ICAR-ATARI, Pune
DETAILS OF ANNUAL PROGRESS REPORT OF KVK RAJKOT-II DURING 2017-18
(1st April 2017 to 31st March 2018)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address with PIN code	Telephone		E mail	Website address & No. of visitors (hits)
Krishi Vigyan Kendra, Junagadh Agricultural University, Pipalia (Dhoraji) Dist: Rajkot, Gujarat-360410	Office	FAX	kvkpipalia@jau.in	www.jau.in
	02824-292584	---		

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

Address	Telephone		E mail	Website address
	Office	FAX		
Junagadh Agricultural University, Junagadh (Gujarat)	0285-2672080-90	0285-2672653	dee@jau.in	www.jau.in

1.3. Name of the Senior Scientist and Head with phone & mobile no.

Name	Telephone / Contact		
	Office	Mobile	Email
Dr. N. B. Jadav	**02824-292584**	09924012649	nb_jadav@yahoo.com

1.4. Year of sanction: March, 2012

1.5. Staff Position (as on March 31, 2018)

				If Permanent, Please indicate			If Temporary, pl. indicate the consolidated amount paid (Rs./month)
Sl. No.	Sanctioned post	Name of the incumbent	Discipline	Current Pay Band	Current Grade Pay	Date of joining	
1.	Senior Scientist and Head	Dr. N. B. Jadav	Ext.Edn.	37400-67000	9000	18.08.06	
2.	Subject Matter Specialist	S. V. Undhad	Pl.Prot.	15600-39100	6000	27.03.15	
3.	Subject Matter Specialist	Dr. V. S. Prajapati	AH	15600-39100	6000	01.04.15	
4.	Subject Matter Specialist	A.R Parmar	Horti	15600-39100	6000	17.01.17	
5.	Subject Matter Specialist	P.S Sharma	HS	15600-39100	6000	19.01.17	
6.	Subject Matter Specialist	Vacant	Agronomy	-	-	-	-
7.	Subject Matter Specialist	Vacant	Extension	-	-	-	-
8.	Programme Assistant	F. P. Kargatiya	M.Sc. (Agri)	9300-34800	-	07.04.15	38090
9.	Computer Programmer	R. G. Panseriya	Com. Operater	9300-34800	4400	31.12.13	-
10.	Farm Manager	N. M. Pithiya	B.Sc.(Agri)	9300-34800	-	01.04.15	38090

11.	Accountant/Superintendent	K. G. Dhaduk	Accounting & Admins.	9300-34800	4400	12.06.13	-
12.	Stenographer	K. R. Yadav	Steno. Grade III	5200-20200	2400	06.02.14	-
13.	Driver 1	Vacant	-	-	-	-	-
14.	Driver 2	Vacant	-	-	-	-	-
15.	Supporting staff 1	Vacant	-	-	-	-	-
16.	Supporting staff 2	L. B Chavda	-	5200-20200	1650	13.12.89	

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1	Under Buildings	-
2.	Under Demonstration Units	-
3.	Under Crops	20.00
4.	Horticulture	-
5.	Pond	-
6.	Others if any	-
	Total	**20.00**

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Year	Plinth area (Sq.m)	Expenditure (Rs.)	Starting year	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	-	-	-	-	-	-	-
2.	Farmers Hostel	-	-	-		-	-	-
3.	Staff Quarters (6)	-	-	-	-	-	-	-
4.	Demonstration Units (2)	-	-	-	-	-	-	-
5	Fencing	-	-	-	-	-	-	-
6	Rain Water harvesting system	-	-	-		-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	-	-	-	-	-	-	-
9	ICT lab	-	-	-	-	-	-	-
10	Other	-	-	-	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep (Bolero)	2013	661107	49521	Working
Mahindra Tractor	2013	565000	2060 hrs	Working
Mini Tractor (Mahindra)	2016	248000		Working

C) Equipments & AV aids

Name of the equipment / Implements	Year of purchase	Cost (Rs.)	Present status
Cultivator (9 tine)	2013	19000	Working
Blade Harrow	2013	11500	Working
Automatic seed drill	2016-17	37619	Working
Mini tractor drawn spray pump	2016-17	69500	Working
Rotavator	2016-17	91245	Working
Reversible MB Plough	2016-17	37500	Working
Pusa STFR meter kit (WST-312P)	2016-17	80600	Working
Mrida parikshak soil testing mini lab	2016-17	90300	Working

1.8. Details SAC meeting conducted in the year (6th SAC)

Date	Name and Designation of Participants	Salient Recommendations	Action taken
26/03/2018	Dr. A.R.Pathak Hon. Vice Chancellor, JAU, Junagadh.	1. To give component demonstration instead of seeds in cumin in FLD. 2. Impart off campus training related to market intelligence, zero budget management in farming. 3. Add training related to protected cultivation to net house and green house owner farmers. 4. Impart more training related to value addition in groundnut with modern way of cooking. 5. Use newly released variety of wheat GW-463/GW-451 instead of GW-366 in FLDs. 6. Impart more training related to importance of artificial insemination in cattle. 7. Add training on prevention and control of mastitis in cattle and buffalo. 8. Add green leafy vegetable seed as input of kitchen gardening FLDs. 9. Add training related to kitchen waste decomposition for kitchen gardening.	Suggestion accepted and incorporated in action plan
	Dr.A.M.Parakhia Director of Extension Education, JAU, Junagadh		
	Dr. B.B. Kabaria Senior Scientist & Head, KVK, JAU, Targhadia		
	Dr. G. S. Sutariya, Research Scientist (DFRS), JAU Targhadia		
	Dr. D.S. Hirpara Senior Scientist & Head, KVK, JAU, Morbi		
	Shri. R. R.Tilava, DAO, District Panchayat, Rajkot		
	Dr.M.K. Kaneria Dy.D.A.H. District Panchayat, Rajkot		
	Dr. G. R. Sharma, Principal, Polytechnic in Agri. Engg., Targhadia		
	Shri S.K. Tiwari NHRDF, Rajkot		
	Shri Vinay Kumar NHRDF, Rajkot		
	Shri D.B. Gajera DAO, District Panchayat, Morbi.		
	Shri. G.J. Kataria Asst. Dir.of Horti. Rajkot		
	Shri. R. J. Gohil Dir. D.R.D.A. Morbi		
	Shri Ashit K. Tank Horti.Officer Rajkot		
	Shri C.M. Vaghasiya Dy. Manager Rajkot Dairy		
	Dr. Hemangi D. Maheta SMS (Home-Science) KVK Morbi		
	Dr. J.N. Thaker SMS- KVK Jamnagar		
	Dr. D.A. Saradava SMS-KVK Morbi		
	Shri A.B. Dabhi A.O. KVK Targhadia		
	Dr. J.R. Choudhary SMS- KVK- Targhadia		
	Shri D.P. Sanepara Scientist KVK - Targhadia		
	Dr. M.M. Tajpara Scientist KVK- Targhadia		
	Smt. H.A. Manvar Scientist (Home Science), KVK, JAU, Targhadia		
	Nirpat Singh Reliance Foundation Jasdan		
	Shri Hiteshbhai Vajubhai Mathukiya Progressive Farmer		
	Shri Harshukh R. Mathukiya Progressive farmers Thanagalol, Ta: Jetpur Dist:Rajkot		
	Shri Chetanm Vajubhai Satasia Progressive farmers		

	Thanagalol, Ta: Jetpur Dist:Rajkot		
	ShriAshwin Bachubhai Trada Progressive farmers Dudhivadar, Ta:Jamkandorna Dist:Rajkot		
	Shri Jentibhai Popatbhai Babaria Progressive farmers Jasapar, Ta:Jamkandorna Dist:Rajkot		
	Shri Navanitbhai K. Babaria Progressive farmers Jasapar, Ta:Jamkandorna Dist:Rajkot		
	Shri Arvindbhai Bhimjibhai Paria Progressive farmers Gadhaka Dist:Rajkot		
	Shri Champaksinh Chandubha Jadeja Progressive farmers Dhebachda, Dist:Rajkot		
	Shri Rajeshbhai Hirpara Progressive farmers Jasapar, Ta:Jamkandorna Dist:Rajkot		
	Shri Shaileshbhai B. Limbasia Progressive farmers Dungarka, Dist:Rajkot		
	Shri Jethalal Amarsibhai Jetpariya Progressive farmers		
	Shri N.M. Pithiya A.O. KVK Pipalia, JAU, JND		
	Ms. Pinki S. Sharma Scientist (Home Science), KVK, JAU, Pipalia		
	Shri A.R.Parmar Scientist KVK (Horticulture), JAU, Pipalia		
	Dr. V. S. Prajapati Scientist (Animal Husbandry), KVK, JAU, Pipalia		
	Dr. N.B.Jadav, Senior scientist & Head, KVK, Pipalia		

2. DETAILS OF DISTRICT

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

S. No	Farming system/enterprise
1	Groundnut-Wheat/Coriander, Cumin, Garlic, Cotton-Summer Groundnut/Pulse crop/Sesame
2	Live stock
3	Farm waste management specially cotton stalk
4	Fruit and vegetable preservation
5	Value addition in Groundnut and wheat

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

a) Soil type

Sl. No.	Agro-climatic Zone	Characteristics
Zone–VI	North Saurashtra	The influence area of North Saurashtra Agro climatic Zone is spread among five districts (35.2 lakh Ha). Out of total area 73.40 per cent area falls under arid and semi-arid region. The soils of this zone are shallow to moderately deep. The soils of Rajkot district are medium black and low in their availability of nitrogen while medium phosphorus and high in available potash. Monsoon commences usually by the end of June and withdraws by middle of September. Average annual rainfall of districts is 1141.2 mm.
Zone-VII	South Saurashtra	The influence area of South Saurashtra Agro climatic Zone is spread among four districts. (Part of Rajkot, Bhavnagar, Amreli and whole district of Junagadh). Type of soil is shallow medium black calcareous soils. Soil are medium to high in nitrogen content, phosphorus low and potash high. Average annual rainfall of the zone is 625-750 mm.

b) Topography

S. No.	Agro ecological situation	Characteristics
1	Situation No. 2	Medium Black Soil with 500-600 mm Rainfall
2	Situation No.4	Shallow Black Soil with 500-600 mm Rainfall
3	-	Shallow medium black soil with 620-750 mm Rainfall

2.3 Soil Types

S. No	Soil type	Characteristics	Area in ha
1	Clay to clay loam	Medium black calcareous soil	
2	Sandy clay loam to clayey	Well drained soil with rapid permeability	
3	Sandy to sandy 10 cm calcareous	Well drained soils	
4			

2.4. Area, Production and Productivity of major crops cultivated in the district (2017-18)

S. No	Crop	Area (ha)	Production (MT.)	Productivity (Qt./ha)
1	Groundnut	4303	137950	32.06
2	Sesamum	63	410	6.49
3	Castor	63	1680	26.61
4	Cotton	2770	150680	9.25
5	Wheat	1444	61030	42.27
6	Green gram	735	1470	2.00
7	Coriander	2112	3168	1.50
8	Cumin	56	500	8.90
9	Garlic	143	8730	61.00
10	Chickpea	574	1292	2.25

Source: District agriculture department.

2.5. Weather data (2017-18)

Month	Rainfall (mm)	Temperature 0 C		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
April	0	-	-	-	-
May	0	-	-	-	-
June	79	-	-	-	-
July	429	-	-	-	-
August	124	-	-	-	-
September	166	-	-	-	-
October	0	-	-	-	-
November	0	-	-	-	-
December	0	-	-	-	-
January	0	-	-	-	-
February	0	-	-	-	-
March	0	-	-	-	-
Total	798	-	-	-	-

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

Category	Population	Production	Productivity
Cattle			
Crossbred			
Indigenous	452	3326.90	
Buffalo	362	5284.70	
Sheep	263.40	266.81(wool)	
Goats	197	231.24	
Pigs			
Crossbred			
Indigenous			
Rabbits			
Poultry			
Hens		3.92	
Desi	7.8	32.52	
Improved	13.4		
Category		Production (Q.)	Productivity
Fish (Reservoir)			

2.7. Details of Operational area / Villages

Taluka	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
Dhoraji	Patanvav	Groundnut, Cotton, Sesame, Wheat, Cumin, Chickpea, Garlic and onion. Enterprise are dairy business, vermicomposting	-Heavy infestation of pink bollworm in cotton -sucking pest in all crops -Stem rot disease in groundnut -Sesame wilt - Less area under horticultural crops -Infertility in livestock	- IPM, IDM and INM in major crops - Motivate the farmers for horticulture crop - To create awareness for value addition - Popularization of MIS Create awareness of artificial insemination
	Nani Parabdi			
Jetpur	Amrapur			
	Mandlikpur			
Jamkandorna	Jashapar			
	Nani Dudhivadar			
	Sanala			
Upleta	Nagvadar			
	Talangna			
Gondal	Daliya			
	Shemla			
	Bhojpara			

2.8. Priority thrust areas:

Sl. No	Crop/ Enterprise	Thrust area
1.	Groundnut, Sesame etc.	Increase productivity of crops by adopting recommended practices in integrated pest management & IDM (Management of white grub and stem rot)
2.	Cotton	-Integrated pest management (management of pink bollworm in Bt. cotton) & INM in cotton -Recycling of cotton stalk (Popularizing of cotton shredder)
3.	Coriander, Sesame, etc.	Increasing the productivity of major crops by adopting recommended technologies, newly release variety and to create awareness of value addition
4.	Cumin	Integrated disease management
5.	Farm waste	Recycling of farm waste through composting, Vermicomposting, green manuring, etc.
6.	Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques
7.	Farm Women	Farm women empowerment by training in value addition, handicrafts, and small scale enterprises
8.	Horticulture (Papaya, Pomegranate, Chilly etc.)	Postharvest technology and value addition in fruit and vegetable, INM, canopy management in orchard
9.	Animal Husbandry	Increasing the productivity of livestock animals by adopting scientific practices and to create awareness about clean milk production

3. TECHNICAL ACHIEVEMENTS

3.1. 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
6	6	36	36	15	17	266	335

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
41	52	1135	1785	984	1809	12806	12791

Seed Production (Qtl.)		Planting materials (Nos.)	
5		6	
Target	Achievement	Target	Achievement
50	52.79	500	1250

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
Nil	Nil	5000	7340

3.1. B. Operational areas details during 2017-18

S.No.	Major crops & enterprises being practiced in cluster villages	Prioritized problems in these crops/ enterprise	Extent of area (Ha/No.) affected by the problem in the district	Names of Cluster Villages identified for intervention	Intervention (OFT, FLD, Training, extension activity etc.)*
1	Groundnut	White grub infestation	-	All adopted village	OFT conducted -1 FLDs-10, Training, Campaign Diagnostic visit
2	Groundnut	Low yield and infestation of stem rot	-	All adopted village	FLDs-10 Training Advisory service
3	Groundnut	Stem rot infestation	-	All adopted village	FLDs : 10 Training Advisory service Provide technological product
4	Cotton	Pink Bollworm Infestation	-	All adopted village	FLDs : 50, Training Diagnostic visit, Campaign Provide technological product
5	Cotton	Nutrient deficiency	-	All adopted village	FLDs : 10 Training Advisory service
6	Wheat	Lack of knowledge about INM and Biofert.	-	All adopted village	OFT-1 Training, Advisory service Provide technological product
7	wheat	Low yield of wheat	-	All adopted village	FLD-10 (GW-366) Training, Advisory Service
8	cumin	Wilt incidence in cumin	-	All adopted village	FLDs : 10 (GC-4) Training Advisory service
9	Chick pea	Low yield of chick pea	-	All adopted village	FLDs : 10 (GJG-3) Training Diagnostic visit Advisory Service
10	Chilli	Fungal Disease	-	All adopted village	OFT -1 Training
11	Brinjal Papaya Okra Onion-	Low Yield	-	All adopted village	FLDs Brinjal (GJHB-4, GJLB-4) Papaya (GJP-1) Okra (GJOH-4) Onion (GJRO-11) Training, Advisory service
12	Nutritional security	Unaware about the concept of kitchen gardening to combat balanced Nutrition with easy availability	-	All adopted village	FLDs : 10 Training
13	Nutritional Security	Less knowledge regarding the importance of solar cooker	-	All adopted village	OFT :1 Training
14	Buffalo	Lack of knowledge about nutrition management	-	All adopted village	OFT:1 Training Advisory service
15	Cattle	Lack of knowledge about nutrition management in cattle	-	All adopted village	OFT:1 Training Diagnostic visit Advisory Service
16	Cattle	Lack of knowledge about nutrition management in cattle	-	All adopted village	FLDs: 10 Training

3.2. Technology Assessment and Refinement

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
Integrated Nutrient Management	-	-	-	-	-	-	-	-	-	-
Varietal Evaluation	-	-	-	-	-	-	-	-	-	-
Integrated Pest Management	-	-	1	-	-	-	-	-	-	-
Integrated Crop Management	-	-	-	-	-	-	-	-	-	-
Integrated Disease Management	-	-	-	-	1	-	-	-	-	1
Integrated Nutrient Management	1	-	-	-	-	-	-	-	-	1
Small Scale Income Generation Enterprises	-	-	-	-	-	-	-	-	-	-
Weed Management	-	-	-	-	-	-	-	-	-	-
Resource Conservation Technology	-	-	-	-	-	-	-	-	-	-
Farm Machineries	-	-	-	-	-	-	-	-	-	-
Integrated Farming System	-	-	-	-	-	-	-	-	-	-
Seed / Plant production	-	-	-	-	-	-	-	-	-	-
Value addition	-	-	-	-	-	-	-	-	-	-
Drudgery Reduction	-	-	-	-	-	-	-	-	1	1
Storage Technique	-	-	-	-	-	-	-	-	-	-
Mushroom cultivation	-	-	-	-	-	-	-	-	-	-
Total	1	1	-	-	1		-	-	1	4

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

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vege	Fruits	Flower	Plantation crops	Tuber Crops	T
Integrated Nutrient Management	-	-	-	-	-	-	-	-	-	-
Varietal Evaluation	-	-	-	-	-	-	-	-	-	-
Integrated Pest Management	-	-	-	-	-	-	-	-	-	-
Integrated Crop Management	-	-	-	-	-	-	-	-	-	-
Integrated Disease Management	-	-	-	-	-	-	-	-	-	-
Small Scale Income Generation Enterprises	-	-	-	-	-	-	-	-	-	-
Weed Management	-	-	-	-	-	-	-	-	-	-

Resource Conservation Technology	-	-	-	-	-	-	-	-	-	-
Farm Machineries	-	-	-	-	-	-	-	-	-	-
Integrated Farming System	-	-	-	-	-	-	-	-	-	-
Seed / Plant production	-	-	-	-	-	-	-	-	-	-
Value addition	-	-	-	-	-	-	-	-	-	-
Drudgery Reduction	-	-	-	-	-	-	-	-	-	-
Storage Technique	-	-	-	-	-	-	-	-	-	-
Mushroom cultivation	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-

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

Thematic areas	Cattle	Poultry	Piggery	Rabbitry	Fisheries	TOTAL
Evaluation of Breeds						
Nutrition Management	2	-	-	-	-	2
Disease of Management	-	-	-	-	-	-
Value Addition	-	-	-	-	-	-
Production and Management	-	-	-	-	-	-
Feed and Fodder	-	-	-	-	-	-
Small Scale income generating enterprises	-	-	-	-	-	-
TOTAL	2	-	-	-	-	2

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

Thematic areas	Cattle	Poultry	Piggery	Rabbitry	Fisheries	TOTAL
Evaluation of Breeds	-	-	-	-	-	-
Nutrition Management	-	-	-	-	-	-
Disease of Management	-	-	-	-	-	-
Value Addition	-	-	-	-	-	-
Production and Management	-	-	-	-	-	-
Feed and Fodder	-	-	-	-	-	-
Small Scale income generating enterprises	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

B. Achievements on technologies Assessed and Refined

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)
Integrated Nutrient Management		Use of Bio-Fertilizer	3	3	1.2
Varietal Evaluation					
Integrated Pest Management		Integrated Pest Management	3	3	1.5
Integrated Crop Management					

Integrated Disease Management		Integrated Disease Management	3	3	1.2
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology					
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction		Comparison of solar Cooker with traditional cooking system	3	3	0
Storage Technique					
Mushroom cultivation					
Total			12	12	3.9

B.2. Technologies Refined 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)
Integrated Nutrient Management	-	-	-	-	-
	-	-	-	-	-
Varietal Evaluation	-	-	-	-	-
	-	-	-	-	-
Integrated Pest Management	-	-	-	-	-
	-	-	-	-	-
Integrated Crop Management	-	-	-	-	-
	-	-	-	-	-
Integrated Disease Management	-	-	-	-	-
	-	-	-	-	-
Small Scale Income Generation Enterprises	-	-	-	-	-
	-	-	-	-	-
Weed Management	-	-	-	-	-
	-	-	-	-	-
Resource Conservation Technology	-	-	-	-	-
	-	-	-	-	-
Farm Machineries	-	-	-	-	-
	-	-	-	-	-
Integrated Farming System	-	-	-	-	-
	-	-	-	-	-
Seed / Plant production	-	-	-	-	-
	-	-	-	-	-
Value addition	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-

Drudgery Reduction	-	-	-	-	-
Storage Technique	-	-	-	-	-
	-	-	-	-	-
Mushroom cultivation	-	-	-	-	-
	-	-	-	-	-
Total	-	-	-	-	-

B.3. Technologies assessed under Livestock and other enterprises

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Evaluation of breeds				
Nutrition management	Cattle	Nutritional management of milch animals	1	15
	Buffalo	Nutritional management of milch animals	1	9
Disease management	-	-	-	-
Value addition	-	-	-	-
Production and management	-	-	-	-
Feed and fodder	-	-	-	-
Small scale income generating enterprises	-	-	-	-
Total			2	24

B.4. Technologies Refined under Livestock and other enterprises

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Evaluation of breeds	-	-	-	-
Nutrition management	-	-	-	-
Disease management	-	-	-	-
Value addition	-	-	-	-
Production and management	-	-	-	-
Feed and fodder	-	-	-	-
Small scale income generating enterprises	-	-	-	-
Total	-	-	-	-

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
Wheat	Irrigated	Low yield due to improper nutrient management	Assessment of response of bio fertilizer on wheat yield	3	INM	Yield	Yield	Yield Net returns and B:C ratio was higher under intervention and recommended practices then farmer practices	Use of bio-fertilizer increases crop yield also they had started using bio-fertilizer in other crops	-	-
Groundnut	Rainfed	Low yield from groundnut cultivation	Assessment of management of white grub in Groundnut	3	IPM	Yield & White grub infestation	Yield & White grub infestation	Yield Net returns and B:C ratio was higher under intervention and recommended practices then farmer practices	Seed treated with Chlorpyriphos @ 25 ml per kg was better effective for management of white grub as compared to other insecticide and gave higher yield with less cost of cultivation		

