blight	Training, Demonstration	7	100	120
14	Blackgram	IPM	Realtime contingent mgmt. of pest s & diseases	Training, Demonstration, Village Action Plan Meetings.	7	150	180

b. Details of FLDs implemented during the current year (Information is to be furnished in the following three tables for each category i.e. cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops.)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
1	Groundnut	ICM	Variety, STBF, Sucking pest management	Kharif-2016	KVK	20	20	6	19	25	
2	sunflower	ICM	Spacing and micro nutrient	Rabi-2016	KVK	20	20	5	20	25	
3	Rabi groundnut	ICM	Variety, STBF, Sucking pest management	Rabi-2016	KVK	20	20	5	25	30	
4	Sesame	ICM	Variety, STBF, weed management	Rabi-2016	KVK	40	40	10	40	50	

Other Demonstrations											
Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
5	jowar	Weed management	Herbicides+ Manual weeding	M-2016	KVK	4	4	4	6	10	
6	Maize	Weed management	Herbicides+ Manual weeding	K-2016	KVK	4	4	4	6	10	
7	Paddy	Crop Establishment	Semi dry Rice cultivation	K-2016	KVK	2.	2	2	3	5	
8	Seteria-Bengalgram	Cropping sequence	ICM	K-2016 R-2016	KVK	4	4	2	3	5	
9	Bt cotton	Crop geometry	spacing	K-2015	KVK	4	4	2	2	5	
10	Cotton	Nutrient management	Soil test based nutrient management	Kharif-2016	KVK	4	4	3	7	10	
11	Chilli	Nutrient management	Soil test based nutrient management	Kharif-2016	KVK	4	4	3	7	10	
12	Bengalgram	Nutrient management	Sulphur and Zinc management	Rabi-2016	KVK	4	4	3	7	10	
13	Maize	Nutrient management	Zinc management	Rabi-2016	KVK	4	4	3	7	10	

14	Bt Cotton	IPM	Sucking pest management	K 2016	ICAR	4.0	4.0	2	8	10	
15	Chillis	IDM	Viral disease management	K 2016	ICAR	4.0	4.0	1	9	10	
16	Chillis	IDM	Mgmt of root rot	K 2016	ICAR	4.0	4.0	2	8	10	
17	Rice	IDM	Mgmt.of blast and sheath blight	K 2016	ICAR	4.0	4.0	2	8	10	
18	Blackgram	IPM	Contingent mgmt of pests and diseases	R 2016	ICAR	4.0	4.0	2	8	10	
19	Rice	IPM	Mgmt of stem borer	R 2016	ICAR	4.0	4.0	2	8	10	

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Groundnut	Kharif-2016	Rainfed	Red soil	L	Med	High	Jowar	2nd week of July	Last week of october		
sunflower	Rabi-2016	Irrigated	Black soil	L	High	High	Jowar	2nd week of oct	Last week of Jan		
Rabi groundnut	Rabi-2016	Irrigated	Red soil	L	Med	High	B.gram	Last week of Dec	1st week of April		
Sesame	Rabi-2016	irrigated	clayloam	L	Med	High	paddy	Last week of Jan	Last week of April		
Other Demonstrations											
jowar	M-2016	irrigated	Black soil	L	M	High	Jowar	2nd week of sep	2nd Week of Dec		
Maize	R-2016	irrigated	M.Black soils	L	M	M	Chillies	1st week of August	Last Week of January		
Paddy	K-2016	irrigated	Clay loam	L	M	M	Blackgram	2nd week of july	2nd Week of Dec		
Seteria-Bengalgram	K-2016	Rainfed	Black soil	L	H	H	Jowar	3nd week of July	3rd week of January		
Bt cotton	K-2016	Rainfed	Black Soil	L	Med	High	Jowar	2nd week of july	2nd Week of Dec		
Bt.cotton	Kharif-16	I/D	Black soil	Low	Medium	Medium to high	Jowar	Last week of July	Last picking 3rd week of January		

Chilli	Kharif-16	I/D	Black soil	Low	High	Medium to high	Maize	2nd to 3rd week of August.	Last week of February		
Bengalgram	Rabi-16	Rainfed	Black	Low	M to H	Medium to high	Bengalgram	3rd week of Oct.	3rd week of Jan.		
Maize	Rabi-16	I/D	Black	Low	High	Medium to high	Paddy	2nd to 3rd week of January.	Last week of April		
Chillis	K 2016	Irrigated	BC soil	L	M	H	Cotton	1st wk of Sep	1st wk of Mar		
Rice	K 2016	Irrigated	BC soil	L	M	H	Rice	2nd wk of Aug	4th wk of Dec		
Blackgram	R 2016	RF	BC soil	L	M	H	Chillis	2nd wk of Oct	4th wk of Jan		
Rice	R 2016	Irrigated	BC soil	L	M	H	Rice	1st wk of Jan			

Technical Feedback on the demonstrated technologies

Agronomy:

S. No	Feed Back
1	Cost on manual weeding was reduced (Rs 950/- per ha) Weed control efficiency was 82-86.0Per cent Weed density was less in demo plot up to critical periods
2	**Semi dry method of Rice cultivation:** • Reduced cost of cultivation as compared to transplanting(Labour,Puddling costs) • Reduced seedr ate (8-12 KG /acre as against 30kg /acre) • Saves 35-40 per cent water. • Reduced fertilizers and pesticides uses

Soil Science

S. No	Feed Back
1	Soil test based nutrient management and foliar application of K,Mg,Zn and B would improve the productivity of Bt.cotton
2	Cost reduction on chemical fertilisers was observed in demonstration plots
3	STCR based nutrient management helped in cost reduction on chemical fertilizers.
4	Productivity enhancement dueto application of sulphur and zinc in respective nutrient deficient soils

Plant Protection

S. No	Feed Back
1	Bt Cotton: Stem application with Mono and Imida at 20,40 and 60 DAS is effective than spraying the same for sucking pest management.
2	Chillis : Seed treatment with TSOP and Imida followed by installation of Yellow sticky traps for white fly management will be better for management of viral disease complex.
3	Chillis : Soil application of Trichoderma and Pseudomonas @ 1 kg each mixed with 100 kg FYM and 10 kg Neem cake (after incubation) will be better for management of root rot.
4	Spraying Tricyclazole on early detection of Blast symptoms could manage blast most effectively, without much damage to the crop.
5	Spraying of Neem oil followed by spray of Chloro and Dichlorovos ensures good protection against maruca damage in Blackgram.

Farmers' reactions on specific technologies

Agronomy

S. No	Feed Back
1	**Groundnut:** ❑ The Groundnut variety Dharani is fairly tolerant to moisture stress than K6. ❑ Farmers were more impressed with performance of Dharani variety. ❑ Incidence of sucking pest is less in Dharani variety. ❑ Dark green foliage with less vegetative growth than K6 variety
2	**SunFlower:** ❖ No significant difference in duration of sunflower hybrids cultivated by farmers. ❖ Due to adoption of 60cm spacing between the rows and practicing thinning at 10-15DAS crop was not affected with moisture stress.

	Basal application of P in form of SSP & boron spray @ 0.2% had positive effect on seed filling & test weight
3	**Sesame:** ❑ The sesame variety YLM-66 is fairly tolerant to phyllody. ❑ Farmers were more impressed with performance of YLM-66 during summer after rice. ❑ Dark green foliage with more no of branches/plant

Soil Science

S. No	Feed Back
1	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 of 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. They are now willing to adopt STBR technology in succeeding seasons for raising crops. Pest incidence was less in demonstration plots than farmers practice fields.
2	Farmers were satisfied with crop performances and expressed that Soil test based nutrient management is a viable technology in chilli, because of less cost of 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. They are now willing to adopt the STCR technology in succeeding seasons for raising crops. Pest incidence was less in demonstration plots than farmers practice fields.
3	Need based application of Sulphur and zinc is more essential for bengalgram yield increments.
4	Application of Zinc is required to enhance yield of maize.

Plant protection

S. No	Feed Back
1	Stem application in Bt cotton is useful for management of sucking pests and it is cheap.
2	Seed treatment with TSOP and Imida gave good control of virus disease in Chillis compared to continuous spraying of different chemical pesticides.
3	Timely spraying of Tricyclazole and Propiconazole effectively controlled the blast and sheath blight disease in rice.
4	Maruca in Blackgram was effectively controlled by sprying Chloropyrphos and Dichlorovos.
5	Root rot in Chillis is better managed by Soil application of Trichoderma and Pseudomonas than drenching with COC and sprayings of systemic fungicides.

Extension and Training activities under FLD

1	Field days	**2**	17-10-2016 3-1-2017	72 98	
2	Farmers Training	6	1.7.2016 20.8.2016 15.9-2016 15.11.2016 18.1.2017 20.2.2017	25 25 30 30 50 50	
3	Training for extension functionaries	1	22-12.2016 18-1.2017	50	

Performance of Frontline demonstrations

Frontline demonstrations on crops

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Pulses																			
Blackgram	IPM	Contingent mgmt of pests and diseases	PU 31	PU 31	10	4.0			2025	1923	5.33	38900	117450	78550	3.02	41575	111534	69659	2.68
Cereals																			
Paddy	Crop establishment	Semidry cultivation	BPT-5204	BPT-5204	5	2	7610	7318	7453	7534	-	52857	129160	76303	1:2.44	61375	130564	69189	1:2.12
Rice	IDM	Mgmt of Blast and Sheath Blight	BPT 5204	BPT 5204	10	4.0			7650	7275	5.2	67975	160650	92675	2.36	69285	152775	83490	2.21

Maize	Weed management	Pre-emergence+ post emergence application of herbicides	Kaveri-51	Kaveri-51	10	4	62.50	54.75	59.95	57.45	4.3	35750	80932	45182	1:2.26	36550	77557	41007	1:2.12
Maize	Nutrient Management	Zinc management	Private hybrid	Private hybrid	10	4	68.6	60.4	63.95	52.90	15.35	50850	95925	45075	1:1.88	48968	79350	30382	1:1.62
Commercial crops																			
Bt cotton	Crop geometry	Spacing	Swapna Bt	Swapna Bt	5	2	33.50	31.40	32.25	29.37	9.0	49375	164475	115100	1:3.33	47750	149787	102037	1:3.13
Bt Cotton	IPM	Management of sucking pests	Bunny	Bunny	10	4.0			2148	1903	12.87	54013	103104	46942	1.84	56163	91344	37332	1.69
Bt.Cotton	Nutrient Management	INM	Jadhu Bt.	Jadhu Bt.	10	4	38.60	30.80	34.95	30.90	13.12	50783	192225	141443	1:3.78	54103	169928	115826	1:3.14
Chillis	IPM	Management of Viral disease complex	Super 10	Super 10	10	4.0			5463	4995	9.36	242325	300465	58140	1.24	248600	274725	26125	1.11
Chillis	IDM	Management of root rot	Super 10	Super 10	10	4.0			5285	4943	6.93	204650	295960	66393	1.45	210413	276808	66395	1.32
Millets																			
Sorghum	Weed management	Pre-emergence+ post emergence application of herbicides	Mahendra male	Mahendra male	10	4	4100	3375	3807	3652	4.2	30150	83754	53604	1:2.7	31375	80344	48969	1:2.5
Setaria-Bengalgram	Cropping system	Doubble cropping	Suryanandi/ Nandyalasanaga-1	Nandyala sanaga-1	5	2	14.76/ 12.50	12.36/ 10.50	13.95/ 1065	11.50	-	44550	83754	39135	-	30450	80344	32800	-
Spices and condiments																			
Chilli	Nutrient Management	STCR based Nutrient Mangmt.	Super-10	Super-10	10	4	60.25	54.60	56.08	55.42	1.18	177465	336450	158986	1:1.90	196737	332502	136735	1:1.69

FLDs conducted with the funding of other sources including CFLD/ATMA/NABARD/other ICAR institutes etc

