PART I - GENERALINFORMATION ABOUT THE KVK

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

KVK Address	Telephone		E mail	Web Address
	Office	Fax		
KRISHI VIGYAN KENDRA, HIREHALLI, TUMAKURU-572 168	0816-2243175	0816-2243177	iihrkvk@gmail.com	www.iihrkvk.org

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

Address	Telephone		E mail	Web Address
	Office	FAX		
INDIAN INSTITUTE OF HORTICULTURAL RESEARCH Hessaraghatta Lake Post, Bengaluru-560 089	080-28466420	080-28466291	director@iihr.res.in, iihrdirector@gmail.com	www.iihr.res.in

1.3. Name of the Programme Co-ordinator with phone & mobile No

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. N.Loganandhan		8277252099	loganandhan@gmail.com

1.4. Year of sanction: 24th, March 2009

1.5. Staff Details as on 31.03.2017

Sl. No.	Sanctioned Post	Name of the Incumbent	Designation	M / F	Discipline	Highest Qualification (for PC, SMS and Prog. Asst.)	Pay Scale	Basic Pay	Date of Joining KVK	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1.	Programme Co-ordinator	Dr. N.Logannadhan	Sr. Scientist & Head	M	Agril.Extn	Ph.D. Agriculture	37400-67000+9000	41,720	02.08.2013	Permanent	Others
2.	SMS	Sri K.N. Jagadish	ACTO (Agril.Extn.)	M	Agril.Extn.	M.Sc. Agriculture	15600 - 39100+6600	71,800	17.11.2009	Permanent	OBC
3.	SMS	Sri P.R.Ramesh	ACTO (Soil Science)	M	Soil Science	M.Sc. Agriculture	15600 - 39100+6600	71,800	17.11.2009	Permanent	OBC
4.	SMS	Sri Prashanth J.M	ACTO (Horticulture)	M	Horticulture	M.Sc. Agri Horticulture	15600 - 39100+6600	71,800	24.11.2009	Permanent	Others
5.	SMS	Sri B. Hanumanthe Gowda	ACTO (Plant Protection)	M	Plant Protection	M.Sc. Agriculture	15600 - 39100+6600	71,800	02.12.2009	Permanent	Others
6.	SMS	Mrs. RadhaR.Banakar	ACTO (Home Science)	F	Home Science	M.Sc. Home Science	15600 - 39100+6600	71,800	05.12.2009	Permanent	Others
7.	SMS	Dr. Somashekhar	SMS (Plant Breeding)	M	Plant Breeding	Ph.D. Agriculture	15600 - 39000+6600	71,800	07.12.2009	Permanent	Others
8.	Farm Manager	Sri H.D.Parashuram	Farm Manager	M	Horticulture	B.Sc.	9300 - 34800+4600	53,600	25.07.2013	Permanent	Others
9.	Prog. Asst. (Comp.)	Mrs. Jyoti Appu Naik	Technical Officer(Comp.)	F	Information Science	B.E.	9300 - 34800+4600	46,200	30.09.2009	Permanent	PH
10.	Prog. Asst. (Lab Tech.)	Sri Shashidhara K N	Prog. Asst. (Lab Tech.)	M	Crop Physiology	M.Sc Agri	9300 - 34800+4200	39,900	17.10.2012	Permanent	SC
11.	Assistant	Sri D.Krishnappa	Assistant	M	-	-	9300 - 34800+4600	52,000	2.5.2016	Permanent	Others
12.	Jr.Stenographer	Mrs.VedaKurnalli	Jr.Stenographer	F	Stenographer	DCP	5200 - 20200+2400	30,500	17.02.2010	Permanent	Others
13.	Driver	Sri M.H.Ningappa	Driver	M	Driver	S.S.L.C.	5200 - 20200+2000	28,700	30.12.2009	Permanent	ST
14.	Driver	Vacant	Driver	-	Driver	-	5200 - 20200+2000	-	-	-	-
15.	Supporting Staff	Sri G.Manjanna	Supporting Staff	M	Supporting Staff	P.U.C.	5200 - 20200+1800	20,900	01.11.2011	Permanent	SC
16.	Supporting Staff	Mrs. S.Gangamma	Supporting Staff	F	Supporting Staff	7	5200 - 20200+2400	37,500	15.10.2016	Permanent	Others

1.6. Total land with KVK (in ha) : 16.8 ha

S. No.	Item	Area (ha)
1	Under Buildings	1.6
2.	Under Demonstration Units	3.28
3.	Under Crops	10.70
4.	Orchard/Agro-forestry	0.50
5.	Others	-

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							
2.	Farmers Hostel							
3.	Staff Quarters							
4.	Demonstration Units							
5	Fencing							
6	Rain Water harvesting system							
7	Threshing floor							
8	Farm godown							
9	Compound Wall	IIHR	12.2.2017	121 mt	10,00,000	-	-	-
10								

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total Kms. Run	Present status
Bolero Diesel Jeep	2009	5,96,783	1,78,737.4	Good condition
Motor Cycle	2010	52,658	45,232	
Honda – Aviator	2010	46,025	34,009	
Power Tiller	2010	1 ,42,400	720 hours	
Tractor	2011	5,60,000	2014.6 hours	

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Fax Machine	2010	21381	Good condition
Xerox Machine	2010	67262	
Camera Nikon – Digital	2010	24950	
Computer with Accessories	2010	49900	
White Board with Stand	2010	1500	
LCD Projector with Accessories	2010	100000	
LED TV	2017	64, 000	
Computer with Accessories	2017	2,40,000	
Public Address System	2017	20,000	
R.O.S system	2017	72,000	
Solar Hot Water System	2017	72,000	

1.8. Details SAC meeting conducted in 2016-17

Sl. No.	Date	No. of Participants	No. of Absentees	Salient Recommendations	Action taken
1.	2.2.2016	45	1	• Off-campus Training Programmes at NGO premises in the respective taluks need to be organized. • Training on PoP on Drumstick (Moringa) is needed	A Training Programme on Proper cultivation practices of Moringa has been organized on 26th Feb 2016 at Balenahalli, Sira taluk in collaboration with mother NGO about 30 Moringa growers have participated.
2.				Production of Arka Microbial Consortium (AMC) has to be increased to meet the high demand among farmers.	•A grant of Rs.4.8 lakhs was supported by NABARD, Tumakuru for enhancing the production capacity of AMC at KVK, Hirehalli. The machineries purchased in this regard – Autoclave, Laminar Airflow chamber etc were installed and production of bio-fertilizer is improved at the rate of 3.5 tonnes per month.
3.				Malnutrition focused Kitchen garden programmes need to be organized.-	• Awareness cum Training Programmes was organised during 2016-17, covering 750 Rural Women from Tumakuru, Pavagada, Madhugiri and Koratagere Taluks on the topic of Nutrition Garden , supported by dept. of Agri. Worth Rs.6.06 lakhs under Bhoo samrudhhi scheme. • Awareness cum Training Programmes was organised during 2016-17, covering 250 Rural Women on the topic of Kitchen Garden , supported by dept. of Horti. Worth Rs.2.28 lakhs under Bhoo samrudhhi scheme
4.				Need to have an OFT by SMS (Home Science) in this field of women & child welfare	OFT on "Assessment of weeders as drudgery reducing equipments in groundnut" was conducted during the year 2016-17.
5.				Efforts need to be taken on control of vertebrate pests (Monkey, Wild boars, Bears	An FLD on Control of Wild boar was conducted during the year 2016-17 in

				etc) and Bird menace in the farmers fields- Mr.Nagendra, ACF	Kariyammana Palya, Pavagada Taluk
6.				Technical Support to FPOs of NGOs and NABARD is necessary.	• An awareness cum interaction Programme on Role of KVK in supporting FPOs was organized on 24th Feb 2016 for the FPOs under DHAN foundation (Sira and Pavagada Taluks) • Department of Horticulture organized a Meeting for their FPOs on 20th Sep. 2016 at Vikash Soudha • NABARD- FPO meeting on 20th Oct, 2016.
7.				Millet Mela is required for profit making business to farmers involved in Millet cultivation -	KVK is one of the Organizers in 22-23, Oct, 2016- Millet Mela at Tumakuru University along with NABARD
8.				Profit making business to farmers involved in Millet cultivation	Exposure visit to farmers to KVK, Salem, Tamil Nadu for Millet Processing
9.				An exposure visit to IIHR for Vegetable & Fruits Farmers for Value addition and Post Harvest Technology	• Farmers were taken on an exposure visit to ICAR-IIHR during Vegetable Mela on 18th August 2016 IIHR- Regional Horti Fair on 15-19th Jan 2017 and Vegetable Field Day on 17th Feb.2017
10.				Package of Practice (PoP) Technologies related to Organic farming, Polyhouse, Dryland horticulture is need of the hour and need to be provided by KVK	An FLD on Organic farming practices in Frenchbean has been approved for 2017-18
11.				Use of Mucuna in horticulture will help in soil conservation, mulching and water conservation	Mucuna field cum demo trials were taken in collaboration with Scientists of IIHR at KVK farm. They were shared among visiting farmers. Seed source has been arranged for demanding farmers.
12.				Topics on safe use and disposal of plastic mulches in the farmers fields need to be included in the Awareness and Training programmes. Plastic mulch of 80 micron or 100 micron can be	In the FLD on ICM in Tomato, care has been taken to increase the polymuch thickness from 50 micron to 80 micron to avoid tearing of sheets and concerned Training was given for safe disposal of them after use.

				recycled after two to three crops.	
13.				KVK products need to be kept at RSK of Agriculture department to reach to farmers. Information of Drumstick as fodder crop inform is required	Products were supplied to different taluks of Tumakuru
14.				Marketing linkage for Mangoes, Coconuts, Jack fruit products and Minor millets need to be given. Dr.Balakrishna, (the then) Nodal Officer, KVK, Hirehalli.	An EDP has been taken to link the value added products of Ragi/Jackfruit of Women SHG "Halli Siri" to market for the year 2016-17. Market linkage given to Electronic city, Benagluru, through 'Velankani Software company' on 22nd Nov, 2016

PART II - DETAILS OF DISTRICT

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

S. No	Farming system/enterprise
1.	Dry Land Agriculture
2.	Dry Land Horticulture
3.	Dairy

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

Sl. No.	Agro-climatic Zone	Characteristics
1.	Central Dry Zone (Zone IV) Taluks: Koratgere, Madhugiri, Sira, Pavagada	• This zone covers an area of 4.74 Lakhs hectare • The Annual rainfall ranges from 454 and 718 mm, of which more than 55% received in Kharif season. • The elevation ranges from 639 and 1197m • Soils are red sandy loams in major areas, shallow to deep black in remaining areas. • The major crops grown are Ragi, Paddy, Redgram, Groundnut, Sunflower, Coconut, Arecanut, Mango, Banana, Tomato, Brinjal, Beans, Peas, Aster, Dairy
2.	Eastern Dry Zone (Zone V) Taluk: Tumakuru	• This zone covers an area of 1.04 Lakh hectares. • The Annual rainfall ranges from 679 and 889 mm, of which more than 50% received in Kharif season. • The elevation is 818 m from sea level. • Soils are red loamy in major areas, shallow to deep black in remaining areas. • The major crops grown are Groundnut, Maize, Paddy, Ragi, Redgram, Tomato, Brinjal, Mango,Sapota, Arecanut,Coconut, Aster,Dairy

Sl. No.	Agro ecological situation	Characteristics
1.	Agro eco sub region-1	Hot moist, semiarid ESR with LGP 150-180 days (LGP-length of growing period)

2.3 Soil type/s

Sl. No.	Soil type	Characteristics	Area in ha
	Red Sandy Loam	• Colour given by haematites or Yellow limonites • Poor in soil fertility • Low Base Exchange capacity • Deficient in organic matter • Low water holding capacity • The pH ranges from 5.5.-6.5 • Low cohesion, plasticity & swelling	6, 15,230
	Red Loam	• Colour given by oxides of iron • Poor in soil fertility • Low- medium Base Exchange capacity • Deficient in organic matter • Low water holding capacity • The pH ranges from slightly acidic or neutral • Low cohesion , plasticity & swelling	2, 04,093
	Shallow Black Soil	• Colour varying from dark brown to dark yellowish brown • Soil with more than 35 per cent clay and crack when dry. • High soil fertility • High base exchange capacity • High organic matter content • High water holding capacity • The pH ranges from 7.5 -8.5 • High cohesion, plasticity & swelling	2, 45,432

2.4. Area, Production and Productivity of major crops cultivated in the district

Sl. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Rice	10,578	38,892	3,677
2	Jowar	2,225	1,176	528
3	Finger millet	1,75,024	2,32,364	1,328
4	Maize	24,987	59,542	2,383
5	Minor Millets	3,428	1,381	403
6	Redgram	13,317	5,020	377
7	Black gram	1,047	132	126
8	Horsegram	11,713	3,290	281
9	Field bean	9,754	2,636	270

10	Greengram	11,131	1,824	164
11	Cowpea	4,124	1,263	306
12	Groundnut	84,237	35,827	425
13	Sesamum	345	57	164
14	Sunflower	736	788	1071
15	Castor	2,290	780	340
16	Niger	1,377	233	169
17	Mustard	706	109	155
18	Cotton	695	3,607	5
19	Sugarcane	646	54,884	85

(**Source:** Dept of Agriculture, Tumakuru)

2.5. Weather data

Month	**Rainfall (mm)**	**Temperature 0 C**		**Relative Humidity (%)**
		Maximum	**Minimum**	
April 16	8.5	34.58	22.28	86.42
May 16	89.1	33.28	21.61	86.33
June 16	124.0	31.09	21.72	84.58
July 16	152.1	28.59	21.53	84.23
August 16	32.1	29.74	21.38	87.54
September 16	36.7	28.23	19.65	81.72
October 16	21.8	28.63	19.76	86.91
November 16	4.8	26.23	16.65	88.72
December 16	36.1	27.75	21.54	82.94
January 17	6.3	24.53	13.86	89.42
February	0.6	32.19	16.98	78.75
March 17	12.4	35.36	18.63	74.33

(**Source:** Dept of Agriculture, Tumakuru)

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

Category	**Population**	**Production**	**Productivity**
Cattle			
Crossbred	63704	54	5.5745
Indigenous	440888	56	2.0671
Buffalo	217528	68	2.5382
Sheep	**meat 000 tons**		
Crossbred	9		--
Indigenous	884643	17.31	--
Goats	322373	16.60	--
Pigs	**-**	-	-
Crossbred	905	0.23	--
Indigenous	12411		--
Rabbits	560	NA	--
Poultry	**Egg production in lakhs**		
Hens		--	--