Chilli	Irrigated	Low yield from Chilli cultivation due to wlit	Assessment of effect of the fungicides on disease of chilli	3	IDM	Yield & Wilt disease incidence		Yield Net returns and B:C ratio was higher under recommended practices and farmer practices then intervention	Reduce wilt disease incidence and increase the crop yield		

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
Farmers practices: Application of only DAP and Urea in diff doses	Junagadh Agricultural University	4417	kg/ha	17559	1:1.32
Recommended practices : Recommended dose of ferti. RDF -120-60-0		4708	kg/ha	22298	1:1.41
Intervention: Seed treatment with Azatobacter & PSB culture (250g/10seed kg) + 75 RDF		5542	kg/ha	35540	1:1.65
Farmer's practice : Chloropyriphos @ 4 lit./ha at the time of attack	Junagadh Agricultural University	1750	kg/ha	35226	1:1.64
Recommended practice: 1.Seed treatment with Chloropyriphos @ 25 ml/kg 2. Application of Chloropyriphos @ 4 lit./ha 3. Spraying the trees on bund with lambda cyalothrin 1.5 ml/1 lit water		3000	kg/ha	72113	1:2.30
Intervention: 1. Application of carbofuran 3G@ 40kg/ha at time of sowing 2.Spraying the trees on bund with lambda cyalothrin 1.5 ml/1 lit water 3.Application of UREA @ 50 kg/ha with irrigation water at time of infestation.		2375	kg/ha	52038	1:1.96

Farmer practices: Two spray of Hexaconazole @ 1ml/liter of water. at 15 days interval	Junagadh Agricultural University	8458	kg/ha	-	1:1.84
Recommended practices: Seed treatment of carbendenzim @ 3gm/kg seed + + soil application of Trichoderma @2.5 kg/ha at 15 DAS + soil drenching of C.O.C. @ 40 gm./10 ltr.of water during disease infestation		10208	kg/ha	-	1:2.33
Intervention: Two spray of Hexaconazole @ 1ml/liter of water. At 15 days interval + soil drenching of C.O.C. @ 40 gm./10 ltr.of water during disease infestation		8208	kg/ha	-	1:1.78

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

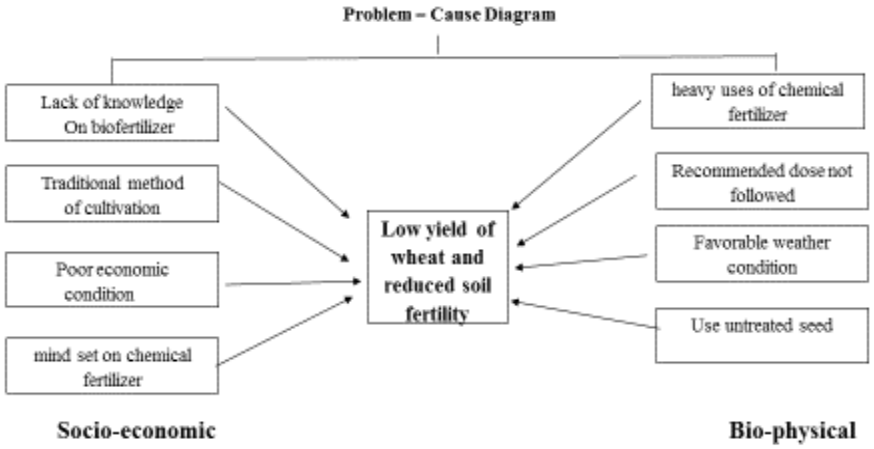
OFT-1 Assessment of response of Bio fertilizers to wheat yield

1. **Title of OFT:** - Assessment of Response of Bio fertilizers to wheat yield
2. **Introduction: -**

In Rabi season the area of wheat cultivation in Rajkot district is higher after coriander crops as compare to other crops. due to canal facilities in this area the production and productivity is higher.

But the continious use of chemical fertilizer in this crops the productivity is decreasing day by day and cost of cultivation also gets increased. High uses of chemical fertilizer in crops again reduces soil fertility. In this situation the KVK decide to increase uses of biofertilizer to reduce cost of cultivation and also increase soil fertility as well as quality and quantity of wheat yield.

3. **Problem definition** : Reduce yield and soil fertility
4. **Problem cause diagram :**
5. **Intervening point** : Response of Bio fertilizers to wheat yield



6. **Crop** : Wheat
7. **Season/Year** : Rabi 2017-18
8. **Plot size** :- 0.4 ha
9. **No. of Replication:** 3 (Farmer)
10. **Cost** : Rs. 360 /-
11. **Source of technology:** Junagadh Agricultural University, Junagadh
12. **Treatments**:
13. **Farmer's practice :-** Application of only DAP & Urea in different doses
14. **Recommended practice :-** 120-60-0 NPK kg/ha
15. **Intervention:-** Application of Azatobacter & PSB culture (250g/10kg) + 75% of RDF
16. **Observations and results:**

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer
1	2	3	4	5	6	7	8	9	10
Wheat	Irrigated	Low yield due to improper nutrient management	Effect of bio fertilizer on wheat yield	3	Farmers practices: Application of only DAP and Urea in diff doses	Yield	Yield	Yield Net returns and B:C ratio was higher under intervent	-
					Recommended practices : Recommended dose of ferti. RDF - 120-60-0				

					Intervention: Seed treatment with Azatobacter & PSB culture (250g/10seed kg) + 75 RDF			ion and recommended practices then farmer practices	

Details	Production per unit in (Kg/ha)	Net Return (Profit) in Rs. / unit	BC Ratio
11	12	13	14
Farmers practices	4417	17559	1:1.32
Recommended Practices	4708	22298	1:1.41
Interventions	5542	35540	1:1.65

17. **Farmers' Perception:** Use of bio-fertilizer increases crop yield also they had started using bio-fertilizer in other crops

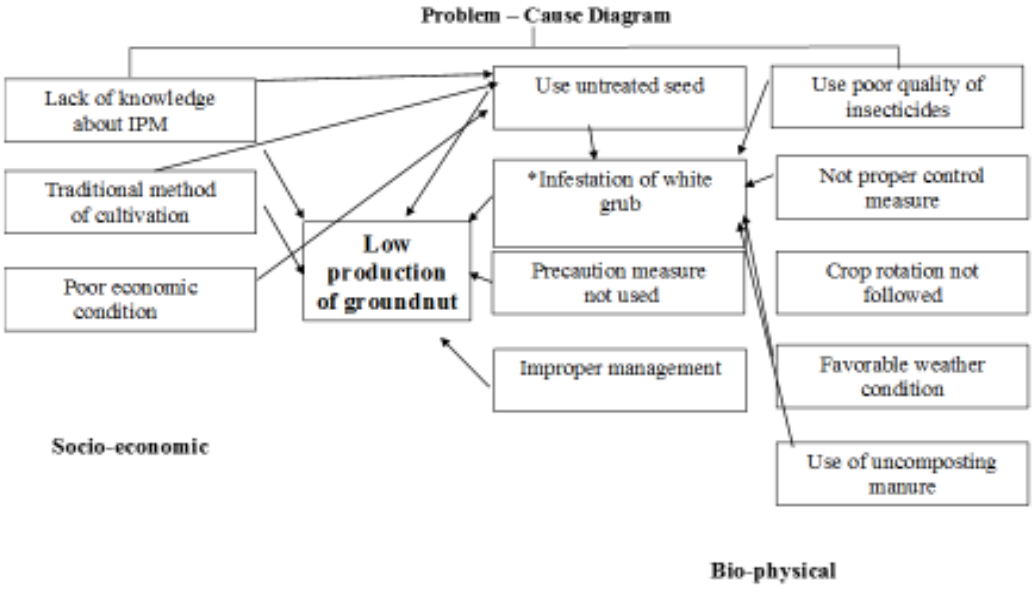
OFT:2

1. **Title:** Assessment Management of white grub in groundnut (On going)
2. **Title of OFT:** - Assessment of management of white grub in Groundnut
3. **Introduction: -**

The area under groundnut cultivation in Rajkot district is higher after cotton crops as compare to other crops. in this area groundnut crops are well suitable crops and gave higher production and productivity.

But since last two to three years this crops suffering from heavy infestation of white grub insect. This insect cause severe damage to groundnut crops and hence results in yield loss. It is difficult to manage this pest. Farmer spent lots of money for uses of insecticides for control of this insect but not proper control. Therefore, it is very necessary to management through different possible solution of white grub in groundnut.

4. **Problem definition** : Low yield from groundnut cultivation
5. **Problem cause diagram :**



6. **Intervening point** : Management of white grub in groundnut
7. **Crop** : Groundnut
8. **Season/Year** : Kharif-17
9. **Plot size** :- 0.4 ha
10. **No. of Replication:** 3 (Farmer)
11. **Cost** : Rs. 4575 /-

12. Source of technology: Junagadh Agricultural University, Junagadh

13. Treatments:

Farmer's practice : Chloropyriphos @ 4 lit./ha at the time of attack

Recommended practice: 1.Seed treatment with Chloropyriphos @ 25 ml/kg
2. Application of Chloropyriphos @ 4 lit./ha
3. Spraying the trees on bund with lambda cyalothrin 1.5 ml/1 lit water

Intervention: **1.** Application of carbofuran 3G@ 40kg/ha at time of sowing
2. Spraying the trees on bund with lambda cyalothrin 1.5 ml/1 lit water
3. Application of UREA @ 50 kg/ha with irrigation water at time of infestation.

14. Observations :

Results:

Details	Yield (Kg/ha)	Net profit	BCR
Farmer's practices	1750	35226	1:1.64
Recommended practices	3000	72113	1:2.30
Intervention	2375	52038	1:1.96

Economic Impact (Continuation of previous table)

Average Cost of cultivation (Rs./ha)			Average Gross Return (Rs./ha)			Average Net Return (Profit) (Rs./ha)			BCR
F P	R P	Int	F P	R P	Int	F P	R P	Int	1:2.30
55087	55387	54212	90313	127500	106250	35226	72173	52038	

White grub infestation (Observation)			
Treatments	Percent plant damage per 1 meter row length		Percent pod damage per plant
	60 DAS	90 DAS	At harvest
Recommended practices	0.00	15.30	8.30
Farmer practices	17.5	45.50	35.0
Intervention	12.30	31.20	20.50

Farmers perception:

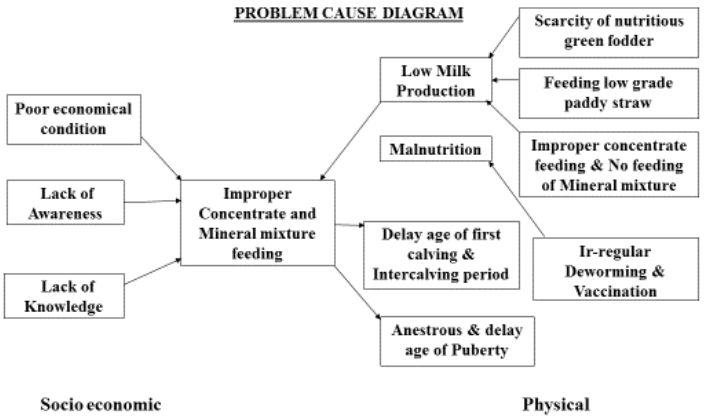
Seed treated with Chlorpyriphos @ 25 ml per kg was better effective for management of white grub as compared to other insecticide and gave higher yield with less cost of cultivation

OFT:3

Title: Assessment of effect of supplementation of concentrate and mineral mixture on milk yield of local buffalo breed.

1. **Title:** Assessment of effect of supplementation of concentrate and mineral mixture on milk yield of local buffalo breed. Livestock production in all its ventures is a source of income and for all livestock owners livestock feeding and nutrition is a major concern. Inadequate nutrition is a major cause of low live-weight gains, infertility and low milk yields in dairy cattle. The aim of the OFT is about the awareness of dairy farmers to know the nutritional management of milch animals to increase milk yield. Therefore, the above entitle OFT has been proposed.
2. **Experiment animal** : 18 (9 animals/treatments)
3. **Source of technology** : Veterinary college, NAU, Navsari

4. **Problem caused diagram**:



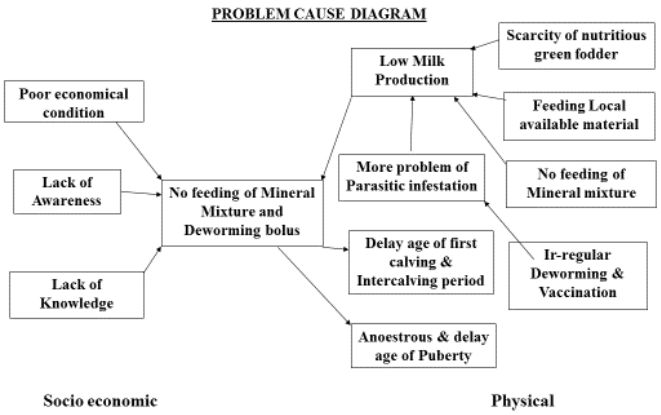
5. **Cost** : Rs.18600 (2067 / animal)
6. **Treatment:**
1. **Farmers practices :** Routine feeding (Green fodder 20 kg +dry fodder 8 kg/animal/day)
2. **Recommended :** T1 + Feeding of concentrate mixture (5 kg/animal/day)+Mineral mixture 50 gm/animal/day)
7. **Observations to be recorded:** Milk Yield (Lit/Animal/Day), B:C ratio and farmers' perception

Results: Awaited

OFT:4

Title: Assessment of Effect of Mineral mixture on milk yield of cattle.

1. **Title:** Assessment of effect of mineral mixture on milk yield of cattle
2. Problem diagnose/defined:
   1. Low milk production due to parasitic infestation & mineral imbalance
   2. Lack of knowledge about feeding of mineral powder & deworming bolus
3. **Experiment animal** : 30 (15 animals/treatments)
4. **Source of technology** : Veterinary college, NAU, Navsari
5. **Problem Caused Diagram**:



6. **Cost** : Rs. 8490 (566/ animal)
7. **Treatment:**

   Farmers practices : Routine feeding (Green fodder 20 kg +dry fodder 8 kg/animal/day)

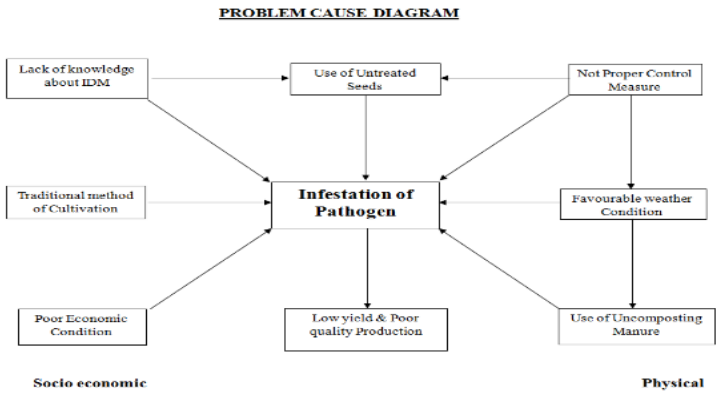
   Recommended : T1 + Fenbendazol @5-7.5 mg Kg body wight + Mineral mixture supplementation @50gm /animal/ day
8. **Observations to be recorded:** Milk yield (Lit/Animal/Day), B:C ratio and farmers' perception
9. **Results:** Awaited

OFT:5

Title: Assessment of effect of the fungicides on disease of chilli

Objective : To inhibit the growth of pathogen.

1. **District** : Rajkot
2. **Intervention points** : IDM
3. **Problem diagnosed /definition**:



4. **Treatment:**
   Farmer practices: Two spray of Hexaconazole @ 1ml/liter of water. at 15 days interval
   Recommended practices: Seed treatment of carbendenzim @ 3gm/kg seed + + soil application of Trichoderma @2.5 kg/ha at 15 DAS + soil drenching of C.O.C. @ 40 gm./10 ltr.of water during disease infestation
   Intervention: Two spray of Hexaconazole @ 1ml/liter of water. At 15 days interval + soil drenching of C.O.C. @ 40 gm./10 ltr.of water during disease infestation
5. Plot: 0.40 ha(1 Acre)/farmer
6. No. of farmers : 3
7. Source of technology : JAU, Junagadh
8. Critical inputs to be supplied : 1 kg Trichoderma and 500 gm copper oxychloride
9. Cost : Rs. 2460
10. Observation and results :

Technology Option	***No.of trials***	***Yield (kg/ha)***	***BCR***
Two spray of Hexaconazole @ 1ml/litre of water. at 15 days interval (Farmers Practice)	*3*	8458	1:1.84
Seed treatment of carbendenzim @ 3gm/kg seed + soil application of Trichoderma @2.5 kg/ha at 15 DAS + soil drenching of C.O.C. @ 40 gm./10 ltr.of water during disease infestation (Recommended Practice)		10208	1:2.33
Two spray of Hexaconazole @ 1ml/litre of water. At 15 days interval + soil drenching of C.O.C. @ 40 gm./10 ltr. of water during disease infestation (Intervention)		8208	1:1.78

Wilt disease incidence (Observation)		
Treatments	**Wilt disease incidence (%)**	
	90 (DAS)	120 (DAS)
Recommended practices	5.00	12.00
Farmer practices	14.00	26.00
Interventions	18.00	35.00

Farmers Perception: Reduce wilt disease incidence and increase the crop yield

OFT:6

Title: Comparison of solar Cooker with traditional cooking system

Items: -

1. Boiled Rice
2. Boiled Sweet potato
3. Salted groundnut

Objective: -

(1) To improve quality and nutrition of Prepared items
(2) To reduce drudgery of farm women
(3) To reduce time and fuel consumption

Treatment: -

1) Preparation by traditional method
2) Preparation by roasting
3) Preparation by solar cooker

No. of Replications: - 5

No. of beneficiaries: 3 Farm women from three different locations

Observations: -

(1) Time consumption
(2) Fuel consumption
(3) Movement
(4) Cost saving
(5) Organo-leptic test
   i. Colour
   ii. Texture
   iii. Taste

Results: Awaited

D1. Results of Technologies Refined

Results of On Farm Trial

Crop/ enterprise	Farming situation	**Problem definition**	Title of OFT	No. of trials	Technology refined	Parameters of refined t	Data on the parameter	Results of refinement	Feedback from the farmer	Details of refinement done
1	2	3	4	5	6	7	8	9	10	11
-	-	-	-	-	-	-	-	-	-	-

Contd..

Technology Refined	Source of Technology for Technology Option1 / Justification for modification of assessed Technology Option 1	Production	Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)	Net Return (Profit) in Rs. / unit	BC Ratio
12	13	14	15	16	17
Technology Option 1 (best performing Technology Option in assessment)	-	-	-	-	-
Technology Option 2 (Modification over Technology Option 1)	-	-	-	-	-
Technology Option 3 (Another Modification over Technology Option 1)	-	-	-	-	-

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

1. Title of Technology refined
2 Problem Definition
3 Details of technologies selected for refinement
4 Source of technology
5 Production system and thematic area
6 Performance of the Technology with performance indicators
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 farmers participation and their reaction

3.3. FRONTLINE DEMONSTRATION

A. Follow-up for results of FLDs implemented during previous years

List of technologies demonstrated during previous year and popularized during 2016-17 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Groundnut*	IPM	IPM	FLDs, Field days, Group discussion, Extension literature	16	80	56
2	Groundnut	IDM	Trichoderma	FLDs, Field days, Group discussion, Extension literature	25	247	87
3.	Sesame	Varietal	GT-3	FLDs, Field days, Group discussion	12	65	70
4.	Chick pea	Varietal	GG-5	FLDs, Personal visit, Training,	20	180	105
5.	Wheat	Varietal	GW-366	FLDs, Extension literature, Training	11	34	17
6.	Cumin	Varietal	GC-4	FLDs, Training	9	46	19
7.	Cotton	INM	INM	FLDs, Field days, Group discussion	22	187	112
8.	Cotton	IPM	IPM	FLDs, Personal visit, Training, Extension literature	5	45	10
9.	Animal Husbandry	Feed Management	Anabolite Liquid	FLDs, Personal visit, Training,	7	52	5
10.	Kitchen Gardening	Household food security	Kitchen Gardening	FLDs, Personal visit, Training,	6	48	4

B. Details of FLDs implemented during 2017-18 (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**.)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
Oilseeds										
Groundnut	Variety	GG-22	*Kharif* 2017-18	4	4	2	8	10	-	
Groundnut*	IDM	Trichoderma	*Kharif* 2017-18	4	4	2	8	10	-	
Groundnut**	IPM	IPM	*Kharif* 2017-18	4	4	2	8	10		
Sesame	Variety	GT-3	*Summer* 2018	5	5	2	8	10	-	
Pulse										
Chickpea	Varietal	GG-3	*Rabi* 2017-18	4	4	2	8	10	-	
Others: Cereals										
Wheat	Varietal	GW-366	*Rabi* -2017-18	5	5	3	7	10	-	
Others: Vegetables										
Onion	Varietal	GJRO-11	*Rabi* 2017-18	2.5	1.6	0	4	4	-	
Brinjal	Varietal	GJLB-4	*Rabi* 2017-18	1.2	1.2	2	3	5	-	
Brinjal	Varietal	GJHB-4	*Kharif* 2017-18	1.25	2	1	4	5	-	
Okra	Varietal	GJHO-4	*Kharif* 2017-18	1.25	2	2	1	3	-	
Others: Fruits										
Papaya	Varietal	GJP-1	*Kharif* 2017-18	1.2	1.2	1	2	3	-	
Others: Spices										
Cumin	Varietal	GC-4	*Rabi* 2017-18	4	4	2	8	10	-	
Others: Commercial crops										
Cotton	INM	INM	*Kharif* 2017-18	4	4	2	8	10	-	
Cotton	IPM	IPM	*Kharif* 2017-18	20	20	10	40	50		
Animal Husbandry										
15	Cattle	Feed Management	Calcium	2017-18	10	10	4	6	10	-
Home Science										
16	Vegetable Crops	Household food security by kitchen gardening and nutrition gardening	Kitchen Gardening	*Kharif* 2017-18	0.5	0.5	10	40	50	-