Crop	Source of fund	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
				Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
								High	Low	Average										
Groundnut	**NMOOP**	ICM	Variety, STBF, Sucking pest management	Dharani Irrigated	K6 Irrigated	12	9.6	12.5	10.56	11.64	9.2	26.0	36965	70528	33563	01.9	32125	51400	19275	01:01.6
				Rainfed	Rainfed	13	10.4	5.9	5.1	5.46	4.15	31.0	31965	38392	6427	1.2	27125	28675	1550	01:01.0
Sunflower	**NMOOP**	ICM	Spacing and micro nutrient	NDSH-1012		22	17.6	14.25	10.75	12.46	10.23	21.7	24065	43610	19545	1.81	23450	35805	12355	1:1.52
						3	2.4	13.85	12.56	13.39	11.50	16.4		46865	22800	1.94		40250	16800	1:1.71
Rabi groundnut	**NMOOP**	ICM	Variety, STBF, Micronutrient	Dharani	K6	30	20	22.8	18.85	20.18	17.02	18.56	34495	109650	75155	3.2	32000	93850	61850	01:02.9
Sesame	**NMOOP**	ICM	Variety, STBF, weedmanagement	YLM-66	Non-specified	50	40	950	750	8.65	6.73	28.0	22000	56225	34225	2.5	19375	43745	24370	01:02.2
Greengram	NFSM	ICM	Variety + IPM	WGG 42	NS	5	3.2	6.00	5.25	5.67	6.00		26050	29200.5	3150.5	1.12	28975	30900	1925	1:1
				LGG 460	NS	30	16.8	10.75	4.80	6.38	6.00	6.33	26050	32857	6807	1.30	28975	30900	1925	1:1
Redgram	NFSM	ICM	Vareity + IPM	PRG 176	ICPL 87119	24	10.0	18.00	6.00	15.49	14.50	6.82	25800	78275	52475	3.03	28000	73225	45225	2.61
				ICPH 2740	ICPL 87119	17	10.0	22.50	6.25	18.37	14.50	26.7	25800	92768.5	66968.5	3.60	28000	73225	45225	2.61
Blackgram	NFSM	ICM	Variety + IPM	TBG 104	PU 31	31	17.6	23.75	16.25	21.78	21.50	1.30	30550	126440	95890	4.14	34250	124700	90450	3.64
				LBG 787	PU 31	33	18.0	21.25	12.00	18.54	21.50		30550	107532	76982	3.52	34250	124700	90450	3.64
				MASH 114	PU 31	9	4.4	23.00	17.50	20.51	21.50		30550	118900	88350	3.89	34250	124700	90450	3.64
Bengalgram	NFSM	ICM	Vareity + IPM	NS 1 (RF)	JG 11	18	14.4	13.50	9.75	11.07	13.75		35250	67527	32277	1.92	40950	83875	42925	2.05
				NS 1 (irri)	JG 11	13	10.0	16.50	11.50	13.50	11.25	20.0	40250	82350	42100	2.05	45950	68625	22675	1.49
				NBeG 49 (Irri)	JG 11	7	5.6	17.50	11.75	13.00	11.25	15.6	40250	79300	39050	1.97	45950	68625	22675	1.49

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Milk yield		% change in major parameter	Other parameters		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Cattle	Animal nutrition management	Supplementation of Selenium and Vit E	20	20	12.53	12.13	3.23	2*	6*	123.03	626.5	503.1	5.1	120.00	606.50	486.50	5.0
Buffalo	Dairy management	Supplementation of RSMM of milch buffaloes	10	20	6.07	5.42	11.9	7**	3**	4933.00	13551.00	8618.00	2.75	4443.00	11401.00	6957.00	2.56
	Animal Nutrition management	Supplementation of Urea Molasses Mineral Blocks	10	10	4.01	3.47	15.56			9990.00	1965.00	8025.00	5.08	6770.00	1395.00	5375.00	4.85
Dairy	Feed and Fodder technology	Feeding of Hydroponic Maize fodder to milch buffaloes	5	10	6.62	6.05	9.42			1500.00	6789.00	5290.00	4.53	6252.00	1961.00	4291.00	3.19
Sheep	Animal nutrition management	Creep feed supplementation to pre weaned lambs	10	50	6.09	4.57	33.26			180.00	1218.00	1038	6.77	914.00	150.00	736.00	6.09

*Incidence of retention of placenta

**Number of animals exhibited heat with in trial period of 90 days

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
Drudgery Reduction	Cotton Hand Gloves	50	Feed back on work related stress factors presented in a separate table	With the introduction of cotton hand gloves for Green Fodder harvesting, the farm women protects her hands from itching and irritation caused while harvesting of green fodder and drudgery was recorded minimum.	Green fodder harvesting with bare hands causes itching and irritation and drudgery was recorded as moderate to max..
Drudgery Reduction	Hand Cultivators	30	Labour required/ac/crop period	39	51
			Reduction on Cost on weeding/ac	Rs.4680/-	Rs.6120/-
			Feed Back on work related Stress factors	With the use of hand cultivator, weeding cost was reduced by Rs.1400/ac and the drudgery was recorded from minimum to moderate. than manual weeding which was recorded from moderate to maximum.	With manual weeding drudgery was recorded from moderate to maximum.
Drudgery Reduction	Three Pronged Wheelhoe	5	Labour required/ac/day	4	7
			Reduction on Cost on weeding/ac	Rs.480/-	Rs.840
			Feed Back on work related Stress factors	With three pronged Wheel hoes for weeding in maize crop, labour Saved and cost on weeding was reduced by Rs.700/- for crop period and drudgery was recorded as moderate.	With manual weeding drudgery was recorded and it is ranged from **moderate to maximum.**

1. Cluster Frontline Demonstrations In Groundnut Under NMOOP

Groundnut is an important oilseed crop grown in India. Globally India ranks first in area and Second in Production. India, accounts for 31 per cent of the total groundnut area in the world (24.6mha) and 22% of the total production (35.7mt). In Andhra Pradesh it is mainly cultivated in Rayalaseema districts viz Ananthapuramu, Kadapa, Kurnool and Chittoor districts followed by Coastal districts. In Andhra Pradesh it is cultivated in an area of around 11.8 lakh ha with production of about 8.8 lakh tones and productivity of 749 kg/ha(2013-14). In Kurnool district it is cultivated in an area of 104237 ha (2016)

Rainfall Situation:

During South-west monsoon period actual rainfall of 526.5 mm was received against Normal rainfall of 455.1 mm and in North-east monsoon, Actual rainfall 14.5 mm was received against normal rainfall 149.6 mm. The no of rainy days were 23 in south-west monsoon period and 2 rainy days in North-east monsoon period. During the crop period (June-sep) a total quantity of 305.2mm rainfall was received as against normal rainfall of 358.0 mm. Due to prolonged dry spell (August) crop was affected with severe moisture stress. Farmers provided one protective irrigation at flowering pigging stage. The vegetative growth of the crop was not satisfactory.

Technological gaps/problems in Groundnut:

- Lack of awareness on improved /moisture stress tolerant cultivars
- Non treatment of seed for control of sucking pest and diseases
- Low plant population per unit area due to mortality/use of less seed rate under rainfed situation and high plant density due to high seed rate.
- Low/imbalanced fertilizer application
- No proper plant protection measures against sucking pest and diseases

Based on above problems training, frontline demonstrations and other extension activities were conducted. The demonstrations were organized in 20.0ha covering 25 farmers.

Farming situation: Red soil, Rainfed and protective Irrigation

Season: Kharif

Details of critical inputs used under FLD Programmes

Particulars	Details of critical Inputs per 0.8ha	
	Qty (kgs)	Cost (Rs.)
Seed (pods)	43.2	5100-00
Trchiderma viridae	2.0	160-00
Soil testing charges	-	120.00
Sticky traps	8 nos	Farmers contribution
Zinc sullphate	20.0	Farmers contribution
Gypsum	400	Farmers contribution

Training programmes: Two training programmes were organized during the crop period i.e

- Pre season training on production technologies
- Mid season Training

Field Visits:

During the crop period four field visits were organized to show the varietal performance, its tolerance to wilt, drought pest & diseases..

Field Day:

Field Day was organised on groundnut on 17-10-2016 at Junuthala village of Owk Mandal ,Mandal Agriculture officer and 72 farmers participated in the event.

Results:

Table 1: Yield details

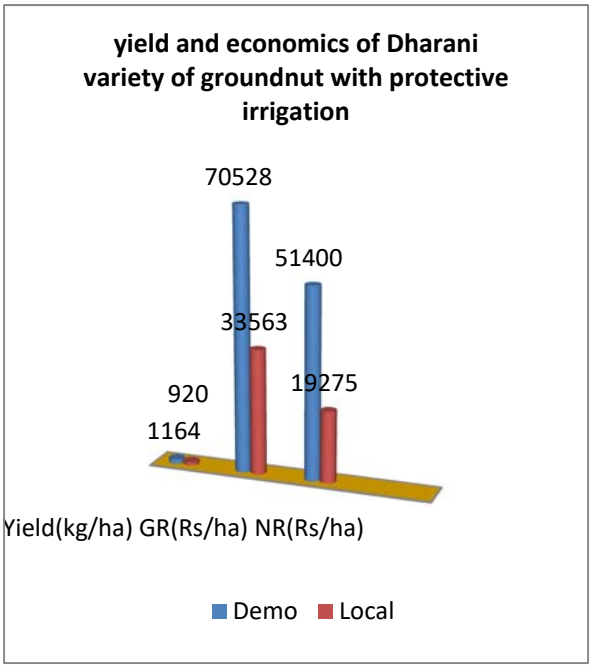
Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
G.nut variety Dharani Irrigated	12	9.6	12.5	10.56	11.64	9.2	26.0
Rainfed	13	10.4	5.9	5.1	5.46	4.15	31.0
Total		**20.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
G.nut variety Dharani Irrigated	12	9.6	36965	70528	33563	01:01.9	32125	51400	19275	01:01.6
Rainfed	13	10.4	31965	38392	6427	01:01.2	27125	28675	1550	01:01.0
Total		**20.0**								

Results:

Groundnut variety Dharani with Improved production technologies (Improved variety, seed treatment, Soil test based fertilizer application and IPM measures against Sucking pest management) gave higher Pod yield (5.46/ha), which was 31.0 per cent than that of farmers practice (4.15 q/ha in red soils under rainfed situation). The same variety gave higher pod yield (11.64 /ha), which was 26.0 per cent than that of farmers practice with one protective irrigation at 30-35 DAS. The increased pod yield with Improved production technologies was mainly because of more no of pods/plant and higher 100 Kernal and Shelling percentage (69.8).-



Feed back:

- **The Groundnut variety Dharani is fairly tolerant to moisture stress than K6.**
- **Farmers were more impressed with performance of Dharani variety.**
- **Incidence of sucking pest is less in Dharani variety.**
- **Dark green foliage with less vegetative growth than K6 variety**

1(a).Cluster Frontline Demonstrations in Rabi Groundnut

Season: Rabi

During Kharif-2016 Cluster FLDs in Groundnut were organized in Ligam bodu village of Owk mandal and Putluru village of Krishnagiri mandal to demonstrate the productivity potentials and profitability of the latest improved groundnut production technologies.

The demonstrations were organized in 20.0ha covering 25 farmers.

Farming situation: sandy clay loam soils , Irrigated

Details of critical Inputs:

Particulars	Details of critical Inputs per ha	
	Qty (kgs)	Cost (Rs.)
Seed (pods)	100	6250-00
Soil testing charges	25	190-00
Pedimethalin	2.5	1000.00
Zinc sullphate	250gm	150.00
Gypsum	400	Farmers contribution
Sticky traps	8 nos	Farmers contribution

Results:

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
G.nut variety Dharani Irrigated	30	20	22.8	18.85	20.18	17.02	18.0
Total		**20.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
G.nut variety Dharani Irrigated	30	20.0	34495	109650	75155	01:03.2	32000	93850	61850	01:02.9
Total		**20.0**								

Results: During Rabi Groundnut variety Dharani with Improved production technologies (Improved variety, seed treatment, Soil test based fertilizer application, Foliar spray of Zn and IPM measures against Sucking pest management) gave higher Pod yield(20.18q/ha), which was 18.56 per cent than that of farmers practice (17.02 q/ha). The increased pod yield with Improved production technologies was mainly because of more no of pods/plant and higher 100 Kernal and Shelling percentage (70.5).-

Field Visits at different stages along with MAO

Field day on Groundnut var Dharani at Junuthala Village of OWK Mandal.