Desi	6,42,382	273	--
Improved	-	71	--
Ducks	**-**	-	-
Turkey and others	**-**	**-**	**-**

Category	Area	Production	Productivity
Fish	-		
Marine	**-**		
Inland	1306 ha	16,000 metric ton	650-700 kg/ha
Prawn	-	-	-
Scampi	**-**	**-**	**-**
Shrimp	**-**	**-**	**-**

2.7 District profile has been **Updated** for 2016-17 Yes / No:**Yes**

2.8 Details of Operational area / Villages

Sl. No.	Taluk	Name of the block	Name of the Village	How long the Village is covered under operational area of the KVK (specify the years)	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1.	Tumakuru	Urdigere	Hirehalli, Kolihalli, Durgadahalli, Kadaranahalli, Janapanahalli,	2 years	Ragi, Redgram, Groundnut, Paddy, Tomato, Brinjal, Mango, Arecanut, Coconut, Flower crops, Dairy	Water Scarcity, Low Yield , Old varieties, Poor Soil Management, Mono cropping, Pest and Disease	ICM, INM, IPM and Soil test based fertilizer application
2.	Koratagere	Kollal	Tanganahalli, Vaddarahalli, Eleramapura, D.Nagenahalli	2 years	Ragi, Paddy, Redgram, Groundnut, Tomato, Arecanut, Frenchbean	Water scarcity, low yield, local variety, Delayed monsoon, Monocropping	ICM, INM and Soil test based fertilizer application
3.	Madhugiri	Kodigenahalli	Muthyalammanahalli , Kodigenahalli	2 years	Groundnut, Arecanut, Pomegranate, Ragi, Maize, Tomato, Mango, Flower Crops, Frenchbean, Brinzal		
4.	Sira	Kallambella	Balenahalli, Tippanahalli, Halenahalli	2 years	Groundnut, Papaya, Toamto, Ragi, Redgram, Onion, Pomegranate, Mango, Tamarind	Local Variety, Tikka Disease in Groundnut, Low Yield, Pest and Disease in Redgram , Water Scarcity	Varietal Evaluation & ICM, IPM
5.	Pavagada	Kotagudda ,	Kotagudda , Kariyammanapalya, Mangalawada	2 years	Groundnut, Pomegranate, Ragi, Maize, Tomato, Redgram, Tamarind, Mango	Water Scarcity, Low yield, Local varieties, Low Soil Fertility, Monocropping, Bacterial Blight and wilt in Pomegranate	Integrated Disease Management, Integrated Crop Management

2.9 Priority thrust areas

Sl. No	Thrust area
1.	High Yielding varieties / Hybrids
2.	Seed treatment with Bio fertilizers and fungicides
3.	Soil test based fertilizer application
4.	Integrated Nutrient Management
5.	Intercropping / Mixed / Multistoried cropping system
6.	Seed Production Techniques in Vegetables and field crops
7.	Integrated Pest & Disease Management
8.	Post harvest technology in Vegetables and Fruits
9.	Soil and Water Conservation
10.	Drudgery Reduction
11.	Income Generating Activities and Value Addition
12.	Child and Women Care and balanced nutrition
13.	Integrated Cropping System

PART III - TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities

OFT				FLD			
1				2			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
5	5	17	15	16	16	240	233

Training				Extension Programmes			
3				4			
Number of Courses		Number of Participants		Number of Programmes		Number of participants	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
67	54	1,875	2,146	564	783	10,500	12,579

Seed Production (Qtl.)		Planting materials (Nos.)	
5		6	
Target	Achievement	Target	Achievement
11.92	22.84	0.93 lakhs	1.02 lakhs
Seed Kit (Nos) 5,000	1,850		

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
-	-	Neem and Pongamia Soap-3,000	4,687
		Sealer cum Healer-1,000	306
		AMC-2,000	3,500
		Fruit Fly Traps-5,000 (Nos.)	5,783 (Nos.)

Others		Micro Nutrient Fertilizers (Kg)	
7		8	
Target	Achievement	Target	Achievement
Amla Candy-200 kg	76 kg	Banana Special -3,000	8,165
Amla Juice- 1,000 ltrs	125 ltrs	Vegetable Special-2,000	7,681
Ragi Malt- 100 kg	60 kg	Mango Special-2,000	4,551
Mushroom spawn-1,500 kg	125 kg	Citrus special-1,000	1,069

3.B1. Abstract of interventions undertaken based on thrust areas identified for the district as given in Sl.No.2.7

Sl. No.	Thrust area	Crop/ Enterprise	Identified Problem	Interventions										
				Title of OFT if any	Title of FLD if any	Number of Training (farmers)	Number of Training (Youths)	Number of Training (extension personnel)	Extension activities (No.)	Supply of seeds (Qtl.)	Supply of planting materials (No.)	Supply of livestock (No.)	Supply of bio products	
													No.	Kg
1.	ICM	Coconut	Monocropping, no appropriate use of space and Cropping system in flowers crops as intercrop, low income	Assessment of commercial flower crops in coconut based cropping system	-	-	-	-	6	-	6,000	-	-	-
2.	High yielding variety and cropping system	Onion	Climate change, Delayed rainfall, Non availability of Rabi variety, Poor storability	Assessment of onion varieties for rabi	-	-	-	-	6	0.09	-	-	-	-
3.	IDM	Redgram	High rate of Sterility Mosaic Diesease (SMD) and wilt disease incidences resulted in reduced yield	Assessment of high yielding varieties of redgram for disease tolerance	-	-	-	-	5	0.45	-	-	-	-

4.	IGA	Mushroom	Lack of availability of paddy straw in Tumakuru district. Food insecurity in rural families	Assessment of agricultural crop waste as substrate for oyster mushroom cultivation		2	-	-	5	0.5	-	-	-	-
5.	Drudgery Reduction	Groundnut	Drudgery involved in weeding in groundnut	Assessment of weeders as drudgery reducing equipments in groundnut		-	-	-	5	-	-	-	-	-
6.	Drought Mitigation	Ragi	Formation of crust after sowing of Ragi due to the impact of Rain and subsequent failure of germination in dryland red soils, Low germination leading to 30-40 % reduction in yield (21.6 q/ha in Tumakuru)		Management of soil surface crust in red soils in finger millet	1	-	-	5	-	-	-	-	50

7.	ICM	Pomegranate	Lack of proper and accurate nutrient status diagnosis methodologies leading to indiscriminate and Imbalanced fertilizer application, Severe infestation of BLB and Wilt		ICM in Pomegranate	2	-	-	6	-	-	-	-	150
8.	PHT	Mango	Lack of knowledge on Production & PHT like Nutrient & Pest Management & proper Harvesting, Ripening method, handling, packing, marketing strategies		Improved production practices and post – harvest management in Mango	1	-	-	4	-	-	-	-	250
9.	ICM	Marigold	Small size flowers, less shelf life, less attractive colour and low yield potential		ICM in Marigold	1	-	-	5	-	2,000	-	-	5

10.	ICM	China Aster	Small size flowers and diameter, less shelf life, less attractive colour and low yield		ICM in China Aster	-	-	-	5	0.0075	-	-		5
11.	ICM	Jasmine	Severe incidence of mite resulted in 30-50% yield reduction, non-practice of pruning and lack of micro nutrient application		ICM in Jasmine	-	-	-	4	-	-	-	-	-
12.	ICM	Tomato	Weed menace, Low nutrient use efficiency and low yield, Water scarcity, soil borne diseases and pest incidence problem in vegetables cultivation	-	ICM in Tomato	1	-	-	5	0.001	-	-	-	17
13.	ICM	French bean & Arecanut	Inefficient use of land, weed menace, low soil fertility, lower income		Areca nut + French bean intercropping system	-	-	-	6	0.4	-	-	-	-

14.	ICM	Onion	Use of local low yielding varieties. Most of the farmers are using substandard local available seeds.		Integrated crop Management in Onion	1	-	-	5	0.05	-	-	-	-
15.		Fruits and Vegetables	Food and nutritional insecurity among farm women Low consumption of Fruits and Vegetables High cost of Fruits and Vegetables		Nutritional garden in schools	4	-	-	5	10 Nos. Seed Kit	-	-	-	5
16.	ICM	Coconut	Poor water holding capacity, 13.7% area reduced due to drought, low nutrient status and low yield, button shedding, mites, stem bleeding, Ganoderma wilt		ICM in Coconut	1	-	-	5	0.5	-	-	-	600

17.	INM	Betelvine	Non application of Chemical Fertilizer, High Pest and Diseases incidence, Poor drained soils, Areca nut is supporting tree and poor decomposed litters, Low nutrient use efficiency and soil fertility Less leaf area and low yield (21 lakh leaves/ha/yr)		Cost effective Arka Microbial consortium(AMC) for high quality and crop yield of Betelvine	1	-	-	4	-	-	-	-	60
18.	IPDM	Wild Boar	Management of Wild Boar in Farming system		Management of wild Boar in farming system	2	-	-	4	-	-	-	-	-
19.	IGA	Jackfruit	Lack of awareness on processing and value addition, Untapped Market, demand during SAC		Jackfruit value addition, branding and market linkage	2	-	-	3	-	-	-	-	-

20.	Varietal Evaluation	Groundnut	Local/Existing varieties are low yielding. More Incidence of foliar diseases in local/existing varieties.		Demonstration of KCG-6 Groundnut Variety	1	-	-	5	11.5	-	-	-	-
21.		Pigeon pea	Local/Existing varieties are low yielding in rainfed situation and unable to sustain drought situation More incidence of pest and diseases in local/existing varieties.		Enhancement of Pigeon pea yield through introduction of BRG – 5	1	-	-	6	1.5	-	-	-	-

3.B2. Details of technology used during reporting period

Sl. No.	Title of Technology	Source of Technology	Crop/enterprise	No .of programmes conducted			
				OFT	FLD	Training	Others (Field Day)
1	2	3	4	5	6	7	8
1.	Assessment of commercial flower crops in coconut based cropping system	CPCRI, Kasaragod	Coconut and flowers	3	-	-	-
2.	Assessment of onion varieties for Rabi	DOG, Pune	Onion	3	-	-	-
3.	Assessment of high yielding varieties of Redgram for disease tolerance	UAS, Raichur	Redgram	3	-	-	-

4.	Assessment of agricultural crop waste as substrate for oyster mushroom cultivation	Directorate of Mushroom Research, Solan / CPCRI, Kasargod	Mushroom	5	-	2	-
5.	Assessment of weeders as drudgery reducing equipments in groundnut	AICRPDA and UAS, Bengaluru	Groundnut	2 Groups	-	-	-
6.	Management of soil surface crust in red soils in finger millet	AICRPDA, UAS, Bengaluru	Finger millet	-	10	1	1
7.	ICM in Pomegranate	UAS, Bengaluru	Pomegranate	-	5	1	-
8.	Improved production practices and post – harvest management in Mango	IIHR, Bengaluru	Mango	-	2 Groups	1	-
9.	ICM in Marigold	IIHR, Bengaluru	Marigold	-	5	1	-
10.	ICM in China Aster	UAS Bengaluru and Dharwad	China Aster	-	5	-	-
11.	ICM in Jasmine	NRCP and IIHR, Bengaluru	Jasmine	-	5	1	-
12.	ICM in Tomato	NRC on Banana, Trichy	Tomato	-	5	1	1
13.	Areca nut + French bean intercropping system	IIHR, Bengaluru	French bean & Arecanut	-	5	-	-
14.	ICM in Onion	IIHR, Bengaluru	Onion	-	10	1	-
15.	Nutritional garden in schools	IIHR, Bengaluru	Fruits and Vegetables	-	3	4	-
16.	ICM in Coconut	IIHR, Bengaluru	Coconut	-	10	1	-
17.	Usage of Arka Microbial Consortium in Betelvine	IIHR, Bengaluru	Betelvine	-	5	1	-
18.	Management of wild Boar in farming system	KAU, Thrissur	Wild Boar	-	5	2	-
19.	EDP on Jackfruit value addition, branding and market linkage	UAS, Bengaluru	Jackfruit	-	2 Groups	2	-
20.	Demonstration of KCG-6 Groundnut Variety	UAS, Bengaluru	Groundnut	-	70	1	-
21.	Enhancement of Pigeon pea yield through introduction of BRG – 5	UAS, Bengaluru	Pigeon pea	-	50	1	-

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Specify)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
3															
3															
1		2													
5								35	12	19	4				
	2		1						19		3				
				7	0	3	0	23	3	6	1				
				4	0	1	0	15		2					
				4	1	5	0	13	7	4	3				
				4	0	1	0	17		2					
				3	0	3	0	-	-	-	-				
				5	0	0	0	11	-	3	-				
				3	0	3	0	12	-	4	-				
				5	0	0	0	17	-	3	-				
				7	0	3	0	46	18	12	9				
				3	0	0	0	16	-	2	-				
				7	1	2	0	13	-	3	-				
				5	0	0	0	12	-	4	-				
				0	0	4	0	15	-	2	-				
				0	2	0	0	-	17	-	4				
				42	11	13	4	48	6	12	4				
				15	0	30	5	32	4	2	3				

PART IV - On Farm Trial

4.A1. Abstract on the number of technologies assessed in respect of crops

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Varietal Evaluation			1		1					2
Integrated Crop Management								1		1
Small Scale Income Generation Enterprises					1					1
Drudgery Reduction		1								1
Total		**1**	**1**	**-**	**2**	**-**		**1**		**5**

4.A2. Abstract on the number of technologies refined in respect of crops -Nil

4.A3. Abstract on the number of technologies assessed in respect of livestock enterprises -Nil

4.A4. Abstract on the number of technologies refined in respect of livestock enterprises -Nil

4. B. Achievements on technologies Assessed and Refined

4. B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	Number of farmers	Area in ha (Per trail covering all the Technological Options) ha
Integrated Crop Management	Coconut and flowers	Assessment of commercial flower crops in coconut based cropping system	3	3	0.4
	Onion	Assessment of onion varieties for rabi	3	3	0.4
Integrated Disease Management	Redgram	Assessment of high yielding varieties of redgram for disease tolerance	3	3	0.4
Drudgery Reduction	Groundnut	Assessment of weeders as drudgery reducing equipments in groundnut	3	3	-
Mushroom cultivation	Mushroom	Assessment of agricultural crop waste as substrate for oyster mushroom cultivation	5	5	-
Total			**17**	**15**	**1.2**

4.B.2. Technologies Refined under various Crops - Nil

4.B.3. Technologies assessed under Livestock and other enterprises - Nil

4.B.4. Technologies Refined under Livestock and other enterprises -- Nil

4. C1.Results of Technologies Assessed

Results of On Farm Trial

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Coconut and flowers	Irrigated	Monocropping, no appropriate use of space and Cropping system in flowers crops as intercrop, low income	Assessment of commercial flower crops in coconut based cropping system	3	TO 1: Monocropping	TO1: Coconut nuts yield	6,302 Nos.	TO4 Recorded Highest production and income per unit area	Farmers expressed the additional income obtained from adoption of Chrysanthemum and Marigold as intercrop in Coconut orchard.	-	-
					TO 2: Coconut + Marigold	TO2: Coconut nuts yield **Flowers parameter :** No of flowers Flower diameter Yield	6,350 Nos. 47/plant 4.8 cm 3,852 Kg				
					TO 3: Coconut+ China Aster (Arka Kamini - IIHR)	TO3 : Coconut nuts yield **Flowers parameter :** No of flowers Flower diameter Yield	6,220 Nos. 42/plant 4.21 cm 2,485 Kg				
					TO 4: Coconut + Chrysanthemum (Yellow Gold / Kurnool)	TO4 Coconut nuts yield **Flowers parameter :** No of flowers Flower diameter Yield	6,580 Nos. 54/plant 4.32cm 3,942 Kg				

Contd..