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Oilseeds											
Groundnut	*Kharif*	Rainfed	MB	M	M	H	Cotton	26th June to 5thJuly	15th Oct to 15 Nov.	789	26
Groundnut*	*Kharif*	Rainfed	MB	M	M	H	Wheat	26th June to 5thJuly	15th Oct to 15 Nov.	789	26
Groundnut**	*Kharif*	Rainfed	MB	M	M	H	Wheat	26th June to 5thJuly	15th Oct to 15 Nov.	789	26
Sesame	*Summer 17-18*	Irrigated	MB	M	M	H	Cotton	20thJan. to 15th Feb.	15th May to 30th May	789	26
Pulse											
Chick pea	*Rabi*	Irrigated	MB	M	M	H	Groundnut	15th Oct. to 5th Nov	20th Feb to 5th March	789	26
Cereals											

Wheat	*Rabi*	Irrigated	MB	M	M	H	Groundnut	15th Oct. to 5th Nov	20th Feb to 5th March	789	26
Other											
Onion	*Rabi*	Irrigated	MB	M	M	H	Groundnut	15th Aug to 15th Oct.	15th Nov to 15th Dec	789	26
Brinjal	*Kharif*	Irrigated	MB	M	M	H	wheat	15th May to 15th July	15thAug to 15thSept.	789	26
Brinjal*	*Kharif*	Irrigated	MB	M	M	H	wheat	15th May to 15th July	15thAug to 15thSept.	789	26
Okra	*Kharif*	Irrigated	MB	M	M	H	wheat	15th June to 15th Aug	30thAug to 1stSept.	789	26
Papaya	*Kharif*	Irrigated	MB	M	M	H	wheat	26th June to 5thJuly	28thFeb	789	26
Cumin	*Rabi*	Irrigated	MB	M	M	H	Groundnut	15th Oct. to 5th Nov	20th Feb to 5th March	789	26
Cotton (INM)	*Kharif*	Rainfed	MB	M	M	H	cotton	26th June to 5thJuly	15th Dec. to 15 Jan.	789	26
Cotton (IPM)	*Kharif*	Rainfed	MB	M	M	H	cotton	26th June to 5thJuly	15th Dec. to 15 Jan.	789	26
Cattle	-	-	-	-	-	-	-	-	-	-	-
Kitchen garden	*Kharif*	Irrigated	MB	M	M	H	-	26th June to 5thJuly	15th Dec. to 15 Jan.	789	26

Technical Feedback on the demonstrated technologies

S. No	Crop/Enterprise	Feed Back
1	Groundnut	Less incidence of stem rot disease and higher yielding
2	Groundnut*	-Application of trichoderma at proper time act as a precaution measure for the stem rot
3	Groundnut**	-IPM in G'nut effectively manage the pest and increase the yield
4	Sesame	-Bold seeded, wilt resistance, higher yield
5	Chick pea	-GG-3 variety of gram gave higher yield and wilt resistance
6	Wheat	-GW-366 variety of wheat is high yielding as compare to GW-496
7	Onion	High Yielding Variety, Less incidence of pest and disease
8	Brinjal	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal
9	Brinjal*	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal disease
10	Okra	High Yielding Variety Less incidence of pest and Yellow Vein Mosaic Virus Disease
11	Papaya	Resistance to papaya mosaic virus
12	Cumin	-Wilt resistance as compare to other variety
13	Cotton	-INM in cotton reduce the cost of fertilizers and reduce the reddening of cotton and increase the yield
14	Cotton*	Less infested cotton with pink bollworm and reduce cost of cultivation
15	Animal Husbandry	-Increase in milk production after calving
16	Kitchen Gardening	- Easy availability of vegetables at low cost

Farmers' reactions on specific technologies

S. No		Feed Back
1	Groundnut	Less incidence of stem rot disease and higher yielding
2	Groundnut*	Use of Trichoderma in groundnut is the best technology to control stem rot
3	Groundnut**	Integrated Pest Management effectively control the pest of groundnut
4	Sesame	Bold seeded and high yielding
5	Chick pea	Less occurrence of wilt and high yielding
6	Wheat	High yielding variety
7	Onion	High Yielding Variety, Less incidence of pest and Disease

8	Brinjal	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal
9	Brinjal*	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal Disease
10	Okra	High Yielding Variety, Less incidence of pest and Yellow Vein Mosaic Virus Disease
11	Papaya	Resistance to papaya mosaic
12	Cumin	Quality seed and high yielding
13	Cotton	-INM in cotton reduce the cost of fertilizers and reduce the reddening of cotton and increase the yield
14	Cotton*	Less infested cotton with pink bollworm and reduce cost of cultivation
15	Animal Husbandry	Never gave calcium supplement on regular basis but now will give regularly
16	Kitchen Gardening	- Helps in proper meal planning

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	20	-	256	73
2	Farmers Training	24	-	556	113
3	Media coverage	-	-	-	-
4	Training for extension functionaries	1	-	28	-

C. Performance of Frontline demonstrations

Frontline demonstrations on oilseed crops

Crop	Thematic Area	technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Groundnut	Varietal	Variety	GJG-22	10	4	31.3	18.8	25.8	22.4	15.08	55952	109437	53485	1.96	54212	95094	40882	1.75
	IDM	IDM	Tricho	10	4	32.5	21.3	27.5	24.6	11.68	55452	116875	61423	2.11	54212	104656	50444	1.93
	IPM	IPM	IPM	10	4	33.8	21.3	26.9	20.9	28.74	55087	114218	59131	2.07	54212	88718	34506	1.64
Sesamum	Varietal	Variety	G.Til-3	10	4	Results awaited												

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

Frontline demonstration on pulse crops

Crop	Thematic Area	technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Chickpea	ICM	ICM	GG-5	10	4	32.5	21.3	26.3	22.6	16.3	58899	92093	33194	1.56	56712	79187	22475	1.40

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

FLD on Other crops

Category & Crop	Thematic Area	Name of the technology	No. of Farmers	Area (ha)	Yield (q/ha)				% Change in Yield	Other Parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demo			Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average												
Cereals																			
Wheat	Varietal	Variety GW-366	10	5	62.5	43.8	52.5	45.6	15.07	Yield	Yield	59032	85312	26280	1.45	57932	74140	16208	1.28
Millets																			

Vegetables																			
Brinjal	Varietal	Variety GJLB-4	5	2	393.8	381.3	388	376.3	3.12	Yield	Yield	150825	418250	267425	2.77	152000	405750	253750	2.67
	Varietal	Variety GJHB-4	5	2	425	412.5	418.3	405.8	3.08	Yield	Yield	150525	388000	237475	2.58	151000	376250	225250	2.49
Okra	Varietal	Variety GJHO-4	3	1.2	131.3	112.5	124.2	117.5	5.67	Yield	Yield	65000	248333	183333	3.82	72000	235000	163000	3.26
Onion	Varietal	Variety GJRO-11	4	1.6	375	312.5	346.9	328.1	5.71	Yield	Yield	120500	433593	313093	3.60	125000	410156	285156	3.28
Flower crops																			
Fruit crops																			
Papaya	Varietal	Variety GJP-1	3	1.2	343.8	325	331.3	314.6	5.3	Yield	Yield	42500	99375	56875	2.34	65000	94375	29375	1.45
Spices & condiments																			
Cumin	Varietal	Variety GC-4	10	4	8.8	4.4	6.7	5.8	15.05	Yield	Yield	57737	117031	59294	2.03	56712	101719	45007	1.79
Commercial Crops																			
Cotton	INM	INM	10	4	33.8	17.5	25.4	22.8	11.54	Yield	Yield	51533	139562	88029	2.71	51163	125125	73962	2.45
	IPM	IPM	50	20	43.8	17.5	30.5	27.3	11.92	Yield	Yield	51813	167887	116074	3.24	51163	150012	98849.5	2.93
Medicinal & aromatic plants																			
Fodder Crops																			

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Cattle	Nutrition management	Use of Calcium Supplement	10	10	Results awaited												
Buffalo																	

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

FLD on Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Common Carps																	
Composite fish culture																	
Feed Management																	

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

FLD on Other enterprises

Category	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.) or Rs./unit				Economics of check (Rs.) or Rs./unit			
				Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)

Oyster Mushroom																
Button Mushroom																
Apiculture																
Maize Sheller																
Value Addition																
Vermi Compost																

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check

FLD on Farm Implements and Machinery

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total

FLD on Other Enterprise: Kitchen Gardening

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units	Yield (Kg)		% change in yield	Other parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demonstration	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Vegetables	Nutritional security	Nutritional security	50	50	214.6	204.9	4.73	Yield	Yield	116470	212340	95870	1.82	123450	210380	86930	1.70

FLD on Demonstration details on crop hybrids

Crop	technology demonstrated	Hybrid Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)			
					Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average						
Oilseed crop													
Pulse crop													
Cereal crop													
Vegetable crop													
Fruit crop													
Other (specify)													

3.4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	0	0	0	0	0	0	0	0	0	0
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	0	0	0	0	0	0	0	0	0	0
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	0	0	0	0	0	0	0	0	0	0
Soil & water conservation	0	0	0	0	0	0	0	0	0	0
Integrated nutrient management	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	1	27	0	27	1	0	1	28	0	28
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	1	29	0	29	2	0	2	31	0	31
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	0	0	0	0	0	0	0	0	0	0
Integrated pest and disease management of vegetable crops	1	28	0	28	1	0	1	29	0	29
Total (a)	3	84	0	84	4	0	4	88	0	88
b) Fruits										
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	0	0	0	0	0	0	0	0	0	0
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Preservation of Fruits and Vegetables	1	0	35	35	0	0	0	0	35	35
Total (b)	1	0	35	35	0	0	0	0	35	35
c) Ornamental Plants										
Nursery Management	0	0	0	0	0	0	0	0	0	0

Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (f)	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**4**	**84**	**35**	**119**	**4**	**0**	**4**	**88**	**35**	**123**
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	1	34	0	34	6	0	6	40	0	40
Poultry Management	0	0	0	0	0	0	0	0	0	0
Piggery Management	0	0	0	0	0	0	0	0	0	0

Rabbit Management	0	0	0	0	0	0	0	0	0	0
Animal Nutrition Management	0	0	0	0	0	0	0	0	0	0
Disease Management	1	34	0	34	6	0	6	40	0	40
Feed & fodder technology	1	28	0	28	4	0	4	32	0	32
Production of quality animal products	1	0	36	36	0	6	6	0	42	42
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**4**	**96**	**36**	**132**	**16**	**6**	**22**	**112**	**42**	**154**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	0	32	32	0	1	1	0	33	33
Design and development of low/minimum cost diet	1	0	25	25	0	1	1	0	26	26
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	0	0	0	0	0	0	0	0	0	0
Processing and cooking	1	0	29	29	0	2	2	0	31	31
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	0	0	0	0	0	0	0	0	0	0
Value addition	0	0	0	0	0	0	0	0	0	0
Women empowerment	0	0	0	0	0	0	0	0	0	0
Location specific drudgery reduction technologies	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	1	0	15	15	0	14	14	0	29	29
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**4**	**0**	**101**	**101**	**0**	**18**	**18**	**0**	**119**	**119**
VI Agril. Engineering										
Farm Machinary and its maintenance	0	0	0	0	0	0	0	0	0	0
Installation and maintenance of micro irrigation systems	0	0	0	0	0	0	0	0	0	0
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
VII Plant Protection										
Integrated Pest Management	2	65	0	65	2	0	2	67	0	67
Integrated Disease Management	2	75	0	75	1	0	1	76	0	76
Bio-control of pests and diseases	1	28	0	28	3	0	3	31	0	31
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Storage Pest Management	1	0	29	29	0	0	0	0	29	29
Total	**6**	**168**	**29**	**197**	**6**	**0**	**6**	**174**	**29**	**203**

VIII Fisheries										
Integrated fish farming	0	0	0	0	0	0	0	0	0	0
Carp breeding and hatchery management	0	0	0	0	0	0	0	0	0	0
Carp fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Hatchery management and culture of freshwater prawn	0	0	0	0	0	0	0	0	0	0
Breeding and culture of ornamental fishes	0	0	0	0	0	0	0	0	0	0
Portable plastic carp hatchery	0	0	0	0	0	0	0	0	0	0
Pen culture of fish and prawn	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Bee-colonies and wax sheets	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	1	29	0	29	0	0	0	29	0	29
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	0	0	0	0	0	0	0	0	0	0
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**1**	**29**	**0**	**29**	**0**	**0**	**0**	**29**	**0**	**29**
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**19**	**377**	**201**	**578**	**26**	**24**	**50**	**403**	**225**	**628**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	0	0	0	0	0	0	0	0	0	0
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	0	0	0	0	0	0	0	0	0	0
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	0	0	0	0	0	0	0	0	0	0
Soil & water conservatioin	0	0	0	0	0	0	0	0	0	0
Integrated nutrient management	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	0	0	0	0	0	0	0	0	0	0
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	0	0	0	0	0	0	0	0	0	0
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	1	30	0	30	0	0	0	30	0	30
Pest and disease management of different vegetable crops	1	28	0	28	1	0	1	29	0	29
Organic farming of vegetable crops	1	35	0	35	0	0	0	35	0	35
Total (a)	3	93	0	93	1	0	1	94	0	94
b) Fruits										
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	1	28	0	28	0	0	0	28	0	28
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (b)	1	28	0	28	0	0	0	28	0	28
c) Ornamental Plants										
Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0

Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	1	32	0	32	0	0	0	32	0	32
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Integrated disease management of spices	1	36	0	36	1	0	1	37	0	37
Total (f)	2	68	0	68	1	0	1	69	0	69
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**6**	**189**	**0**	**189**	**2**	**0**	**2**	**191**	**0**	**191**
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	0	0	0	0	0	0	0	0	0	0
Poultry Management	0	0	0	0	0	0	0	0	0	0
Piggery Management	0	0	0	0	0	0	0	0	0	0
Rabbit Management	0	0	0	0	0	0	0	0	0	0
Animal Nutrition Management	1	32	0	32	1	0	1	33	0	33

Disease Management	1	35	0	35	0	0	0	35	0	35
Feed & fodder technology	2	81	0	81	1	0	1	82	0	82
Production of quality animal products	2	33	28	61	0	0	0	33	28	61
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**6**	**181**	**28**	**209**	**2**	**0**	**2**	**183**	**28**	**211**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	0	32	32	0	1	1	0	33	33
Design and development of low/minimum cost diet	0	0	0	0	0	0	0	0	0	0
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	0	0	0	0	0	0	0	0	0	0
Processing and cooking	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	0	0	0	0	0	0	0	0	0	0
Value addition	1	0	29	29	0	1	1	0	30	30
Women empowerment	2	0	68	68	0	1	1	0	69	69
Location specific drudgery reduction technologies	2	0	59	59	0	0	0	0	59	59
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	2	0	65	65	0	0	0	0	65	65
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**8**	**0**	**253**	**253**	**0**	**3**	**3**	**0**	**256**	**256**
VI Agril. Engineering										
Farm Machinary and its maintenance	0	0	0	0	0	0	0	0	0	0
Installation and maintenance of micro irrigation systems	0	0	0	0	0	0	0	0	0	0
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
VII Plant Protection										
Integrated Pest Management	3	124	0	124	1	0	1	125	0	125
Integrated Disease Management	3	130	0	130	1	0	1	131	0	131
Bio-control of pests and diseases	1	28	0	28	4	0	4	32	0	32
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Storage pest management	1	36	0	36	1	0	1	37	0	37
Total	**8**	**318**	**0**	**318**	**7**	**0**	**7**	**325**	**0**	**325**
VIII Fisheries										
Integrated fish farming	0	0	0	0	0	0	0	0	0	0

Carp breeding and hatchery management	0	0	0	0	0	0	0	0	0	0
Carp fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Hatchery management and culture of freshwater prawn	0	0	0	0	0	0	0	0	0	0
Breeding and culture of ornamental fishes	0	0	0	0	0	0	0	0	0	0
Portable plastic carp hatchery	0	0	0	0	0	0	0	0	0	0
Pen culture of fish and prawn	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	1	30	0	30	1	0	1	31	0	31
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	1	28	0	28	1	0	1	29	0	29
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**2**	**58**	**0**	**58**	**2**	**0**	**2**	**60**	**0**	**60**
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**30**	**746**	**281**	**1027**	**13**	**3**	**16**	**759**	**284**	**1043**

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	0	0	0	0	0	0	0	0	0	0
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	0	0	0	0	0	0	0	0	0	0
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	0	0	0	0	0	0	0	0	0	0
Soil & water conservatioin	0	0	0	0	0	0	0	0	0	0
Integrated nutrient management	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	1	27	0	27	1	0	1	28	0	28
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	1	29	0	29	2	0	2	31	0	31
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	1	30	0	30	0	0	0	30	0	30
Integrated pest and disease management of vegetable crops	2	56	0	56	2	0	2	58	0	58
Organic farming of vegetable crops	1	35	0	35	0	0	0	35	0	35
Total (a)	6	177	0	177	5	0	5	182	0	182
b) Fruits										
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	1	28	0	28	0	0	0	28	0	28
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Preservation of Fruits and Vegetables	1	0	35	35	0	0	0	0	35	35
Total (b)	2	28	35	63	0	0	0	28	35	63
c) Ornamental Plants										

Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	1	32	0	32	0	0	0	32	0	32
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Integrated disease management of spices	1	36	0	36	1	0	1	37	0	37
Total (f)	2	68	0	68	1	0	1	69	0	69
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**10**	**273**	**35**	**308**	**6**	**0**	**6**	**279**	**35**	**314**
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	1	34	0	34	6	0	6	40	0	40

Poultry Management	0	0	0	0	0	0	0	0	0	0
Piggery Management	0	0	0	0	0	0	0	0	0	0
Rabbit Management	0	0	0	0	0	0	0	0	0	0
Animal Nutrition Management	1	32	0	32	1	0	1	33	0	33
Disease Management	2	69	0	69	6	0	6	75	0	75
Feed & fodder technology	3	109	0	109	5	0	5	114	0	114
Production of quality animal products	3	33	64	97	0	6	6	33	70	103
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**10**	**277**	**64**	**341**	**18**	**6**	**24**	**295**	**70**	**365**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	2	0	64	64	0	2	2	0	66	66
Design and development of low/minimum cost diet	1	0	25	25	0	1	1	0	26	26
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	0	0	0	0	0	0	0	0	0	0
Processing and cooking	1	0	29	29	0	2	2	0	31	31
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	0	0	0	0	0	0	0	0	0	0
Value addition	1	0	29	29	0	1	1	0	30	30
Women empowerment	2	0	68	68	0	1	1	0	69	69
Location specific drudgery reduction technologies	2	0	59	59	0	0	0	0	59	59
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	3	0	80	80	0	14	14	0	94	94
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**12**	**0**	**354**	**354**	**0**	**21**	**21**	**0**	**375**	**375**
VI Agril. Engineering										
Farm Machinary and its maintenance	0	0	0	0	0	0	0	0	0	0
Installation and maintenance of micro irrigation systems	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
VII Plant Protection										
Integrated Pest Management	5	189	0	189	3	0	3	192	0	192
Integrated Disease Management	5	205	0	205	2	0	2	207	0	207
Bio-control of pests and diseases	2	56	0	56	7	0	7	63	0	63
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Storage pest management	2	36	29	65	1	0	1	37	29	66
Total	**14**	**486**	**29**	**515**	**13**	**0**	**13**	**499**	**29**	**528**
VIII Fisheries										
Integrated fish farming	0	0	0	0	0	0	0	0	0	0
Carp breeding and hatchery management	0	0	0	0	0	0	0	0	0	0

Carp fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Hatchery management and culture of freshwater prawn	0	0	0	0	0	0	0	0	0	0
Breeding and culture of ornamental fishes	0	0	0	0	0	0	0	0	0	0
Portable plastic carp hatchery	0	0	0	0	0	0	0	0	0	0
Pen culture of fish and prawn	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Apiculture	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	2	59	0	59	1	0	1	60	0	60
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	1	28	0	28	1	0	1	29	0	29
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**3**	**87**	**0**	**87**	**2**	**0**	**2**	**89**	**0**	**89**
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**49**	**1123**	**482**	**1605**	**39**	**27**	**66**	**1162**	**509**	**1671**

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
Nursery Management of Horticulture crops	-	-	-	-	-	-	-	-	-	-
Training and pruning of orchards	-	-	-	-	-	-	-	-	-	-
Protected cultivation of vegetable crops	-	-	-	-	-	-	-	-	-	-
Commercial fruit production	-	-	-	-	-	-	-	-	-	-
Integrated farming	-	-	-	-	-	-	-	-	-	-
Seed production	-	-	-	-	-	-	-	-	-	-
Production of organic inputs	-	-	-	-	-	-	-	-	-	-
Planting material production	-	-	-	-	-	-	-	-	-	-
Vermi-culture	-	-	-	-	-	-	-	-	-	-
Mushroom Production	-	-	-	-	-	-	-	-	-	-
Bee-keeping	-	-	-	-	-	-	-	-	-	-
Sericulture	-	-	-	-	-	-	-	-	-	-
Repair and maintenance of farm machinery and implements	-	-	-	-	-	-	-	-	-	-
Value addition	-	-	-	-	-	-	-	-	-	-
Small scale processing	-	-	-	-	-	-	-	-	-	-
Post Harvest Technology	-	-	-	-	-	-	-	-	-	-
Tailoring and Stitching	-	-	-	-	-	-	-	-	-	-
Rural Crafts	-	-	-	-	-	-	-	-	-	-
Production of quality animal products	-	-	-	-	-	-	-	-	-	-
Dairying	-	-	-	-	-	-	-	-	-	-
Sheep and goat rearing	-	-	-	-	-	-	-	-	-	-
Quail farming	-	-	-	-	-	-	-	-	-	-
Piggery	-	-	-	-	-	-	-	-	-	-
Rabbit farming	-	-	-	-	-	-	-	-	-	-
Poultry production	-	-	-	-	-	-	-	-	-	-
Fish harvest and processing technology	-	-	-	-	-	-	-	-	-	-
Fry and fingerling rearing	-	-	-	-	-	-	-	-	-	-
Any other (pl.specify)	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	-	-	-	-	-	-	-	-	-	-
Training and pruning of orchards	-	-	-	-	-	-	-	-	-	-
Protected cultivation of vegetable crops	-	-	-	-	-	-	-	-	-	-
Commercial fruit production	-	-	-	-	-	-	-	-	-	-
Integrated farming	-	-	-	-	-	-	-	-	-	-
Repair and maintenance of farm machinery and implements	-	-	-	-	-	-	-	-	-	-
Value addition	-	-	-	-	-	-	-	-	-	-
Small scale processing	-	-	-	-	-	-	-	-	-	-
Post Harvest Technology	-	-	-	-	-	-	-	-	-	-