2. Cluster Frontline Demonstrations in Sunflower under NMOOP

Sunflower crop is one of the major oilseed crops in Kurnool district. The average productivity of the crop is 485kg/ha. in kharif season . The research data indicated higher yields can be obtained in Sunflower through improved technologies.

To know the production problems of sunflower crop survey was conducted through field visits, group discussions and other PRA techniques.

Agrotechnological constraints:

- Poor emergence of seed due to lack of sufficient soil moisture
- Poor seed setting
- Pollen shedding
- Problems of insects, like whitefly, Jassids, Heliothis and diseases like bud necrosis and alterneria
- Sensitive to external moisture

Technological gaps in Sunflower:

- Non adoption of recommended spacing (60cm) and thinning
- Non adoption of recommended management practices against bud necrosis
- Inadequate and imbalanced use of fertilizers has been identified as one of the critical constraints in sunflower production
- Non application of Boron which are responsible for increased oil content and test weight

Based on above problems training, frontline demonstrations and other extension activities were conducted.

Description of farmers' practices:

The farmers' practices included use of high seed rate with local 6 tyned gorru sowing, imbalanced or partial application of recommended dose of fertilizers.

During Rabi-2016Cluster FLDs in Sunflower were organized in two villages of Banaganapalli mandal i.e Nandavaram and Pandlapuram to demonstrate the productivity potentials and profitability of the latest improved Sunflower production technologies.

The demonstrations were organized in 20.0ha. covering 25 farmers.

The components of are as follows:

1. Optimum spacing in sunflower
2. Three sprayings of Boron @ 0.2% from star bud stage to ray floret opening stage.
3. Necrosis management.
4. Soil test based fertilizers application n and P in form of SSP

Training programmes: Two training programmes were organized during the crop period i.e

- Pre season training on production technologies
- Mid season Training

Field Visits:

During the crop period 4 field visits were organized to show the importance of spacing, effect of boron on seed filling, pest & diseases..

Field Day:

Field Day was organised on sunflower on 3-1-2017 at pandlapuram village of Banaganapalli Mandal ,Mandal Agriculture officer and 98 farmers participated in the event.

Table –Details of critical inputs used under FLD Programmes

Particulars	Details of critical Inputs per ha	
	Qty (kgs)	Cost (Rs.)
Seed	5.0	2680-00
Imidacloprid	250ml	300-00
Boron	500gm	238-00
Neem oil	500ml	215-00
Soil testing	-	150-00

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
SH-177	22	17.6	14.25	10.75	12.46	10.23	21.7
NDSH-1012	3	2.4	13.85	12.56	13.39	11.50	16.4
Total	**25**	**20.0**					

Table 2: Economics

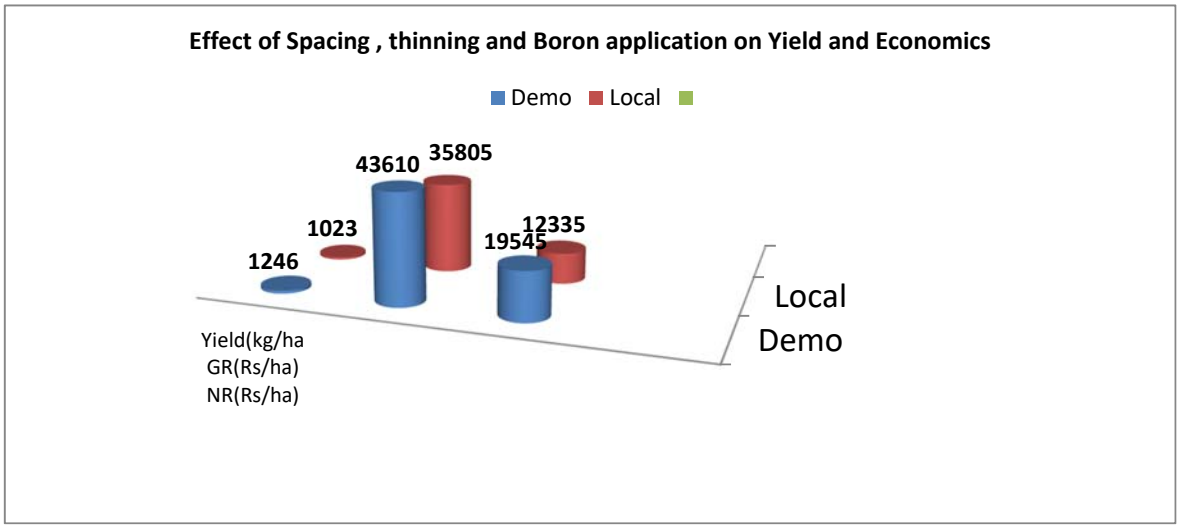
Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
SH-177	22	17.6	24065	43610	19545	1:1.81	23450	35805	12355	1:1.52
NDSH-1012	3	2.4		46865	22800	1:1.94		40250	16800	1:1.71
Total	**25**	**20.0**								

The results indicated that sunflower hybrid SH-177 with Improved production technologies (seed treatment, Pre-emergence application of pendimethalin @ 2.5 lit/ha, Soil test based fertilizer application, spacing and thinning at 10-15 DAS, application of Boron @0.2% and sucking pest management) gave higher yield (12.46/ha), which was 21.7 per cent than that of farmers practice (10.23 q/ha in black soils with protective irrigation). The Hybrid NDSH-1012 gave higher grain yield (13.39/ha), which was 16.4 per cent higher than that of farmers practice under Irrigated condition.

The Economic Viability of improved technology over farmers practice was calculated depending on prevailing prices of input and output costs. The hybrids SH-177 and NDSH-1012with improved technologies resulted increased income with cost benefit ratio of 1:1.81/1.52 and1:1.94/1.7 with protective irrigation respectively.

Farmers, feedback :

- No significant difference in duration of sunflower hybrids cultivated by farmers.
- Due to adoption of 60cm spacing between the rows and practicing thinning at 10-15DAS crop was not affected with moisture stress.



- Basal application of P in form of SSP & boron spray @ 0.2% had positive effect on seed filling & test weight.

3. Cluster Frontline Demonstrations In Sesame Under NMOOP

Sesame is one of the important oilseed crops in India. The crop is now grown in a wide range of environments, extending from semi-arid tropics and sub tropics to temperate regions. India ranks first in the world in terms of sesame growing area (23%) and second largest producer of sesame in the world after Myanmar. But the productivity is only 335.16kg/ha (FAO, 2012) which is lower than most of the sesame growing countries. The potential yield of sesame is much higher than actual yield.

In general the average productivity of sesame continues to be lower than expected from agricultural technologies for the last 40 years, mainly due to its cultivation on marginal, poor management practices and low input application except seed.

Production Constraints:

The major constraint responsible for lower yields is adoption of inappropriate production technologies by farmer.

- Broadcast method of sowing
- Non application of fertilizers
- Poor weed management
- Non-adoption of appropriate pp measures against pests and diseases.

The yield of Sesame can be increased substantially with adoption of improved technologies such as sowing method, improved variety, recommended dose of fertilizers, weed management and need based plant protection measures.

Keeping this in view the cluster frontline demonstrations on sesame were organized with YLM-66 variety, to demonstrate the production potentials and economic benefits of latest improved technologies to the farmers.

During Rabi-2016Cluster 50 FLDs in Sesame were organized in two villages Govidapalli of Serivella mandal and K.sunkesula of owk mandal to demonstrate the productivity potentials and profitability of the latest improved Sesame production technologies.

The demonstrations were organized in 40.0ha. covering 50 farmers , during 1st fort night of Feb-17, crop is at seedling to vegetative stage.

Table –Details of critical inputs used under FLD Programmes

Particulars	Details of critical Inputs per ha	
	Qty (kgs)	Cost (Rs.)
Seed	5.0	903-00
Carbendizm	250mg	150-00
Sulphur	10kg	500-00
Pendimethalin	2.5	1000-00
Soil testing	-	150-00

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
SH-177	50	40	9.5	7.5	8.65	6.73	28.0
Total	**50**	**40**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
SH-177	50	40	22000	56225	34225	01:02.5	19375	43745	24370	01:02.2
Total	**50**	**40**								

The results indicated that sesame variety 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) ga ve higher yield(8.65q/ha), which was 28.0 per cent than that of farmers practice (6.73 q/ha in black soils under Irrigated condition.

The Economic Viability of improved technology over farmers practice was calculated depending on prevailing prices of input and output costs. The Improved variety with improved technologies resulted increased income with cost benefit ratio of 1:2.5/2.2.




Strategy to up scale the results:

- Organization of large scale demonstration with latest technologies and high yielding varieties.
- Production and dissemination of information on innovations in form of posters, brochures etc.,
- Organization of more no of Exposure visits, Field Days, etc.,
- Identification of innovative farm practices
- Convergence with line Departments and other organizations working for the Cause.
- Capacity building of farmers on latest production technologies including participatory seed production.
- Organization of farmers Field schools using integrated crop management approach.
- Involvement of NGOs and other organizations for horizontal spread of the technology.

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Cluster Frontline Demonstrations on Pulses under NFSM (2016-17)

Introduction:

Pulses are important source of protein, high in fibre content and provide ample quantity of vitamins and minerals. Keeping in view large benefits of pulses for human health, the United Nations has proclaimed 2016 as the International Year of Pulses. Thus, due attention is required to enhance the production of pulses not only to meet the dietary requirement of protein but also to raise the awareness about pulses for achieving nutritional, food security and environmental sustainability. Pulses are important component to sustain the agriculture production as the pulse crops possess wide adaptability to fit into various cropping systems, improve the soil fertility being leguminous in nature and physical health of soil while making soil more porous due tap root system.

The pulses availability reduced from 22.1kg/capita/year in 1951 to 15kg/capita/year during 2012. Thus, the availability of pulses is quite low than actual recommendation of WHO of 80 grams/capita/day (29.2 kg/capita/year). India is importing pulses to tune of 2.8 million tons (2007-08) to 4.02 million tons (2012-13) to meet the growing demand

India has largest share of about 25% in production, about 33% in acreage and about 27% in consumption of total pulses of the world. The acreage ranged from 20.35 (2000-01) to 23.99 million ha (2012-13) and production varied from 11.08 (2000-01) to 18.45 million tons (2012-13). The productivity has increased from 544kg/ha (2000-01) to 750 kg/ha (2012-13). The major pulses producing states are Madhya Pradesh (25%), Utter Pradesh (13%), Maharashtra (12%), Rajasthan (11%), Andhra Pradesh (9%) and other states together (30%) during 2012-13.

Among the pulses, chickpea contributes 48%, Pigeonpea 17%, Blackgram 10%, Greengram 7% and other pulses 18% in total pulses production in India.

Cluster Front Line Demonstrations in Greengram

1. **Name of the KVK :: ** Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra,
   Yagantipalle

2. **Scientists involved ::** D.Balaraju, Scientist (Plant Protection)

3. Details of farming situation

The CFLD on Greengram was taken up during Kharif 2016 under rainfed and irrigated black soils condition at Bhanumukkala village of Banaganapalle mandal and Jalakanur village of Midthur mandal. The fertility of soils is low to medium.
During south west monsoon period actual rainfall of 526.5 mm was received in the district as against the normal rainfall of 455.1 mm. In the implementing areas, we received 246 mm in Banaganapalle mandal and 384 mm in Midthur mandal during the crop period. Due to dry spell in August, the crop in rainfed areas is affected. Due to continuous cloudy weather and drizzles in September, the crop in Midthur suffered.

4. Details of the Problems/Constraints ::

Greengram is an important pulse crop grown in Kharif and Summer fallows in Andhra Pradesh with about 416 kg/ha state productivity. However, the crop is being taken up in Kurnool district in about 3000 ha in annually, with 543 kg/ha productivity. The constraints in Greengram production are :

- There is no quality YMV resistant cultivars available for farmers.
- Non adoption of seed treatment leading to high incidence of sucking pests and thus YMV.
- Greengram is taken up as preceeding chance crop to bengalgram in Kharif in majority of the areas, which is mostly succumbing to rains in Kharif season, without yielding many a times.
- Due to incidence of YMV, rust and powdery mildew due because of congenial conditions during Kharif, it is yielding lower.
- Many a times it is left without harvest in the field due to very low bearing.