Technology Assessed	Source of Technology	Production	Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)	Net Return (Profit) in Rs. / unit	BC Ratio
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	FP	Coconut yield : 6,302	nuts/ha/year	Coconut : 36,220	2.35
Technology option 2	UHS (B)	Coconut yield : 6,350 Marigold yield: 3,852	nuts/ha/year Kg/ha	Coconut : 36,700 Marigold : 82,710	3
Technology option 3	CPCRI, Kasargod	Coconut yield : 6,220 China Aster yield: 2,485	nuts/ha/year Kg/ha	Coconut : 35,400 China Aster: 56,225	3
Technology option 4		Coconut yield : 6,580 Chrysanthemum yield: 3,942	nuts/ha/year Kg/ha	Coconut: 39,000 Chrysanthemum: 94,475	3.1

4. C2.Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details

1. Title of Technology Assessed : Assessment of commercial flower crops in coconut based cropping system
2. Problem Definition : Monocropping, no appropriate use of space and Cropping system in flowers crops as intercrop, low income
3. Details of technologies selected for assessment:

Technology option 1 (Farmer's practice): Mono cropping
Technology option 2 : Coconut + Marigold
Technology option 3 : Coconut+ China
Technology option 4 : Coconut + Chrysanthemum

4. Source of technology : CPCRI, Kasargod
5. Production system and thematic area : Irrigated and Cropping system
6. Performance of the Technology with performance indicators : Technology TO4 Recorded Highest production of Chrysanthemum flower yield compare to other flower intercropping system in coconut orchard.
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :-
8. Final recommendation for micro level situation : Chrysanthemum and marigold as a intercrop in coconut orchard
9. Constraints identified and feedback for research : Low market demand for flowers crop
10. Process of farmers participation and their reaction : Group discussion and positive reaction by the farmers participation

2 .Onion											
Crop/ enterprise	**Farming situation**	**Problem definition**	**Title of OFT**	**No. of trials**	**Technology Assessed**	**Parameters of assessment**	**Data on the parameter**	**Results of assessment**	**Feedback from the farmer**	**Any refinement needed**	**Justification for refinement**
1	2	3	4	5	6	7	8	9	10	11	12
Onion	Rainfed	Climate change, Delayed rainfall, Non availability of Rabi variety, Poor storability	Assessment of Onion varieties for Rabi	03	TO1:Arka Kalyan	TO1: Yield Qtl/ha Bulb weight-Gms Bulb Diameter-Cm	 260.40 77.42 5.52	Bhima Shakti recorded highest yield and income per unit area compare to Bhima Super during Rabi Season.	Farmers expressed the positive performance of the Bhima Shakti during rabi season.	-	-
					TO2:Bhima Super	TO2: Yield Qtl/ha Bulb weight-Gms Bulb Diameter-Cm	 210.7 72.92 5.23			-	
					TO3:Bhima Shakti	TO3: Yield Qtl/ha Bulb weight-Gms Bulb Diameter-Cm	 290.3 86.23 5.63			-	

Technology Assessed	**Source of Technology**	**Production**	**Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)**	**Net Return (Profit) in Rs. / unit**	**BC Ratio**
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	IIHR, Bengaluru	Yield:260.4	Qtl/ha	99,290	2.75
Technology option 2	DOG, Pune	Yield :210.7	Qtl/ha	70,780	2.27
Technology option 3		Yield:290.3	Qtl/ha	1,17,230	3.05

4. **C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details**

1. Title of Technology Assessed : Assessment of Onion varieties for Rabi
2. Problem Definition : Climate change, Delayed rainfall, Non availability of Rabi variety, Poor storability
3. Details of technologies selected for assessment :

Technology option 1 Arka Kalyan
Technology option 2 : Bhima Super
Technology option 3 : Bhima Shakti

4. Source of technology : DOG, Pune
5. Production system and thematic area : Irrigated, Varietal Evaluation
6. Performance of the Technology with performance indicators: Bhima Shakti recorded highest yield and income per unit area compare to Bhima Super during Rabi Season.
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :-
8. Final recommendation for micro level situation : Bhima Shakti and Arka Kalyan varieties are suitable for Rabi Season.
9. Constraints identified and feedback for research : Non availability of potential rabi /summer varieties
10. Process of farmers participation and their reaction : Group discussion and positive reaction by the farmers participation

3. Redgram

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Redgram	Rainfed	High rate of Sterility Mosaic Disease (SMD) and wilt disease incidences resulted in reduced yield	Assessment of high yielding varieties of Redgram for disease tolerance	03	FP-TO1: Local variety	% Disease incidence Yield(qtl/ha)	5.68 8.64	GRG-811 was found to be highly suitable for drought condition and SMD tolerant.	GRG-811 was superior than BRG-5, since it matures in only 130-140 days.	-	-
					TO2: BRG-5	% Disease incidence Yield(qtl/ha)	2.98 12.14				
					TO3:GRG 811	% Disease incidence Yield(qtl/ha)	2.16 12.92				

Technology Assessed	Source of Technology	Production	Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)	Net Return (Profit) in Rs. / unit	BC Ratio
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	-	8.64	Qtl/ha	28,260	2.19
Technology option 2	UAS, Bengaluru	12.14	Qtl/ha	45,820	2.71
Technology option 3	UAS, Raichur	12.92	Qtl/ha	50,620	2.89

4. **C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details**

1. Title of Technology Assessed : Assessment of high yielding varieties of Redgram for disease tolerance
2. Problem Definition : High rate of Sterility Mosaic Disease (SMD) and wilt disease incidences resulted in reduced Yield
3. Details of technologies selected for assessment :

Technology option 1 (Farmer's practice): Local variety
Technology option 2 : BRG-11
Technology option 3 : GRG-811

4. Source of technology : UAS, Bengaluru and UAS, Raichur
5. Production system and thematic area : Irrigated and Rainfed, Varietal Evaluation
6. Performance of the Technology with performance indicators: GRG-811 was found to be highly suitable for drought condition and SMD tolerant.
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :
8. Final recommendation for micro level situation : -
9. Constraints identified and feedback for research : Lack of SMD tolerant variety
10. Process of farmer's participation and their reaction: Group discussion and positive reaction by the farmers participation

4. Mushroom											
Crop/ enterprise	**Farming situation**	**Problem definition**	**Title of OFT**	**No. of trials**	**Technology Assessed**	**Parameters of assessment**	**Data on the parameter**	**Results of assessment**	**Feedback from the farmer**	**Any refinement needed**	**Justification for refinement**
1	2	3	4	5	6	7	8	9	10	11	12
Mushroom	Rainfed	Lack of availability of paddy straw in Tumakuru district. Food insecurity in rural families.	Assessment of Agricultural crop waste as substrate for Oyster Mushroom Cultivation	03	FP-TO1 Paddy straw	Biological Efficiency(%) Infection (%) Avg. Yield(kg)	82 10.50 7.41	Paddy Straw and Ragi Straw are still suitable for Mushroom Cultivation.	Depending on the locally available, either Paddy Straw or Ragi Straw can be utilized for commercial mushroom cultivation.	-	-
					TO2: Coconut coir	Biological Efficiency(%) Infection (%) Avg. Yield(kg)	20 25 1.50				
					TO3: Arecanut husk	Biological Efficiency(%) Infection (%) Avg. Yield(kg)	45 32 3.06				
					TO4: Ragi Straw	Biological Efficiency(%) Infection (%) Avg. Yield(kg)	78 12 6.86				

Technology Assessed	**Source of Technology**	**Production**	**Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)**	**Net Return (Profit) in Rs. / unit**	**BC Ratio**
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	IIHR, Bengaluru	Avg. Yield(kg):7.41	%	889.2	2.50
Technology option 2	Directorate of Mushroom Research, Solan / CPCRI, Kasargod	Avg. Yield(kg):1.50	%	108.2	1.57
Technology option 3		Avg. Yield(kg):3.06	%	272	1.80
Technology option 4		Avg. Yield(kg):6.86	%	686	2

4.**C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details**

1. Title of Technology Assessed : Assessment of Agricultural crop waste as substrate for Oyster Mushroom Cultivation
2. Problem Definition : Lack of availability of paddy straw in Tumakuru district. Food insecurity in rural families.
3. Details of technologies selected for assessment :

Technology option 1 (Farmer's practice): Paddy Straw
Technology option 2 : Coconut coir
Technology option 3 : Arecanut Husk
Technology option 4: Ragi straw

4. Source of technology
:IIHR, Bengaluru and Directorate of Mushroom Research, Solan /CPCRI, Kasargod
5. Production system and thematic area : IGA
6. Performance of the Technology with performance indicators : Paddy Straw and Ragi Straw are still suitable for Mushroom Cultivation
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :-
8. Final recommendation for micro level situation : -
9. Constraints identified and feedback for research : -
10. Process of farmer's participation and their reaction : Group discussion and positive reaction by the farmers participation

5. Groundnut

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Groundnut	Rainfed	Drudgery involved in weeding in groundnut	Assessment of weeders as drudgery reducing equipments in Groundnut	03	FP-TO1 Hand Weeder	weeding efficiency (%) REBA Score Plant Damage(Nos.)	91 12.44 4	Among different weeders, Cycle Weeder and Twin Wheel Hoe Weeder found more effective and also cost effective for Weed	Balaram Weeder can be utilized for the plots where plants are small in size.	-	-
					TO2: Cycle Weeder	weeding efficiency (%) REBA Score Plant Damage(Nos.)	75 5.89 16				

					TO3: Use of Hand operated Twin Wheel Hoe Weeder	weeding efficiency (%) REBA Score Plant Damage(Nos.)	82 5.11 12	Management.			
					TO4: Balaram Weeder	weeding efficiency (%) REBA Score Plant Damage(Nos.)	85 8.25 8				

Technology Assessed	**Source of Technology**	**Production**	**Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)**	**Net Return (Profit) in Rs. / unit**	**BC Ratio**
13	14	15	16	17	18
Technology option 1 (Farmer's practice)	-	-	-	-	-
Technology option 2	ZARS, Hiriyur	-	-	-	-
Technology option 3	CIAE, Bhopal	-	-	-	-
Technology option 4	TNAU, Coimbatore	-	-	-	-

4.**C2. Details of each On Farm Trial for assessment to be furnished in the following format separately as per the following details**

1. Title of Technology Assessed : Assessment of weeders as drudgery reducing equipments in Groundnut
2. Problem Definition : Drudgery involved in weeding in groundnut
3. Details of technologies selected for assessment :

Technology option 1 (Farmer's practice): Hand Weeder
Technology option 2 : Cycle Weeder
Technology option 3 : Use of Hand operated Twin Wheel Hoe Weeder
Technology option 4: : Balaram Weeder

4. Source of technology : TNAU, Coimbatore
5. Production system and thematic area : Drudgery Reduction
6. Performance of the Technology with performance indicators : REBA Score for both Cycle Weeder and Twin Wheel Hoe Weeder are less compare to other options.

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques :
8. Final recommendation for micro level situation : -
9. Constraints identified and feedback for research : -
10. Process of farmer's participation and their reaction : Group discussion and positive reaction by the farmers participation

4.D1. Results of Technologies Refined

Results of On Farm Trial : Nil

4.D.2. Details of each On Farm Trial for refinement to be furnished in the following format separately as per the following details: Nil

PART V - FRONTLINE DEMONSTRATIONS

5.A. Summary of FLDs implemented during 2016-17

Sl. No.	Category	Farming Situation	Season and Year	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
									Proposed	Actual	SC/ST	Others	Total	
1.	Oilseeds	Rainfed	Kharif 2016	Groundnut	KCG-6/K6	-	HYV	Demonstration of KCG-6 Groundnut Variety under NMOOP	28	28	17	53	70	
	Cereals													
2.	Millets	Rainfed	Kharif-2016	Ragi	ML-365		Drought Mitigation	Management of soil surface crust in red soils in finger millet	5	5	3	7	10	
3	Pulses	Rainfed	Kharif-2016	Redgram	BRG-5		ICM	Enhancement of Pigeon pea yield through introduction of BRG-5 under NFSM	20	20	35	15	50	
4.	Vegetables	Irrigated	Late Kharif 2016	Tomato		Pvt. Hybrid	ICM	Integrated crop Management in Tomato	1	1	0	3	3	

5.		Irrigated	Late Kharif 2016	Onion	Arka-Kalyan		ICM	Integrated crop Management in Onion	4	4	3	7	10	
6.	Fruits	Irrigated	Rabi, 2016	Pomegranate	Bhagwa		ICM	Integrated Crop Management in Pomegranate	2	2	1	4	5	
7.		Rainfed	Summer 2017	Mango	Alphnoso		Drudgery Reduction & PHT	Improved practices of production and post - harvest in Mango	10	10		2 Groups	2 Groups	
8.	Flowers	Irrigated	Rabi 2016	China Aster	Arka Kamini	-	ICM	Integrated crop Management in China Aster	1	1	2	3	5	
9.		Irrigated	Kharif 2016	Marigold	Arka Bangara-2		ICM	Integrated crop Management in Marigold	0.4	0.4	1	4	5	
10.		Irrigated	Rabi 2016	Jasmine			ICM	Integrated crop Management in Jasmine	0.5	0.5	0	5	5	
11.	Medicinal and aromatic	Irrigated	Kharif 2016	Betelvine	Local	-	INM	Usage of Arka Microbial Consortium in Betelvine	2	2	0	5	5	
12.	Plantation Crops	Irrigated	Kharif 2016	Coconut	Local	-	ICM	Integrated Crop Management in Coconut	2	2	2	8	10	
13.		Irrigated	Rabi 2016	French bean & Arecanut	Arka Suvidha		ICM	Areca nut + French bean intercropping system	1	1	0	5	5	
14.	Oil Seeds	Rainfed	Kharif 2016	Groundnut			IPM	Management of wild Boar in farming system	2	2	5	0	5	
15.	Nutrition Garden	Irrigated	Kharif 2016	Fruits and Vegetables				Nutritional garden in Schools			-	3	3	
16.			Rabi & Summer	Jackfruit			Value Addition	Jack fruit processing, Value	2 Groups	2 Groups	-	-	-	

								addition and marketing linkage						
17.		-	Rabi 2016	Ragi	ML-365		PHT	EDP on Ragi Processing, Value Addition and Marketing	2 Groups	2 Groups	-	2	2	