Tailoring and Stitching	-	-	-	-	-	-	-	-	-	-
Rural Crafts	-	-	-	-	-	-	-	-	-	-
Production of quality animal products	-	-	-	-	-	-	-	-	-	-
Dairying	-	-	-	-	-	-	-	-	-	-
Sheep and goat rearing	-	-	-	-	-	-	-	-	-	-
Quail farming	-	-	-	-	-	-	-	-	-	-
Piggery	-	-	-	-	-	-	-	-	-	-
Rabbit farming	-	-	-	-	-	-	-	-	-	-
Poultry production	-	-	-	-	-	-	-	-	-	-
Ornamental fisheries	-	-	-	-	-	-	-	-	-	-
Composite fish culture	-	-	-	-	-	-	-	-	-	-
Freshwater prawn culture	-	-	-	-	-	-	-	-	-	-
Shrimp farming	-	-	-	-	-	-	-	-	-	-
Pearl culture	-	-	-	-	-	-	-	-	-	-
Cold water fisheries	-	-	-	-	-	-	-	-	-	-
Fish harvest and processing technology	-	-	-	-	-	-	-	-	-	-
Fry and fingerling rearing	-	-	-	-	-	-	-	-	-	-
Any other (pl.specify)	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	-	-	-	-	-	-	-	-	-	-
Training and pruning of orchards	-	-	-	-	-	-	-	-	-	-
Protected cultivation of vegetable crops	-	-	-	-	-	-	-	-	-	-
Commercial fruit production	-	-	-	-	-	-	-	-	-	-
Integrated farming	-	-	-	-	-	-	-	-	-	-
Seed production	-	-	-	-	-	-	-	-	-	-
Production of organic inputs	-	-	-	-	-	-	-	-	-	-
Planting material production	-	-	-	-	-	-	-	-	-	-
Vermi-culture	-	-	-	-	-	-	-	-	-	-
Mushroom Production	-	-	-	-	-	-	-	-	-	-
Bee-keeping	-	-	-	-	-	-	-	-	-	-
Sericulture	-	-	-	-	-	-	-	-	-	-
Value addition	-	-	-	-	-	-	-	-	-	-
Small scale processing	-	-	-	-	-	-	-	-	-	-
Post Harvest Technology	-	-	-	-	-	-	-	-	-	-
Tailoring and Stitching	-	-	-	-	-	-	-	-	-	-
Rural Crafts	-	-	-	-	-	-	-	-	-	-
Production of quality animal products	-	-	-	-	-	-	-	-	-	-
Dairying	-	-	-	-	-	-	-	-	-	-
Sheep and goat rearing	-	-	-	-	-	-	-	-	-	-
Composite fish culture	-	-	-	-	-	-	-	-	-	-
Freshwater prawn culture	-	-	-	-	-	-	-	-	-	-
Shrimp farming	-	-	-	-	-	-	-	-	-	-
Pearl culture	-	-	-	-	-	-	-	-	-	-
Cold water fisheries	-	-	-	-	-	-	-	-	-	-
Fish harvest and processing technology	-	-	-	-	-	-	-	-	-	-
Fry and fingerling rearing	-	-	-	-	-	-	-	-	-	-
Any other (pl.specify)	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	28	5	33	0	0	0	28	5	33
Integrated Pest Management	1	25	2	27	0	0	0	25	2	27
Integrated Nutrient management	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0
Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	0	0	0	0	0	0	0	0	0	0
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0
Household food security	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	2	53	7	60	0	0	0	53	7	60

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	32	2	34	0	0	0	32	2	34
Integrated Pest Management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient management	1	34	3	37	0	0	0	34	3	37
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0
Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	0	0	0	0	0	0	0	0	0	0
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0
Household food security	0	0	0	0	0	0	0	0	0	0
Integrated Disease Management	1	34	2	36	2	0	2	36	2	38
TOTAL	3	100	7	107	2	0	2	102	7	109

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	**2**	**60**	**7**	**67**	**0**	**0**	**0**	**60**	**7**	**67**
Integrated Pest Management	**1**	**25**	**2**	**27**	**0**	**0**	**0**	**25**	**2**	**27**
Integrated Nutrient management	**1**	**34**	**3**	**37**	**0**	**0**	**0**	**34**	**3**	**37**
Rejuvenation of old orchards	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Protected cultivation technology	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Production and use of organic inputs	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Care and maintenance of farm machinery and implements	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Gender mainstreaming through SHGs	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Formation and Management of SHGs	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Women and Child care	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Low cost and nutrient efficient diet designing	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Group Dynamics and farmers organization	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Information networking among farmers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Capacity building for ICT application	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Management in farm animals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Livestock feed and fodder production	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Household food security	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Integrated Disease Management	**1**	**34**	**2**	**36**	**2**	**0**	**2**	**36**	**2**	**38**
TOTAL	**5**	**153**	**14**	**167**	**2**	**0**	**2**	**155**	**14**	**169**

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Increasing production and productivity of crops	3	118	0	118	2	0	2	120	0	120
Commercial production of vegetables	1	75	0	75	12	0	12	87	0	87
Production and value addition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Fruit Plants	1	34	0	34	0	0	0	34	0	34
Ornamental plants	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Spices crops	1	45	0	45	4	0	4	49	0	49
Soil health and fertility management	1	87	0	87	0	0	0	87	0	87
Production of Inputs at site	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Methods of protective cultivation	2	94	0	94	5	0	5	99	0	99
Integrated Pest and Disease Management	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Major crops	2	77	0	77	1	0	1	78	0	78
Vegetable crops	1	41	0	41	4	0	4	45	0	45
Spices crops	1	32	0	32	0	0	0	32	0	32
Bio-control of pests and diseases	1	35	0	35	0	0	0	35	0	35
Total	**14**	**638**	**0**	**638**	**28**	**0**	**28**	**666**	**0**	**666**
Post harvest technology and value addition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Processing and value addition	2	0	43	43	0	2	2	0	45	45
Others (pl. specify)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**2**	**0**	**43**	**43**	**28**	**2**	**2**	**0**	**45**	**45**
Farm machinery	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Farm machinery, tools and implements	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Others (pl. specify)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Livestock and fisheries	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Livestock production and management	1	22	203	225	3	12	15	25	215	240
Animal Nutrition Management	1	30	95	125	2	18	20	32	113	145
Animal Disease Management	1	24	296	320	4	26	30	28	322	350
Fisheries Nutrition	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Fisheries Management	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Animal Health Camp	1	30	0	30	5	0	5	35	0	35
Total	**4**	**106**	**594**	**700**	**14**	**56**	**70**	**120**	**650**	**770**
Home Science	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Household nutritional security	1	0	41	41	0	0	0	0	41	41
Economic empowerment of women	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Drudgery reduction of women	2	28	12	40	0	0	0	28	12	40
Others (pl. specify)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**3**	**28**	**53**	**81**	**0**	**0**	**0**	**28**	**53**	**81**
Agricultural Extension	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Capacity Building and Group Dynamics	1	34	0	34	2	0	2	36	0	36
Others (pl. specify)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**1**	**34**	**0**	**34**	**2**	**0**	**2**	**36**	**0**	**36**
GRAND TOTAL	**24**	**806**	**690**	**1496**	**44**	**58**	**102**	**850**	**748**	**1598**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management	0	0	0	0	0	0	0	0	0	0
Commercial floriculture	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Commercial vegetable production	0	0	0	0	0	0	0	0	0	0
Integrated crop management	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Value addition	1	0	30	30	0	0	0	0	30	30
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Dairy farming	0	0	0	0	0	0	0	0	0	0
Poultry farming	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Agricultural Extension	0	0	0	0	0	0	0	0	0	0
Capacity building and group dynamics	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	30	30	0	0	0	0	30	30

3.5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	1	1737	24	1761
Diagnostic visits	50	85	0	85
Field Day	21	323	10	333
Group discussions	25	1317	5	1322
Kisan Ghosthi	18	252	4	256
Film Show	18	753	10	763
Self -help groups	12	247	3	250
Kisan Mela	0	0	0	0
Exhibition	0	0	0	0
Scientists' visit to farmers field	180	393	0	393
Farmers visit to kvk	1421	1431	0	1431
Plant/animal health camps	9	232	3	235
Farm Science Club	0	0	0	0
Ex-trainees Sammelan	0	0	0	0
Farmers' seminar/workshop	0	0	0	0
Method Demonstrations	0	0	0	0
Celebration of important days	1	186	0	186
Special day celebration	2	209	0	0
Exposure visits	2	207	1	208
Soil testing	50	50	0	50
Ma Narmada Mahotsav	1	4500	65	4565
Total	**1811**	**11922**	**125**	**11838**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	
Extension Literature	3305
Newspaper coverage	
Popular articles	
Radio Talks	
TV Talks	
Animal health amps (Number of animals treated)	135
Others (pl. specify)	
Total	**3445**

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

Production of seeds by the KVKs

Crop	Name of the crop	Name of the variety	Name of the hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers
Cereals	Wheat	GW-496	-	320	-	-
Oilseeds	Groundnut	GJG-17	Breeder	23.80	-	
	Groundnut	GAUG-10	Breeder	69.50	-	
	Groundnut	GJG-22	Breeder	56.90	-	
	Castor	GCH-9	Breeder	Standing		
Pulses	Black Gram	GujUdad-1	Mega	17.10	-	
	Soya bean	GJS-3	Mega	31.65	-	
Others	Sunnhemp	-	-	4.00	20320/-	
	Papaya	GJP-1		Standing	-	
Total				**522.95**	**20320**	

Production of planting materials by the KVK

Crop	Name of the crop	Name of the variety	Name of the hybrid	Number	Value (Rs.)	Number of farmers
Vegetable seedlings	Tomato	GT-1	-	500	250	10
	Brinjal	GJLB-4	-	250	125	6
	Brinjal	GJHB-4	-	250	125	4
Fruits	Papaya	GJP-1	-	250	1250	50
Total				**1250**	**1750**	**70**

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg/bottle/no	Value (Rs.)	No. of Farmers
Bio Fertilisers	Azotobacter culture (500 ml)	139	8340	80
	PSB culture (500 ml)	183	10980	75
	Rhizobium culture (500 ml)	122	7320	60
Bio-pesticide	Beauveria Bassiana (1 kg)	2842	426300	1225
	Metarhizium (1 kg)	93	13950	40
Bio-fungicide	Trichoderma (1 kg)	3961	277270	1450
Others	Pheromone Trap nos.	1054	21080	850
	Pink bollworm Lure nos.	2025	20850	750
Total		**10419**	**786090**	**4530**

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

A. KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)
B. Literature developed/published
(I) Literature developed: (Folder)

Sr. No.	Title	Author	No. of copies
1	Pholoni Kheti	A.R.Parmar, N.B.Jadav, S.V.Undhad, V.S. Prajapati, P.S.Sharma, F.P.Kargatiya	2000
2	Dungali and Lasan ni Viagnanik Kheti Padhhati	A.R.Parmar, N.B.Jadav, S.V.Undhad, V.S. Prajapati, P.S.Sharma, F.P.Kargatiya	2000
3	Dhana ane Jiru ni Vaignanik Kheti Paddhati	A.R.Parmar, N.B.Jadav, S.V.Undhad, V.S. Prajapati, P.S.Sharma, N.M.Pithiya	2000
4	Nabali Kaxana Charani Posanxamta ane Gunvannta Sudharva Mateni Prakriya	V.S. Prajapati, N.B.Jadav, S.V.Undhad, P.S.Sharma, A.R.Parmar F.P.Kargatiya	2000
5	Kitchan Garden: Samtol Ahar no Vikalp	P.S.Sharma, , N.B.Jadav, V.S. Prajapati S.V.Undhad, , A.R.Parmar F.P.Kargatiya	2000
6	Savsahay Jutho Dwara Mahila Sasaktikaran	P.S.Sharma, , N.B.Jadav, V.S. Prajapati S.V.Undhad, , A.R.Parmar F.P.Kargatiya	2000
7	Nidaman nasak Dawaono Vaprash ane Upyogi Kaljio	S.V.Undhad,, N.B.Jadav, V.S. Prajapati, A.R.Parmar P.S.Sharma, F.P.Kargatiya	2000
8	Kheti pako ma Dawao nu Mishran ane teni Asarkarkta	S.V.Undhad,, N.B.Jadav, V.S. Prajapati, A.R.Parmar P.S.Sharma, F.P.Kargatiya	2000
9	Kheti Pako ma Rog Jivat ma Vadhati Pratikarakta ane tena Upayo	S.V.Undhad,, N.B.Jadav, V.S. Prajapati, A.R.Parmar P.S.Sharma, F.P.Kargatiya	2000
10	Sajiv Khetima Jaivik Niyatrakono Upyogi Rog jivat niyantran	S.V.Undhad,, N.B.Jadav, V.S. Prajapati, A.R.Parmar P.S.Sharma, N.M.Pithiya	2000
11	Pasuoma Navjat Vacharads/Padio Sarsambhal	V.S. Prajapati, N.B.Jadav, S.V.Undhad, , P.S.Sharma, A.R.Parmar N.M.Pithiya	2000
12	Mahila oma Kheti Kariybhar Ghatadva mate Uttam Takniko	P.S.Sharma, , N.B.Jadav, V.S. Prajapati S.V.Undhad, , A.R.Parmar, F.P.Kargatiya	2000

(II) Popular articles and research paper published:

Sr.	Particular/Title	Author	Month	Journal /Bulletin/Issue
1.	Doodh Utpadan vyavasay ma swarojgari	Dr. V.S Prajapati, N.B.Jadav, S.V.Undhad, A.R.Parmar	June 2017	Krushi jivan Vol-11, pp.21
2.	Green house ma turiya tatha kakdini kheti	A.R Parmar, N.B.Jadav, V.S.Prajapati and S.V.Undhad	August 2017	Krushi jivan Vol-10, pp.20,
3.	Dairy kemadhyam se udhamsheelta vikas	KVK Pipalia	April 2017	Published as Success story in annual zonal workshop of KVK 2017 held at JAU
4.	Sanrakhshit kheti ketehatsabjiutpadanaajivika kaekvaikalpikstrot	KVK Pipalia	April 2017	Published as Success story in annual zonal workshop of KVK 2017 held at JAU
5.	The farmer-to-farmer extension approach for dissemination of improved crop technology	Jadav N. B. Undhad S.V. and Sharma P.S.	April 2017	Full length research paper published in National seminar during April 21-22, 2017 at SDAU, Dantiwada by SEEG, Gujarat and SDAU, Dantiwada pp. 91-95
6.	Stakeholder analysis for climate smart agriculture	Meghwal P.K, R.J. Singh, Jadav N.B and Rajpur R.P	Jan-March 2017	Marumegh- Kisaan e-patrika, 2017 Volume-2, Issue 1 pp.41-43
7.	Skill development is a key for agriculture development	Meghwal P.K, Jadav N.B Reddy S. Y. and Tripura P	April-May 2017	Marumegh- Kisaan e-patrika, 2017 Volume-2, Issue 2 pp.72-76
8.	Information Needs of Groundnut Growers	Sangada Bhisman and Jadav N. B	978-3-330-08470-4	Lap Lambert Academic Publishing
9.	Training Needs of Farmer in Relation to Organic Farming Practices	Rohan Sharma and Jadav N.B	978-3-330-32364-3	Lap Lambert Academic Publishing
10	Time Use Pattern and its impact on Cognition	Pinki Sharma and Jatinder Kaur Gulati	978-620-2-01281-2	Lap Lambert Academic Publishing
11.	Management of Purple blotch (*Alternariaporri*) disease of Onion	S. V Undhad, B.K Chovatiya and M.K Ghelani	978-3-330-07492-7	Lap Lambert Academic Publishing
12	“Sv-shahay Juthh”-Mahila shashaktikaran matey agatya no paso	P S Sharma, N.B.Jadav, V.S.Prajapati, S.V.Undhad and A.R.Parmar	February 2018	Krushi jivan Vol-7, pp.17-18,
13.	Time Spent in Various Activities and Cognitive Abilities of School Going and Non-School Going Children in Migrant Labour Families.	P S Sharma ,J K Gulati ,N B Jadav, V S Prajapati and S V Undhad	Jan- June 2018	Journal of Krishi Vigyan, Vol 6, Issue 2, pp. 234-237
14.	Calf management pratices in dairy animals of rural and urban area under milk shed of South Gujarat	V.S.Prajapati, R.R.Singh, N.B.Jadav, P.S.Sharma and S.V.Undhad	Dec.2017	Research Journal of Animal Husbandry and dairy science Vol.8 Issue 2, 99-102

C. Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD/ Audio-Cassette)	Title of the programme	Number
-	-	-	-

D. 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 Story: 1

Title: A Journey from Housewife to Entrepreneurship

Name: Smt. Ranjanaben Bachubhai Parmar
Age :36 Year
Family Member :2 (Two)
Village: Moti Marad
Taluka: Dhoraji
Dist : Rajkot (Gujarat)

Description of Innovation

Every entrepreneurial journey starts somewhere and at that moment he or she has an experience, getting fired, getting desperate, getting fed up, getting lucky enough to convert that journey into his/her success. Same is here who is a successful entrepreneur now Smt. Ranjanaben Bachubhai Parmar who had started with nothing and now she had a business turnover of Rs. 150,000 net profit as a saving excluding all other household expenses. Smt. Ranjanaben is landless farmwomen of village Moti Marad, Taluka Dhoraji, Rajkot District of Gujarat. She had not even to complete her secondary school examination (8th Pass) and got married early at the age of 20 years in 1999-2000. After which one incident occurred in which due to some personal reason because of which the newly wedded spouse gets departs and Smt. Ranjanaben got divorced. That time she needs not only financial support but also mental support because of her pregnancy. After this trauma she had not accepted the defeat and being in such condition she had started stitching the garments at home petty coat, blouses, dresses etc and earn approximately Rs. 500-1000, but this is not her actual goal. Smt. Ranjanaben own maternal family support and her own courage and strong determination to do something provoke her to do something more for fulfill her as well as child needs.

Utility of Innovation with KVK Intervention

Smt. Ranjanben came in contact with KVK Pipalia through DRDA, Dhoraji and started spreading her stitching garment business more. She was inspired by KVK, Pipaliaand became member of Self employed women association (SEWA) to establish her own retail price shop of readymade garments includes dress material, scarf, leggings, children wear, top, kurtis etc. The task was tough and even challenging but became little easy after taking a loan of Rs. 40,000 with the help of SEWA in the village. As the Greek philosopher Plato said, 'Necessity is the mother of invention'. This times her maternal family and of course her loving son and continuous and motivational efforts from KVK scientists helped her to open a small shop in front of her house.

Spread and Utility of Innovation

With a smiling face awaiting customers Ranjanben's business is progressive very well. Today Ranjanben has doubled her sales ranging from INR 40,000-50,000/ month. Not only this, she has also learned the respect of others and set an example to provide encouragement to many Ranjanbens throughout Gujarat. Along with the garments, Ranjanben also keeps seasonal items like Rakhi, crackers, toys, simple ornaments and more in her shop. She has products for all age groups including children, women, men and the elderly. Ranjanben has completed all the interior furniture work in a very well arranged manner now which is very attractive for the villagers to attract them for buying the clothes. Her customers always prefer to buy from Ranjanben because she pays special attention to fulfill their needs. She does not hesitate to open her shop at midnight, if someone needs something in an emergency. This is a common phenomenon, especially in marriage season and during celebration of common festivals, and it is just beginning Ranjanben says that many more things are still set goals of Ranjanben. Now she has even employed many neighbourers friends and set an example to start a new Enterprise with nothing.

Success Story: 2

Title: Vegetable production under protected cultivation is an alternative source of livelihood

Introduction:

Shri HareshbhaiViradiya is innovative farmers of motamahika villages, taluka-Gondal district Rajkot of Gujarat state with 1.3 ha of land. He educated up to 11 std., during his study, due to some reason he left his study and started a small business of repairing farming tools and machinery at his own village. At that time, his father was looked after his farming and earned only 1.5 to 2 lac from his land annually by cultivating regular crop (Groundnut, cotton, cumin) without

any scientific technological knowhow. Once Mr. Haresh visited one protected cultivation at Junagadh Agricultural University, Junagadh, being a mechanical behavior, he strikes to growing crop or vegetable in protected cultivation. He starts to collect information about green house and finally in 2013 set up well-structured green house of about 1 acre on his own land. Initially he failed to produce quality vegetable from green house and suffer economical loses because of heavy pest and disease infestation. Now he decided to produce quality food from green house, with the help of scientists of KrishiVigyan Kendra. Because of KVK scientists' effort and his hardworking nature, his yield and income goes extremely high that nobody can believe.

KVK Intervention:

Mr. Hareshbhai is a young educated farmer of mota mahika village. Earlier Hareshbhai was doing another business of repairing of farming tools. He prepared farm tools by their own. By knowing the greenhouse farming after participating in KVK Pipalia training and frequent visit to kvk he decided to prepare a greenhouse and start vegetable farming in greenhouse.

Shri Hareshbhai made greenhouse of 1-acre area in the year 2013-14 and initially he grown off season ridge gourd and cucumber and got maximum prices from the market in which heface some problems like heavy pest and disease occurrence, improper pollination. He was new to this type of farming and never knows to fight with this type of situations. Due to improper pollination in vegetable, he also ready to adopt bee keeping in green house but not get guidance however after getting proper guidance from scientists of KVK his problems was resolved. He adopt hand pollination at flower opening time by identifying male and female flowers,whole family was doing this operation until mid-night, and by proper pollination they got not only maximum production but also ways to do proper use of IPM practices to protect their crop from heavy occurrence of pest and diseases.

Output:

Shri Hareshbhai mentioned that by adopting this technology after two year of extreme effort, he got more output from 1-acre area as he never got it from open field. As compare to earlier situation, in the 3rd year he produced 15,000 kg of ridge gourd and earned Rs7, 20,000 /-from 1-acre area in Rabi season. Whereas in 2015-16 year he produced 15,000 kg of cucumber and earned Rs2, 70,000/- income from kharif season. Total 16,000 kg of ridge gourd production and Rs8, 00,000/- annual income from this 1-acre area, finally he earned Rs. 10,70,000/- for the year 2015-16 from 1 acre green house.