5. Technology Demonstrated ::

Based on the above problems, the following technology package is taken up for demonstration in Kharif, 16 in Greengram.

- Introduction of short duration, YMV resistant variety WGG 42 and ICM in popular LGG 460.
- Seed treatment with Imidacloprid.
- Greengram as intercrop in Kharif Redgram at 1:5 ratio as insurance against complete failure of the crop.
- Imida and Neem oil 1500 ppm for sucking pest management.
- Plant protection measures against Maruca, Rust and Powdery mildew.

6. Critical inputs given ::

The following critical inputs were given to beneficiary farmers of the cluster demonstration :

- Seed (WGG 42 / LGG 460) – 20 kg/ha. (Rs.3000/- per ha)
- Imidacloprid – 500 ml/ha for seed treatment and spray. (Rs. 700/- per ha)

- Neem oil 1500 ppm - 2.5 lt /ha (Rs. 700/- per ha)
- Emamectin benzoate – 250 g/ha (Rs.1050/- per ha)
- Dichlorovos – 625 ml/ha (Rs. 325/- per ha)
- Soil testing – Rs. 250/-per sample/ha

During the crop period two trainings were organized one pre season training and one mid season training and three field visits were organized to show the varietal performance and diagnose the probles and offer solutions in the field.

Field Day : Field Day was organ ized at Jalakanur village of Midthur mandal on 17th October, 2016. A total of 34 farmers took part in the field day.

7. Results ::

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
LGG 460	30	16.8	1075	480	638	600	6.33
WGG 42	5	3.2	600	525	567		- 5.50
Total	**35**	**20.0**					
Irrigated	23	11.6	1075	480	638	600	6.33
	5	3.2	600	525	567		- 5.50
Rainfed	7	5.2	-	-	-	-	-
Total	**35**	**20.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
LGG 460	30	16.8	26050	32857	6807	1.3:1	28975	30900	1925	1.06 : 1
WGG 42	5	3.2	26050	29200.5	3150.5	1.12:1				
Total	**35**	**20.0**								
Irrigated	23	11.6	26050	32857	6807	1.3:1	28975	30900	1925	1.06 : 1
	5	3.2	26050	29200.5	3150.5	1.12:1				
Rainfed	7	5.2	-	-	-	-	-	-	-	-
Total	**35**	**20.0**								

Description of the Results:

The popular greengram variety LGG 460 with Integrated Crop Management (Seed treatment, IPM, INM) yielded 638 kg/ha grain, inspite of it being affected by diseases in continuous wetting period in September, 16 which is 6.33 % more compared to local check. But, the yields of WGG 42 were affected due to rust and powdery mildew in September, and resulted in 567 kg/ha grain yield which is 5.5% less than the local check.

8. Constraints faced :

In rainfed demonstration area, due to dry spell in August, the crop was dried up in all the rainfed locations. In Jalakanur, where it was taken up under ID, due to continuous wet period in September, and incidence of diseases, the crop was damaged in 10 locations of which LGG 460 was affected in 8 locations and WGG 42 in two locations.

9. Feedback of the farmers involved :

The farmers opined that, the greengram can not be taken as pure crop in Kharif season due to its uncertainity of giving yields. But, it can be taken as intercrop in redgram, which is in sizeable area during kharif in the district, as a chance crop if YMV resistant short duration cultivars like WGG 42 are available.

10. Feedback of the Scientists involved :

- The short duration variety WGG 42 can be taken up as intercrop in Redgram during Kharif and in rice fallows on residual moisture to get extra income.
- Development of rust and PM disease resistant varieties may help farmer realize some yields during kharif.

11. Strategy to upscale the results ::

- Awareness be created in farmers about taking up Greengram as intercrop in Redgram for improving soil productivity and to get a chance of extra income.
- Short duration YMV resistant varieties like WGG 42 should be made available to the farmers.
- Taking up greengram in Rabi and Summer in rice fallows on residual moisture should be promoted with proper weed management strategies.

Glimpses of CFLD Greengram

Pre Seasonal Training on Greengram

Inputs arrangement for Greengram CFLDs

Field visit to greengram CFLD along with Dr Kagi.

Showing pest & disease problems in greengram

Field Day on Greengram conducted at Jalakanur of Midthur on 17th October, 2016

Cluster Front Line Demonstrations in Redgram

1. **Name of the KVK :: ** Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra,
   Yagantipalle

2. **Scientists involved ::** D.Balaraju, Scientist (Plant Protection)

3. **Details of farming situation**

The CFLD on Redgram was taken up during Kharif 2016 under irrigated light black soils condition at Jalakanur village of Midthur mandal. The fertility of soils is low to medium.

During south west monsoon period actual rainfall of 526.5 mm was received in the district as against the normal rainfall of 455.1 mm. During NE monsoon period only 14.5 mm of rainfall is received as against 149.6 mm. In the implementing areas, we received a total of 386.3 mm in Midthur mandal during the crop period. Due to good distribution of rains in September, the vegetative growth of the crop was good.

4. **Details of the Problems/Constraints ::**

Redgram is the important pulse crop grown in Kharif in Andhra Pradesh in almost all the districts in Rainfed situation, with about 599 kg/ha state productivity (2015-16). However, the crop is being taken up in Kurnool district in about 48000 ha annually, with 354 kg/ha productivity (2015-16). The constraints in Redgram production are :

- Due to terminal moisture stress in rainfed areas, the productivity is low.
- Non adoption of seed treatment for wilt.
- Frequent incidence of haze during flowering that results in complete flower dessication.
- Long duration varieties being used.
- In recent times, the crop is damaged heavily due to Maruca and pod fly.
- Poor care and management as the crop is grown normally in marginal soils with poor fertility.

5. **Technology Demonstrated ::**

Based on the above problems, the following technology package is taken up for demonstration in Kharif, 16 in Redgram in Jalakanur village of Midthur mandal with 41 farmers, all of whom have canal irrigation facility.

- Introduction of short duration, Wilt resistant variety PRG 176 to escape terminal drought.
- Seed treatment with Trichoderma against soil borne diseases.
- Introduction of ICPH 2740, a potential high yielding hybrid in irrigated areas.
- Foliar spray of 13-0-45 for cold tolerance.
- IPM for Maruca and Pod fly.
- Soil test based fertilizer application.

6. **Critical inputs given ::**

The following critical inputs were given to beneficiary farmers of the cluster demonstration :

- Seed (ICPH 2740) – 7.5 kg/ha and PRG 176 – 10 kg/ha.
- Trichoderma – 5 kg /ha for seed treatment and soil application.

- Neem oil 1500 ppm - 2.5 lt /ha
- Emamectin benzoate – 250 g/ha
- Dichlorovos – 625 ml/ha
- Chlorpyriphos – 1250 ml/ha
- Soil testing

During the crop period two trainings were organized one pre season training and one mid season training and three field visits were organized to show the varietal performance and diagnose the problems and to offer solutions in the field.

Field Day : Field Day was organized at Jalakanur village of Midthur mandal on 20th January,2017. A total of 130 farmers took part in the field day. During the field day, The Art of Living Society, Hyderabad have arranged an exhibition on Zero Budget Natural Farming options for Redgram.

7. Results ::

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
ICPH 2740	17	10.0	2250	625	1837	1450	26.66
PRG 176	24	10.0	1800	600	1550		6.80
Total	**41**	**20.0**					
Irrigated	17	10.0	2250	625	1837	1450	26.66
	24	10.0	1800	600	1550		6.80
Rainfed	-	-	-	-	-	-	-
Total	**41**	**20.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
ICPH 2740	17	10.0	25800	92769	66969	3.6 : 1	28000	73225	45225	2.61 : 1
PRG 176	24	10.0	25800	78275	52475	3.03 : 1				
Total	**41**	**20.0**								
Irrigated	17	10.0	25800	92769	66969	3.6 : 1	28000	73225	45225	2.61 : 1
	24	10.0	25800	78275	52475	3.03 : 1				
Rainfed	-	-	-	-	-	-	-	-	-	-
Total	**41**	**20.0**								

Description of the Results: The redgram hybrid ICPH 2740 with Integrated Crop Management (Seed treatment, IPM, INM) yielded 1837 kg/ha, inspite of it being affected by haze during winter, which is 26.66 % more compared to local check. And the variety PRG 176 yielded 1550 kg/ha, which is 6.8 % more compared to local check Asha.

8. Constraints faced ::

- Incidence of haze during winter (flowering time) resulted in dessication of total flower flush.
- Incidence of Maruca and Pod fly resulted in sizeable loss of yield.

9. Feedback of the farmers involved :

- Farmers are of the opinion that PRG 176 is better and it can escape terminal drought.
- In assured irrigation conditions, ICPH 2740 will be good choice that can give about 25% extra yield.

10. Feedback of the Scientists involved :

- PRG 176 can best be popularized in rainfed light black and mixed soils.
- ICPH 2740 is good for deep black cotton soils in rainfed situations and with irrigation in all other situations.
- Spraying of KNO3 @ 1% at flower bud stage will impart cold resistance to plant.

Glimpses of CFLD Redgram

Pre Seasonal Training on Redgram

Inputs arrangement for Redgram CFLDs

Field visit to Redgram CFLD along with Dr Kagi.

Showing pest & disease problems in Redgram

Field Day on Redgram conducted at Jalakanur of Midthur on 20th January, 2017

Cluster Front Line Demonstrations in Blackgram

1. **Name of the KVK :** Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra,
   Yagantipalle

2. **Scientists involved ::** D.Balaraju, Scientist (Plant Protection)

3. **Details of farming situation**

The CFLD on Blackgram was taken up during Rabi 2016 under irrigated light black soils condition at Chennur, Kaminenipalle and Govindapalle villages of Sirivel mandal.

During south west monsoon period actual rainfall of 526.5 mm was received in the district as against the normal rainfall of 455.1 mm. During NE monsoon period only 14.5 mm of rainfall is received as against 149.6 mm. In the implementing areas, apart from September rains of 192.4 mm, which helped to sow the crop, we received a total of 14.5 mm in during NE monsoon period or the crop period. Due to availability of irrigation, the crop did not suffer any moisture stress during its period of growth.

4. **Details of the Problems/Constraints ::**

Blackgram is an important pulse crop grown in Rabi and Summer seasons in Andhra Pradesh in almost all the districts in Rainfed situation, with about 902 kg/ha state productivity (2015-16). However, the crop is being taken up in Kurnool district in about 10000 ha annually, with 1129 kg/ha productivity (2015-16). The constraints in Blackgram production are :

- Due to terminal moisture stress in rainfed areas, the productivity is low.
- Non adoption of seed treatment for wilt.
- Frequent incidence of haze during flowering that results in complete flower dessication.
- Long duration varieties being used.
- In recent times, the crop is damaged heavily due to Maruca and pod fly.
- Poor care and management as the crop is grown normally in marginal soils with poor fertility.

5. **Technology Demonstrated ::**

Based on the above problems, the following technology package is taken up for demonstration during Rabi 16 in Blackgram in Chennur, Kaminenipalle and Govindapalle villages of Sirivel mandal with 58 farmers, all of whom have canal irrigation facility.

- Introduction of two new blackgram varieties released from ANGRAU in recent years, viz., LBG 787 and TBG 104 and one from PAU, Punjab i.e. MASH 114, all of which are YMV resistant.
- Yellow Sticky Traps for whitefly management.
- IPM for Maruca and PM.
- Soil test based fertilizer application.

6. Critical inputs given ::

The following critical inputs were given to beneficiary farmers of the cluster demonstration:

- Seed – 20 kg / ha (Rs. 3800/- per ha)
- Neem oil 1500 ppm - 2.5 lt /ha (Rs. 825/- per ha)
- Yellow sticky traps – 25 /ha (Rs. 350/- per ha)
- Dichlorovos – 625 ml/ha (Rs. 375/- per ha)
- Hexaconazole – 1250 ml/ha (Rs.750/- per ha)
- Soil testing – Rs.250/sample/ha.