5.A. 1. Soil fertility status of FLDs plots during 2016-17

Sl. No.	Category	Farming Situation	Season and Year	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Season and year	Status of soil			Previous crop grown
										N	P	K	
	Oilseeds												
1.		Rainfed	Kharif 2016	Groundnut	KCG-6/K6	-	HYV	Demonstration of KCG-6 Groundnut Variety under NMOOP	Kharif-2016	L	L	M	Ragi
	Cereals												
2.	Millets	Rainfed	Kharif-2016	Ragi	ML-365		Drought Mitigation	Management of soil surface crust in red soils in finger millet	Kharif-2016	L	L	M	Ragi
3.	Pulses	Rainfed	Kharif-2016	Redgram	BGR-5		ICM	Enhancement of Pigeon pea yield through introduction of BRG-5 under NFSM	Kharif-2016	M	M	M	Ragi
4.	Vegetables	Irrigated	Rabi-2016	Tomato		Pvt. Hybrid	ICM	Integrated crop Management in Tomato	Rabi-2016	M	M	L	Frenchbean
5.		Irrigated	Late Kharif 2016	Onion	Arka-Kalyan		ICM	Integrated crop Management in Onion	Late Kharif 2016	M	M	L	Redgram
6.	Fruits	Irrigated	Kharif, 2016	Pomegranate	Bhagwa		ICM	Integrated Crop Management in Pomegranate	Kharif, 2016	M	M	M	-

7.			Summer 2017	Mango			Drudgery Reduction & PHT	Improved practices of production and post - harvest management in Mango	Summer, 2017	-	-	-	-
8.	Flowers	Irrigated	Rabi 2016	China Aster	Arka Kamini	-	ICM	Integrated crop Management in China Aster	Rabi 2016	L	L	M	Ragi
9.		Irrigated	Kharif 2016	Marigold	Arka Bangar-2		ICM	Integrated crop Management in Marigold		M	L	M	Vegetables
10.		Irrigated	Rabi 2016	Jasmine	Kakada		IPM	Integrated crop Management in Jasmine		M	L	M	-
11	Medicinal and aromatic	Irrigated	Kharif 2016	Betelvine	Local	-	INM	Usage of Arka Microbial Consortium in Betelvine	Kharif 2016	H	M	M	-
12.	Plantation	Irrigated	Kharif 2016	Coconut	Local		ICM	Integrated Crop Management in Coconut	Kharif 2016	M	M	L	-
13.		Irrigated	Rabi 2016	French bean & Arecanut	Arka Suvidha		ICM	Areca nut + French bean intercropping system	Rabi 2016	H	M	M	-
14.		Rainfed	Kharif 2016	Wild boar	-	-	IPM	Management of wild Boar in farming system	Kharif 2016	M	M	L	Groundnut

5.B. Results of Frontline Demonstrations

5.B.1. Crops

Crop	Name of the Technology Demonstrated	Variety	Hybrid	Farming situation	No. of Demo	Area (ha)	Yield (q/ha)				% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
							Demo			Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
							H	L	A										
Oilseeds	Demonstration of KCG-6 Groundnut Variety under NMOOP	KCG-6/K6	-	Rainfed	70	28	3.92	1.85	2.65	2.46	7.7	15,000	13,025	-1975	0.86	15,000	12,550	-2,975	0.83
Millets	Management of soil surface crust in red soils in finger millet	ML-365		Rainfed	10	5	13.5	10.3	11.9	8.8	35.2	24,950	35,700	10,750	1.4	22,500	26,400	3,900	1.1
Pulses	Enhancement of Pigeon pea yield through introduction of BRG-5 under NFSM	BRG-5		Rainfed	50	20	3	1.3	2.04	1.55	31.61	8,400	10,200	1,800	1.21	9,200	7,750	-1,450	0.84
Vegetables	Integrated crop Management in Tomato		Pvt Hybrid	Irrigated	3	1	785	723	748	662	12.9	73,450	3,36,600	2,63, 150	4.58	83,980	2,97,900	2,13,920	3.54
	Integrated crop Management in Onion	Arka Kalyan		Rainfed	10	4	354	160	312	245	27.5	1,00,000	1,56,000	56,000	1.56	1,00,00	98,000	-2,000	0.98
Fruits	Integrated Crop Management in Pomegranate	Bhagwa		Irrigated	5	2	109.6	70.9	80.9	60.8	29.65	1,29, 806	5,35,560	4,05,754	4.12	1,46,028	4,12,800	2,66,771	2.82
	Improved practices of production and post - harvest in Mango	Alphonso		Rainfed	2 Groups	10	Ongoing												
Flowers	Integrated Crop Management in China Aster	Arka Kamini		Irrigated	5	1	46.4	42.2	44.5	35.2	26.42	35,250	1,33,500	98,250	3.79	37,900	1,05,600	67,700	3.11

	Integrated Crop Management in Marigold	Arka Bangar-2		Irrigated	5	0.4	58	54	56	46.6	20.17	38,750	1,79,200	1,40,450	4.6	36,780	1,39,800	1,03,020	3.8
	Integrated Crop Management in Jasmine	Kakad		Irrigated	5	0.5	69.78	64.06	66.45	40.89	62.50	89,456	33,260	2,42,804	3.71	97, 245	2,04,460	1,07,214	2.1
Medicinal and aromatic	Usage of Arka Microbial Consortium in Betelvine	Local		Irrigated	5	2	3.2	2.4	2.8	2.3	21.7	38,500	70,400	34,040	1.8	37,000	46,050	11,500	1.2
Plantation Crops	Integrated Crop Management in Coconut	Local		Irrigated	10	2	6,800 Nos /ha	6,250 Nos /ha	6,420 Nos /ha	5,906 Nos /ha	8.7	33,500	70,620	37,120	2.1	31,750	64,966	33,216	2.0
	Areca nut + French bean intercropping system	Arka Suvidha		Irrigated	5	1			11.2 36	10.7 -	-	72,950 16,250	2,24,000 54,000	1,51,050 37,750	3.32	72,950	2,14,000	1,41,050	2.93
Groundnut	Management of wild Boar in farming system	Local		Rainfed	5	2	4.28	3.45	3.84	2.98	28.85	14,456	19,964	5,508	1.38	12,952	15,496	2,544	1.19

Data on additional parameters other than yield (viz., reduction of percentage in weed/pest/diseases etc.)

	Data on other parameters in relation to technology demonstrated		
Title	**Parameter with unit**	**Demo**	**Check**
Demonstration of KCG-6 Groundnut Variety under NMOOP	Pods per plant-Nos.	7.65	7.07
Management of soil surface crust in red soils in finger millet	Bulk Density - g/cc	1.66	1.75
Enhancement of Pigeon pea yield through introduction of BRG-5 under NFSM	Pods per plant-Nos.	20.3	15.52
Integrated crop Management in Tomato	Fruit Weight-gm	88.4	56.5
Integrated crop Management in Onion	Avg Bulb Weight-gm	65.4	45.2
Integrated Crop Management in Pomegranate	Fruit Blight -%	8.30	28.61
Improved practices of production and post - harvest in Mango	-	-	-
Integrated Crop Management in China Aster	Flowers per plant-Nos.	42.2	32.5
Integrated Crop Management in Marigold	Flowers per plant-Nos.	58.5	42
Integrated Crop Management in Jasmine	Mite Infection-%	8.80	58.44
Usage of Arka Microbial Consortium in Betelvine	foot rot disease-(%)	10.8	26.3

Integrated Crop Management in Coconut	Stem Bleeding Incidence-%	4.5	13
Areca nut + French bean intercropping system	Pods per plant-Nos.	36.2	-
Management of wild Boar in farming system	Damage in Early stage-%	0	69.53

5.B.2. Livestock and related enterprises: Nil

5.B.3. Fisheries : Nil

5.B.4. Other enterprises : Nil

5.B.5. Farm implements and machinery : Nil

5.B.6. Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organized	Number of participants	Remarks
1	Field days	2	65	
2	Farmers Training	21	145	

PART VI – DEMONSTRATIONS ON CROP HYBRIDS

Demonstration details on crop hybrids

Type of Breed	Name of the technology demonstrated	Name of the hybrid	No. of Demo	Area (ha)	Yield (q/ha)				% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo			Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
					H	L	A										
Tomato	Integrated Crop Management in Tomato	Private hybrid	3	1	785	723	748	662	12.9	73,450	3,36,600	2,63, 150	4.58	83,980	2,97,900	2,13,920	3.54
Total			**3**	**1**	**785**	**723**	**748**	**662**	**12.9**	**73,450**	**3,36,600**	**2,63, 150**	**4.58**	**83,980**	**2,97,900**	**2,13,920**	**3.54**

PART VII. TRAINING

7.A.. Training of Farmers and Farm Women 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
Crop Production										
Integrated Farming	2	33	8	41	7	4	11	39	11	52
Soil Health and Fertility Management										
Soil fertility management	1	17	2	19	3	0	3	20	2	22
Soil and water testing	1	2	43	45	0	10	10	2	53	55
Home Science/Women empowerment										
Value addition	5	0	126	126	0	48	48	0	174	174
Production of Inputs at site										
Bio-fertilizer production	1	22	2	24	6	1	7	28	3	31
Capacity Building and Group Dynamics										
Entrepreneurial development of farmers/youths	1	19	1	20	3	0	3	22	1	23
TOTAL	**11**	**93**	**182**	**275**	**19**	**63**	**82**	**111**	**244**	**355**

7.B Training of Farmers and Farm Women 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
Horticulture										
a) Vegetable Crops										
Off-season vegetables	1	16	2	18	2	0	2	18	2	20
b) Fruits										
Cultivation of Fruit	2	68	14	82	8	3	11	76	17	93
Soil Health and Fertility Management										
Soil and water testing	4	104	24	128	34	7	41	138	31	169
Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	4	39	79	118	4	13	17	43	92	135
Post Harvest Technology	2	58	12	70	9	3	12	67	15	82
Plant Protection										
Integrated Pest Management	2	39	7	46	9	3	12	48	10	58
Integrated Disease Management	3	99	22	121	19	5	24	118	27	145
Others (Safe use of Pestcides)	1	11	19	30	2	7	9	13	26	39
Production of Inputs at site										
Mushroom production	1	26	4	30	1	1	2	27	5	32
TOTAL	**20**	**460**	**183**	**643**	**88**	**42**	**130**	**548**	**225**	**773**

7.C.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
Mushroom Production	6	72	85	157	14	18	32	86	103	189
Small scale processing	4	62	8	70	11	3	14	73	11	84
TOTAL	**10**	**134**	**93**	**227**	**25**	**21**	**46**	**159**	**114**	**273**

7. D. Training for Rural Youths including sponsored training programmes (off campus)-Nil

7.E.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
Rejuvenation of old orchards	1	69	6	75	8	2	10	77	8	85
Production and use of organic inputs	1	70	10	80	3	3	6	73	13	86
Total	**2**	**139**	**16**	**155**	**11**	**5**	**16**	**150**	**21**	**171**

7.F. Training programmes for Extension Personnel including sponsored training programmes (off campus):Nil

7.G. Sponsored training programmes conducted

Sl. No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	**Crop production and management**										
1.a.	Increasing production and productivity of crops	4	146	0	146	14	0	14	160	0	160
2	**Production and value addition**										
2.c.	Agro Forestry	1	32	0	32	3	0	3	35	0	35
8	**Farm machinery**										
8.a.	Farm machinery, tools and implements	1	28	5	33	6	2	8	34	7	41
11.	**Home Science**										
11.a	Household nutritional security	5	3	394	397	2	59	61	5	453	458
	Total	**11**	**209**	**399**	**608**	**25**	**61**	**86**	**234**	**460**	**694**

Details of sponsoring agencies involved

1.Department of Agriculture
2. Department of Horticulture
3. Coconut Development Board
4. State marketing Department

7.H. Details of Vocational Training Programmes carried out by KVKs for rural youth:Nil

PART VIII – EXTENSION ACTIVITIES

Extension Programmes (including extension activities undertaken in FLD programmes)

Nature of Extension Programme	No. of Programmes	No. of Participants (General)			No. of Participants SC / ST			No. of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	2	32	19	51	8	6	14	4	2	6
Kisan Mela	1	445	159	604	25	15	40	32	10	42
Kisan Ghosthi	1	160	40	200	14	8	22	14	2	16
Exhibition	6	1840	880	2720	180	80	260	48	18	66
Film Show	3	38	4	42	16	4	20	3	1	4
Method Demonstrations	6	98	40	138	34	20	54	9	3	12
Farmers Seminar//Workshop	3	116	24	140	12	6	18	16	4	20
Group meetings	1	16	-	16	4	-	4	2		2
Lectures delivered as resource persons	5	220	40	260	35	15	50	-	-	
Newspaper coverage	10	-	-	--	-	-	-	-	-	-
Radio talks	3	-	-	--	-	-	-	-	-	-
TV talks	7	-	-	--	-	-	-	-	-	-
Popular articles	3	-	-	--	-	-	-	-	-	-
Extension Literature	5	-	-	--	-	-	-	-	-	-
Advisory Services	378	1640	360	2000	48	26	74	83	30	103
Scientific visit to farmers field	18	24	6	30	6	0	0	3	1	44
Farmers visit to KVK	274	800	400	1200	38	10	48	128	28	156
Diagnostic visits	74	124	36	160	15	5	20	5	0	5
Exposure visits	3	245	55	300	45	20	65	-	-	-
Ex-trainees Sammelana	-	-	-	--	-	-	-	-	-	-
Soil health Camp	1	110	30	140	8	4	12	6	2	8
Celebration of important days (International Women Day)	4	-	-	--	-	-	-	-	-	-
Any Other (Specify) Special day celebrations	2	52	16	68	13	7	20	-	-	-
Total	**810**	**5960**	**2109**	**8069**	**501**	**226**	**721**	**353**	**101**	**484**