Year	Season	Crop	Production (kg/acre)	Income (Rs./acre)	Expenditure (Rs./acre)	Net Profit (Rs./acre)
2013-14	Kharif	-	-	-	-	-
	Rabi	Ridge Gourd	15,000	7,20,000/-	1,30,000/-	5,90,000/-
Total (2013-14)			15,000	7,20,000/-	1,30,000/-	5,90,000/-
2014-15	Kharif	Cucumber	12,000	2,50,000/-	1,10,000/-	1,40,000/-
	Rabi	Ridge Gourd	8,500	4,50,000/-	1,20,000/-	3,30,000/-
Total (2014-15)			20,500	7,00,000/-	2,30,000/-	4,70,000/-
2015-16	Kharif	Cucumber	15,000	2,70,000/-	1,15,000/-	1,55,000/-
	Rabi	Ridge Gourd	16,000	8,00,000/-	1,30,000/-	6,70,000/-
Total (2015-16)			31,000	10,70,000/-	2,45,000/-	8,25,000/-
2016-17	Kharif	Cucumber	14,000	3,50,000/-	1,25,000/-	2,25,000/-
	Rabi	Ridge Gourd	25,000	12,50,000/-	1,80,000/-	10,70,000/-
Total (2016-17)			39,000	16,00,000/-	3,05,000/-	12,95,000/-
Grand Total (4 years)			1,05,500	40,90,000/-	9,10,000/-	31,80,000/-

Impact:

Due to adoption of scientific technology, Shri Hareshbhai able to stands his life economically at upper stage and become a respected person in community. He proved that when scientific knowledge and hardworking works together then we can achieve our desired goal. Shri Hareshbhai set an example of doing farming as a business point of view instead of regular farming that we are doing since our ancestors. He also encourages and trained nearby rural youth about vegetable production in protected cultivation. His adventurous efforts encourage other 10 to 15 farmers to develop this type of protected cultivation structure and whenever they have any troubles regarding they contact Krishi Vigyan Kendra scientist and Haresh bhai also.

Success Story: 3

Title: Innovation of Automatic Groundnut Harvester cum Thresher

1. Name of Farmer: Dobariya Nileshbhai Oghadbhai

2. Present Address:- Village: Boriya**, Block:** Jamkandorna, **Dist.** Rajkot

Mobile: 9904666824,

3.Birth Date: 21-08-1980 **Age:-** 36,

Introduction: -

Above all the harvesting and threshing operations of certain crops needs load of labors which are difficult now-a-days to find. The young generation is getting away from agriculture as a profession leading to scarcity of labour which delays certain operations thus ultimately affecting the production and quality. These were the key factors which leads to innovation of machinery that Nileshbhai has developed. The above said machinery i.e. Automatic Harvester cum Thresher (Self named) which is capable of harvesting and threshing different crops simultaneously which results more output with less human and non human resources. The machine developed by him collects groundnut pats from the field and conveys it to thresher where the pods and fodder/straw are separately collected in different compartments.

Subject Matter: -

Automatic Harvester cum Thresher (Self named) which is capable of harvesting and threshing different crops simultaneously. The machine developed by him collects groundnut pats from the field and conveys it to thresher where the pods and fodder/straw are separately collected in different compartments. This can separately be collected which reduce the cost of cleaning and sorting. While in traditional method the pats are collected by the labors and carried to the thresher. Four labors are required during the threshing operation on thresher, the pods and straw/fodder goes along with wind which is to be heaped which again leads to more manual labour practice.

Economic Output

On an average 20-25 labors are required to do the complete process which can be reduced to one with the use of this automatic machine as only one driver is needed during the whole process. As a whole after accounting the cost of the whole process, it can be concluded that traditional method requires Rs 1500/- per hour while this machine includes cost of diesel and driver which consumes about 2-3 litres diesel per hour.

One more beneficial of this machine is that pats need to dry more in sunlight to reduce the humidity otherwise harvesting will not done correctly in this machine. This will automatically cause reduction of fungus Aspergillus from the seed which gives export quality groundnut as compare to groundnut harvested by thresher.

Conclusion

Due to adoption of this innovative and scientific technology, Shri Nileshbhai able to uplift his stands and also his life economically at upper stage and become a respected person in the community. He genuinely proved that when self interest in innovative techniques, hardworking nature and strong dedication all together can achieve our desired goal.

Horizontal Spread of Innovation

Shri Nileshbhai set an example of doing farming as a business point of view instead of regular farming that we are doing since our ancestors. He is now getting repeated orders for the machine and there is quite a long waiting period for having machine on rental purposes as he owes single of its kind. He seeks offer opportunity to make it commercialized in the market because of its efficiency. He has also applied for patenting of his technology through NGO.

Outstanding contribution in the field of agriculture

Shri Nileshbhai's innovation is outstanding where finding of labour is the hardest work in this time of shortage of labour. Because in this machine there is no need of labour for harvesting of groundnut, while in thresher it must be needed 15-20 labour for harvesting the groundnut, which reduces the cost of labour and cost of expense.

Award received

He has been awarded as krushi rishi by state agriculture government

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

I) Major Technology transferred for management of pink boll worm

1. Avoid pre-sowing of cotton
2. Adoption of pheromone trap on community basis
3. Spraying of Beauveria bassiana for effective management of pink bollworm
4. Destroyed damage cotton ball after completion of crop
5. Teach the skill about installation of pheromone trap and lure

Table: 1. Activities under the campaign on Management of pink bollworm in Bt. Cotton during 2017-18

Sr.	Activities/Technology		no of Activities	Participants
1	On campus training		4	237
2	Off campus training		8	373
3	Sponsored training		9	689
4	Diagnostic visit		15	21
5	Field days		10	254
6	FLD on farmer fields	Pheromone trap	50	50

		Beauveria bassiana		
7	Selling of IPM inputs	Pheromone trap	1054	84
		Pheromone lure	2025	79
		Beuveria bassiana	2842	277
8	Selling of IPM inputs through co-operatives	Pheromone trap	10000	3538
		Beauveria bassiana	10000	3460
8	Provide Literature/poster on IPM		3896	-
9	Phone advisory and What's app information dissemination		-	1213/season

II) Major Technology transferred for management of White Grub in Groundnut

1. Deep ploughing in summer
2. Use of light trap
3. Seed treatment with Chloropyriphos 20% EC
4. Application of Phorate 10 G @ 25 Kg per hectare
5. Drenching of Chloropyriphos @4 lit per hectare

Table: 1.Activities under the campaign on Management of White Grub in Groundnut during 2017-18

Sr. No	Activities/Technology		Total no of Activities /Technology/input	Participants/Beneficiaries
1	On campus training		3	210
2	Off campus training		6	149
3	Sponsored training		7	289
4	Diagnostic visit		16	20
5	Field days		4	90
6	FLD on farmer fields	Chloropyriphos for seed treatment	10	10
7	Provide Literature/poster on IPM		2586	-
8	Phone advisory and What's app information dissemination		-	1045/season

Table: 2. Detail of Frontline demonstration on management of White Grub in Groundnut

Sr. No	Technology/ Demonstration	No. of farmer	Total area (ha.)	Method of Application
1	Chloropyriphos 20% EC	10	4	Seed treatment with Chloropyriphos 20% EC @25 ml per Kg Seed

F. 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)

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1.	Chilly	Use castor as a trap crop	For controlling thrips and jassids
2	Crop husbandry	Crop rotation and mixed cropping	Control weed
3	Fertility Management	Application of *tach / morum*	To improve soil physical condition
4	Fertility Management	Sheep and goat penning	To improve soil fertility
5	Harvesting	Harvest pulse crop in the morning hours	To reduce shattering

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

A. Practicing Farmers

a) Group discussion
b) Field obervation
c) Diagnostic visit

B. Rural Youth

a) Discussion
b) Observation

C. In-service personnel

a) Questionnaire
b) Discussion

5.2. Indicate the methodology for identifying OFTs/FLDs

For OFT:

i) PRA
ii) Field level observations
iii) Farmer group discussions

For FLD:

i) New variety/technology
ii) Poor yield at farmers level

5.3. Field activities

Number of villages adopted : 12

Sr. No	Name of village	Sr. No.	Name of Village	Sr. No.	Name of Village
1.	Talangana	5.	Mandlikpar	9.	Dalia
2.	Nagavadar	6.	Amrapar	10.	Sanala
3.	Patanvav	7.	Bhojpara	11.	NaniDudhivadar
4.	NaniParabdi	8.	Shemla	12.	Jashapar

6. LINKAGES

A. Functional linkage with different organizations

A	**Junagadh Agricultural University**	
1	College of Agriculture, Junagadh.	Impart training on Agril. aspects.
2	College of Agril. Engg, Junagadh	Impart training on Engg. aspects
3	Pulse Research Station, Junagadh	Supply of seeds for FLDs
4	Oilseeds Research Station, Junagadh	Supply of seeds for crop museum
5	Oilseeds Research Station, Amreli	Supply of seeds for crop museum
6	Director, DGR, Ivnagar, Junagadh	Training & exposure visit
7	Bio-control Lab, Dept of Ento. JAU. Junagadh	Supply of Beauveria, P. Trap, Lure etc.
8	Dept. of Plant Pathology, JAU, Junagadh	Supply of Bio fertilizer and Trichoderma
9	Vegetable Research Station, JAU, Junagadh	Supply of Vegetable Seeds
10	Cattle Breeding Farm, JAU, Junagadh	Training & exposure visit
B	**State corporation and state deptt.**	
1	District Agricultural Officer, Deptt. of Agriculture, District Panchayat, Rajkot	➢ Joint diagnostic team visit at farmers' field ➢ Organizing collaborative training to farmers ➢ For collaborative off campus training ➢ For collaborative training and demonstration Programme ➢ Collaborative on campus training programme ➢ For providing hostel facilities to participants and organizing collaborative Mahila Krishi Mela
2	District Rural Development Agency, Rajkot	
3	Deputy Director of Veterinary, Department of veterinary &Animal Husbandry, Rajkot	
4	Deputy Director of Horticulture, Rajkot	
5	Deputy Director of Agriculture (Training), Farmer Training Centre, Rajkot	
6	Deputy Director of Agriculture (Extension), Rajkot	
10	Estate Engineer, Department of Irrigation, Dhoraji	
11	All Taluka Development Officers, and their team at Taluka level	
13	ATMA, Rajkot	

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

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Seed Village Programme	2017-18	GOI & State Govt	180000
NMOOP (CFLD)	2017-18	GOI	485000
Evaluation of Carrot Varieties under different Spacing	2017-18	-	-
Evaluation of Bioefficacy and Phytotoxicity of PIF 320 5% SC against Powdery Mildew disease of Chili sponsored by PI Industries Ltd.	2017-18	-	219500

C. Details of linkage with ATMA

a) Is ATMA implemented in your district Yes

If yes, role of KVK in preparation of SREP of the district?

Coordination activities between KVK and ATMA

S. No.	Programme	Particulars	No. of programmes attended by KVK staff	No. of programmes Organized by KVK	Other remarks (if any)
01	**Meetings**	AGB meeting	1	-	-
02	**Research projects**	-	-	-	-
03	**Training programmes**	Farmers training programme	12	5	-
04	**Demonstrations**	-	-	-	-
05	**Extension Programmes**				
	Kisan Mela	1	2	-	-
	Technology Week	-	-	-	-
	Exposure visit	-	-	-	-
	Exhibition				
	Soil health camps				
	Animal Health Campaigns				
	Others (Pl. specify)				
06	**Publications**				
	Video Films				
	Books				
	Extension Literature				
	Pamphlets				
	Others (Pl. specify)				
07	**Other Activities** (Pl. specify)				
	Watershed approach				
	Integrated Farm Development				
	Agri-preneurs development				

D. Give details of programmes implemented under National Horticultural Mission

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Constraints if any
-	-	-	-	-	-

E. Nature of linkage with National Fisheries Development Board

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
-	-	-	-	-	-

F. Details of linkage with RKVY

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
-	-	-	-	-	-

7. Convergence with other agencies and departments:-

8. Innovator Farmer's Meet

Sl.No.	Particulars	Details
	Have you conducted Farm Innovators meet in your district?	No
	Brief report in this regard	

9. Farmers Field School (FFS)

S. No	Thematic area	Title of the FFS	Budget proposed in Rs.	Brief report
	-	-	-	-

10.1. Technical Feedback of the farmers about the technologies demonstrated and assessed:

S. No	Crop/Enterprise	Feed Back
1	Groundnut	Less incidence of stem rot disease and higher yielding
2	Groundnut*	-Application of trichoderma at proper time act as a precaution measure for the stem rot
3	Groundnut**	-IPM in G'nut effectively manage the pest and increase the yield
4	Sesame	-Bold seeded, wilt resistance, higher yield
5	Chick pea	-GG-3 variety of gram gave higher yield and wilt resistance
6	Wheat	-GW-366 variety of wheat is high yielding as compare to GW-496
7	Onion	High Yielding Variety, Less incidence of pest and disease
8	Brinjal	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal
9	Brinjal*	High Yielding Variety, Less incidence of pest and Little leaf of Brinjal disease
10	Okra	High Yielding Variety Less incidence of pest and Yellow Vein Mosaic Virus Disease
11	Papaya	Resistance to papaya mosaic
12	Cumin	-Wilt resistance as compare to other variety
13	Cotton	-INM in cotton reduce the cost of fertilizers and reduce the reddening of cotton and increase the yield
14	Cotton*	Less infested cotton with pink bollworm and reduce cost of cultivation
15	Animal Husbandry	-Increase in milk production after calving
16	Kitchen Gardening	- Easy availability of vegetables at low cost

10.2. Technical Feedback from the KVK Scientists (Subject wise) to the research institutions/universities:

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11. Technology Week celebration during 2017-18 Yes/No, If Yes

Period of observing Technology Week: From 25th to 29th September, 2017
Total number of farmers visited : 205
Total number of agencies involved : 2
Number of demonstrations visited by the farmers within KVK campus: 3

Other Details

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Gosthies	-	-	IPM, INM, IDM in field crops & horticultural crops AI, feed and Fodder Management and nutrition management in Livestock, value addition, storage techniques, nutritional education, women empowerment for farm women
Lectures organized	25	205	
Exhibition	-	--	
Film show	5	205	
Fair			
Farm Visit	5	205	
Diagnostic Practicals	4	205	
Supply of Literature (No.)	12	205	
Supply of Seed (q)	-	--	
Supply of Planting materials (No.)	1	15	Vegetable seedlings
Bio Product supply (Kg)	1	45	
Bio Fertilizers (q)	1	25	
Supply of fingerlings	-	-	
Supply of Livestock specimen (No.)	-	-	
Total number of farmers visited the technology week	1	245	

12. Interventions on drought mitigation (if the KVK included in this special programme)

A. Introduction of alternate crops/varieties

State	Crops/cultivars	Area (ha)	Number of beneficiaries
-	-	-	-
-	-	-	-

B. Major area coverage under alternate crops/varieties

Crops	Area (ha)	Number of beneficiaries
Oilseeds	-	-
Pulses	-	-
Cereals	-	-
Vegetable crops	-	-
Tuber crops	-	-
Total		

C. Farmers-scientists interaction on livestock management

State	Livestock components	Number of interactions	No.of participants
-	-	-	-
-	-	-	-
Total			

D. Animal health camps organized

State	Number of camps	No. of animals	No. of farmers
-	-	-	-
-	-	-	-
Total			

E. Seed distribution in drought hit states

State	Crops	Quantity (qtl)	Coverage of area (ha)	Number of farmers
-	-	-	-	-
-	-	-	-	-
Total				

F. Large scale adoption of resource conservation technologies

State	Crops/cultivars and gist of resource conservation technologies introduced	Area (ha)	Number of farmers
Total			

G. Awareness campaign

State	Meetings		Gosthies		Field days		Farmers fair		Exhibition		Film show	
	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers	No.	No. of farmers
Total												

13. IMPACT

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)
-	-	-	-	-

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

B. Cases of large scale adoption

Title: Integrated Management of Pink Bollworm in Bt. Cotton of Rajkot-II district of Gujarat State

1) Situation analysis/Problem statement:

Gujarat is the single largest cotton producer state with 36 per cent (101 lakh bales) of the total national production from the area about 25.00 lakh hectares. Saurashtra account 65 % area of the state and contributes 68 % in the total production of the state. Average lint production of the Saurashtra is 754 kg/ha as against 615 kg/ha of the state (2007-08). Among the different districts of Gujarat, Surendranagar ranks first in total cotton production of the state (22 %), followed by Rajkot (16.6 %), Bhavnagar (15.8 %), Vadodara (7.7 %) and Amreli (7.2 %). Cotton is the second largest sowing kharif crop in Rajkot district with 311500 ha area. The operational area of Krishi Vigyan Kendra-Pipalia (Rajkot –II) is seven Taluka of Rajkot district. The farmers of this area were sown mainly Bt. Cotton from 2003-04 and achieved higher income, but since 2015-16 farmers suffering from heavy infestation of pink bollworm in Bt. Cotton which resulted in heavy crop yield losses. The productivity reduces 40-50 % and quality of cotton lint was also declined. In addition to this, due to less knowledge of integrated management of pink boll worm, cotton growers used injudicious conventional pesticides for management of pink bollworm, resulted increased cost of production So farmer income generated from cotton crop was false down. There is urgent need to provide technological know-how about integrated management of pink boll worm with easily available critical input.

2) Plan, Implement and Support:

To overcome the above situation, it is necessary to disseminate integrated management technology among the cotton growers by different extension methods, for that KVK-Pipalia had decided to organize special campaigning on integrated management of pink bollworm in Bt. cotton for two years 2015-16 and 2016-17. we had prepared one by one step procedure and activities for management of pink bollworm. Primarily we surveyed some field of cotton and discussion with farmers to analyze the actual situation. Identified some villages and progressive farmers for training, who were willingly to join this campaign and also listed out departmental extension machinery i.e. VLWs, farmers friend

–ATMA and FIGs of ATMA prevailing in entire area. And arranged all activities accordingly viz., Training, FLDs, Diagnostic visit, Field day, Presentation, postering and literature distribution, Phone advisory, Exposure visit, Farmer-scientist interaction etc. Because of instant implementation of campaign, we identified one NGO (AFPRO) who had work in area for maximizing Bt.cotton yield and also we need help from Junagadh Agricultural University, Junagadh for more technical guidance and for supply of technical product (Beauveria bassiana and Pheromone trap). To measure impact of campaign, interview schedule was developed and for selection of respondents, 60 cotton growers were randomly selected from selected six villages who have been a part of special campaign. For measuring horizontal spread of campaign, selection of 30 cotton growers who are the fellow farmers of the firstly selected farmers. Questionnaire were filled by personal contact and analysis done on percentage basis.

During 2015-16, the infestation was observed during the flowering stage. For instant action, we arranged four training for extension functionaries i.e. state department, farmers friend, AFPRO contact leader. Six on and off campus training were carried out for progressive farmers with total beneficiaries was 668. Agro input dealer is the first line information source for the farmers so one training was also organized with 55 agro input dealers and distributors of 4 major taluka. Poster is more powerful medium for understanding the technology with diagram and picture. Total 600 posters of well-defined integrated management of pink bollworm were distributed to 60 villages of entire operational area. More than 800 farmers were benefited through various extension activities carried out by KVKs scientist i.e. diagnostic visit, F-S interaction, group meeting, field visit, telephone advisory etc. Thus total 5400 farmers benefited directly by the KVKs activities during 2015-16.

During 2016-17 following activities was carried out by the KVKs and more than Ten thousands of farmers were benefited including extension functionaries and ATMA FIGs members.

Major Technology transferred for management of pink boll worm

1. Avoid pre-sowing of cotton
2. Adoption of pheromone trap on community basis
3. Spraying of Beauveria bassiana for effective management of pink bollworm
4. Destroyed damage cotton ball after completion of crop
5. Teach the skill about installation of pheromone trap and lure

Table: 1.Activities under the campaign on Management of pink bollworm in Bt. Cotton during 2016-17

Sr. No	Activities/Technology		Total no of Activities /Technology/input	Participants/Beneficiaries
1	On campus training		3	187
2	Off campus training		12	1449
3	Sponsored training		7	266
4	Diagnostic visit		11	17
5	Field days		3	54
6	FLD on farmer fields	Pheromone trap	50	50
		Beuveria bassiana		
7	Selling of IPM inputs	Pheromone trap	4490	315
		Pheromone lure	4815	321
		Beuveria bassiana	4950	619
8	Selling of IPM inputs through co-operatives	Pheromone trap	25000	2250
		Beuveria bassiana	4500	498
8	Provide Literature/poster on IPM		1050/300	-
9	Phone advisory and What's app information dissemination		-	950/season

Table: 2. Detail of Frontline demonstration on IPM in Bt. Cotton

Sr. No	Technology/ Demonstration	No. of farmer	Total area (Ha.)	Method of Application
1	Pheromone trap/ lure	50	20	First installation at the flowering stage @ 40/ha. and change lure every 45 days for 3 times
2	Beuveria bassiana	50	20	Spraying 60 gm/15 lit of water at the time of infestation of Pink bollworm in moist weather.

3) Impact of campaign on management of pink bollworm in Bt. cotton

Following impact was observed / measured from campaign on management of pink boll worm.

1. Due to activities of two years for integrated management of pink bollworm, total more than fifteen thousand farmers were benefited.
2. During 2015-16 (First year) about 200 farmers used Beuveria and pheromone trap from KVK. Its high impact observed consecutive year 2016-17 (Second year) and KVK sold 4850 kg of Beauveria and 30000 pheromone trap.
3. Impact on first line farmers:

On basis of data analysis, it revealed that 86.67 per cent change in attitude about integrated management of pink bollworm (ranked first), reduction of pink bollworm infestation (83.33 per cent) with second rank, extent of awareness with 80.00 per cent (ranked fourth), improvement of cotton quality ranked fifth with 76.67 per cent, gain in knowledge with 45.00 per cent (ranked sixth) and rise income with 73.33 per cent ranked seventh. It can be concluded that most of the farmers attitude must be changed towards use of IPM practices i.e. use of pheromone trap, Beauveria etc.

Table: 3 Response of cotton growers towards activities on management of pink bollworm on participated farmers **n =60**

Sr. No.	Particular	Frequency	Percent	Rank
1.	Gain in knowledge	45.00	75.00	VI
2.	Extent of awareness	48.00	80.00	III
3.	Change in attitude	52.00	86.67	I
4.	Reduction pink bollworm infestation	50.00	83.33	II
5.	Increased productivity	48.00	78.33	IV
6.	Improvement in cotton quality	46.00	76.67	V
7.	Rise in income	44.00	73.33	VII

4) Impact on fellow farmers:

Table : 4 Impact of extension activities on management of pink bollworm on fellow farmers

n =30

Sr. No.	Particular	Frequency	Percent	Rank
1.	Gain in knowledge	40.00	66.67	III
2.	Extent of awareness	42.00	70.00	II
3.	Change in attitude	46.00	76.67	I
4.	Reduction in pink bollworm infestation	38.00	63.33	IV
5.	Increased productivity	38.00	63.33	IV
6.	Improvement in cotton quality	33.00	55.00	VI
7.	Rise in income	37.00	61.67	V

It is apparent that most of the fellow cotton growers change in attitude with 76.67 per cent ranked first. This was followed by extent of awareness and gain in knowledge ranked second and third respectively. Similarly, reduction of pink bollworm infestation, increased productivity, rise in income, and improvement in cotton quality were realized as important statements given by ranked 4th, 4th, 5th and 6th respectively. On basis of fellow farmers' response, it can be concluded that first line farmers had given due weight in dissemination of proven management technology to his surrounding community.