During the crop period two trainings were organized one pre season training and one mid season training and two field visits were organized to show the varietal performance and diagnose the problems and to offer solutions in the field.

Field Day: Field Day was organized at Kaminenipalle village of Sirivel mandal on 19th December, 2016. A total of 45 farmers from Govindapalle, Chennur and Kaminenipalle attended the field day.

7. Results ::

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
LBG 787	32	18.8	2125	1200	1854	2150	- 13.76
TBG 104	30	17.6	2375	1625	2180		1.39
MASH 114	9	3.6	2300	1750	2050		- 4.6
Total	**58**	**40.0**					
Irrigated	32	18.8	2125	1200	1854	2150	- 13.76
	30	17.6	2375	1625	2180		1.39
	9	3.6	2300	1750	2050		- 4.6
Rainfed	-	-	-	-	-	-	-
Total	**58**	**40.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
LBG 787	32	18.8	30550	107532	76982	3.52 : 1	34250	124700	90450	3.64 : 1
TBG 104	30	17.6	30550	126440	95690	4.14 : 1				
MASH 114	9	3.6	30550	118900	88150	3.89 : 1				
Total	**58**	**40.0**								
Irrigated	32	18.8	30550	107532	76982	3.52 : 1	34250	124700	90450	3.64 : 1
	30	17.6	30550	126440	95690	4.14 : 1				
	9	3.6	30550	118900	88150	3.89 : 1				
Rainfed	-	-	-	-	-	-	-	-	-	-
Total	**58**	**40.0**								

Description of the Results : The two new blackgram varieties released from ANGRU viz., LBG 787 and TBG 104 yielded 1854 kg/ha and 2180 kg/ha respectively. The yield of LBG 787 is 13.7 % less compared to farmers variety PU 31 where as the yield of TBG 104 is on par with PU 31, but it is of shiny type that fetches better price compared to PU31. In case of MASH 114, it gave an yield of 2050 kg/ha which is 4.65 % less compared to farmers variety PU 31, with same quality of dull grain.

8. Constraints faced ::

- Bud necrosis disease noticed in LBG 787.
- Due to excessive moisture, LBG 787 extended its duration to 100 days and yielded less.
- Leaf crinkle disease was noticed in TBG 104.

9. Feedback of the farmers involved :

- Farmers are of the opinion that both LBG 787 and TBG 104 are better than existing PU 31 as the produce is shiny grain type and fetches better price compared to PU 31 and the yields are also on par, with good resistance against YMV.
- Mash 114 can be used as alternative to PU 31, as both are giving almost on par yields with same grain quality.

10. Feedback of the Scientists involved :

- TBG 104 can be promoted in places where short statured varieties like PU 31 are predominant, as it gives good quality grain that fetches premium, thus improving income of the farmer.
- LBG 787, though its quality is good, it grows profusely and takes little more time to flower and mature, thus need excess moisture and nutrition.

Glimpses of CFLD Blackgram

Pre Seasonal Training on Blackgram

Inputs arrangement for Blackgram CFLDs

Field visit to see the performance of different varieties of Blackgram

Field Day on Blackgram conducted at Kaminenipalle of Sirivel mandal on 19^{h} December, 2016

Cluster Front Line Demonstrations in Bengalgram

1. **Name of the KVK :: ** Shri Hanumantharaya Educational & Charitable Society, Krishi Vigyan Kendra,
   Yagantipalle

2. **Scientists involved ::** D.Balaraju, Scientist (Plant Protection)

3. **Details of farming situation**

The CFLD on Bengalgram was taken up during Rabi 2016 both under rainfed and irrigated black soils condition at Nannur, Loddipalle (Rainfed) of Orwakal mandal and Illuru Kothapeta (Irrigated) of Banaganapalle mandal respectively.

In the implementing areas of CFLDs, apart from September rains of 192.4 mm, which helped to sow the crop, we received a meagre 14.5 mm rainfall during NE monsoon period or the crop period, because of which the yields in rainfed sown areas were affected. Due to availability of irrigation in IK Peta, the crop did not suffer any moisture stress during its period of growth.

4. **Details of the Problems/Constraints ::**

Bengalgram is an important pulse crop grown in Rabi in Andhra Pradesh. It is predominantly grown in Rayalaseema districts and Prakasam district of AP. The average state productivity of bengalgram is 1061 kg/ha (2015-16). However, the crop is being taken up in Kurnool district in about 2.5 lakh ha annually, with 799 kg/ha productivity (2015-16). The constraints in Bengalgram production are :

- Adoption of high seed rate.
- Incidence of wilt and dry root rot.
- Non adoption of management measures for Dry root rot.
- Non availability of Wilt and Dry root rot resistant, high yielding cultivars.
- Non adoption of INM.
- Pest and Disease problems.

5. **Technology Demonstrated ::**

Based on the above problems, the following technology package is taken up for demonstration during Rabi 16 in Bengalgram in Nannur, Loddipalle villages of Orwakal Mandal and Illuru Kothapeta of Banaganapalle mandal. The cluster demonstration in Bengalgram is taken up with 38 farmers in 30 ha.

- Newly released varieties of ANGRAU viz., Nandyala Sanaga 1 and NBeG 49.
- Soil test based fertilizer application
- IPM for Helicoverpa and Spodoptera.
- Seed treatment and Soil application of Trichoderma for wilt and dry root rot management.

6. **Critical inputs given ::**

The following critical inputs were given to beneficiary farmers of the cluster demonstration:

- Seed – 25 kg / ha (Rs. 2500/- per ha)
- Soil testing – Rs.250/sample/ha.
- Trichoderma viride for seed treatment and soil application – 5 kg/ha (Farmers contribution)

During the crop period three trainings were organized one pre season training and two mid seasonal village level trainings and three field visits were organized to show the varietal performance and diagnose the problems and to offer solutions in the field.

Field Day: Field Day was organized at Illuru Kothapeta village of Banaganapalle mandal on 2nd January, 2017. A total of 48 farmers attended the field day.

Results::

Table 1: Yield details

Details	No. of Farmers /demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			High	Low	Average		
Nandyal Sanaga 1	31	24.4	1650	1125	1350	1125	20.00
NBeG 49	7	5.6	1750	1175	1300		15.55
Total	**38**	**30.0**					
Irrigated	13 (NS1)	10.0	1650	1125	1350	1125	20.00
	7 (NBeG 49)	5.6	1750	1175	1300		15.55
Rainfed	18 (NS1)	14.4	1350	975	1107	1375	-19.50
Total	**38**	**30.0**					

Table 2: Economics

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Nandyal Sanaga 1	31	24.4	40250	82350	42100	2.05 : 1	45950	68625	22675	1.49 : 1
NBeG 49	7	5.6	40250	79300	39050	1.97 : 1				
Total	**38**	**30.0**								
Irrigated	13 (NS1)	10.0	40250	82350	42100	2.05 : 1	45950	68625	22675	1.49 : 1
	7 (NBeG 49)	5.6	40250	79300	39050	1.97 : 1				
Rainfed	18 (NS1)	14.4	-	-	-	-	45950	83875	42925	2.05 : 1
Total	**38**	**30.0**								

Description of the Results : Nandyala Sanaga 1 and NBeG 49 varieties of Bengalgram gave 1350 kg/ha and 1300 kg/ha grain yield under irrigated conditions respectively as against 1125 kg/ha in JG 11, all of which were suffered with haze incidence at flowering. Where as in rainfed situation at Nannur and Loddipalli, where no haze incidence was noticed, NS 1 gave 1107 kg/ha as against 1375 kg/ha by JG 11, 19.5% less compared to farmers practice of JG 11. It shows that, the varieties NS 1 and NBeG 49 respond better to moisture availability than JG 11.

7. Constraints faced ::

- Haze incidence at flowering at Illuru Kothapeta village resulting in total flower drop.
- Non receipt of rains during NE monsoon affected yields at Nannur and Loddipalle villages.

8. Feedback of the farmers involved :

- Grain size in NS 1 is good and yields better provided good monsoon prevails.
- Uniform grain in NBeG 49 is attractive and withstands better in wilt endemic areas, as it is tolerant to wilt.

9. Feedback of the Scientists involved :

- Discolouration of grain in NS 1 upon storage, resulting in low market price.
- Dry root rot resistance cultivars will benefit the farmers to adopt recommended seed rate, thus save on cost of cultivation.

Glimpses of CFLD Bengalgram

Pre Seasonal Training on Bengalgram

Inputs arrangement for Bengalgram CFLDs

Field visit to see the performance of different varieties of Bengalgram

Field Day on Bengalgram conducted at Illuru Kothapeta of Banaganapalle mandal on 2nd January, 2017

Strategy to up scale the results of Cluster Demonstrations in Pulses :

- ✓ Capacity building of farmers on latest production technologies including participatory seed production.
- ✓ Awareness be created in farmers about taking up Greengram as intercrop in Redgram for improving soil productivity and to get a chance of extra income.
- ✓ Short duration YMV resistant varieties like WGG 42 should be made available to the farmers.
- ✓ Taking up greengram in Rabi and Summer in rice fallows on residual moisture should be promoted with proper weed management strategies.
- ✓ Quality YMV resistant Blackgram seed varieties viz., LBG 787 and TBG 104 need to be produced in large scale and made available to farmers.
- ✓ Promotion of Redgram varieties like PRG 176 in light soils to avoid complete failure of crop due to terminal moisture stress.
- ✓ Organization of large scale demonstration with latest technologies and high yielding varieties need to be taken up.
- ✓ Production and dissemination of information on innovations in the form of posters, brochures etc.,
- ✓ Organization of more no of Exposure visits, Field Days, and Interaction meetings with successful farmers.
- ✓ Convergence with line Departments and other organizations working for the Cause.
- ✓ Involvement of NGOs and other organizations for horizontal spread of the technology.

4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	2	80	-	80	20	-	20	100	-	100
Cropping Systems	1	19	-	19	6	-	6	25	-	25
Micro Irrigation/irrigation	1	25	-	25	5	-	5	30	-	30
Seed production	1	15	-	15	3	-	3	18	-	18
Nursery management										
Integrated Crop Management	8	137	4	141	46		46	183	4	187
Total	**13**	**276**	**4**	**280**	**80**		**80**	**356**	**4**	**360**
Integrated Nutrient Management	1	19	0	19	6	-	6	25	-	25
Production and use of organic inputs	2	39	-	39	11		11	50	-	50
Management of Problematic soils	1	61	98	159	21	20	41	82	118	200
Balance use of fertilizers					6	-	6	25	-	25
Soil and Water Testing	1	19	-	19						
Others (pl specify)										
Total	**5**	**138**	**98**	**236**	**44**	**20**	**64**	**182**	**118**	**300**
IV Livestock Production and Management										
Dairy Management	1	12		12	3		3	15		15
Animal Nutrition Management	1	10	5	15	8	2	10	18	7	25
Disease Management	1	21		21	4		4	25		25
Feed & fodder technology	2	31		31	9		9	40		40
Small ruminant management	1	11		11	3	2	5	14	2	16
Total	**6**	**85**	**5**	**90**	**27**	**4**	**31**	**112**	**9**	**121**
V Home Science/Women empowerment										
Value addition	5	8	67	75	2	28	28	10	95	105
Rural Crafts	1	-	23	23	-	4	4	-	27	27
Others- Enterpreneurship development programme for rural women & men. (pl specify)	1	8	19	27	7	6	13	15	25	40
Total	**7**	**16**	**109**	**125**	**9**	**38**	**45**	**25**	**147**	**172**