PART IX – PRODUCTION OF SEED, PLANT AND LIVESTOCK MATERIALS

9.A. Production of seeds by the KVKs

Crop category	Name of the crop	Variety	Hybrid	Quantity of seed (Kg)	Value (Rs)	Number of farmers to whom provided
Cereals (crop wise)	Ragi	ML 365		400	16,000	80
	Ragi	ML 322		30	1,200	3
	Brown top millet	Local variety		500	40,000	-
Pulses	Red gram	BRG-5		134	20,100	50
Vegetable crops	Palak	Arka Anupama		189	75,600	120
	Cowpea	Arka Garima		40	10,000	21
	Tomato	Arka Meghali		20	40,000	40
	Amaranthus	Arka Suguna		50	25,000	52
	Onion	Arka Kalyan		50	75,000	20
	Onion	Bhema Shakti		200	3,00,000	-
	Radish	Arka Nishant		31	12,400	15
	French bean	A Suvidha		400	1,00,000	-
	Veg Seed kit (No.)	10 different vegetables		1,850	1,85,000	1,500
Fodder Crops	Sunhemp	Local variety		240	16,800	2
Total					**9,17,100**	

9.B. Production of planting materials by the KVKs

Crop category	Name of the crop	Variety	Hybrid	Number	Value (Rs.)	Number of farmers to whom provided
Plantation	Areca nut	Hirehalli tall		91,000	27,30,000	41
		Sprouts		3,000	15,000	2
	Coconut	Arsikere tall		2,250	1,80,000	10
Fruits	Mango	Alphanso		1,950	78,000	20
	Guava	Pink flesh, AK		550	22,000	10
	Amla	NA-4,5,7		260	10,400	24
	Lime	Seedless		135	5,600	8
	Pomello	Devanahalli		120	2,400	8
	Lime	Kazi Lime		250	5,000	5
	Sapota	Cricket Ball		250	10,000	15
	Tamarind	PKM-1		1,770	70,800	62
Others seedlings	Rose apple, Fig, Ramphal, Custard apple	-		550	5,500	30
Total				**1,02,085**	**31,34,700**	

9.C. Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg	Value (Rs.)	No. of Farmers
Micro Nutrient Fertilizers	Banana Special	8,165	12,24,750	621
	Vegetable Special	7,681	11,52,150	630
	Mango Special	4,551	6,82,650	363
	Citrus Special	1,069	1,60,350	76
Bio-pesticide	Neem Soap	3,542	5,31,300	684
	Pongamia Soap	1,145	1,40,835	381
	Sealer cum Healer	306	45,900	117
Bio Fertilizers	Arka Microbial consortium	2.943	4,41,450	410
Bio Agents	Mango fruit fly traps/Lures (Nos.)	23,159	4,63,180	1,260
Others	Amla Candy	76	22,800	
	Amla Squash (Lit)	125	16,250	
	Mushroom Spawn	125	10,000	
	Ragi Malt	60	12,000	
Total			**49,03,615**	

9.D. Production of livestock materials: Nil

PART X – PUBLICATION, SUCCESS STORY, SWTL, TECHNOLOGY WEEK AND DROUGHT MITIGATION

10. A. Literature Developed/Published (with full title, author & reference)

(A) KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)
April –June 2016
July-Sept 2016
Oct-Dec 2016

(B) Literature developed/published

Item	Title	Authors name	Number
Research papers	**Research Papers:** 1. Impact of Frontline demonstrations in adoption of production Technology and economics of Tomato in Farmers' Field of Tumakuru District. ***The Asian Journal of Horticulture*****, Volume-2, Issue-2, December 2016 Pp 349-354.** 2. Effect of Black Polythene Mulches on Growth and Yield of Green Chilli (Capsicum annuum) in Tumkur District Karnataka. *Nature Environment and pollution Technology* ***An International Quarterly Scientific Journal* – Vol.15 (1): PP.201-204.** 3. Short and Medium Duration Varieties of Cereals and Millets to Mitigate Monsoon Vagaries in Rainfed Agriculture, **Indian Journal of Ecology (2017) 44 (Special Issue-4)**	Nagappa Desai, B.Mamata, **J.M.Prashanth**. N. KUMARA, **N. LOGANANDHAN, SOMASHEKHAR AND B. HANUMANTHE GOWDA** Srinivas Reddy D.V., Sreenath Dixit, **N.Loganandhan,** Manjunath Gowda B. Mohan S., Sheeba . Mallikarjuna B.O. and Anitha,	-

	4. Influence of farm ponds towards imparting climate resilience to rainfed farming: Success from NICRA villages, XIII Agricultural Science Congress-2017: Climate Smart Agriculture – 21-24, Feb 2017.	Srinivas Reddy D.V., Sreenath Dixit, **N.Loganandhan,** Manjunath Gowda B. Mohan S., Sheeba . Mallikarjuna B.O. and Anitha	
	5. Climate smart Agriculture – Influence of in-situ moisture conservation practices on the performance of field crops, XIII Agricultural Science Congress-2017: Climate Smart Agriculture – 21-24, Feb 2017	Srinivas Reddy D.V., Sreenath Dixit, **Ramesh P.R.**, Chougala D.C., Manjunath Gowda S. Sheeba S. Mallikarjuna B.O. and Anitha,	
	6. Energy Consumption and Sensitivity Analysis of Rainfed Chickpea Production in Vertisols of Semi-arid Karnataka, Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci. DOI 10.1007/s40011-016-0802-3.	S. L. Patil, N. Loganandhan, M. N. Ramesha, Partha Pratim Adhikary, K. Channabasappa	
	Research Abstracts/ Proceedings:		
	1. Role of Arka Microbial Consortium (AMC) on management of foot rot of Betelvine caused by *Phytophthoraparasitica* in cluster villages of Tumakuru District .*In proceedings of IPS 6th International Conference on "Plant, Pathogens and People',*held on Feb. 23-27, 2016 at NASC Complex, New Delhi.Pp:127-129	Hanumanthegowda.B,Loganandhan. N ,Ramesh.P.R, Shashidhar,K.N, and Himabindu	
	2. Weather based approach for effective management of bacterial blight of pomegranate caused by *Xanthomonasaxonopodis pv. punicae*. In proceedings of First KVK Symposium Zone VIII held at UAS,Dharwad on Jan,21-22nd,2016. Pp:46-49	Hanumanthegowda.B,Ramesh.P.R, Shashidhar,K.N,, Jagadish.K.N , and Loganandhan.	
	3. Studies on effect of Arka Microbial Consortium (AMC) on management of wilt in Pomegranate caused by *Ceratocystisfimbriata* in cluster villages of Tumakuru District. Presented at National Symposium on 'Diagnosis and management of plant diseases: Integrated approaches and recent trends' to be held on Jan, 9-11, 2017 at Umiam, Meghalaya.Pp:156	Hanumanthe gowda.B ,Loganandhan. N ,Ramesh.P.R , Prashanth, J.M,and Jagadish.K.N.	
	4. Assessment of damage level of Groundnut crop caused by wild boar (*Sus scrofa*) in Tumakuru district. Presented at National Meet of Entomologists on 7 h & 8th October held at ICAR-IIHR. Pp:73	Hanumanthegowda.B, Loganandhan. N ,Ramesh.P.R , Prashanth, J.M,and Jagadish.K.N.	
	5. ROLE OF 'Sealer Cum Healer' on management of Mango stem borer caused by *Batocerarufomaculata* In Cluster Villages Of Tumakuru District.Presented at National Meet of Entomologists on 7 h & 8th October held at ICAR-IIHR.Pp:110	Hanumanthegowda.B, Loganandhan. N ,Ramesh.P.R , Prashanth, J.M,and Jagadish.K.N.	
	6. Rainwater harvesting through Checkdam and efficient use to enhance climate resilience at D.Nagenahalli, Tumakuru District, Karnataka,	**Ramesh P.R., Loganadhan N.** and Praveen Kumar,	

	XIII Agricultural Science Congress-2017: Climate Smart Agriculture – 21-24, Feb 2017.		
Technical reports	IIHR Annual Report 2016-17 SAC Report NICRA Action Plan Report Action Plan Report	KVK Staff	4
News letters	ICAR News letter IIHR News Letter KVK News letter CRIDA News letter		4
Technical bulletins	1. Manual on Integrated Farming System-Dryland Horticulture under Sujala Phase-III 2016-17, Department of Horticulture, Govt. of Karnataka. 2. 'Ahaara mattu poshana subhadrategе poustik kaithota'(Kannada), Published under Bhoosamrudhi Project funded by Zilla Panchayath, Tumakuru. 3. Arogya mattu aadhayakkaagi Anabe Krishi (Kannada), Published by KVK, Hirehalli.	Prasanth JM, BH Gowda , KN Jagadish, PR Ramesh and N Loganandhan Radha R.Banakar, Somashekhar, Loganandhan and G Karunakaran Radha R.Banakar, Somashekhar and Loganandhan 2016,	-
Popular articles	1. 'Halasina Hannu sanskarane mattu moulya vardhane' (Kannada) In:Siri samruddi monthly magzine.BAIF, Tiptur. June, 2016, PP- 26-29. 2. 'Arogyakkagi Anabe-Besaya mattu Moulyavardhane' (Kannada) In:Siri samruddi monthly magzine.BAIF, Tiptur. Nov, 2016, PP- 17-20. 3. Status of Farmer Producer Organizations ion Tumakuru District (Part I) at Book Chapter: Chandre Gowda,M.J. and Sreenath Dixit (Eds) 2016, Farmer Producer Organizations in Karnataka - A KVK Perspective, ICAR Agricultural Technology Application Research Institute Bengaluru, Karnataka, India. Pp 54 -62 4. Krushikarindale moulyavardhane- bisakida gidagaligiga badukige neralu, *Adike Patrike,* March 2017: Pp No. 12-15.	Radha R.Banakar, Somashekhar, Loganandhan N. Radha R.Banakar, Somashekhar, Loganandhan N 2016. N.Loganadhan, K.N.Jagadish, KVK Tumakuru (II) **K.N.Jagadish,** Padaru,	-
Extension literature	1. 'Irullayalli Bheejothpadhane' 2. IDM in Coconut, KVK, Hirehalli 3. IPM in Coconut, KVK, Hirehalli	Somashekhar, Radha R.Banakar and Loganandhan Hanumanthegowda.B, Jagadish.K.N, Shashidhar,K.N, and Loganandhan. Hanumanthegowda.B, Ramesh.P.R, Prasanth J.M., and Loganandhan.	-
TOTAL			

10.B. Details of Electronic Media Produced :Nil

10.C. Success Stories / Case studies, if any (two or three pages write-up on each case with suitable action photographs. The Success Stories / Case Studies need not be restricted to the reporting period).

Success stories

1. Multiple Cropping with Plastic Mulch and Drip Irrigation in Tomato

Tomato is important commercial vegetable crop in india. Tomato farmers are facing problems due to the climate change which leads to outbreak of pest and diseases, drought situation, bore wells going dry, Labour scarcity etc. In last 3-4 years major diseases like late blight, Leaf curl has emerged as a devastating problems for tomato crop. Cost of cultivation has gone up and labour shortage has a major threat for farming community now a days. Farming community finding difficult to cope with the raised in the input cost and other problems faced by the farmers. To mitigate the problems, KVK, Hirehalli initiated the technology on poly mulching with drip irrigation in tomato crop under Front line demonstration during the year 2013-14.

Smt.Saroja is a progressive women farmer from Devarayapatna village of Tumkauru district, Karnataka. She has graduated from Tumakauru and now grows vegetables and flowers in an area of 2 acres along with her husband. KVK, Hirehalli has introduced improved varieties of vegetables and flowers to her in the year 2013-14, in which she showed tremendous outcome.

The story started with the introduction of improved tomato variety – Arka Samrat under plastic mulching in her field. Tomato is an important commercial vegetable crop in India. Tomato farmers are facing problems due to the climate change which leads to outbreak of pest and diseases, drought situation, bore wells going dry, labour scarcity etc. In last 3-4 years major diseases like late blight and leaf curl have emerged as devastating problems for tomato crop. Subsequently cost of cultivation has also gone up and labour shortage has a major threat for farming community. Farmers are finding it difficult to cope up with the raised input costs and other related problems. Smt.Saroja is also not an exception from these predicaments.

To mitigate these problems, KVK (IIHR), Hirehalli initiated a demonstration of the technology - Poly mulching with drip irrigation in tomato crop under Front Line Demonstration (FLD) during the year 2013-14 in her field. Earlier, she used to grow only ragi and paddy crops during the monsoon. She was unable to cultivate the profit oriented crops due to the lack of technical knowhow and labour scarcity. She visited KVK, Hirehalli and discussed with scientists about cultivation of *tomato*. She was advised about the improved *tomato* production technology developed by IIHR Bengaluru with Hybrid Arka Samrat under poly mulching.

Keeping these suggestions in view, Smt. Saroja decided to go for summer tomato cultivation in her field. She planned for one acre and used the Hybrid Arka Samrat. She transplanted the tomato seedlings on raised beds with ploy mulch film laid with drip irrigation. She has followed package of practices with fertigation and plant protection recommendations as per the suggestions given by the SMS (Horticulture). She used to visit KVK, Hirehalli frequently for suggestions and regular visits were also made by the KVK Scientists to the FLD plot. The practice of mulching helped in moisture conservation, weed suppression and maintenance of soil structure. Mulches also improved the use efficiency of applied fertilizer and use of reflective mulches minimized the incidences of pests and viral diseases. She started harvesting tomato after 65 days after planting and got 32.50 tonnes of tomato per acre and sold them @ Rs.10 per kg. This resulted in a total income of Rs. 3.25 lakhs per acre. The total cost of cultivation for tomato was Rs.60,000 per acre. Thus, she earned a net profit of Rs. 2.65 lakh per acre (BC ratio 5.41). Farmers of surrounding villages were very impressed by the result of this technological intervention of plastic mulching with drip irrigation. Farmers from the village are of the opinion that by following these technologies, they can reduce the wastage of water and fertilizers and also increase the water use efficiency. The incidence of pests and diseases has come down. The number of seedlings required for planting one acre is also less because of the

decreased seedling mortality. The fruits obtained are of better quality and colour, which fetched her more prices in the market.

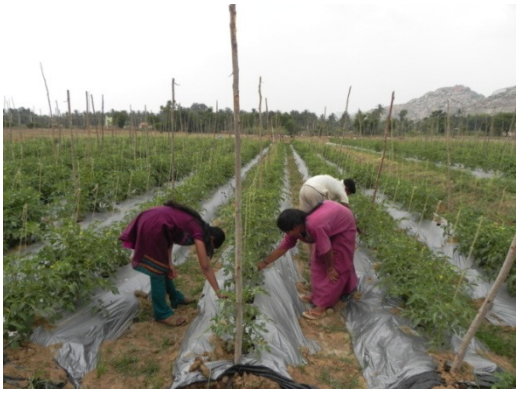
The anticipated increase in income by using poly mulch in crops, especially of high value such as tomato, appropriately justifies the costs of plastic mulch and drip irrigation. However, use of plastic mulch may or may not impact the net profit in case of low value crops, considering the investment in mulching.