C. Details of impact analysis of KVK activities carried out during the reporting period: -----

14. 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 2017	-	-	-
May	-	-	-
June	-	-	-
July	-	-	-
August	-	-	-
September	-	-	-
October	-	-	-
November	-	-	-
December	-	-	-
January 2018	-	-	-
February	-	-	-
March	-	-	-

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marke-ting	Aware-ness	Other enterprise	Total
	Text only	68	75	65	30	31	21	290
	Voice only	321	452	374	32	75	71	1325
	Voice & Text both	-	-	-	-	-	-	-
	Total Messages	389	527	439	62	106	92	1615
	Total farmers Benefitted	389	527	439	62	106	92	1615

15. PERFORMANCE OF INFRASTRUCTURE IN KVK

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	
NIl									

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.	Cost of inputs	Gross income	
Cereals									
Wheat			12.50	GW-496	Truthful	32500	-	-	Sell During 2018-19
Pulses									
Black Gram			2.70	GujUdad-1	Truthful	1710	-	-	
Soya bean			3.60	GJS-3	Truthful	3165	-	-	
Oilseeds									
Groundnut			2.00	GJG-17	Breeder	2380	-	-	
Groundnut			3.70	GAUG-10	Breeder	6950	-	-	
Groundnut			4.00	GJG-22	Breeder	5690	-	-	
Castor			1.00	GCH-9	Breeder	Standing	-	-	
Fruits									
Papaya			0.16	GJP-1	Truthful seed	Standing	-	-	
Fibre			1.72	-	Seed Prod	400	-	20230	
Sunnhemp									

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

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
NIL					

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

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
NIL							

E. Utilization of hostel facilities

Accommodation available (No. of beds): NIL

F. Database management

S. No	Database target	Database created
NIL		

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

Amount sanction (Rs.)	Expenditure (Rs.)	Details of infrastructure created / micro irrigation system etc.	Activities conducted					Quantity of water harvested in '000 litres	Area irrigated / utilization pattern
			No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)		
NIL									

16. FINANCIAL PERFORMANCE

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	---				---		
With KVK	SBI	Dhoraji	060072		32586636847	360002082	SBIN0060072

B. Utilization of KVK funds during the year 2017-18 (Rs. in lakh)

Sr. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	68.29	68.29	68.29
2	Traveling allowances	1.00	1.00	0.54
3	Contingencies	10.00	10.00	10.00
	TOTAL (A)	79.29	79.29	78.83
B. Non-Recurring Contingencies				
1	Works	0	0	0
2	Equipments including SWTL & Furniture	0	0	0
3	Vehicle (Four wheeler)	0	0	0
4	Library (Purchase of assets like books & journals)	0	0	0
	TOTAL (B)	0	0	0
C. REVOLVING FUND				
	GRAND TOTAL (A+B+C)	79.29	79.29	78.83

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 2015 to March 2016	285034	217280	266000	236314
April 2016 to March 2017	236314	1833862	1047720	1022456
April 2017 to March 2018	1022456	1501896	2331203	193149

17.1 Details of HRD activities attended by KVK staff during year

Name of the staff	Designation	Title of the training programme	Institute where attended	Dates
Dr. N.B.Jadav, S.V Undhad,A.R. Parmar and V S Prajapati	Senior Scientist & Head and scientists	Extension plus: ”Ëxpanding horizons of extension for holistic agriculture approach”	SDAU, SKNagar	21/04/2017-22/04/2017
A.R. Parmar	Scientist(Horti)	Proper handling of Mini Soil testing Machine	ATARI, Jodhpur, Rajasthan	20/05/2017-22/05/2017
Dr. N.B.Jadav, S.V Undhad, P.S Sharma and F.P Kargatiya	Senior Scientist & Head, Scientist(PP), Scientist(Home Sc.) and A.O	Annual Zonal Workshop of KVKs of Zone VI (Rajasthan & Gujarat)	JAU, Junagadh	10/06/2017-12/06/2017
A.R Parmar	Scientist(Horti)	Computer Kaushalya Talim	SPIPA, Rajkot	24/07/2017-08/08/2017
Dr. N.B.Jadav and S.V Undhad	Senior Scientist & Head and Scientist(PP)	Store verification	KVK Khapat	19/07/2017
P.S Sharma	Scientist(Home Sc.)	Upgradation of Human Research development for extension personnel	JAU, Junagadh	20/06/2017-22/06/2017
Dr. N.B.Jadav	Senior Scientist & Head	Improving income of farmers through agriculture and allied sectors through development interventions	ICAR-CIFA, Bhubaneswar	05/01/2018-07/01/2018
A.R Parmar	Scientist(Horti)	Workshop-cum-Training on CFLDs Oilseeds & Pulses	NAU, Navsari	29/01/2018-31/01/2018
V S Prajapati	Scientist(LPM)	Nutritional challenges for raising animal productivity to improve farm economy	JAU, Junagadh	01/02/2018-03/02/2018
P.S Sharma	Scientist(Home Sc.)	Computer Kaushalya Talim	SPIPA, Rajkot	29/01/2018-14/02/2018
N.B.Jadav	Senior Scientist & Head	National conference of KVK technologies for doubling the farmers income	IARI, New Delhi	16/03/2018 to 17/3/2018
N.B.Jadav P.S.Sharma A.R.Parmar F.P.Kargatiya	Senior Scientist & Head, Scientist(Home Sc.), Scientist(Horti) and A.O	Water Conservation technique and micro irrigation system for quality crop production	DEE, JAU, Junagadh	21/3/2018 to23/3/2018
S.V.Undhad	Scientist(PP)	Production protocol for biocontrol agents quality analysis and quality management of microbial bio pesticides and biofertilizers	NIPHM, Hyderabad	8/3/2018 to 28/3/2018

17.2 Award Received:

Dr. Narendra B. Jadav, Senior Scientist & Head, KVK Pipalia, has been received a “Young Scientist Award” and “Best Poster Presentation Award” during National Conference on “Improving income of farmers through agriculture and allied sectors through development interventions”held at ICAR-CIFA, Bhubneswar, Odisha during 5th to 7th January 2018 organized by Society of Krishi Vigyan, Ludhiana.

Shri Nileshbhai Oghadbhai Dobariya Village, Boriya, Ta: Jamkandorana Dist:Rajkot had won the award of “Krishi Yantrikaran Award” under Mahindra Samriddhi India Agri Award-2018. The award was given by Central Minister of Agriculture and Farmers Welfare Hon. Shri Radhamohan Singh on 6th March., 2018.

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

Celebration of Technology Week:

Technology week was celebrated at Krishi Vigyan Kendra, J.A.U., Pipalia during 25th to 29th September, 2017. In which following Total 205 farmers and farm women from different villages of KVK operational area were participated.

Date	Name of Village	Taluka	Male	Female	Total
25.9.2017	Rayadi, Nani Dudhivadar	Jam Kandorna	42	0	42
26.9.2017	Nagvadar	Upleta	46	0	46
27.9.2017	Mandlikpur	Jetpur	45	0	45
28.9.2017	Charaniya,	Dhoraji	00	36	36
29.9.2017	Patanvav	Dhoraji	05	31	36
		Total	138	67	205

Dr. N. B. Jadav, Programme Co-ordinator, KVK , J.A.U., Pipalia welcomed all the participants during the technology week- 2017 and highlighted the achievements and activities of the KVK in brief.

Technology Week was celebrated by KVK, J.A.U., Pipalia during 25th to 29th September, 2017. During the Technology Week Dr. A. M. Parakhia, Director of Extension Education, JAU, Junagadh has visited for giving the information about role of women in agriculture, women empowerment, importance of child care, income generation activities. In his speech he emphasized on formation of self-help group and generate income in different agriculture and allied fields.

In a week, out of 5 days 3 days for farmers and 2 days for specially farm women the programme was arranged accordingly. Different scientists of KVK have given talk on different subjects and provide scientific information. Dr. N.B. Jadav and Shri S.V. Undhad, SMS, (Plant Protection) delivered different lecture on "Management of white grub in groundnut and pink boll worm in cotton", "Pest and disease management in major kharif crops"**, "**Package of practices of major rabi crops", "Role of Seed treatments in management of Pest and Diseases" topics with presentation. Smt. P. S. Sharma, SMS (Home Science) has delivered different lecture to rural farm women on "Balance diet and nutrition", Value addition of different crops", "Drudgery reduction technology" and "Importance of kitchen gardening", Gender mainstreaming with self-help group formation. Dr. V. S. Parajapati, SMS (AH), delivered different lecture on milk production and management of livestock, awareness about the Colostrum feeding in the calves and importance of vaccination and Deworming of the animal and Shri Arvind Parmar SMS (Horticulture) has given training on "Cultivation of vegetables in green houses", "Importance of drip irrigation in Horticultural crops", "knowledge about scientific cultivation of Spice Crop" and during the week on all days farmers and farm women visited the KVK, Farm and crop cafeteria.

The day to day Theme is as under.

Themes of the Technology Week:

1. 1st day: Pest and disease management in major kharif crops , Package of practices of fruit crops
2. 2nd day: Clean milk production and management of livestock, uses of recommended pesticides and fungicides
3. 3rd day: Management of white grub in groundnut and pink boll worm in cotton, scientific cultivation of Spice Crop
4. 4th day: Kitchen gardening and Value addition in different crops, Drudgery Reduction Tools
5. 5th day: Exposure Visit for farmers/farm women to JAU and DGR, Ivnagar

Following are the topics delivered by scientist

- Whit grub in groundnut and their management
- Integrated pest and disease management in kharif crops
- Control and management of pink boll worm in cotton
- Importance of drip irrigation in Horticultural crops
- Value addition in fruits and vegetables
- Importance of kitchen gardening
- Balance diet and nutrition

- Drudgery reduction technology in agriculture and work simplification in house hold activities
- Gender mainstreaming through self-help group formation
- Vermin compost and organic farming
- Recycling for farm waste material and composting
- Clean milk production
- Balance nutrition of farm animal
- Awareness about artificial insemination and knowledge about vaccination
- Cultivation of vegetables in green houses
- Package and practices of fruit crops
- Introduction of new release variety of horticultural crops

All the days at the end of the day discussion session was held during this five days, farmers get satisfied during this week and encouraged for adopting scientific technologies in agriculture, Horticulture and animal husbandry. And all the days' farmers actively participated in discussion session and get resolved their problems.

On last day one exposure visit was arranged by KVK. For Farm women and rural youth of Patanvav village of Dhoraji Taluka who had visited the Junagadh Agricultural University, Junagadh. Smt. P. S. Sharma, SMS (Home Science) had made the visit of different department like Entomology, Plant pathology, Horticulture oilseed and educational museum of university and NRCG, Junagadh.

In addition, in Bakery school, bakery item demonstration had made for farm women by Shri M. B. Kapopara and at the end of the day farm women and rural youth get very satisfied by visiting the university.

18.2 Celebration of "Mahila Krushi Diwas":

"Mahila Krushi Divas" was celebrated at Krishi Vigyan Kendra, JAU, Pipalia on 6th august, 2017, in which 155 farm women from different seven villages, covering four talukas of kvk Pipalia Jurisdiction had participated. The programme was organized collaboratively with ATMA Rajkot.

Sr. No.	Village Name	Taluka	Participant (Farm Women)
1.	Deradi	Gondal	45
2.	Dharada	Gondal	35
3.	Upleta	Upleta	18
4.	Samadhiyala	Upleta	12
5.	Bhadajaliya	Dhoraji	15
6.	Thana Galol	Jetpur	15
7.	Devki Galol	Jetpur	15
Total	**7**	**4**	**155**

The programme was held by Dr. N. B. Jadav, Senior Scientist & Head of KVK Pipalia. In his speech he addressed to farm women on their role and importance in agriculture, their contribution in dairy technology. Active participation of ATMA Staff i.e. Shri Viren Trada (BTM-Gondal), Shri Sandip Nimavat (BTM-Dhoraji), Shri Ritesh Gajera (BTM-Upleta), Shri Nirav Unjiya (BTM-Jetpur). In his lecture Shri Viren Trada (BTM-Gondal) told that more number of farm women must be participated in ATMA Scheme, i.e. Exposure visit, Training etc., So that farm women can strengthen by seeing is believing. Shri S. V. Undhad, Scientist (Plant Protection) addressed recent problem of plant protection, i.e. Pink Boll Worm in cotton and White Grub in Groundnut. He suggested easy integrated management of both the problem.

In Saurashtra Region 90% of animal husbandry done by farm women our scientist Dr. V. S. Prajapati, Scientist (Livestock Prod. & Manag.) lectured on clean milk production and simple way to manage monsoon diseases of animals. Shri Foram Kargatia (Agriculture Officer) from horticulture lecture on kitchen gardening and vegetable production for daily diets. After the completion of lecture and presentation, all farm women actively participated in discussion of different problem about farm and animal health. One progressive farm Women Neetaben from Jetpur advised to more participation of farm women in different government scheme and training.

The programme was ended by field visit of KVK, crop cafeteria and nearby animal husbandry shed.

18.3 "Mera Gaon Mera Gaurav" Scheme:

TheMeraGaonMeraGuarav scheme was implemented during the year 2017-18. Under this scheme,first following two groups of scientists were formed for village selection and base line survey.

Table 1: Details of MGMG Team and status of benchmark survey of selected villages

Team	Name of scientists with discipline	Name of village	Name of block	Name of district	Benchmark survey Status
1	2	3	4	5	6
Team 27	Dr. N. B. Jadav (ExtnEdu) Ms Pinki Sharma (Home Sci.) Shri S V Undhad (Pl. Prot.)	Patanvav	Dhoraji	Rajkot	Completed
		Toraniya	Dhoraji		
		Zanzmer	Dhoraji		
		Arni	Upleta		
		Pedhala	Jetpur		
Team 28	Dr. V. S. Prajapati (LPM), Shri A R Parmar Shri F P Kargatiya (Horti)	KhajuriGundala	Jetpur	Rajkot	Completed
		CharanSamdhiyala	Jetpur		
		Jasapar	Jamkandorna		
		Satodad	Jamkandorna		
		Chitravad	Jamkandorna		

Table 2: Activities carried in the selected villages

Team	Visit to village		Goshthis/ Interface meetings conducted		Demonstrations conducted		
	No. of visits	No. of farmers	No. of goshthis/ interface meetings	No. of farmers	Title of demonstration	No. of demons	No. of farmers
1	2	3	4	5	6	7	8
Team 27	9	129	4	96	Feed Management	4	4
Team 28	11	138	3	68	Kitchen gardening	10	10

Team	Trainings conducted		Mobile-based advisory		Literature support provided		Input support	
	No. of training	No. of farmers	No. of farmers	No. of advisories	No. of literature	No. of farmers	Area (ha)	No. of farmers
9	10	11	12	13	14	15	16	17
Team 27	10	254	85	15	582	582	-	-
Team 28	11	237	87	20	650	650	-	-

Table 3: Any other activity carried out

Team	Name of activity	No. of farmers
1	2	3
Team 27	Mahila Krishi Divas	45
	Technology week	35
Team 28	Mahila Krishi Divas	34
	Technology week	37

18.4 Exposure Visit of farmers:

Sr.No.	**Date**	**Scientist**	**Village**	**No. of participant**	**Place visited**
1.	29-09-2017	P S Sharma	Patanvav	36	DGR, CBF & COA, JAU, Junagadh
2.	22-01-2018	P S Sharma	Upleta, Jamkandorna and Dhoraji Taluka Villages	165	Machinery and Technology Demonstration Fair at College of Agricultural Engineering & Technology, JAU, Junagadh
3.	17-3-2018	A.R.Parmar	Dhank, Rayadi	60	Farmers fair cum interactive session, DGR, Ivnagar, Junagadh

18.5 Celebration Mahila Kisan Divas

"Mahila Kisan Divas" was celebrated at Krishi Vigyan Kendra, JAU, Pipalia on 15th October, 2017, in which 54 farm women including 2 PRI members from different KVK operational villages had actively participated

18.6 Celebration of *Parthenium* awareness week

Parthenium Awareness week was celebrated on last week of August at KVK Pipaliaand farmers from different villages had actively participated in the programme. KVK Scientists had given lectures on Parthenium and all different weeds and also discussed measures to control them during the programme.

18.7 Celebration of Swachta Pakhwada

Swachchta Pakhwada was celebrated by KVK Pipalia during 15th September to 2nd Octas a part of Swachh Bharat Mission. A camapaign was organized by KVK in which many activities were performed by the Staff i.e. celebration of Sewa Divas, tree plantation, shramdaan, etc.

18.8 Participation in Ma Narmada Mahotsav

Scientist of KVK Pipalia had actively participated in Ma Narmada Mahotsav w.e.f. 6/9/2017 to 15/9/2017 where they had conducted a total of 11 number of "*Khedut Sabha*" in different villages of Upleta, Dhoraji, Jetpur and Jamkandorna talukas. During sabhas Scientist had delivered lectures on water harvesting, water conservation, use of micro-irrgation and had a good Farmer-Scientist Interaction.

18.9 Krishi Unnati Mela:

A live webcast programme of Hon. Prime Minister was organized on 17 March 2018 by KVK Pipalia under the theme of doubling farmers income by 2022 held at IARI New Delhi covering 158 farmers and 50 farm women. The target group was to make aware about all the scheme and benefits cover to make mission successful.

18.10 Dignitaries /Scientist visit:

Sr. No.	Dignitaries/Scientist	Date	Purpose of visit
1.	Dr.A.R.Pathaksir Hon. Vice chancellor JunagadhAgril. University, Junagadh	03-08-2017	KVK-Visit
2.	Dr.A.M.Parakhia Director of Extension Education JunagadhAgril.University Junagadh	03-08-2017	KVK-Visit
		28-08-2017	KVK-Visit
		28-09-2017	To participate in Technology Week
		18-10-17	KVK-Visit
		07-02-2018	KVK-Visit
3.	Shri Pravinbhai Makadiya Ex-MLA, Dhoraji	08-09-2017	KVK-Visit
4.	Dr K. L. Dobariya Research Scientist(Groundnut) JunagadhAgril.University,Junagadh	01-09-2017	KVK-Visit
5.	Dr P. R. Kanani, ADE, JunagadhAgril.University, Junagadh	21-09-2016	KVK-Visit
6.	Dr. N. D. Dholariya, Assistant Research Scientist JunagadhAgril.University, Junagadh	11-09-2017	KVK-Visit
		07-10-2017	KVK-Visit
7.	Scientists from Vegetable Research Station, JAU, Junagadh	22-11-2017	Experiment Layout and Sowing
8.	Scientists from Oilseed Dept. & Dept. of Seed Science and Technology, JAU, Junagadh	22-12-2017	KVK-Visit
9.	Dr. D K Varu, Associate Professor, Deptt. Of Horticulture, JAU, Junagadh	11-01-2018	KVK-Visit

18.11. Technical Programme (Results):

Technical Programme 1

Title: Knowledge of farmers about use of biofertilizer and biopesticides in Bt. cotton

Principal investigator: Dr.N.B.Jadav, Senior Scientist & Head, KVK, JAU, Pipalia
Co-investigator: 1) Sh. S.V. Undhad, Scientist, KVK, JAU, Pipalia
2) Dr.V.S.Prajapati, Scientist, KVK, JAU, Pipalia
3) Sh.A.R.Parmar, Scientist, KVK, JAU, Pipalia
4) P.S.Sharma, Scientist, KVK, JAU, Pipalia
5) Sh. F.P.Kargatiya, Agril. Officer, KVK, JAU, Pipalia
6) Dr.A.M.Parakhia, DEE, JAU, Junagadh

INTRODUCTION:

Bio fertilizers are defined as preparations containing living cells or latent cells of efficient strains of microorganisms that help crop plants uptake of nutrients by their interactions in the rhizosphere when applied through seed or soil. They accelerate certain microbial processes in the soil which augment the extent of availability of nutrients in a form easily assimilated by plants. In arid and semi-arid area where the moisture is limiting factor there is no chance or sometime less chances of giving top dressing of fertilizers. In such situation biofertilizers are the cheap source to maintain fertility as well as soil moisture. They are beneficial in enriching the soil with microorganisms which increases quality of nutrient in soil and also impart strength to combat with diseases (Savci 2012).

In semi-arid regions of tropical and subtropical countries, the soils are nutritionally deficient and due to moisture limitation, chemical fertilizers cannot be applied in adequate quantities. Crops grown in such areas, therefore, the supply of N is largely dependent on biological nitrogen fixation. In rainfed agriculture, these inputs gain added importance in view of their low cost, as most of the farmers are small and marginal and cannot afford to buy expensive chemical fertilizers. Biofertilizers are also ideal input for reducing the cost of cultivation and for practicing organic farming. In addition to being a model organism for studying diazotrophs, it is used by humans for the production of bio fertilizers, food additives, and some biopolymers. (Sartaj *et al.* 2012)

Biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals. Microbial pesticides consist of a microorganism (e.g., a bacterium, fungus, virus or protozoan) as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pests and disease. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pests and disease. *(*Abhilash and Singh, 2009). In India, some of the biopesticides like *BT*, *NPV*, Neem based pesticides, *Trichoderma, Beauveria* etc. have already been registered and are being practiced. *Trichoderma harzianum* is a fungus that is also used as a biofungicide. It is used for foliar application, seed treatment and soil treatment for suppression of various disease causing fungal pathogens. (Govindasamy and Balasubramanian, 1989)

The biofertilizer and biopesticide technology is basically a microbial technology. The field extension workers are the link between the newly recommended technology and farmers. They have a major role to communicate this specialized technology to farmers. Accordingly, in order to acquaint about the developments towards biofertilizer and biopesticide technology, the extension officials of the state governments are being trained in the project, about the current developments of biofertilizer and biopesticide technology.

Cotton is one of the principal commercial crops and has been one of the main sources of India's economic growth and foreign exchange earner. Since launch of "Technology Mission on Cotton" by Government of India in February 2000 significant achievements have been made in increasing yield and production through development of high yielding varieties, appropriate transfer of technology, better farm management practices, increased area under cultivation of Bt. cotton hybrids etc. All these developments have resulted into a turnaround in cotton production in the country since last 6/7 years. The yield per hectare which was stagnant at about 300 kg/ha for more than 10 years, has increased substantially and reached a level of 489 kg/ha in cotton season 2012-13.