VII Plant Protection										
Integrated Pest Management	5	96		96	37		37	133		133
Bio-control of pests and diseases	2	54		54	10	12	22	64	12	76
Total	**7**	**150**		**150**	**47**	**12**	**59**	**197**	**12**	**209**
GRAND TOTAL	**38**	**665**	**216**	**881**	**207**	**74**	**281**	**872**	**290**	**1162**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	2	50	-	50	10	-	10	60	-	60
Resource Conservation Technologies	1	40	-	40	5	-	5	45	-	45
Cropping Systems	3	66		66	17		17	83		83
Crop Diversification	1	35	-	35	15	-	15	50	-	50
Integrated Crop Management	7	223		223	61		61	284		284
Others **ORGANIC FARMING**	3	67		67	10		10	77		77
Fodder production	1	45	-	45	5	-	5	50	-	50
Total	**18**	**526**		**526**	**123**		**123**	**649**		**649**
II Horticulture										
a) Vegetable Crops										
Nursery raising	2	51		51	9		9	60		60
Total (a)	**2**	**51**		**51**	**9**		**9**	**60**		**60**

III Soil Health and Fertility Management										
Integrated Nutrient Management	1	20	-	20	5	-	5	25	-	25
Micro nutrient deficiency in crops	1	24	-	24	8	-	8	32	-	32
Nutrient Use Efficiency	1	20		20	6		6	26		26
Total	**3**	**64**		**64**	**19**		**19**	**83**		**83**
IV Livestock Production and Management										
Dairy Management	2	30	4	36	24	2	36	54	6	60
Animal Nutrition Management	1	12		12	6		6	18		18
Feed & fodder technology	1	18		18	12		12	30		30
Production of quality animal products	1	8		8	5	2	7	13	2	15
Small ruminant management	1	13		13	2		2	15		15
Total	**6**	**81**	**4**	**85**	**49**	**4**	**53**	**130**	**8**	**138**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	-	13	13	-	7	7	-	20	20
Designing and development for high nutrient efficiency diet	1	-	12	12	-	13	13	-	25	25
Value addition	4	-	66	66	-	34	34	-	100	100

Women empowerment										
Location specific drudgery reduction technologies	1	-	19	19	-	11	11	-	30	30
Total	**7**		**110**	**110**		**65**	**65**		**175**	**175**
VII Plant Protection										
Integrated Pest Management	15	316		316	60	10	70	376	10	386
Others (Organic methods of pest & Dis mgmt)	4	68	30	98	13	3	16	81	33	114
Total	**19**	**384**	**30**	**414**	**73**	**13**	**86**	**457**	**43**	**501**
GRAND TOTAL	**55**	**1106**	**144**	**1250**	**273**	**82**	**355**	**1379**	**226**	**1605**

Farmers' Training including sponsored training programmes – CONSOLIDATED (On + Off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	4	130	-	130	30	-	30	160	-	160
Resource Conservation Technologies	1	40	-	40	5	-	5	45	-	45
Cropping Systems	4	85		85	23		23	108		108
Crop Diversification	1	35	-	35	15	-	15	50	-	50
Micro Irrigation/irrigation	1	25	-	25	5	-	5	30	-	30
Seed production	1	15	-	15	3	-	3	18	-	18
Integrated Crop Management	15	360	4	364	107		107	467	4	471
Others (ORGANIC FARMING)	3	67		67	10		10	77		77
Fodder production	1	45	-	45	5	-	5	50	-	50
Total	**31**	**802**	**4**	**806**	**203**		**203**	**1005**	**4**	**1009**
II Horticulture										
a) Vegetable Crops										
Nursery raising	2	51		51	9		9	60		60
Total (a)	**2**	**51**		**51**	**9**		**9**	**60**		**60**
III Soil Health and Fertility Management										
Integrated Nutrient Management	2	39		39	11		11	50		50
Production and use of organic inputs	2	39		39	11		11	50		50
Management of Problematic soils	1	61	98	159	21	20	41	82	118	200
Micro nutrient deficiency in crops	1	24		24	8		8	32		32
Nutrient Use Efficiency	1	20		20	6		6	26		26
Balance use of fertilizers	1	19		19	6		6	25		25
Total	**8**	**202**	**98**	**300**	**63**	**20**	**83**	**265**	**118**	**383**
IV Livestock Production and										

Management										
Dairy Management	3	42	4	48	27	2	39	69	6	75
Animal Nutrition Management	2	22	5	27	14	2	16	36	7	43
Disease Management	1	21		21	4		4	25		25
Feed & fodder technology	3	49		49	21		21	70		70
Production of quality animal products	1	8		8	5	2	7	13	2	15
Small ruminant management	2	24		24	5	2	7	29	2	31
Total	**12**	**166**	**9**	**177**	**76**	**8**	**94**	**242**	**17**	**259**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	-	13	13	-	7	7	-	20	20
Designing and development for high nutrient efficiency diet	1	-	12	12	-	13	13	-	25	25
Value addition	9	8	133	141	2	62	62	10	195	205
Location specific drudgery reduction technologies	1	-	19	19	-	11	11	-	30	30
Rural Crafts	1	-	23	23	-	4	4	-	27	27
Others- Enterpreneurship development programme for rural women & men. (pl specify)	1	8	19	27	7	6	13	15	25	40
Total	**14**	**16**	**194**	**235**	**9**	**103**	**122**	**25**	**322**	**347**
VII Plant Protection										
Integrated Pest Management	20	393	1	394	92	25	117	485	26	511
Integrated Disease Management										
Bio-control of pests and diseases	2	54		54	10	12	22	64	12	76
Production of bio control agents and bio pesticides										
Others (Organic methods of pest and disease management)	4	81	30	111	16		16	97	30	127
Total	**26**	**528**	**31**	**559**	**118**	**37**	**155**	**646**	**68**	**714**
GRAND TOTAL	**93**	**1765**	**361**	**2128**	**478**	**168**	**654**	**2243**	**529**	**2772**

Training for Rural Youths including sponsored training programmes (On campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Seed production	1	18	-	18	2	-	2	20	-	20
Production of organic inputs	1	25		25	5		5	30		30
Dairying	1	12		12	3		3	15		15
Any other (Skill Development trg. On Organic Farming)	1	18		18	2		2	20		20
Any other- Soil testing	1	32		32	8		8	40		40
TOTAL	**5**	**105**		**105**	**20**		**20**	**125**		**125**

Training for Rural Youths including sponsored training programmes (Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Tailoring and Stitching	1	-	28	28	-	9	9	-	37	37
Rural Crafts- Fabric Painting	1	-	19	19	-	4	4	-	23	23
TOTAL	**2**		**47**	**47**		**13**	**13**		**60**	**60**

Training for Rural Youths including sponsored training programmes – CONSOLIDATED (On + Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Seed production	1	18	-	18	2	-	2	20	-	20
Production of organic inputs	1	25		25	5		5	30		30
Tailoring and Stitching	1	-	28	28	-	9	9	-	37	37
Rural Crafts-Fabric Painting	1	-	19	19	-	4	4	-	23	23
Any other (Skill Development trg. On Organic Farming)	1	18		18	2		2	20		20
Any other-Soil testing	1	32		32	8		8	40		40
TOTAL	**7**	**105**	**47**	**152**	**20**	**13**	**33**	**125**	**60**	**185**

Training programmes for Extension Personnel including sponsored training programmes (on campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	2	20	40	60	5	10	15	25	50	75
Integrated Pest Management	3	48	36	84	8	7	15	56	43	99
Production and use of organic inputs	4	90	74	164	21	12	33	111	86	197
Livestock feed and fodder production	1	12		12	8		8	20		20
Any other – Soil testing	1	-	30	30	-	-	-	-	30	30
TOTAL	**3**	**170**	**180**	**350**	**42**	**29**	**71**	**212**	**209**	**421**

Training programmes for Extension Personnel including sponsored training programmes (off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	18	9	27				18	9	27
Integrated Pest Management	2	31	35	66	8	6	14	39	41	80
Production and use of organic inputs	1	25	8	33	3		3	28	8	36
Low cost and nutrient efficient diet designing	1	-	42	42	-	28	28	-	70	70
TOTAL	**5**	**74**	**94**	**168**	**11**	**34**	**45**	**85**	**128**	**213**

Training programmes for Extension Personnel including sponsored training programmes – CONSOLIDATED (On + Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	18	9	27				18	9	27
	2	**20**	**40**	**60**	**5**	**10**	**15**	**25**	**50**	**75**
Integrated Pest Management	5	79	71	150	16	13	29	95	84	179
Production and use of organic inputs	5	115	82	194	24	12	36	139	94	233
Low cost and nutrient efficient diet designing	1	-	42	42	-	28	28	-	70	70
Livestock feed and fodder production	1	12		12	8		8	20		20
Any other – Soil testing	1	-	30	30	-	-	-	-	30	30
TOTAL	**16**	**244**	**274**	**518**	**53**	**63**	**116**	**297**	**337**	**634**

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Increasing production and productivity of crops	25	501	114	615	94	16	110	595	130	725
Total	**25**	**501**	**114**	**615**	**94**	**16**	**110**	**595**	**130**	**725**
GRAND TOTAL	**25**	**501**	**114**	**615**	**94**	**16**	**110**	**595**	**130**	**725**

Name of sponsoring agencies involved:

S.No.	Name of Sponsoring Agenccy	No. of Trainings
1	Department of Agriculture, Kurnool	13
2	Department of Horticulture, Kurnool	6
3	ATMA, Kurnool	2
4	Reliance Foundation, Kurnool	1
5	NHRDF, Kurnool	1
6	BIRDS – NGO, Allagadda	2
TOTAL		**25**

Details of vocational training programmes carried out by KVKs for rural youth

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Organic farming	1	18	-	18	2	-	2	20	-	20
Total	**1**	**18**	**-**	**18**	**2**	**-**	**2**	**20**	**-**	**20**
Income generation activities										
Seed production	1	18	-	18	2	-	2	20	-	20
Total	**1**	**18**	**-**	**18**	**2**	**-**	**2**	**20**	**-**	**20**
Grand Total	**2**	**36**		**36**	**4**		**4**	**40**		**40**

5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Field Day	3	225	14	239
Group discussions	12	260	5	265
Kisan Mela	1	250	6	256
Exhibition	1	254	7	261
Scientists' visit to farmers field	32	593	2	596
Method Demonstrations	11	98	19	117
Celebration of important days World Soil Day	 1	 476	8	484
Celebration of important days- National Nutrition Week-1 International Womens Day	 1		220 45	220 45
Total	**62**	**2156**	**326**	**2483**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	
Extension Literature	5
News paper coverage	47
Popular articles	8
Radio Talks	9
TV Talks	2
Animal health amps (Number of animals treated)	8 (420)
Popular articles	3
Research article	1
Total	**83**

Messages sent

MOBILE ADVISORY SERVICES THROUGH MKISAN PORTAL

No of registered farmers: 1565

Types of Messages	Type of messages													
	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	20	1545												
Voice only														
Voice & Text both														
Total Messages	**20**	**1545**												
Total farmers Benefitted	**20**	**1545**												

MOBILE ADVISORY SERVICES THROUGH OTHERS

No of registered farmers:

Types of Messages	Type of messages													
	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only					63	344								
Voice only														
Voice & Text both														
Total Messages					**63**	**344**								
Total farmers Benefitted					**63**	**344**								

7. PRODUCTION OF SEED/PLANTING MATERIAL AND BIO-PRODUCTS

Production of seeds by the KVKs (give quantity of seed in quintals only)

Crop	Name of the crop	Name of the variety /hybrid	Quantity of seed produced (q)	Value (Rs)	Seed supplied to farmers		Supplied to other agencies (q)
					Quantity (q)	No of farmers	
Cereals	paddy	BPT-5204	238.94	680000	238.94		
		NDLR-7	282.65	750000	282.65		
		RNR-15048	92.41	250000	92.41		
	Jowar	NJ-2647	8.66	25000	8.66		
		NJ-2446	5.18	15000	5.18		
	Setaria	SIA-3221	8.24	20000	8.24		
		Suryanandi	13.60	52,000	13.60		
Oilseeds	Groundnut	Dharani	29.72	175000	29.72		
Pulses	Blackgram	TBG-104	13.30	150000	13.30		
	Redgram	ICPH-2740	123.0	18,45,000	123.0		
		PRG-176	130.0	11,70,000	130.0		
		ICPL-87119	96.22	8,84,000	96.22		
	Bengalgram	NBeG-3	228.3	22,00,000	228.3		
Total			**1271.22**	**82,16,000**	**1271.22**		