To reap more benefits from the investment made on mulch and drip irrigation, multiple cropping (growing a second or even third crop immediately after the previous crop) has become a common practice under plastic mulching. Rotation of *Solanaceous* crops with a leguminous crop could be a better option in this case. However, proper installation of a good quality plastic mulch and drip tube is absolutely necessary for successful multiple cropping. So, Smt. Saroja was suggested by the KVK to take up second crop as a french beans. She had harvested french bean after 55 days after sowing and gained 3.5 t/acre. She sold them at the rate of Rs.22/kg. The gross income was Rs.77, 000 consecutively, considering the quality of the mulch and drip tubes, she was suggested to go for a third crop – newly released variety of Marigold Arka Bangara from IIHR, propagated through cuttings, in the same polymulch with same spacing. In Marigold, 45 days after planting, she got 1800 kg and sold at the rate of Rs. 20/kg and gross income was Rs. 36,000. By this she earned a total net income of Rs. 0.92 lakh per acre.

Table – showing the income from all the three crops and in total

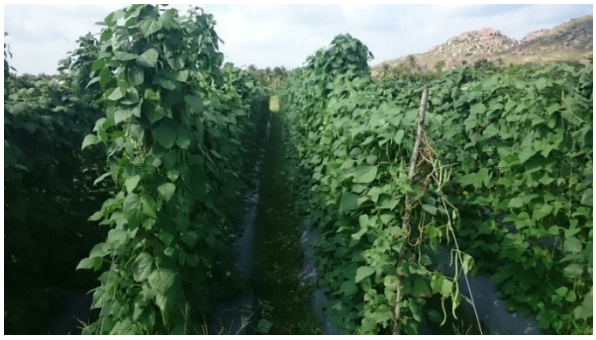
Sl. No.	**Varieties**	**Yield**	**Net Returns (Rs./acre)**
1.	Tomato Arka Samrat	32.50 t/acre	2,65,000
2.	French Bean –Pole beans	3.50 t/ acre	64,500
3.	Marigold- Arka Bangara	1800 kg /acre	27,500

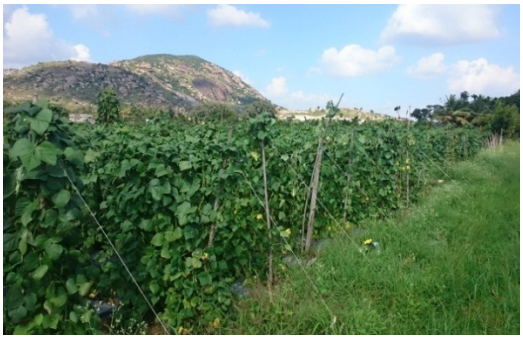
She received innovative farm woman award from IIHR on her success during the recent ICAR foundation day–18th July 2014. Smt.Saroja is acting as a role model for nearby farm women to lead a successful career by following improved horticulture practices.



FLD Plot on Poly Mulching in Tomato – Arka Samrat

I crop - Tomato – Arka Samrat





II crop: French bean crop in same polymulch- Pole beans

III crop: Marigold crop - Arka Bangara

Felicitation during ICAR Foundation day

2. Mushroom Cultivation for Sustainable And Higher Income in Tumakuru District

The use of mushroom as food is as old as human civilization. They have been mentioned in ancient literature of China, Egypt, Greece and India. However, all mushrooms are not edible. While some are non-edible, a few are mild to deadly poisonous. This was the main reason that mushroom could not be accepted universally for a long time. Though there are about 2000 edible mushroom species, only 20 species are under cultivation and 3-4 species share major part of the world production which is about one million tons per annum. Mushrooms are gradually becoming popular as they are rich in minerals, vitamins, very low on fat and sugar. They are good source of protein and contain many essential amino acids. It is also known to have medicinal value and certain varieties of mushrooms can inhibit growth of cancerous tumor.

Mushroom farming is being practiced in more than 100 countries, and is increasing at the rate of 7 percent per annum. Production of mushroom has already crossed 5 million metric tons annually in the world and it is expected to reach around 7 million metric tons by 2020. India had been known in the world over for its exotic mushrooms. Total mushroom production in India was around 39094 tons. The present mushroom production figures of India are very low in comparison to that of China. However, the country provides varied climate conditions and abundance of raw material (Agricultural wastes) which can be utilized to produce large quantity of different mushroom varieties.

Small-scale mushroom production gives an opportunity to the interested farmers for income generation through less usage of land. Those farmers can do this as a way to extract value from waste materials. It plays an important role in managing organic farm waste as well, as the agricultural and food processing by-products are being used as growing media for edible mushroom.

Leisure time can be utilized effectively by involving in mushroom cultivation enterprise. Producing nutritious food at a profit, while using materials that would otherwise be considered "waste", constitutes a valuable service in the self-sustaining community. Mushroom production is labor and management intensive. The SHG's are in search of viable activities which are promising and giving good returns. Mushroom Production provides an excellent opportunity for a viable economic activity as a source of income.

Tumakuru district is having major area under rainfed farming where income levels are very low, where mushroom cultivation could be very good candidate for raising income levels of farmers. Here Oyster mushroom cultivation could be taken up as a income generating activity where it needs very little space and the temperature required is 25 C.

Name : Mr.Narayanarao M.N
Village : Byalya
Tq :Madhugiri
Dist :Tumakuru
Holding: 1.4 Acre

With the available land he dug one borewell during 2014-15 and started Poultry farming in that piece of land. For taking up Poultry farming he constructed 3 big sheds with an investment of Rs.2.00 lakh. He raised Poultry birds for 2 seasons, and for 3rd seasons his income was very meager because of the disease attack to Birds. Then he started alternate venture and found Mushroom cultivation and after hearing advice from his relative he visited KVK hirehalli and later attended Mushroom cultivation training programme. Now he is producing average 25 kg of mushrooms and sold to Madhugiri and Tumakuru market, he is now confident that he can still raise the production levels of mushroom to get the sustainable income from mushroom cultivation. He says, through mushroom cultivation benefit cost of ratio ranges between 1.5 to 2.5depending on the season.

3. Seed production for sustainable Income in Tumakuru district

Krishi Vigyan Kendra Main mandate is to transfer the new technologies developed at various research institutes where new varieties/hybrids will also be demonstrated in Front Line Demonstrations (FLD, s). In recent years production of quality planting material and seed is also one of the important mandate of the KVK.

Large number of Varieties and Hybrids are released by the public sector research institutes like Indian Institute of Horticultural Research and other State Agricultural Universitis have umpteen numbers of potential varieties/hybrids for their high yield and other nutritional benefits. Farmers are in need of quality seed material in vegetable crops and Field crops. Multiplications of such varieties/Hybrids need to be done in large quantity which is not possible in the KVK farm/Institute farm. To meet the huge demand of the vegetable seed and field crops contractual seed production will be undertaken in the mandated areas of the KVK. Such activity of production can be taken up in farmers' field under strict vigilance of KVK/Institute staff for maintaining the seed quality and later seed will be processed at the KVK seed unit and marketed to the farmers at reasonable rate

These seeds produced by the farmer will be procured by KVK as per the agreement between two parties. Later this seed material will be processed at the KVK, for this we have to have the processing equipments and building. For maintaining the quality of the seed, to maintain the seed viability for longer time storage, cold storage unit would be constructed at the KVK campus. For sale of this produce, As Hirehalli is located on the National Highway No.4 (Pune-Bangalore) with only 58 Km from Bangalore and this place is also connected by Indian Railway making this place very much accessible to the large number of farming community.

This project will be operated in 3 stages, (Three **P,s**) i.e., Production, Processing and Packing &marketing of vegetable seeds of notified varieties/Hybrids.

A. **P**roduction of seed
B. **P**rocessing of seed
C. **P**acking & marketing of seed

Plan of Work:

As KVK, Hirehalli is already in the process of vegetable seed production in the last few years. In spite of continues increase in the production, the demand for vegetable seed is increasing. The resources like water, labour and land are major constraints to further increase the production at the KVK Farm. Thus in order to over come the problem, vegetable seeds will be produced in the farmer's field through seed village concept in the mandated taluks of the KVK. These farmers will also be linked with national Horticulture mission programme for getting the financial aid for producing the vegetable seed, which will be additional income for the farmers who are involved in the production programme. Before taking up the seed production, a memorandum of Agreement will be made between the institute (KVK, IIHR) of procurement and the seed grower. KVK Farm will be utilized for production of quality foundation seed for giving to farmers who are involved in the seed production programme through seed village programme. In each village interested farmers will be made various groups may be called as Commodity/ Seed groups based on the crops which they will be growing.

Success story of Seed production:

Govindaraju, a farmer of Maruti pura village in Hoskere hobli of Madhugiri taluk is having 5 acre land where he was cultivating vegetable crops, field crops and other plantation crop since many years. Since vegetables give more profit compared to field crops and profitability highly dependent on market price otherwise he was he was under loss when there is reduced market price. During 2015-16 he visited IIHR KVK Hirehalli and agreed to take up the Onion seed production (Var:Arka Kalyan). This crop needs two

seasons to get the desired seed. As per agreement between him and IIHR KVK he collected seed from KVK and took up the sowing during june month of 2015 and harvested 12 quantals of onion bulbs in 0.5 acre land. During harvesting season in October he got access rainfall and received fewer yields(12 qt only). After one month period, he planted 12 quantals of bulb for rasing seed crop in another piece of land. He got 75 kg of good quality onion seed arka kalyan and submitted to KVK Hirehalli as per agreement. Through RTGS he received Rs. 75000/- to his account. If he had not went for seed production he would hardly got Rs.15000 income through sale of 12qt onion bulb. Because of remunerative activity, during current year (2016-17) he had extended this seed production area in 2 acre land and expected to get 600 kg of onion seed and expected to get Rs.350000/- gross income and BC Ratio would be 1:3. Apart from him other 10-15 farmers came forward and taking up seed production in other crops like Redgram, Ragi, French bean,etc.,

10.D. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year

-Nil-

10.E. Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

Sl. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Groundnut	Tying of old Clothes, Installation of scare crow, Installation of traditional bells made up of old steel plates, Application of phorate all along the borders	Management of Wild boar
2	Coconut	Fixing of old oil tin plate all around over middle of trunk.	To avoid the monkey and squirrels

10.F. Indicate the specific training need analysis tools/methodology followed for

1. **Identification of courses for farmers/farm women**
   - PRA technique and need analysis through individual & group discussion
   - As per the suggestions and guidelines of members of SAC
   - Discussion with the scientist of IIHR Bengaluru
   - Discussion with officials of line department
2. **Rural Youth**
   - Survey and discussion
   - Feedback from rural youths
   - Periodical field visits

3. In service personnel

- Discussion with District and taluk level officers to know the areas of interest/choice of extension workers based on field problems
- Collaborative activities, meetings and discussions with line departments.
- SAC interactions
- Diagnostic visits

10.G. Field activities

i. Number of villages adopted : 17
ii. No. of farm families selected : 233
iii. No. of survey/PRA conducted : 05

10.H. Activities of Soil and Water Testing Laboratory

Status of establishment of Lab : Established under NHM Scheme

1. Year of establishment : 19.4.2014

2. List of equipments purchased with amount :

Sl. No.	Name of Equipments	Qty	Amount (Rs.)
1	Spectrophotometer with accessories	1	1,81,260
2	Flame photometer	1	53,238
3	Analytical balance	1	28,625
4	Nitrogen Analyzer (Kjeldahl digestion and distillation) with spare parts	1	1,79,879
5	Shaker	1	45,800
6	Refrigerator	1	40,200
7	Oven	1	60,456
8	Hot plate	1	18,893
9	Digestion fume chamber	1	99,501
10	Atomic Absorption Spectrophotometer	1	10,00,000
11	Centrifuge	1	58,404
12	Glassware and miscellanies	-	99,279
13	Chemicals	-	1,34,465
Total			**20,00,000**

Details of samples analyzed so far since establishment of SWTL:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages	Amount realized (Rs.)
Soil Samples	6,160	5,260	3,328	2,49,200
Water Samples	4,503	2,928	2,169	1,46,500
Plant samples	157	66	56	13,200
Total	**4,291**	**4,089**	**2,828**	**1,57,850**

Details of samples analyzed during the 2016-17:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages	Amount realized (Rs.)
Soil Samples	3,668	2890	1,768	3,66,800
Water Samples	2,826	1260	952	1,41,300
Plant samples	35	15	5	3,500
Total	**6,529**	**4,165**	**2,725**	**5, 11,600**

10.I. Technology Week celebration during 2016-17 Yes/No, If Yes : Yes

Period of observing Technology Week: From 23.12.2016 to 29.12.2016
Total number of farmers visited : 224
Total number of agencies involved : 4
Number of demonstrations visited by the farmers within KVK campus: 8

Other Details

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Gosthies	-	-	-
Lectures organized	7	224	
Exhibition	1	85	
Film show	2	64	
Fair	-	-	
Farm Visit	4	180	
Total number of farmers visited the Technology week		224	

10. J. Interventions on drought mitigation (if the KVK included in this special programme) -NA

PART XI. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Polymuch with drip Irrigation	25	30	1,70,000	2,20,000

11.B. Cases of large scale adoption
(Please furnish detailed information for each case)

-NIL-

11.C. Details of impact analysis of KVK activities carried out during the reporting perio

Impact of Foliar application of Arka Banana Special in farmers field of Tumakuru distrct

IIHR, Bengaluru has conducted research in Banana growing fields. It has shown that yield reduction and poor fruit quality are mainly due to deficiency of micronutrients such as Zinc, Boron, Manganese, Iron, Copper etc.