Gujarat is the second largest cotton producing state of India. In Gujarat state Saurashtra region is also has major area under cotton crop. However, it is interesting to note that cotton, which occupies only five per cent of the total cultivable land consume more than 55 per cent of the pesticides used in India. Excessive and indiscriminate use of chemical pesticides has lead to several complications such as resistance development, resurgence, secondary pest outbreak, toxicity to beneficial organism, residue in food, feed, fodder etc. and above all environmental pollution. The cotton crop is attacked by a number of insect, pests, diseases, nematodes and weeds. Yield losses due to the pests range from 15-25 per cent

There is great need to increase farm production to overcome the requirement of food for increasing population without damaging the environment. The more use of chemical fertilizers is harmful to living soil and therefore the use of biofertilizers and are required which improve the soil fertility without any harmful effect to the soil as well as biopesticides are require to control of pest without harmful effect to environment.

Looking to above facts a study entitled "**Knowledge of farmers about use of biofertilizer and biopesticides in Bt. cotton** was undertaken with following objectives.

OBJECTIVES:

1) To study the personal and socio-economic characteristics of the farmers in the study area
2) To determine farmers level of knowledge about use of biofertilizer and biopesticides

3) To explore the relationship between characteristics and knowledge of cotton growers
4) To identify the constraints faced by the farmers in adoption of biofertilizer and biopesticides
5) To seek suggestion from the farmers to overcome the constraints

METHODOLOGY:

Selection of respondents:

The study was conducted in Krishi Vigyan Kendra, Junagadh Agricultural University, Pipalia (Rajkot-2) operational area of Saurashtra region. Out of seven operational talukas viz. Dhoraji, Upleta and Jam kandorana were selected purposively where more area under Bt. cotton cultivation. Four villages from each taluka selected randomly thus total twelve village selected for the study. For the selection of respondents, ten respondents were randomly selected from each village and total 120 respondents interviewed for the study. *Ex-post facto* research design was followed for the study.

Table: 1 Selection of respondents according to village, taluka of Rajkot district.

Sr. No.	Taluka	Villages	Respondents
1.	Upleta	1. Talangana	10
		2. Nagvadar	10
		3. Mojira	10
		4. Zanzmer	10
2.	Dhoraji	1. Bhadajaliya	10
		2. Toraniya	10
		3. Pipaliya	10
		4. Jamnavad	10
3.	Jam Kandorana	1. Tarvada	10
		2. Rayadi	10
		3. Sanala	10
		4. Jasapar	10
		Total	120

Measurement of variables

To determine Bt. Cotton knowledge about biofertilizer and biopesticides, forty-two item statements were presented and assessment based on teacher made knowledge test. The objective question was prepared in which the responses can be recorded as Yes /No, correct / incorrect etc. A unit score was given to the correct answer and zero to incorrect answer the total score obtained by individual respondents for all the statement was calculated. With the help of mean and standard deviation, the respondents were categorised as low medium and high. To explore the relationship between independent and dependent variables, the person product moment method of computing correlation coefficient was used. To assess the constraints of Bt. cotton growers about use of bio pesticide and biofertilizer, ten item statements were presented and assessment based on yes and no, percentage of statements were work out and ranked it. For the suggestions to overcome the constraint was kept open-handed and percentage work out and ranked given accordingly.

FINDINGS:

(1) Personal and socio-economic characteristics:

The data presented in Table 2.1 indicated that majority (53.33 per cent) of the respondents was in the middle age group followed by 26.67 and 20.00 per cent of the respondents belonged to the old and young age group respectively. This might be due to that young age farmers moved towards urban area for other business and especially male elder were the respected members and they possess decision making power about all family matters and farming. While in case of education that is presented in Table 2.2, majority 38.33 per cent of the respondent were educated up to secondary level whereas, 30.83 per cent respondents were educated up to primary level followed by 15.83 per cent of the respondents were educated up to higher secondary, 10.00 per cent respondents were graduate and 5.00 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that about 37.50 per cent of respondents had small farmers and 31.67 per cent respondents were medium farmers. Whereas 18.33 and 12.50 per cent respondents were small and big farmers respectively. The data in Table 2.4 represented about annual income of the Bt. cotton growers, indicated that 30.83 per cent farmers had high annual income followed by 27.50 per cent farmers had medium annual income. The respondents belonged to low annual income category was 20.00 per cent. Whereas 15.00 and 6.67 per cent respondents were very high and very low annual income respectively.

The data in Table 2.5 represented about experience as Bt. Cotton growers, indicated that 52.50 per cent of the respondents had medium experience as cotton growers whereas 25.83 and 21.67 per cent respondents had high and low experience as a Bt. Cotton growers respectively. This might be due to that 79.99 per cent respondents were middle and old age group.

Table: 2 Distribution of respondents according to their personal, socio-economic characteristics. (N=120)

Sr.	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 years)	24	20.00
	Middle age (36 to 55 years)	64	53.33
	Old age (above 55 years)	32	26.67
	Total	120	100.00
2	**Education**		
	Illiterate	6	5.00
	Primary (1 to 7th std.)	37	30.83
	Secondary (8 to 10th std.)	46	38.33
	Higher Secondary (11th to 12th std.)	19	15.83
	Graduate (above 12th std.)	12	10.00
	Total	120	100.00
3	**Size of land holding**		
	Marginal (up to 1 ha)	22	18.33
	Small farmers (1.01 to 2 ha)	45	37.50
	Medium (2.01 to 4 ha)	38	31.67
	Big farmers (Above 4 ha)	15	12.50
	Total	120	100.00
4	**Annual income**		
	Very low annual income (up to Rs. 50,000)	8	6.67
	Low annual income (Rs. 50,001 to 1,00,000)	24	20.00
	Medium annual income (Rs. 1,00,001 to 1,50,000)	33	27.50
	High annual income (Rs. 1,50,001 to 2,00,000)	37	30.83
	Very high annual income (above Rs. 2,00,000)	18	15.00
	Total	120	100.00
5	**Experience as a cotton grower**		
	Low experience as a cotton grower (blow 5.01)	26	21.67
	Medium experience as a cotton growers (between 5.01 to 9.01)	63	52.50
	High experience as a cotton growers (more then 9.01)	31	25.83
	Total	120	100.00
6	**Social participation**		
	Low social participation (below 1.01)	34	28.33
	Medium social participation (1.01 to 3.32)	57	47.50
	High social participation (above 3.32)	29	24.17
	Total	120	100.00
7	**Extension participation**		
	Low extension participation (below 13.77)	27	22.50
	Medium extension participation (13.77 to 38.99)	63	52.50
	High extension participation (above 38.99)	30	25.00
	Total	120	100.00
8	**Innovativeness**		
	Low innovativeness (below 1.14)	40	33.33
	Medium innovativeness (1.14 to 2.52)	60	50.00
	High innovativeness (Above 2.52)	20	16.67
	Total	120	100.00

9	**Risk orientation**		
	Very low (up to 18 score)	0	0.00
	Low (19 to 26 score)	6	5.00
	Medium (27 to 34 score)	69	57.50
	High (35 to 42 score)	37	30.83
	Very high (above 42 Score)	8	6.67
	Total	120	100.00

The data regarding social participation represented in Table :2.6 on the basis of data it is cleared that 47.50 per cent respondent had medium social participation followed by 28.83 and 24.17 per cent respondents had low and high social participation respectively. The reason behind this might be that in study area, respondents were progressive farmers as compare to other area. Table.2.7 data inferred that majority 52.50 per cent of the respondents had medium extension participation while 25.00 per cent respondents had high extension participation followed by 22.50 per cent respondents had low extension participation.

The results in Table 2.8 indicate that half (50.00 per cent) of the cotton growers had medium innovativeness; followed by 33.33 and 16.67 per cent respondents had low and high innovativeness respectively. Table 2.9 revealed that more than half (57.50 per cent) respondents had medium risk orientation followed by 30.83 per cent respondents belonged to high risk orientation. Whereas 6.67 and 5.00 per cent respondents had high and low risk orientation respectively. No one of the respondents belonged to very low risk orientation category.

1. Level of knowledge of Bt. cotton growers about bio fertilizer and bio pesticide

Knowledge level of Bt. cotton growers about biofertilizer and biopesticide indicated in Table 3. The data inferred that majority (59.16 per cent) of the Bt. cotton growers had medium level of knowledge about biofertilizer and biopesticide. While 21.67 per cent of the Bt. cotton growers belonged to low level of knowledge category and 19.17 per cent respondent had a high level of knowledge about biofertilizer and biopesticides. This might be due to that majority of the Bt. cotton growers had medium extension participation and medium risk orientation.

Table: 3 Distribution of Bt. cotton growers according to their level of knowledge about bio fertilizer and biopesticides. (N=120)

Sr. No.	Category	Frequency	Percentage
1	Low level of knowledge (Below 18.00 score)	26	21.67
2	Medium level of knowledge (18.00 to 32.97 score)	71	59.16
3	High level of knowledge (Above 32.97 score)	23	19.17
	Total	120	100
Mean = 25.49	S.D. = 7.48		

3. Correlation between level of knowledge of Bt. cotton with their selected characteristics

The correlation co-efficient was computed to ascertain the association between cotton growers level of knowledge and their selected characteristics. The data in Table 4 revealed that there was negative and significant association between cotton growers' knowledge of biofertilizer and biopesticide and their age. The direction of association was negative and significant which indicated that cotton grower knowledge increased significantly with decrease in their age. This might be happened because great majority respondents fell in medium to young age group. Size of land holding is non-significance associated with cotton growers' knowledge about biofertilizer and biopesticide. This might be due to the fact that, irrespective size of land holding, almost all cotton growers needed to acquire the technical know-how equally.

Remaining all characteristics of cotton growers like education, annual income, experience as cotton growers, social participation, extension participation, innovativeness and risk orientation were positively and significantly associated with knowledge about bio fertilizer and bio pesticides of Bt. cotton growers. It's proved that increasing knowledge about biofertilizer and biopesticides with increasing the positively associated characteristics. This might be due to that majority of farmers were educated up to primary level and had contact with extension functionaries also take participation in krishimela, training etc and get scientific knowledge.

Table: 4 Correlation between level of knowledge and their selected characteristics

(N=120)

Sr.No.	Characteristics	"r" value
1	Age	-0.2654**
2	Education	0.2674**
3	Size of land holding	0.1725^{NS}
4	Annual income	0.2378*
5	Experience as a cotton grower	0.3012**
6	Social participation	0.2146*
7	Extension participation	0.2698**
8	Innovativeness	0.2597**
9	Risk orientation	0.2864**

* Significant at 0.05 level r = 0.195

** Significant at 0.01 level r = 0.254

NS = Non significant

4. Constraints faced by cotton growers in adoption of biofertilizer and biopesticide

The ten item statements were presented and the responses were recorded in the schedule itself. The frequency for each constraint was worked out and the mean was calculated. The data was converted in to percentage. A rank was assign to each constraint and presented.

The data in Table 5 revealed that majority of the Bt.cotton growers expressed bio pesticides could not give instant results as compare to pesticides (76.67 %) ranked first, not mix with other fertilizer and chemical, increase labour cost (73.33%) ranked second, unavailability of bio pesticides and biofertilizer at local level (70.83 %) ranked third, application of biofertilizer and biopesticide mostly depend on favourable environmental condition (62.50%) ranked fourth, lack of awareness about biofertilizer and bio pesticide (60.00 %) ranked fifth and biofertilizer is difficult to apply at the time of sowing (56.67%) ranked sixth.

Other general constraints faced by cotton grower in adoption of biofertilizer and biopesticide were Poor shelf life of biofertilizers and biopesticides. (51.67%) ranked seventh, bio pesticides are not application in drip (45.83%) ranked eighth, complex process of application (43.33%) ranked ninth andlack of storage facility for biofertilizer sand biopesticides (39.17%) ranked tenth.

Table 5. Constraints faced by the respondents in adoption of biofertilizer and bio pesticides (N=120)

Sr.No.	Constraints	Frequency	%	Rank
1.	Bio pesticides could not give instant results as compare to pesticides	92	76.67	I
2.	Unavailability of bio pesticides and biofertilizer at local level	85	70.83	III
3.	Lack of awareness about biofertilizer and bio pesticide	72	60.00	V
4.	Bio pesticides is not application in drip	55	45.83	VIII
5.	Not mix with other fertilizer and chemical, increase labour cost	88	73.33	II
6.	Application of biofertilizer and biopesticide mostly depend on favourable environmental condition	75	62.50	IV
7.	Biofertilizer is difficult to apply at the time of sowing	68	56.67	VI
8.	Poor shelf life of biofertilizers and biopesticides.	62	51.67	VII
9	Lack of storage facility for biofertilizers and biopesticides.	47	39.17	X
10	Complex process of application	52	43.33	IX

5. Suggestions of the Bt. cotton growers to overcome the constraints faced in adoption of biofertilizer and biopesticides.

The suggestions were kept open ended. The responses were recorded in the schedule itself. The frequency for each constraint was worked out and the mean was calculated. The data was converted in to percentage. A rank was assign to each suggestions and presented in Table No.6.majority of the Bt. cotton growers given suggestion were: provide at local dealer (65.00 per cent) ranked first, biopesticides and biofertilizer must be subsidized (60.00 per cent) ranked second, biopesticides should be easily soluble in water (56.67 per cent) ranked third, increase awareness about use of biofertilizer (54.17 per cent) ranked fourth and impart training about method of application (43.33 per cent) ranked fifth.

Table 6. Suggestions to overcome the constraints in adoptionof bio pesticides and bio fertilizer (N=120)

Sr. No.	Suggestions	Frequency	Percentage	Rank
1	Provide at local dealer	78	65.00	I
2	Biopesticides and biofertilizer must be subsidized	72	60.00	II
3	Increase awareness about use of biofertilizer	65	54.17	IV
4	Impart training about method of application	52	43.33	V
5	Bopesticides should be easily soluble in water	68	56.67	III

CONCLUSION

It can be concluded that More than half (59.16%) of Bt. cotton growers belonged to medium level of knowledge about bio fertilizers and bio pesticides. Knowledge of Bt. cotton growers was positively related with characteristics like education, annual income, experience as cotton growers, social participation, extension participation & risk orientation. Young farmers possessed more knowledge about Biopesticides and biofertilizer.

The adoption of bio fertilizers and bio pesticides were seriously constrained by bio pesticides could not give instant results as compare to pesticides, cannot be mix with other fertilizer and chemical, which increase labour cost and unavailability of bio pesticides and bio fertilizer at local level. Suggestions perceived by the farmers were bio fertilizers and bio pesticides should be provided at local dealer and must be subsidized. To increase farmers knowledge, farmers must be facilitated with the technological knowledge and motivated to participate more in extension activities.

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Message :

Policy makers are suggested that biopesticides should be made available which is more water soluble with increase shelf life. For higher adoption, biopesticides and biofertilizer should be provided at local level.

Technical Programme 2

Title: Training needs of dairy farm women with respect to animal husbandry practices in Rajkot district of Saurashtra region

Principal investigator: Dr.N.B.Jadav, Senior Scientist & Head, KVK, JAU, Pipalia

Co-investigator:
1) Dr.V.S.Prajapati, Scientist, KVK, JAU, Pipalia
2) Sh. S.V. Undhad, Scientist, KVK, JAU, Pipalia
3) Sh.A.R.Parmar, Scientist, KVK, JAU, Pipalia
4) P.S.Sharma, Scientist, KVK, JAU, Pipalia
5) Sh. F.P.Kargatiya, Agril. Officer, KVK, JAU, Pipalia
6) Dr.A.M.Parakhia, DEE, , JAU, Junagadh

INTRODUCTION:

The animal husbandry sector plays an important and vital role in GDP of Gujarat state, which is to the tune of nearly about 5.0 %. This also contribute to product nutritive food, rich in animal protein, to the general public and good supplementary income to the economically weaker section of society like S.T., S.C., small farmers, marginal farmers and agriculture labour. Dairy is an essential component of the district. There is a long tradition of rearing dairy animals by the farmers in the district. Large numbers of landless families are also engaged in dairy animal rearing. There exists wide gap between the average yield and attainable yield and/or potential yield which offers scope for improvement in productivity. Enhanced women farmers interest and thrust of animal husbandry and other government departments and agencies are required in increases milk yield of the district.

Women in the present age are facing the most challenging situation of performing their role in and outside the home for social and economic development of the nation. Farm and home are inseparable in India. Our dairy farm women play a great role in decision making process on farm matter, perform many of the farm operation and undertake many responsibilities concerning care and management of farm animals.

Animal husbandry practices and agricultural activities are the main areas of the economic activities for dairy farm women. The daily work schedule of a dairy farm woman is a very demanding and arduous one. They have not only to attend to various field operations like transplanting, weeding crops but have also been practically in complete charge

of many harvest and post-harvest operations. Attending the farm animals and saving farmyard refuse for use either as fuel or manure. The entire management of livestock starting from cutting, collection, carrying and chaffing of fodder to feeding of livestock animal and milking, preparation of milk products, cleaning cattle shed, collection of urine and cow dung for manure pit, preparation of cow dung cakes and their storage are done by women. Thus, they prove much of the unpaid family labour in agriculture as well as livestock management.

Dairying has a great potential in generating gainful employment and supplementing agriculture income. It could also help to ensure better and balanced nutrition for the people. It is obvious that one cannot increase the land area. Agriculture cannot take in more people than today. Hence, the hope for solving the problems of rural poverty and unemployment lies in the agriculture based industries. Dairy farming is one of such industries next to agriculture, as a source of income to the rural people.

The new technology of dairy cattle rearing has a great potentiality and scope for improving the economic and social condition of the dairy farm women. Under the new strategy of rural development, milk production can contribute to the national health and wealth by providing substantial employment opportunities in rural areas to solve the problems of rural poverty and unemployment.

India has more than 191 million cattle, 108 million buffaloes and only 121 million tonnes milk production from these animals. In spite of covering nearly one-sixth (15 %) of the world cattle population and a half of the world's buffalo population, India contribute only to the extent of 16 percent of the world's milk production (Livestock census, 2012). The average milk production of the country of a milch cow was 2.4 kg per day and of a milch buffalo was 3.4 kg per day, which is very low as compared to the other western countries. The average annually milk production per cow is 4000 kg in some advanced countries. Thus, there is a wide gap between the number of animals and milk produced. The remarkable low productivity of dairy cattle is largely due to poor knowledge about improved animal husbandry practices by the dairy farm women leading to poor adoption. This could be possible only by updating women's knowledge and thereby accelerating the pace of adoption of improved animal husbandry practices.

The milk co-operatives structure, as a medium of dairy development has become successful in Gujarat state for uplifting the socio-economic conditions of small and marginal farmers which has attracted attention throughout world. The Rajkot district Co-operative milk producers union limited, Rajkot, has been established in the year 1956 on co-operative basis with an object to improve social-economic condition of the farmer's particularly small and marginal farmers and landless labour.

It is a common observation that dairy farm women are fully engaged in care and management of dairy animals. It is thus, imperative that dairy development is not feasible unless dairy farm women are trained in scientific dairy farming. Realizing this fact, Rajkot district Co-operative milk producers union limited, Rajkot, ATMA agencies and NGO started conducting the training programme for rural women with respect to improved animal husbandry practices. But due to lack of funds, above mention agencies could not run the programme for a long period.

Now a day's training institutes (KVK, State A.H. department, Gujarat) in the district have started training programme to the dairy farm women. However, in the absence of sound research findings, very little experiences are available with the organizer and trainers to this programme need based and thereby more scientific and effective. This speaks of the necessity of research study to know the training needs of the dairy farm women with respect to animal husbandry practices.

Dairying is an integral part of the rural agricultural economy. Adoption of improved animal husbandry practices like breeding, feeding, management, health care etc., are necessary to improve the productivity of dairy cattle and thereby making dairy farming a more profitable enterprise. Through training, the dairy farm women not only learn about the improved animal husbandry practices. For making training effective, it should be based on their felt needs. The training programme, which is not need based have little impact on bringing desired change in the clientele system.

Keeping in view above facts, the present study entitled "Training needs of dairy farm women with respect to animal husbandry practices in Rajkot district of Saurashtra region" was planned.

OBJECTIVES:

1) To study the personal and socio-economic characteristic of the dairy farm women.
2) To study the training needs of the dairy farm women with respect to animal husbandry practices.
3) To study the association between the socio-economic and personal characteristic of the dairy farm women with their training needs.
4) To study the relative suitability of method, venue, time, duration, interval and choice of teacher-trainer for dairy farm women with respect to animal husbandry practices.

METHODOLOGY:

Selection of respondents:

The research study will be conducted in jurisdiction of Krishi Vigyan Kendra, JAU, Pipalia. Two talukas will be selected randomly for conducting the present investigation. Eight villages will be further selected from two talukas where dairy husbandry practiced. From each village ten farm women will be selected who engaged dairy farming. Accordingly, 80 farm women will be selected purposively from each of the eight villages. An interview schedule will be prepared to collect the required information as per the objective of the study. Data will be collected personal interview method. The collected data will be quantified, categorized and tabulated. Analysis will be carried out by using frequencies and percentage.

Table: 1 Selection of respondents according to village, taluka of Rajkot district

Sr. No	Taluka	Village	Respondents
1.	Dhoraji	a. Patanvav	10
		b. Moti Parbadi	10
		c. Fareni	10
		d. Toraniya	10
2.	Upleta	a. Arani	10
		b. Dumiyani	10
		c. Kolki	10
		d. Talngana	10
		Total	80

Measurement of variables

To assess dairy farm women training need about animal husbandry practices, ten-item statements were presented and assessment based on a three point Likert-type rating scale of most needed coded 3, somewhat needed coded 2 and not needed coded 1, mean scores was calculated. A unit score was calculated and total score obtained by individual respondents for all the statement was calculated. With the help of mean and standard deviation the respondents were categorized as low, medium and high category. To measuring relationship between independent and dependent variables, the person product moment method of computing correlation coefficient was used. For measuring Suitability of venue, time, duration, interval and choice of teacher-trainer for dairy farm women with respect to animal husbandry practices measured on four point Likert scale with values of 4,3,2 and 1 assigned to highly appropriate, more appropriate, less appropriate and not appropriate respectively.

FINDINGS:

(2) Personal and socio-economic characteristics of dairying farm women:

The data presented in Table 2.1 indicated that majority (55.00 per cent) of the respondents was in the middle age group followed by 19.00 and 17.00 per cent of the respondents belonged to the young and old age group respectively. The probable reason that could be attributed to these findings may be that this is the major group who can physically look after their animals.