Production of planting materials by the KVKs

Crop	Name of the crop	Name of the variety / hybrid	Number	Value (Rs.)	Planting material supplied to farmers		Supplied to other agencies (No)
					No	No of farmers	
Vegetable seedlings	Chilli		35000	10500		12	
	Tomato		34000	10200		2	
	Brinjal		20000	6000		2	
Fodder crop saplings	Hybrid Napier	CO-4, Phule Jaywanth	75550	22665.00	75550	12	
Total			**164500**	**49365.00**			

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg	Value (Rs.)	Supplied to farmers		Supplied to other agencies kg
				kg	No of farmers	
Bio Fertilizers	Vermi compost	1,68,000	8,40,000	1,68,000	122	2
	PSB	614	30700	614	29	
	Azospirillum	508	25400	508	16	
Bio-fungicide	Pseudomonas	782	78200	782	89	
	Trichoderma	835	83500	835	83	
Total		**1,70,739**	**10,57,800**	**2739**	**339**	**2**

Livestock:

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	Supplied to farmers		Supplied to other agencies (No)
				No	No of farmers	
Sheep	Nellore Brown	65	212290	35	16	20
Poultry						
Backyard poultry	Rajasri	3942	295650	3942	56	
Total		**4007**	**507940.00**	**3977**	**72**	**20**

8. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Soil	2993	2656	55	17,65,050
Water	21	11	6	2,100
Plant	130	18	3	13,050
Total	**3144**	**2685**	**64**	**17,80,200**

9. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
09.03.2017	26

Note: please attach the proceedings of sac meeting along with the list of participants

List of participants attended the SAC Meeting :

S.No	Name	Designation
1.	Sri. P.Balaji	Secretary, KVK, Yagantipalle
2.	Dr. B. Gopal Reddy	ADR RARS Nandyal
3.	Sri. C. Subba Reddy	M.A.O, Banaganapalle
4.	Dr M R srinivasulu	Treasurer SHE&CS
5.	Dr. C.Venkata Ramana Varma	ADAH (Rep. of JDAH, Kurnool)
6.	S. Konda Reddy	Special officer SHE&CS
7.	Dr. Y. Narasimhulu	PC, KVK, Banavasi.
8.	Dr V. jaya lakshmi	
9.	Dr. B. srikanth Reddy	VAS yagantipalle
10.	Sri. M. Srinivasa Reddy	BTM, ATMA, Nandyal.
11.	Dr. M raghavendra reddy	VAS Pasupula
12.	Dr. ram kumar reddy	Vas pLUKUR
13.	Smt. G. Dhanalakshmi	Programme Coordinator
14.	Sri M. Thirupam Reddy	Farmer, Kaipa
15.	Sri. B.V.Subba Reddy	Farmer, Banaganapalle
16.	Sri M. Krishnudu	Farmer, Yagantipalle
17.	Sri K. Pani Bhushan	Farmer, Utakonda
18.	Sri. P.B. Hari Krishna	Farmer, Nandavaram
19.	Sri. M.V.Krishna Reddy	Farmer, Kalugotla
20.	Sri. M.Veerabhadra Reddy	Farmer, Bethamcherla
21.	Sri. K. Venkateswar Reddy	Farmer, Owk Mittapalle
22.	Sri. D. Siva Shankar Reddy	Farmer, Yagantipalle
23.	Sri D.Chennapa Reddy	Farmer banaganapalle
24.	Smt. B. Rajeswari	Women farmer, YPL
25.	Smt. Maheswaramma	Woman Entrepreneur, YPL
26.	Smt. Lakshmi Devi	Woman Farmer, Banaganapalle

10. PUBLICATIONS

Publications in journals

S. No	Authors	Year	Title	Journal
1	A.Krishna Murthy	2016	Study on growth performance of different crops under low cost greenhouse hydroponic unit	Abstract papers of ANACON-2016 pp.71
2	A.Krishna Murthy	January'17	Effective utilization of green fodder	Pasunestham monthly magazine pp.34
3	A.Krishna Murthy	March 17	Reproductive disorders in dairy animals	Annadata monthly magazine pp.61-62

Other publications

S.No	Item	Year	Authors	Title	Publisher
1	Books				
2	Book chapters / manuals				
3	Training manuals				
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	13.09.2016	A.Krishna Murthy	Vaaramlo pachimetha	Saakshi "Saagubadi"
		19.09.2016	A.Krishna Murthy	Clean milk production	saakshi "Paadi-Pantalu"
		05.12.2016	A.Krishna Murthy	Enrichment of dry fodder	saakshi "Paadi-Pantalu"
		10.12.2016	A.Krishna Murthy	Bypass feeds for better milk production	saakshi "Paadi-Pantalu"
5	Technical bulletin/ Folders	2017	A.Krishna Murthy	Effective utilization of green fodder	1000 copies
		2017	A.Krishna Murthy	Hydroponic fodder production	1000copies
		2016-17	D.Balaraju, SMS (PP) G.Dhanalakshmi, Sr. Scientist & Head	1. పెసర పంట సాగులో కీలక యాజమాన్య పద్ధతులు . 2.కంది సాగులో కీలక యాజమాన్య పద్ధతులు.	1000 copies 1000 copies
		2016-17	M. Sudhakar G. Dhanalakshmi	ψ⌋σℑTΞ⁄θ>• κ⊆>•T	1000 copies
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				□↵≤	copies
6	Reports				
7	others				

4. Training/workshops/seminars etc details attended by KVK staff

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

Name of the staff	Title	Duration	Organized by
K.V. Ramanaiah	Workshop on Soil health Governance	1	Fertiliser Association of India(FAI) at Hyderabad.
D.Balaraju	TOT on Zero Budget Natural Farming	3 days	Dept of Agriculture, Andhra Pradesh at Guntur.
D.Balaraju	Workshop on Zero Budget Natural Farming	4 days (11.9.16 to 14.9.16)	DoA, AP at Tirupati
A. Krishina Murthy	National Conference	2	Dept. of A.N, CVSC, Tirupathi.
K.Lakshmipriya	Workshop on Measures to Combat Anemia among adolesents	1	Dept. of Women Development And Child Welfare
K.Lakshmipriya	Workshop on "Ergonomic Methodologies For Assessment Of Drudgery.	1	Faculty of Homescience, ANGRAU
K.Lakshmipriya	Regional workshop on SMART Tragetting For Nutrition Mission.	1	Dept.Of Women Development and Child Welfare and UNICEF
K.Lakshmipriya	Training programme on "Empowering Millet Stake Holders through Processing & Commercialization of Value Added Technologies' .	2	Indian Institute Of Millet Research, R'nagar,Hyd
K.Lakshmipriya	Training programme on "Promotion of Agro Enterprises and Food Processing.	2	NIMSME, Yousafguda, Hyd.

11. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM

Activities conducted				
No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)

13. Awards/rewards by KVK and staff

Item of Recognition	Year	Awarding Organization National / International / Professional; Society	Individual/ collaborative
K.Lakshmipriya	2016	Indian Institute Of Millet Research,Rajendranagar, Hyderbad	Individual

14. Details of sponsored projects/programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Farm Innovation Fund	ICAR (ATARI)	To implement the ration balancing techniques in cattle	1 Year	1,00,000.00

15. Success stories

I. YMV Tolerance in Blackgram – Boon to Farmer for prosperity

Situation analysis/Problem statement:

In Kurnool district of Andhra Pradesh Blackgram crop is being grown mainly during Rabi season. This crop is being cultivated in Parts of Koilkuntla, Nandyal and Allagadda sub divisions of Kurnool district. During last year, Blackgram was sown in an area of 19644 ha in the district as against normal area of 9251 ha in Rabi. During the past two years, the YMV disease is most prevalent in the district and caused a yield loss to the tune of 30 – 60 % of potential yields, thus affecting the income of the farmers. Farmers are in search of YMV resistant, high yielding varieties and are approaching University, KVKs, fellow farmers in other districts of the state for the purpose. Even department of Agriculture has intervened in this regard and supplied TBG 752 and PU 31 varieties of Blackgram as a solution. But, LBG 752 is not immune to YMV and it showed YMV incidence from 5 – 20 % in the field, where as though PU 31 is almost immune to YMV, the dull seed coat resulted in low market price. The farmers are in want of shiny, YMV resistant, high yielding blackgram varieties. In this regard, KVK intervened and implemented Cluster Front Line Demonstrations in Blackgram with different new varieties which are YMV tolerant, shiny and high yielders. Viz., TBG 104, LBG 787 and MASH 114 (dull type).

To help the farmers with regard to YMV management in Blackgram, KVK has implemented a series of activities such as sensitization and awareness regarding integrated management of YMV disease in existing crop varieties during 2013-14. In 2014, KVK has implemented On Farm Testing in YMV Resistant varieties of Blackgram and introduced LBG 752, PU 31 and MASH 338.

Plan, Implement and Support:

For largescale popularization of YMV resistant varieties of Blackgram, the CFLD in Blackgram was implemented in Govindapalle, Chennur and Kaminenipalle villages of Sirivel mandal in the district during Rabi, 2016. S.Ramakrishna Reddy, a progressive farmer of Chennur village, who tried many available varieties of Blackgram in his field of 15 acres during last two years and was not successful in identifying best suitable variety was given with LBG 787 and TBG 104 varieties under CFLD (Blackgram) during this season. All the CFLD farmers were given the critical inputs of Seed, Seed treatment chemical (Imidacloprid), Yellow Sticky Traps 20/ac, PP Chemicals (Neem oil, *Emamectin benzoate*, Dichlorovos and Hexaconazole) for management of pests and diseases. Two training programmes were conducted one pre seasonal and one mid seasonal for imparting knowledge on crop management, INM and IPM. The CFLDs were regularly visited for diagnosis of

pests and diseases and timely advisories were given, based on which the farmers have taken up sprayings. A field day was conducted at the farmers field, to show the performance of different varieties against YMV and also the yield. The farmers interacted with Scientists of KVK and updated their knowledge of the crop.




Output:

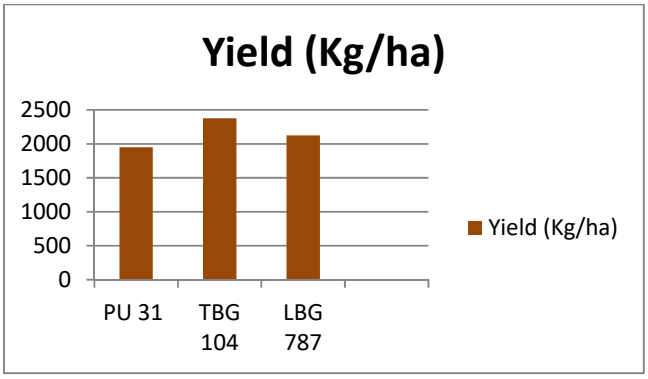
The demonstrated varieties with good agronomical and pest and disease management gave better yield compared to farmer adopted variety i.e. PU 31.

Performance of Cluster Demonstrations of Blackgram in the implemented area:

Sl. No	Existing (Farmer's) variety name	Existing yield (q/ha)	Name of vaiety demonstrated	Number of farmers (Area in acre)	Yield obtained (q/ha)			Yield advantage (%)
					Max.	Min.	Av.	
1	PU 31	2150	TBG-104	31 (17.6)	23.75	16.25	21.78	1.3
2			LBG-787	33 (18.0)	21.25	12.00	18.54	-13.8
3			MASH-114	9 (4.4)	23.00	17.50	20.51	-4.6

Performance of Cluster Demonstration of Blackgram in the field of S.Ramakrishna Reddy:

Sl. No	Existing (Farmer's) variety name	Existing yield (q/ha)	Variety	Yield obtained (kg/ha)	Yield advantage (%)
1	PU 31	1950	TBG-104	2375	21.79
			LBG-787	2125	8.97



Yield Comparision between different varieties

The farmer has got 21.79 % and 8.97% yield advantage compared to PU 31 variety, apart from good management of Whitefly, Maruca, Pod borer and Powdery mildew disease. This was resulted due to timely diagnosis of the problem and sprayings. He has taken up 3 sprayings in the entire season as against 4-5 sprays taken up by his fellow farmers, with a saving of Rs. 2,550/- per ha. He got additional net returns of Rs. 34,075/-per ha with TBG 104 and Rs. 17,825/- per ha with LBG 787.