KVK, Hirehalli has authorized license to produce and sell of Arka Banana Special, which is very popular among farmers for its genuine quality. For the benefit of farmers, KVK is selling at low price to reach out maximum the Banana growers across the Tumakuru district

Sl. No	Particulars	With Banana special		Without application of banana special		With Banana special		Without application of banana special	
		1st year	2nd year	1st year	2nd year	1st year	2nd year	1st year	2nd year
		G9		G9		Ellaki			
A.	Material inputs								
	Land preparation including trenching	14,283.33	0.00	14,283.33	0.00	13,340.00	0.00	13,340.00	0.00
1	FYM and Manures	26,358.33	0.00	26,358.33	0.00	25,600.00	0.00	25,600.00	0.00
2	Fertilizers	10,010.00	11,010.00	10,010.00	11,010.00	8,285.00	9,285.00	10,285.00	12,345.00
	N in kgs	140.18	145.18	140.18	145.18	140.4667	145.78	140.18	150.18
	P in kgs	92.48	98.78	92.48	98.78	77.08	78.89	85.48	95.48
	K in kgs	100.50	104.89	100.50	104.89	103.33	102.8	102.50	105.50
	Other nutrients in kgs	184.6	180.88	184.6	180.88	170.8		174.6	204.6
3	PPP chemicals	13,453.33	14,500.00	16,000.00	16,500.00	14,980.00	15,880.00	17,000.00	18,550.00
4	Seedlings	26,800.00	0.00	26,800.00	0.00	25,800.00	0.00	25,800.00	0.00
5	Cost of Banana special application	2,913.88	2,913.88			2,823.33	2,823.33		
	Sub total	90,905.00	25,510.00	93,451.67	27,510.00	88,005.00	25,165.00	92,025.00	30,895.00
B.	Labour costs								
	(Hired + Own)	19,200.00	11,700.00	20,800.00	13,300.00	19,565.00	12,065.00	18,565.00	12,500.00
	A+B)	110,105.00	37,210.00	114,251.67	40,810.00	107,570.00	37,230.00	110,590.00	43,395.00
C.	Interest on working capital	9,909.45	3,348.90	10,282.65	3,672.90	9,681.30	3,350.70	9,953.10	3,905.55
	Total costs	120,014.45	40,558.90	124,534.32	44,482.90	117,251.30	40,580.70	120,543.10	47,300.55
	Yield per bunch	63.33	64.50	52.00	52.80	13.75	14.00	9.90	10.11
	Yield per acre in Kgs	65,450.00	65,550.00	53,092.00	53,908.80	14,712.50	14,980.00	10,593.00	10,817.70
	Total Returns	418,880.00	426,075.00	339,788.80	345,016.32	382,525.00	389,480.00	275,418.00	281,260.20
	NR	298,865.55	360,525.00	286,696.80	291,107.52	367,812.50	374,500.00	264,825.00	270,442.50
	Returns per rupee of investment	3.49	10.51	2.73	7.76	3.26	9.60	2.28	5.95

PART XII - LINKAGES

12.A. Functional linkage with different organizations

Name of organization	Nature of linkage
State Department of Horticulture	Trainings, FLD, Joint Diagnostic Survey
State Department of Agriculture	Trainings, FLD, Joint Diagnostic Survey
Department of Animal Husbandry and Fisheries	Trainings and Technical Information
Department of Women and Child Development	Trainings
BAIF NGO, Tiptur	Trainings and Technical Information
ORDER NGO, Tumakuru	Trainings, FLD's and Technical Information, FPOs
AWARE NGO, Tumakuru	Trainings
APART NGO Tumakuru	Organic Farming and Group Approach
MOTHER NGO Tumakuru	Seed Village Concept
UAS, Bengaluru	Trainings and FLDs
UAS, Dharwad	Trainings and FLDs
UHS, Bagalkote	Trainings and FLDs
ICAR-NIANP, Bengaluru	Trainings
SKRDP	Trainings
DHAN Foundation	Trainings
AVISHKAR	Trainings, FPOs

12.B. List Externally Funded Projects / schemes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies

Name of the scheme	Role of KVK	Date/ Month of initiation	Funding agency	Amount (Rs. In lakhs)
Technology demonstration component of NICRA	Demonstration of Interventions	January 2011	CRIDA, Hyderabad	83.79
Participatory Vegetable Seed Production and Distribution System	Participatory Vegetable Seed Production in farmers field	March 2013	RKVY, GOK	40
Establishment of Arka Microbial Production Unit	Production of AMC	March 2016	NABARD	4.8
Conservation Agriculture	Research on Conservation Agriculture	February 2016	CRIDA, Hyderabad	1
Bhoosamruddhi Scheme	Trainings	April 2016	ZP, Tumakuru	8.3

12.C. Details of linkage with ATMA

a) Is ATMA implemented in your district Yes/No : Yes

If yes, role of KVK in preparation of SREP of the district?
Designing of technical and training programmes for the year 2016-17

Coordination activities between KVK and ATMA during 2016-17

Sl. No.	Programme	Particulars	No. of programmes attended by KVK staff	No. of programmes Organized by KVK	Other remarks (if any)
01	Meetings	SREP			
02	Research projects				
03	Training programmes	Soil Testing and its importance	2	1	
		Mushroom Cultivation	1	1	
		Value addition of Amla	1	1	
			4		

12.D. Give details of programmes implemented under National Horticultural Mission: NIL

12.E. Nature of linkage with National Fisheries Development Board : NIL

12.F. Details of linkage with RKVY

Sl. No.	Programmes	Nature of linkage	Funds received if any Rs. -lakhs	Expenditure during the reporting period in Rs. -lakhs	Remarks
1	Participatory Vegetable Seed Production and distribution system under RKVY scheme	Quality seed production	40	10	**-**

12. G Kisan Mobile Advisory Services

Month	No. of SMS sent	No. of farmers to which SMS was sent	No. of feedback / query on SMS sent
April 2016	1	1,381	7
May	4	1,365	-
June	7	1,382	3
July	8	1,362	4
August	8	1,377	6
September	5	1,376	-
October	5	1,388	-
November	7	1,374	-
December	7	1,396	-
January 2017	2	1,720	5
February	-	-	-
March 2017	5	1,713	-
Total for the year 2016-17	**59**	**-**	**-**

PART XIII- PERFORMANCE OF INFRASTRUCTURE IN KVK

13.A. Performance of demonstration units (other than instructional farm) –

Sl. No.	Demo Unit	Year of establishment	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1.	Biodigester	2016	-	-	-	1	49,000	-	-
2.	Farm Machinery Custom Hiring Center under Bhoosumraddhi	2016	-	-	-	1	20,00,000	-	-

13.B. Performance of instructional farm (Crops) including seed production

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty. (kg)	Cost of inputs	Gross income	
Ragi	12.12.2016	30.3.2017	0.4	ML 365	Seeds	400	8,000	16,000	
Ragi	10.11.2016	15.2.2017	0.2	ML 322		30	600	1,200	
Brown top millet	15.10.2016	18.2.2017	0.8	Local		500	20,000	40,000	
Red gram	11.6.2016	15.12.2016	0.2	BRG-5		134	10,000	20,100	
Cowpea	18.7.2016	10.11.2016	0.2	Arka Garima		40	6,000	10,000	
Sunhemp	6.7.2016	10.11.2016	0.8	Local		240	8,000	16,800	
Spices & Plantation crops									
Areca nut		-	-	Hirehalli Tall	Seedlings	91,000		27,30,000	
					Sprouts	3,000		15,000	
Coconut		-	-	ArsikereTall	Seedlings	2,250		1,80,000	
Fruits									
Mango	-	-	-	Alphanso, Mallika, Dashehari	Seedlings	1,950		78,000	
Guava	-	-	-	AS, Pink flesh, L-49	Seedlings	550		22,000	
Amla	-	-	-	NA-4,5,7	Seedlings	260		10,400	
Lime	-	-	-	Seedless	Seedlings	135		4,000	
Pomello	-	-	-	Devanahalli	Seedlings	120		9,260	
Lime	-	-	-	Kazi Lime	Seedlings	250		14,500	
Sapota	-	-	-	Cricket Ball	Seedlings	250		58,720	
Tamarind	-	-	-	PKM-I	Seedlings	1,770		70,800	
Others seedlings	-	-	-	Rose apple, Fig, Ramphal, Custard apple	Seedlings	550		5,500	

Vegetables -Seeds in Kg									
Palak	10.10.2016	10.1.2017	0.2	Arka Anupama	Seeds	189	38,000	75,600	
Tomato	5.11.2016	30.3.2017	0.1	Arka Meghali		20	19,000	40,000	
Amaranthus	13.12.2016	29.3.2017	0.1	Arka Suguna		50	12,00	25,000	
Onion	15.6.2016	15.3.2017	0.1	Arka Kalyan		50	30,000	75,000	
Onion	30.6.2016	25.3.2017	0.2	Bhema Shakti		200	2,00,000	3,00,000	
Radish	2.8.2016	10.1.2017	0.2	Arka Nishant		31	5,900	12,400	
French bean	2.1.2017	30.3.2017	0.4	A Suvidha		400	48,000	1,00,000	
Veg Seed kit (No.)	-	-	-	10 different vegetables		1,850	90,000	1,85,000	

13. C. Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.)

Sl. No.	Name of the Product	Qty-Kg	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1.	Banana Special	8,165	-	12,24,750	
2.	Vegetable Special	7,681		11,52,150	
3.	Mango Special	4,551	-	6.82,650	
4.	Citrus Special	1,069	-	1,60,350	
5.	Neem Soap	3,542		5,31,300	
6.	Pongamia Soap	1,145	-	1,40,835	
7.	Sealer cum Healer	306		45,900	
8.	Arka Microbial consortium	2.943	-	4,41,450	
9.	Mango fruit fly traps/Lures (Nos.)	23,159	-	4,63,180	
10.	**Others**				
11.	Amla Candy	76		22,800	
12.	Amla Squash (Lit)	125		16,250	
13.	Mushroom Spawn	125	-	10,000	
14.	Ragi Malt	60		12,000	

13.D. Performance of instructional farm (livestock and fisheries production) :Nil

13.E. Utilization of hostel facilities

13.F. Database management

Sl. No	Database target	Database created
1.	Farmers Database	**Ongoing**
2.	Database for Technologies assessed and Refined	
3.	Frontline Demonstrations Database	
4.	Training Database	
5.	Database of Extension Programmes	
6.	Seeds and Planting Material Database	

13.G. Details on Rain Water Harvesting Structure and micro-irrigation system : -Nil

PART XIV - FINANCIAL PERFORMANCE

14.A. Details of KVK Bank accounts

Bank account	Name of the bank	Location	Branch code	Account Name	Account Number	MICR Number	IFSC Number
With Host Institute	Central Bank of India	Hessaraghatta Bengaluru	3973	Current Account	185833018	560016024	CBIN 0283973
With KVK							

14.B. Utilization of KVK funds during the year 2016-17 (Rs.)

Sl. No.	Particulars	Sanctioned	Released	Expenditure
A	**Recurring Contingencies**			
1	**Pay & Allowances**	1,08,50,000		1,08,50,964
2	**Traveling allowances**	1,50,000		1,04,988
3	**Contingencies**			0
A	Stationery, telephone, postage & other expenditure on office running, publication of Newsletter & library maintenance	3,00,000		3,00,000
B	POL, repair of vehicles, tractor & equipments	3,00,000	1,41,07,102	3,00,000
C	Meals/refreshment for trainees	1,00,000		1,00,000
D	Training material	50,000		50,000
E	Frontline demonstration (except oilseeds & pulses + NFSM)	2,44,000		2,44,000
F	On farm testing	66,000		66,000
G	Training of extension functionaries	50,000		50,000
H	Maintenance of buildings	1,00,000		1,00,000
I	Establishment of Soil, Plant & Water Testing Laboratory	50,000		50,000
J	Library	5,000		5,000
K	Extension Activities	25,000		25,000
L	Integrated Farming System	30,000		30,000
M	Farmer's Field School	30,000		30,000
N	EDP/Innovative activities	30,000		30,000
O	Display Boards	10,000		10,000
	Total Recurring	**1,23,90,000**		**1,23,45,952**
B	**Non-Recurring Contingencies**			
	Works			
A	Demo Units -2 Nos.	8,00,000		8,00,000
B	Repairs & Renovation	4,00,000		3,93,181
C	Equipments including SWTL & Furniture			
D	Office Automation	3,00,000		3,00,000
E	Furnitures & Fixtures	3,00,000		3,00,000
F	Library			
	Total Non Recurring	**18,00,000**		**17,93,181**
C	**REVOLVING FUND70**	0		63,06,760
	GRAND TOTAL (A+B+C)	**1,41,90,000**	**1,41,07,102**	**2,04,45,893**

14. C. Status of revolving fund (Rs. in lakh) for the three years

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year
April 2014 to March 2015	24,36,261	49,60,840	39,34,815	34,62,286
Apr 2015 to Mar 2016	34,62,286	51,44,116	45,01,515	41,04,887
Apr 2016 to Mar 2017	41,04,887	70,14,523	63,06,760	48,12,650

15. Details of HRD activities attended by KVK staff during 2016-17

Name of the Staff	Designation	Title of the training programme	Institute where attended	Dates
N.Loganandhan	Sr. Scientist & Head	Cross learning at KVK of same zone	KVKs Salem, Tamil Nadu and Pathanamthitta, Kerala, CIAE, Coimbatore, TN	17-18, Nov, 2016
K.N.Jagadish	SMS-Agril. Extension	SREP for Filed Functionaries	SAMETI, UASB, Hebbal, Bengaluru	8th – 11th August 2016
		"Financial Inclusion, Agricultural Credit and Crop Insurance"	MANAGE, Rajendranagar, Hyderabad	20th -22nd February, 2017
Sri P.R.Ramesh	SMS-Soil Science	Dairy Farm and Milk Processing Plant Management	NDRI, Adugodi, Bengaluru	19th -24th , September , 2016
Dr.B.Hanumanthe Gowda	SMS-Plant Protection	IPS Meet - 2016	ICAR-NEHR, Barapani, Megalaya	10-12, January, 2017

14. Please include any other important and relevant information which has not been reflected above (write in detail).

- Bheema Fasal Yojane on 6th April 2016.
- Organic Vegetable Mela on 19th August 2016 at KVK, Hirehalli in collaboration with
- Millet mela on 22nd and 23 rd October 2016 at Tumakuru University in colloboration with ORDER, AVISHKAR NGO and Department of Agriculture, Tumakuru
- Dr. A.K. Singh , DDG, Agril. Extn & Hort., ICAR vested to KVK, Hirehalli on 7th January 2017.
- World Soil Day and Rabi Campaign 2016
- Regional Horticultural Fair at IIHR on 15 -19 January 2017
- XIII-Agricultural Science Congress: at UAS Bengaluru on 21-24 February 2017
- Walkathon 28th January 2017