Outcome:

As the quality of grain is good and marketability is high, the farmer has saved 40% of his produce for seed purpose, i.e for own needs and to supply the seed to his fellow farmers in the ensuing season. As the timely diagnosis and management of pests and diseases could save costs and improve productivity, he is spreading the same message to his fellow farmers in all the occasions of interaction with regard to crop. As a result of the CFLD in the above villages, we foresee the possibility of the normal variety i.e. PU 31 will be replaced with new varieties TBG 104 and LBG 787 significantly in coming season.

Impact:

As the soils of Kurnool district are more suitable for cultivation of blackgram, the potential for increase in area under the crop is high, which is most likely with the availability of and awareness on new YMV Resistant, high yielding, shiny grain type varieties viz., TBG 104 and LBG 787. The economics of Blackgram crop out beats the economics of current major crop i.e. Bengalgram.

2. Success story on Castor hybrid PCH-111 in Kurnool district

Situation analysis/Problem statement:

Castor is a valuable Non-edible oilseed crop playing an important role in agricultural economy of arid and semiarid regions. At present, the world trade of fossil fuel is being controlled by Gulf. Similarly, India should also monopolies castor trade on the globe. Although, 67 percent India's' share in the world production of oilseeds is contributed only by castor with higher produc tion and productivity. Castor is grown mainly in dry lands of Andhra Pradesh, Karnataka, Tamilnadu, Orrisa, MadhyaPradesh and Maharashtra and irrigated areas of Gujarat and Rajasthan. It is grown mostly as pure crop and in some states as intercrop. Castor crop can be intercropped' with a large number of crops such as jowar, bajra, redgram, fingermillet, maize, groundnut, greengram and in some cases with commercial crops like chilli, turmeric etc. Castor is raised as a whole season crop in a year by virtue of its long durations and perenniating habit.

Castor is an important oilseed crop of A.P and is grown under semi arid and tropical areas. The yields are generally low due to scanty and ill distributed rain fall during the monsoon period. In Kurnool district castor is grown in an area of 67,000 ha with *low productivity varies from 500-675 kg/ha . This is mainly due to the following reasons.*

- *The soils of castor growing areas in Kurnool district fall under Alfisols which are characterized by poor texture, shallow depth, less water holding capacity and low fertility.*
- Non-availability of quality seed, meager water resources, poor adoption of agronomic and plant protection measures.

- *The cyclonic rains coupled with high relative humidity (>90%) during spike formation/development stage results in severe incidence of Botrytis, which adversely affects the capsule formation& development.*

To overcome above constraints several on farm demonstrations were organized with castor hybrid PCH-111 developed at RARS, palem in comparison with private hybrids during kharif 2010 onwards.

Output and Outcome:

The results revealed that PCH-111 castor hybrid has recorded 24. per cent increased yield over private hybrids under rainfed situation with additional returns of Rs12040/ha. Farmers opined that the percent of male flowers were less in PCH-111, tolerant to wilt, and drought and more no. of spikes/plant. Farmers were also convinced with its good performance and showing interest to cultivate only this castor hybrid.

This hybrid has spread very quickly in the district and also other castor growing districts of A.P including non-traditional areas because of its special features like high yielding, comes up well even when drought situations prevail during crop growth period, wilt resistant, bold seed type etc

FLD visit to PCH-111 plot

At present there is great demand for PCH-111, as its performance was good in rainfed situation over the hybrids available in private sector.

To cater to the needs of the farmers seed production of PCH-111 was taken up at KVK farm and Farmers fields .This KVK is meeting the seed demand by 3.9 percent of district requirement of castor seed. For three years the seed produced at adopted villages of KVK was supplied to SRTC, Rajendranagar, Hyderabad. The details of Seed Production in collaboration with ANGRAU are furnished hereunder.

Seed Production in collaboration with ANGRAU:

CROP	Hybrid	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Quantity in Qtls.,							
Castor	PCH-111	65.50	120.0	4.0	-	4.0	193.5

Yield Performance

Year	Component	Variety	No. of Farmers	Area (ha)	Yield q/ha		Per cent increase
					Demo	LC	
2012-13	Hybrids Evaluation	PCH-111	25	10.0	17.18	13.64	25.2
2013-14	Hybrids Evaluation	PCH-111	10	4.0	9.93	7.87	26.1
2014-15	Hybrids Evaluation	PCH-111	10	4.0	10.92	8.96	21.8
			45	**18.0**	**12.67**	**10.15**	**24.36**

Economic Performance

Year	Avg. Cost of Cultivation (Rs./ha)		Avg. Gross Returns (Rs./ha)		Avg. Net Returns(Rs./ha)		BC Ratio	
	Demo	Check	Demo	Check	Demo	Check	Demo	Check
2012-13	15375	15375	59780	47740	44405	32365	1:3.8	1:3.10
2013-14	15000	15000	34755	27545	19755	12545	1:2.1	1:1.83
2014-15	23440	19042	52075	36180	28635	17138	1:2.2	1:1.9
Average	**17938**	**16472**	**48870**	**34640**	**30931**	**20682**	**1:2.7**	**1:2.27**

On an average the Castor hybrid PCH-111 gave 12.67q/ha yield which is 24.36 per cent higher than private hybrids. The economic data of the demonstrations and local check showed that average net returns Rs 30931 as compared to local check which is Rs20682 with B:C ratio of 1: 2.27

Impact:

This hybrid has spread very quickly not only to the interior pockets of the district but also to other castor growing districts and non-traditional areas because of its unique features like high yielding variety, comes up well even when drought situations prevail during crop growth period, wilt

resistant, bold seed type etc. Farmers are reaping good returns due to the hybrid and area under Rabi castor is also increasing in the district.

3. Success story on crop intensification in Rainfed black soils (Double cropping)

Background:

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 under rainfed situation in black soils. In order to increase Net returns/ha and cropping intensity in dry lands this demonstration was planned in collaboration with ATMA.

Technology/ Process:

Demonstrations were orgnaized on crop intensification in rainfed black soils (Double cropping), at Appalapuram Village of Banaganapalli mandal and provided critical inputs i.e seed, Fertilizers and P.P chemicals to the selected farmers with ATMA funds. During the crop period five field visits were organized to the farmers and others farmers from different villages to show the new cropping system i.e growing of Seteria before bengalgram.

After assessment of technology for two years, the successful result of the technology is considered for large scale adoption in the district. In order to create awareness on double cropping, three trainings were conducted to farmers, adarsha rythus and extension personnel. The methodology and results were published in Daily news papers. Out of 120 trained farmers twenty farmers were selected for demonstration in an area 20 acres and provided critical inputs like seteria seed, fertilizers and need based pp chemicals. Seteria crop was sown during the month of 1 st week of july and harvested during last week of September. Second crop i.e Bengalgram was successfully sown during second week of October. During the crop period five field visits were organized to the farmers and others farmers from different villages to show the new cropping system i.e. growing of Seteria before bengalgram.

The results indicated that highest net returns was obtained with Korra-Bengalgram sequence (Rs32948/ha)

than fallow –bengalgram.

The net income of the farmers was also increased in Korra- Bengalgram sequence which is calculated as Rs. 32948/- per ha which is Rs. 8535/- more than the Fallow- Bengalgram. This shows the increased profitability through Korra- Bengalgram sequence.

Conclusion:

Foxtail millet (korra), crop being its short duration may fit well in double cropping sequence under rainfed situation in black soils. Inorder to increase net returns Rs/ha and cropping intensity, Seteria- bengalgram can be successfully grown in rainfed black soils, if onset of monsoon are in time.

4. NDLR-7 a paddy variety suitable for Kharif late sowings and Rabi under tankfed areas of Kurnool district of Andhra Pradesh

Background:

In AP rice is grown in an area of 2.82 million ha. In Kurnool district the crop is being cultivated in an area of 0.048 mha and 0.011mha with productivity of 2096 kg/ ha and 2265kg/ha during kharif and rabi respectively.

The common varieties usually grown in the district are samba Mashuri (BPT-5204), JGL-1798385, MTU-1001, IET-1444, RNR-1446, among this varieties samba Mashuri (BPT-5204) and RNR-1446 are popular with the rice farmers during kharif and rabi seasons respectively.

Samba Mashuri (BPT-5204), popularly Known as Kurnool sona, is much preferred variety, popular by the farmers, but the variety is susceptible to blast and BPH. During unfavourable conditions the farmers sustain heavy losses, with low yields and high production cost (Rs.25,000-00/ha).

During rabi RNR-1446 a short duration variety, suitable for late sowing is being grown. The grain quality is coarse, market price for this variety is low and net returns are low.

There is a need to develop variety suitable for delayed sowings with tole*ra*nce to blast and BPH and grain cooking qualities similar to that of BPT-5204.

Technology /process:

Rice variety NDLR-7 from regional Agriculture Research Station (RARS) Nandyal which has fine grain quality, 135 days duration (medium duration) tolerant to BPH and blast, suitable for kharif, late sowings for Rabi.

KVK, Yagantipalle initiated efforts to improve the productivity levels and increase the profitability under late sowing and tankfed areas during Kharif and rabi .

With view to popularize NDLR-7, on station/on farm demonstrations, were organized in comparision with BPT-5204 during kharif and with RNR-1446 during rabi.

The results revealed that NDLR-7 proved to be a better alternative to BPT-5204 under late sowing and RNR-1446 during Rabi, with 10-15days earliness. It is tolerant to BPH and blast with 7-16% additional yield. The grain and cooking qualities are similar to BPT 5204. It is also fetching similar price as of BPT5204.

To cater to the needs of the farmers seed production at KVK farm was taken up and supplied to the needy farmers. The variety gained popularity in Atmakur mandal of Kurnool dt. during kharif and tankfed areas of Owk mandal during rabi, it also spread to other districts of A.P i.e Prakasam Guntur, Krishna, Chittoor, Mahaboobnagar and parts of **Karnataka** particularly Bellary dist.

Case study of Nandyal Sannalu in tankfed areas:

In **Owk** mandal of Kurnool district rice is grown in an area of 1500-2000ha during rabi under tankfed irrigation. The varieties commonly grown viz., RNR-1446, IR-64 and JGL-1798, are popular with average yields of3-5.5 ton/ha .KVK introduced NDLR-7 in an area of 80 ha in this mandal.

In Annavaram, Mettupalle, Konapur villages of Owk mandal, this variety was harvested at the same time as of RNR-1446 with average yields of 6-2 to 6.7 tonnes/ ha ie. 13.4 to 16.6 increases over RNR-1446.A field day was organized farmers from the same village and neighboring villages had an opportunity to observe the performance of this variety and the market rate was almost on par with BPT 5204. This intervention brought conviction in the farming community, resulting in large scale cultivation of the variety. The area under this variety under owk tank in Rabi occupied 70%

Productivity and economics of NDLR-7 in comparison to BPT-5204 in late kharif and with RNR-1446 in rabi are furnished below.

Productivity and economics of NDLR-7 in comparison with BPT-5204

S. No	Year	Season	Mean yield Kg/ha			Gross returns Rs/ha		Net Return Rs/ha	
			NDLR-7	BPT-5204	%	NDRL-7	BPT-5204	NDRL-7	BPT-5204
1	2013	Kharif	7010	6540	7.0	46686	43556	33686	30056
2	2014	Kharif	6956	6656	5.0	46326	44328	33326	30828
3	2015	Kharif	7120	6712	6.0	47419	44701	34419	31201

Productivity and Economics of NDLR-7 in comparison with RNR-1446

S. No	Year	Season	Mean yield Kg/ha			Gross returns Rs/ha		Net Return Rs/ha	
			NDLR-7	RNR-1446	%	NDRL-7	BPT-5204	NDRL-7	BPT-5204
1	2013	Rabi	5625	6562	16.6	37600	26212	25600	14212
2	2014	Rabi	5534	6281	13.4	35990	25788	23990	13788
3	2015	Rabi	5815	6750	16.0	38677	27097	26677	15097

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