- **SUMMARY FOR 2016-17**

I. TECHNOLOGY ASSESSMENT

Summary of technologies assessed under various crops

Thematic areas	Crop	Name of the technology assessed	No. of trials
Varietal Evaluation	Onion	Assessment of onion varieties for Rabi	3
	Redgram	Assessment of high yielding varieties of Redgram for disease tolerance	3
Integrated Crop Management	Coconut and flowers	Assessment of commercial flower crops in coconut based cropping system	3
Small Scale Income Generation Enterprises	Mushroom	Assessment of agricultural crop waste as substrate for oyster mushroom cultivation	3
Drudgery Reduction	Groundnut	Assessment of weeders as drudgery reducing equipments in groundnut	2 Groups
Total			**12**

Summary of technologies assessed under livestock : NIL

Summary of technologies assessed under various enterprises : NIL

Summary of technologies assessed under home science :

Thematic areas	Enterprise	Name of the technology assessed	No. of trials
IGA- Mushroom cultivation	Mushroom	Assessment of agricultural crop waste as substrate for oyster mushroom cultivation	5
Drudgery Reduction	Groundnut	Assessment of weeders as drudgery reducing equipments in groundnut	2 Groups

II. TECHNOLOGY REFINEMENT

Summary of technologies refined under various crops : NIL

Summary of technologies assessed under refinement of various livestock : NIL

Summary of technologies refined under various enterprises : NIL

Summary of technologies refined under home science : NIL

III. FRONTLINE DEMONSTRATION

Crops

Crop	Thematic area	Name of the technology demonstrated	No. of KVKs	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters		*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
						Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Cereals																		
Millets	Drought Mitigation	Management of soil surface crust in red soils in finger millet		10	5	11.9	8.8	35.2	Bulk Density of Soil- g/cc -1.66	1.75	24,950	35,700	10,750	1.4	22,500	26,400	3,900	1.1
Oilseeds		Demonstration of KCG-6 Groundnut Variety under NMOOP		70	28	2.65	2.46	7.7	Pods per plant-Nos.-7.65	7.07	15,000	13,025	-1975	0.86	15,000	12,550	-2,975	0.83
Pulses	Variety introduction	Enhancement of Pigeon pea yield through introduction of BRG-5 under NFSM		50	20	2.04	1.55	31.61	Pods per plant-Nos.-20.3	15.52	8,400	10,200	1,800	1.21	9,200	7,750	-1,450	0.84
Vegetables	ICM	Integrated crop Management in Tomato		3	1	748	662	12.9	Fruit Weight-Gm :88.4	56.5	73,450	3,36,600	2,63, 150	4.58	83,980	2,97,900	2,13,920	3.54
	ICM	Integrated crop Management in Onion		10	4	312	245	27.5	Bulb weight-gram: 65.4	45.2	1,00,000	1,56,000	56,000	1.56	1,00,00	98,000	-2,000	0.98
Flowers	Variety introduction	Integrated Crop Management in China Aster		5	1	44.5	35.2	26.42	Flowers per plant-Nos.:42.2	32.5	35,250	1,33,500	98,250	3.79	37,900	1,05,600	67,700	3.11
		Integrated Crop Management in Marigold		5	0.4	56	46.6	20.17	Flowers per plant-Nos.:58.5	42	38,750	1,79,200	1,40,450	4.6	36,780	1,39,800	1,03,020	3.8
	ICM	Integrated Crop Management in Jasmine		5	0.5	66.45	40.89	62.50	Mite Infection-%:8.80	58.44	89,456	33,260	2,42,804	3.71	97, 245	2,04,460	1,07,214	2.1
Ornamental																		
Fruits	INM	Integrated Crop Management in Pomegranate		5	2	80.9	60.8	29.65	Fruit Blight -%::8.30	28.61	1,29,806	5,35,560	4,05,754	4.12	1,46,028	4,12,800	2,66,771	2.82

	PHT	Improved practices of production and post - harvest in Mango		2 Groups	10													Ongoing
Medicinal and aromatic		Usage of Arka Microbial Consortium in Betelvine		10	2	2.8 lakh/acre	2.3 lakh/acre	21.7	foot rot disease-(%):10.8	26.3	38,500	70,400	34,040	1.8	37,000	46,050	11,500	1.2
	ICM	Integrated Crop Management in Coconut		10	2	6,420 Nos /ha	5,906 Nos /ha	8.7	Stem Bleeding Incidence-%:4.5	13	33,500	70,620	37,120	2.1	31,750	64,966	33,216	2.0
	Imtercropping	Areca nut + French bean intercropping system		5	1	11.2 36	10.7 -	-	Pods per plant-Nos.:36.2	-	72,950 16,250	2,24,000 54,000	1,51,050 37,750	3.32	72,950	2,14,000	1,41,050	2.93
	Total																	

Livestock :NIL

Fisheries : NIL

Other enterprises : NIL

Women empowerment : NIL

Farm implements and machinery : NIL

Other enterprises : NIL

Demonstration details on crop hybrids

Crop	Name of the Hybrid	No. of farmers	Area (ha)	Yield (kg/ha) / major parameter			Economics (Rs./ha)			
				Demonst-ration	Local check	% change	Gross Cost	Gross Return	Net Return	BCR
Vegetable crops										
Tomato	Private hybrid	3	1	748	662	12.9	73,450	3,36,600	2,63, 150	4.58
Total		**3**	**1**	**748**	**662**	**12.9**	**73,450**	**3,36,600**	**2,63, 150**	**4.58**

IV. TRAINING PROGRAMME

Training of Farmers and Farm Women 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
Crop Production										
Integrated Farming	2	33	8	41	7	4	11	39	11	52
Soil Health and Fertility Management										
Soil fertility management	1	17	2	19	3	0	3	20	2	22
Soil and water testing	1	2	43	45	0	10	10	2	53	55
Home Science/Women empowerment										
Value addition	5	0	126	126	0	48	48	0	174	174
Bio-fertilizer production	1	22	2	24	6	1	7	28	3	31
Capacity Building and Group Dynamics										
Entrepreneurial development of farmers/youths	1	19	1	20	3	0	3	22	1	23
TOTAL	**11**	**93**	**182**	**275**	**19**	**63**	**82**	**111**	**244**	**355**

Training of Farmers and Farm Women 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
Horticulture										
a) Vegetable Crops										
Off-season vegetables	1	16	2	18	2	0	2	18	2	20
Cultivation of Fruit	2	68	14	82	8	3	11	76	17	93
Soil Health and Fertility Management										
Soil and water testing	4	104	24	128	34	7	41	138	31	169
Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	4	39	79	118	4	13	17	43	92	135
Agril. Engineering										
Post Harvest Technology	2	58	12	70	9	3	12	67	15	82
Plant Protection										
Integrated Pest Management	2	39	7	46	9	3	12	48	10	58
Integrated Disease Management	3	99	22	121	19	5	24	118	27	145
Others (Safe use of Pestcides)	1	11	19	30	2	7	9	13	26	39
Production of Inputs at site										
Mushroom production	1	26	4	30	1	1	2	27	5	32
TOTAL	**20**	**460**	**183**	**643**	**88**	**42**	**130**	**548**	**225**	**773**

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
Mushroom Production	6	72	85	157	14	18	32	86	103	189
Small scale processing	4	62	8	70	11	3	14	73	11	84
TOTAL	**10**	**134**	**93**	**227**	**25**	**21**	**46**	**159**	**114**	**273**

Training for Rural Youths including sponsored training programmes (off campus):Nil

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
Rejuvenation of old orchards	1	69	6	75	8	2	10	77	8	85
Production and use of organic inputs	1	70	10	80	3	3	6	73	13	86
Total	**2**	**139**	**16**	**155**	**11**	**5**	**16**	**150**	**21**	**171**

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

Sponsored training programmes conducted

S.No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	**Crop production and management**										
1.a.	Increasing production and productivity of crops	4	146	0	146	14	0	14	160	0	160
2	**Production and value addition**										
2.c.	Agro Forestry	1	32	0	32	3	0	3	35	0	35
3.	**Soil health and fertility management Balance use of fertilizers**										
4	**Production of Inputs at site**										
5	**Methods of protective cultivation**										
6	**Post harvest technology and value addition**										
7	**Others (pl.specify)**										
8	**Farm machinery**										
8.a.	Farm machinery, tools and implements	1	28	5	33	6	2	8	34	7	41
9.	**Livestock and fisheries**										
10	**Livestock production & management**										
11.	**Home Science**										
11.a	Household nutritional security	5	3	394	397	2	59	61	5	453	458
	Total	**11**	**209**	**399**	**608**	**25**	**61**	**86**	**234**	**460**	**694**

Details of sponsoring agencies involved

1.Department of Agriculture

2. Department of Horticulture

3. Coconut Development Board

4. State marketing Department

Details of Vocational Training Programmes carried out by KVKs for rural youth:Nil

V. EXTENSION PROGRAMMES

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Field Day	2	65	6	71
Kisan Mela	1	644	42	686
Kisan Ghosthi	1	222	16	238
Exhibition	6	2980	66	3046
Film Show	3	62	4	66
Method Demonstrations	6	192	12	204
Farmers Seminar//Workshop	3	158	20	178
Group meetings	1	20	2	22
Lectures delivered as resource persons	5	310		310
Newspaper coverage	10		-	
Radio talks	3		-	
TV talks	7		-	
Popular articles	3		-	
Extension Literature	5		-	
Advisory Services	378	2074	103	2177
Scientific visit to farmers field	18	30	44	74
Farmers visit to KVK	274	1248	156	1404
Diagnostic visits	74	180	5	185
Exposure visits	3	365	-	365
Ex-trainees Sammelana	-		-	
Soil health Camp	1	152	8	160
Celebration of important days (International Women Day)	4		-	
Any Other (Specify) Special day celebrations	2	88	-	88
Total	**810**	**8790**	**484**	**9274**

Details of other extension programmes

Particulars	Number
Extension Literature	3
News Letter	4
News paper coverage	8
Technical Articles	4
Technical Bulletins	3
Technical Reports	4
Radio Talks	3
TV Talks	7
Animal health amps (Number of animals treated)	0
Others (pl.specify)	-
Total	**36**

VI. PRODUCTION OF SEED/PLANTING MATERIAL

Production of seeds by the KVKs

Crop category	Name of the crop	Name of the variety (if hybrid pl. specify)	Quantity of seed (Kg)	Value (Rs)	No. of farmers to whom provided
Cereals (crop wise)	Ragi	ML 365	400	16,000	80
	Ragi	ML 322	30	1,200	3
	Brown top millet	Local variety	500	40,000	-
Pulses	Red gram	BRG-5	134	20,100	50
Vegetable crops	Palak	Arka Anupama	189	75,600	120
	Cowpea	Arka Garima	40	10,000	21
	Tomato	Arka Meghali	20	40,000	40
	Amaranthus	Arka Suguna	50	25,000	52
	Onion	Arka Kalyan	50	75,000	20
	Onion	Bhema Shakti	200	3,00,000	-
	Radish	Arka Nishant	31	12,400	15
	French bean	A Suvidha	400	1,00,000	-
	Veg Seed kit (No.)	10 different vegetables	1,850	1,85,000	1,500
Fodder Crops	Sunhemp	Local variety	240	16,800	2
Total				**9,17,100**	

Production of planting materials by the KVKs

Crop category	Name of the crop	Name of the variety (if hybrid pl. specify)	Number	Value (Rs.)	No.of farmers to whom provided
Plantation	Areca nut	Hirehalli tall	91,000	27,30,000	41
		Sprouts	3,000	15,000	2
	Coconut	Arsikere tall	2,250	1,80,000	10
Fruits	Mango	Alphanso	1,950	78,000	20
	Guava	Pink flesh, AK	550	22,000	10
	Amla	NA-4,5,7	260	10,400	24
	Lime	Seedless	135	5,600	8
	Pomello	Devanahalli	120	2,400	8
	Lime	Kazi Lime	250	5,000	5
	Sapota	Cricket Ball	250	10,000	15
	Tamarind	PKM-1	1,770	70,800	62
Others seedlings	Rose apple, Fig, Ramphal, Custard apple	-	550	5,500	30
Total			**1,02,085**	**31,34,700**	

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg	Value (Rs.)	No. of Farmers
Micro Nutrient Fertilizers	Banana Special	8,165	12,24,750	621
	Vegetable Special	7,681	11,52,150	630
	Mango Special	4,551	6.82,650	363
	Citrus Special	1,069	1,60,350	76
Bio-pesticide	Neem Soap	3,542	5,31,300	684
	Pongamia Soap	1,145	1,40,835	381
	Sealer cum Healer	306	45,900	117
Bio Fertilizers	Arka Microbial consortium	2,943	4,41,450	410
Bio Agents	Mango fruit fly traps/Lures (Nos.)	23,159	4,63,180	1,260
Others	Amla Candy	76	22,800	
	Amla Squash (Lit)	125	16,250	
	Mushroom Spawn	125	10,000	
	Ragi Malt	60	12,000	
Total			**49,03,615**	

Production of livestock and related enterprise materials :Nil

VII. DETAILS OF SOIL, WATER AND PLANT ANALYSIS 206-17

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages	Amount realized (Rs.)
Soil Samples	3,668	2890	1,768	3,66,800
Water Samples	2,826	1260	952	1,41,300
Plant samples	35	15	5	3,500
Total	**6,529**	**4,165**	**2,725**	**5, 11,600**

VIII. SCIENTIFIC ADVISORY COMMITTEE

Number of SACs conducted : 01
2.2.2016

IX.NEWSLETTER

Number of issues of newsletter published : 03
April – June, 2016 July –September ,2016 October –December ,2016

X. RESEARCH PAPER PUBLISHED

Number of research paper published : 06
1. Impact of Frontline demonstrations in adoption of production Technology and economics of Tomato in Farmers' Field of Tumakuru District. ***The Asian Journal of Horticulture*****, Volume-2, Issue-2, December 2016 Pp 349-354.**
2. Effect of Black Polythene Mulches on Growth and Yield of Green Chilli (Capsicum annuum) in Tumkur District Karnataka. *Nature Environment and pollution Technology* ***An International Quarterly Scientific Journal*** **–Vol.15 (1): PP.201-204.**
3. Short and Medium Duration Varieties of Cereals and Millets to Mitigate Monsoon Vagaries in Rainfed Agriculture, **Indian Journal of Ecology (2017) 44 (Special Issue- 4)**
4. Influence of farm ponds towards imparting climate resilience to rainfed farming: Success from NICRA villages, XIII Agricultural Science Congress-2017: Climate Smart Agriculture – 21-24, Feb 2017.
5. Climate smart Agriculture – Influence of in-situ moisture conservation practices on the performance of field crops, XIII Agricultural Science Congress-2017: Climate Smart Agriculture – 21-24, Feb 2017
6. Energy Consumption and Sensitivity Analysis of Rainfed Chickpea Production in Vertisols of Semi-arid Karnataka, Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci. DOI 10.1007/s40011-016-0802-3.

XI. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM:-Nil

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