While in case of education that is presented in Table 2.2, majority 40.00 per cent of the respondent were educated up to secondary level whereas, 22.50 per cent of the respondents were educated up to primary level followed by 21.25 per cent respondents were educated up to high secondary level, 7.00 per cent respondents were graduate and 6.00 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that higher percentage (46.25 per cent) dairy farm women was found to have medium size land holding, while 33.75 percent dairy farm women were found to have small size of land holding, whereas 10.00 percent dairy farm women had marginal size of land holding, and only 6.00 per cent dairy farm women had large size of land holding. This might be due to that dairy farm women had main occupation is rearing the animals, and in order to maintain their animals, they may be cultivating the land.

The perusal of data in Table 2.4 indicated that 40.00 per cent of dairy farm women belonged to high annual income followed by 22.00 per cent of dairy farm women had medium annual income. Whereas 14.00 and 9.00 per cent dairy farm women belonged to medium and low annual income group respectively. only 2.00 of dairy farm women had low annual income i.e. up to Rs. 100000.

The data of dairy farm women distribution according to their dairying experience depicted in Table 2.5. Majority, 66.25 per cent of dairy farm women had medium experience as dairying followed by 18.00 per cent respondents had high dairying experience. Only 9.00 per cent farm women possessed low dairying experience. The data presented in Table 2.6 revealed that 67.50 per cent dairy farm women fell in medium social participation category followed by 21.25 per cent dairy farm women fell in low social participation category and 11.25 per cent dairy farm women belonged to low social participation group. This might be due to that women are less active in social activities. In case of herd size, Table 2.7 data inferred that 72.50 per cent dairy farm women had a medium herd size (i.e. 3-7 animal) while 17.50 per cent dairy farm women had more than 7 animal. Only 8.00 per cent dairy farm women had less than 2 animal. Milk yield production data presented in Table 2.8 in which 42.50 per cent dairy farm women had medium milk yield followed by 41.25 per cent dairy farm women had low milk yield. While 16.25 per cent dairy farm women had high milk yield.

Table: 2 Distribution of respondents according to their characteristics (N=80)

Sr.	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 years)	19	23.75
	Middle age (36 to 55 years)	44	55.00
	Old age (above 55 years)	17	21.25
	Total	80	100.00
2	**Education**		
	Illiterate	6	7.50
	Primary (1 to 7th std.)	18	22.50
	Secondary (8 to 10th std.)	32	40.00
	Higher Secondary (11th to 12th std.)	17	21.25
	Graduate (above 12th std.)	7	8.75
	Total	80	100.00
3	**Size of land holding**		
	Marginal (up to 1 ha)	10	12.50
	Small (1.01 to 2 ha)	27	33.75
	Medium (2.01 to 4 ha)	37	46.25
	Large (Above 4 ha)	6	7.50
	Total	80	100.00
4	**Annual income**		
	Very low annual income (up to ₹ 100000)	3	3.75
	Low annual income (₹ 100000 to 150000)	9	11.25
	Medium annual income (₹ 150000 to 200000)	14	17.50
	High annual income (₹ 200000 to 250000)	22	27.50
	Very high annual income (above ₹ 2,50,000)	32	40.00
	Total	80	100.00
5	**Dairying experience**		
	Low experience (blow 4.72)	9	11.25
	Medium experience (between 4.72 to 12.36)	53	66.25
	High experience (more then 12.36)	18	22.50
	Total	80	100.00
6	**Social participation**		
	Low social participation (below 1.01)	17	21.25
	Medium social participation (1.01 to 3.24)	54	67.50
	High social participation (above 3.24)	9	11.25
	Total	80	100.00
8	**Herd size**		
	Low herd size (Up to 2 animal)	8	10.00
	Medium herd size (3-7 animal)	58	72.50
	High herd size (above 7 animal)	14	17.50
	Total	80	100.00
9	**Milk Yield**		
	Low milk production (up to 3300 lit.)	33	41.25
	Medium milk production (3301 to 9600 lit.)	34	42.50
	High milk production (above 9600 lit.)	13	16.25
	Total	80	100.00

2.Training need of dairy farm women about animal practices

Distribution of the dairy farm women according to their training need

The collected data of dairy farm women training need about animal husbandry practices presented in Table 3, it is quite clear that 56.25 per cent of dairy farm women had medium training need whereas, 27.50 per cent had high and 16.25 per cent had low training need about animal husbandry practices. This might be due to fact that dairy farm women had medium social participation and medium dairying experience.

Table: 3 Distribution of the dairy farm women according to their training need (N=80)

Sr. No.	Category	Frequency	Percentage
1	Low training need (Below 14.83 score)	13	16.25
2	Medium training need (14.83 to 24.60 score)	45	56.25
3	High training need (Above 24.60 score)	22	27.5
	Total	80	100
Mean = 19.72		S.D. = 4.88	

Distribution of respondents according to subject-wise training need

The data in Table 4 represented about subject-wise training need of dairy farm women about animal husbandry practice. Among ten subject, highest to lowest needed training were : Animal nutrition practices (WMS=2.38) ranked first, Animal breeding practices (WMS=2.26) ranked second, Animal health care practices (WMS=2.21) ranked third, Feeding practices in milking and dry animal (WMS=2.18) ranked fourth, Artificial insemination and heat detection of animal (WMS=2.05) ranked fifth, Vaccination and deworming in the animal (WMS=2.03) ranked sixth, Tack care of animal new born calves (WMS=1.94) ranked seventh, Care and Management of the mastitis in milking animal (WMS=1.93) ranked eighth, Animal husbandry practices in the agricultural operation (WMS=1.85) ranked ninth and Importance of record keeping in the dairy business (WMS=1.76) ranked tenth.

Table: 4 Distribution of respondents according to subject-wise training need (N=80)

Sr. No.	Subject	Most needed	Some what needed	Not needed	WMS	Rank
1	Animal nutrition practices	32	46	2	2.38	I
2	Feeding practices in milking and dry animal	22	50	8	2.18	IV
3	Animal breeding practices	28	45	7	2.26	II
4	Artificial insemination and heat detection of animal	14	56	10	2.05	V
5	Animal health care practices	25	47	8	2.21	III
6	Vaccination and deworming in the animal	15	52	13	2.03	VI
7	Animal husbandry practices in the agricultural operation	15	38	27	1.85	IX
8	Care and Management of the mastitis in milking animal	18	38	24	1.93	VIII
9	Take care of animal new born calves	17	41	22	1.94	VII
10	Importance of record keeping in the dairy business	13	35	32	1.76	X

3. Association between dairy farm women training need and their selected characteristics

The correlation co-efficient was computed to ascertain the association between dairy farm women training need and their selected characteristics. The data in Table 4 revealed that there was negative and significant association between training need and their age. It means less age dairy farm women, needed more training. In case education, there was negative and significant association between training need and their education. Those dairy farm women which had lower education needed more training about animal husbandry practices. While size of land holding and annual income were non significant association with training need. It means training need was irrespective with size of land holding and annual income of dairying farm women. Dairying experience and milk yield were negative significant with training need of animal husbandry practices. It means decrease in milk yield and less dairying experience needed more training. In case of social participation, there was non significant association between training need and their social participation of dairying farm women. It means social participation was not related with training need about animal husbandry practices. While herd size was positive and significant association with training need. It proved that those dairying farm women possessed more number of animal required more training about animal husbandry practices.

Table: 5 Correlation between training need and their selected characteristics (N=80)

Sr. No.	Characteristics	"r" value
1	Age	-0.2934**
2	Education	-0.2412*
3	Size of land holding	0.2078 NS

4	Annual income	0.2102 NS
5	Dairying experience	-0.2745*
6	Social participation	0.1948NS
7	Herd size	0.2862**
8	Milk Yield	-0.2597*

* Significant at 0.05 level r = 0.2171

** Significant at 0.01 level r = 0.2829

NS = Non significant

4. Relative suitability of venue, time, duration, interval and choice of teacher-trainer for dairy farm women with respect to animal husbandry practices

For effective organization of training programme, the respondents were asked to give their opinion regarding method, venue, time, duration, interval and choice of teacher-trainer. The data regarding their opinions are presented in table 6.

With a support of the data presented in table 6 clearly indicated that the subject vice lecture was most important and effective method of training with (WMS =3.53) first ranked followed by training with Computer presentation (WMS = 3.46), Group discussion (WMS = 3.30), question- answer (WMS = 2.93), Audio-Video (WMS = 2.40) respectively with second, third, fourth and fifth ranked respectively. Remaining training method with T.V (WMS = 2.38) and Own member (WMS = 2.29) who ranked sixth and seventh respectively. In case of training venue highly appropriate place were: Krishi Vigyan Kendra (WMS=3.44) ranked first, Sardar smurti Kendra (WMS=3.35) ranked second, farmer training centre (WMS=3.20) ranked third, village milk cooperative society (WMS=3.18) ranked fourth, Rajkot milk cooperative dairy (WMS=2.86) ranked fifth and village panchayat office (WMS=2.43) ranked sixth.

Training time is also important for effective training, before monsoon season (WMS=3.30) ranked first, before cropping season (WMS=3.23) ranked second, after monsoon season (WMS=3.08) ranked third and after cropping season (WMS=2.93) ranked fourth. While in case of duration of training were: one day (WMS=3.14) ranked first, two day(WMS=3.05) ranked second, four day (WMS=2.98) ranked third and one week (WMS=2.86) ranked fourth. Interval between two training category, the highly appropriate were: four times in a year (WMS=3.28) ranked first, Trice in a year (WMS=3.18) ranked second, twice in a year (WMS=2.91) ranked third and once in a year (WMS=2.54) ranked fourth. Gender of trainers is also a important aspect for effective training in which female teacher trainer (WMS=3.35) ranked first and male teacher trainer (WMS=2.79) ranked second.

Table 6: Suitability of method, venue, time, duration, interval and choice of teacher-trainer for dairy farm women with respect to animal husbandry practices (N=80)

Sr. No.	Component of training	Highly Appropriate	Appropriate	Less appropriate	Not appropriate	WMS	Rank
1	**Types of training method**						
1	Own member	8	21	37	14	2.29	VII
2	T.V	10	24	32	14	2.38	VI
3	Audio-Video	10	20	42	8	2.40	V
4	Group discussion	40	30	4	6	3.30	III
5	question- answer	25	31	17	7	2.93	IV
6	Computer presentation	47	24	8	1	3.46	II
7	Subject vice lecture	51	22	5	2	3.53	I
2	**Training Venue**						
1	Farmer training centre	40	18	20	2	3.20	III
2	Village panchayat office	10	21	42	7	2.43	VI
3	Village milk co-operative society	38	25	10	7	3.18	IV
4	Sardar Smruti Kendra	47	21	5	7	3.35	II
5	Rajkot milk co-operative dairy	29	26	10	15	2.86	V
6	Krishi Vigyan Kendra	54	12	9	5	3.44	I
3	**Training time**						
1	Before monsoon season	48	15	10	7	3.30	I
2	After monsoon season	37	22	11	10	3.08	III
3	Before cropping season	41	20	15	4	3.23	II

4	After cropping season	34	19	14	13	2.93	IV
4	**Training Duration**						
1	One day	41	18	12	9	3.14	I
2	Two days	38	20	10	12	3.05	II
3	Four days	30	28	12	10	2.98	III
4	One week	28	24	17	11	2.86	IV
5	**Interval between two training**						
1	Once in a year	18	21	27	14	2.54	IV
2	Twice in a year	28	24	21	7	2.91	III
3	Thrice in a year	38	21	18	3	3.18	II
4	Four times in a year	42	22	12	4	3.28	I
6	**Trainers**						
1	Female teacher trainer	51	13	9	7	3.35	I
2	Male teacher trainer	27	23	16	14	2.79	II

Conclusion:

It can be concluded that the overall distribution of dairy farm women according to training need, 56.25 per cent were from medium training need followed by high training need category. Dairy farm women most needed training in aspects of animal nutrition and breeding practices. The association between characteristics like age, education, dairying experience and milk yield was negative and significant associated with their training needs, while increasing the herd size required more training.

Training need was irrespective with their size of land holding, annual income and social participation. To organize more effective training, it must be subject-wise at kvk before monsoon and before cropping season. The one-day training duration was most appropriate and four times in a year. Female teacher trainer was most appropriate for training dairy farm women about animal husbandry practices.

Message :

Extension personnel are suggested that more training programme should be organized in topic of animal nutrition animal breeding practice to enrich knowledge of dairy farm women. To increase the effectiveness of training, training module should be subject specific, preferably before onset of monsoon, one day duration and master trainers should be the female.

Technical Programme 3

Title: Perception of effectiveness of “SAWAJ” trichoderma in controlling the disease among its end users

Principal investigator: Dr.N.B.Jadav, Senior Scientist & Head, KVK,JAU, Pipalia

Co-investigator:
1) Sh. S.V. Undhad, Scientist, KVK, Pipalia
2) Dr.V.S.Prajapati, Scientist, KVK, Pipalia
3) P.S.Sharma, Scientist, KVK, Pipalia

Associate:
1) Dr.P.R.Kanani, ADE, DEE, JAU, Junagadh
2) Dr.G.R.Gohil, Training Asso, DEE,JAU,Junagadh
3) Dr.A.M.Parakhia, DEE, JAU, Junagadh

INTRODUCTION:

In order to meet the food needs of the alarmingly growing population, "Green revolution" came as an answer. Green revolution in India has witnessed a jump in agricultural production with the introduction of high yielding varieties (HYVs) of various crops and by following intensive cultivation practices with the use of fertilizers, pesticides and other inputs. The cropping intensity has also increased during green revolution period, wherever water is available a second crop was introduced. Consumption of chemical fertilizers and pesticides increased tremendously over the years.

Economic status of the people in country like India mostly depends upon the agricultural production. Need for more intensive and economic agricultural production led to indiscriminate use of high doses of chemical fertilizers, pesticides etc., Relentless use of these chemicals not only alter the eco-system but also claim death to many lives every year due to their hazardous nature. Biopesticides are certain types of pesticides derived from such natural materials as animals, plants, bacteria, and certain minerals. Microbial pesticides consist of a microorganism like bacterium, fungus, virus or protozoan as the active ingredient. Microbial pesticides can control many different kinds of pests, although each separate active ingredient is relatively specific for its target pests and disease. (Abhilash and Singh, 2009)

Biopesticides are ecofriendly pesticides which are obtained from naturally occurring substances (Biochemicals), microbes and plants. The potential benefits to agriculture and public health programmes through the use of biopesticides are considerable. Not all natural products are biopesticides. Some are chemical pesticides if they act on nervous system of the pest. Through the use of biopesticides in a wider way, agriculture and health programmes can be beneficially affected. There are many disadvantages associated with the use of chemical pesticides like genetic variations in plant

populations, reduction of beneficial species, damage to the environment or water bodies, poisoning of food and health problems such as cancer which makes biopesticides to come into picture. India has a vast potential for biopesticides. Some biopesticides currently being developed may be excellent alternatives to chemical pesticides. Biopesticides being target pest specific are presumed to be relatively safe to non-target organism including humans. However, in India, some of the biopesticides like*Bt*, *NPV*, Neem based pesticides, *Trichoderma, Beauveria* etc. have already been registered and are being practiced.

Junagadh Agricultural University released two type of biopesticide *Trichodermaharzianum* and *Beauveria bassiana* as trade name *'Sawaj'.*

Production and selling of '*Sawaj*' trichoderma from Junagadh Agricultural University, Junagadh.

Year	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017*
Production(kg)	22670	53236	37216	58262	104800*

*upto 28th February, 2017
Source: *www.jau.in/coa/index.php/department/plant-pathology*

Selling of '*Sawaj*' trichoderma from KrishiVigyan Kendra, JAU, Pipalia.

Year	2014-2015	2015-2016	2016-17	2017-2018
Selling (kg)	-	526	1570	3839

Source: *KVK,JAU, Pipalia Store record*

Trichodermaharzianum isa fungus that is also used as a fungicide. It is used for foliar application, seed treatment and soil treatment for suppression of various disease causing fungal pathogens. (Govindasamy and Balasubramanian, 1989)

There is great need to increase farm production to overcome the requirement of food for increasing population without damaging the environment. The more use of chemical fertilizers are harmful to living soil and therefore the use of biofertilizersand are required which improve the soil fertility without any harmful effect to the soil as well as biopesticides are require to control of pest without harmful effect to environment.

Sometime, the technology is available however the farmers do not use the technology. There are certain reasons for not use of the technology. This might be due to poor awareness, unfavourable attitude and low knowledge regarding the technology. The biofertilizer and biopesticide technology can help the farmers of arid and semi-arid areas of Junagadh district in increasing crop production especially in *kharif* season crops viz. groundnut, cotton, pulses, til, vegetables etc

Looking to above facts a study entitled "Perception of effectiveness of "SAWAJ" trichoderma in controlling the disease among its end users" was undertaken with following objectives

OBJECTIVES:

6) To study the profile of respondents.
7) To find out the impact of SAWAJ Trichoderma in management of diseases.
8) To determine the level of adoption of SAWAJ Trichoderma for the next year.
9) To know the problems and suggestions from respondents for increasing adoptions

METHODOLOGY:

Selection of respondents:

The study was conducted in KrishiVigyan Kendra, Junagadh Agricultural University, Pipalia (Rajkot-2) operational area of Saurashtra region. The village-wise list was prepared of farmers, who purchased trichoderma from the KVK- Pipaliaduring 2016-2017 and 2017-18. Out of listed farmers two taluka was purposively selected on the basis of highest purchased tirchoderma and five villages from each taluka was selected randomly and respondent selection made from ten villages. Selection of respondents made randomly, from each village ten farmers selected as a respondents and total 100 farmers interviewed as per the objective of the study.

Table :1 Selection of respondents according to village, taluka of Rajkot district.

Sr. No.	Taluka	Villages	Respondents
1.	Jetpur	5. Sardharpur	10
		6. Panchpipala	10
		7. Pedhala	10
		8. Mandlikpur	10

		9. Motagundala	10
2.	Dhoraji	5. Sanala	10
		6. Jasapar	10
		7. Boriya	10
		8. Satodad	10
		9. Chitravad	10
		Total	100

To determine perception of effectiveness about use of “Sawaj” trichoderma, interview schedule was developed and respondents were interviewed personally. To assess the constraints in use of “Sawaj” trichoderma, eleven item statements were presented and assessment based on yes and no, percentage of statements were work out and ranked it. For the suggestions to overcome the constraintwas kept open-handed and percentage work out and on basis of percentage ranked given.

FINDINGS:

(3) Characteristics of Respondents:

The data presented in Table 2.1 indicated that majority (58.00 per cent) of the respondents was in the middle age group followed by 24.00 and 18.00 per cent of the respondents belonged to the old and young age group respectively. This might be due to that young age farmers moved towards urban area for other business and especially male elder were the respected members and they possess decision making power about all family matters and farming. While in case of education that is presented in Table 2.2, majority 42.00 per cent of the respondent were educated up to secondary level whereas, 32.00 per cent of the respondents were educated up to primary level followed by 14.00 per cent respondents were educated up to higher secondary level, 7.00 per cent respondents were graduate and 5.00 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that about 40.00 per cent of respondents had small farmers and 33.00 per cent respondents were medium farmers. Whereas 17.00 and 10.00 per cent respondents were marginal and big farmers respectively. The data in Table 2.4 represented about annual income of the Bt. cotton growers, indicated that 32.00 per cent farmers had high annual income followed by 28.00 per cent farmers had medium annual income. The respondents belonged to low annual income category was 20.00 per cent. Whereas 12.00 and 8.00 per cent respondents were very high and very low annual income respectively.

The data in Table 2.5 represented about social participation of the farmers, the data indicated that 52.00 per cent of the respondents had medium social participation whereas 28.00 and 20.00 per cent respondents had low and high social participation respectively. This might be due to that 76.00 per cent respondents were middle and old age group.

Table: 2 Distribution of respondents according to their personal, socio-economic characteristics. N=100

Sr.	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 years)	24	24.00
	Middle age (36 to 55 years)	58	58.00
	Old age (above 55 years)	18	18.00
	Total	100	100.00
2	**Education**		
	Illiterate	5	5.00
	Primary (1 to 7th std.)	32	32.00
	Secondary (8 to 10th std.)	42	42.00
	Higher Secondary (11th to 12th std.)	14	14.00
	Graduate (above 12th std.)	7	7.00
	Total	100	100.00
3	**Size of land holding**		
	Marginal (up to 1 ha)	17	17.00
	Small farmers (1.01 to 2 ha)	40	40.00
	Medium (2.01 to 4 ha)	33	33.00
	Big farmers (Above 4 ha)	10	10.00
	Total	100	100.00
4	**Annual income**		

	Very low annual income (up to ₹ 50,000)	8	8.00
	Low annual income (₹ 50,001 to 1,00,000)	20	20.00
	Medium annual income (₹ 1,00,001 to 1,50,000)	28	28.00
	High annual income (₹ 1,50,001 to 2,00,000)	32	32.00
	Very high annual income (above ₹ 2,00,000)	12	12.00
	Total	100	100.00
5	**Social participation**		
	Low social participation (below 1.01)	28	28.00
	Medium social participation (1.01 to 3.33)	52	52.00
	High social participation (above 3.33)	20	20.00
	Total	100	100.00
6	**Extension participation**		
	Low extension participation (below 12.84)	23	23.00
	Medium extension participation (12.84 to 37.25)	56	56.00
	High extension participation (above 37.25)	21	21.00
	Total	100	100.00
7	**Innovativeness**		
	Low innovativeness (below 1.18)	30	30.00
	Medium innovativeness (1.18 to 2.57)	55	55.00
	High innovativeness (Above 2.57)	15	15.00
	Total	100	100.00
8	**Risk orientation**		
	Very low (up to 18 score)	1	1.00
	Low (19 to 26 score)	6	6.00
	Medium (27 to 34 score)	59	59.00
	High (35 to 42 score)	26	26.00
	Very high (above 42 Score)	8	8.00
	Total	100	100.00

The data regarding extension participation represented in Table :2.6 on the basis of data it is cleared that 56.00 per cent respondent had medium extension participation followed by 23.00 and 21.00 per cent respondents had low and high extension participation respectively. The reason behind this might be that in study area, respondents were progressive farmers as compare to other area. Table.2.7 data inferred that majority 55.00 per cent of the respondents had medium innovativeness while 30.00 per cent respondents had low innovativeness followed by 15.00 per cent respondents had high innovativeness category.

Table 2.8 revealed that more than half (59.00 per cent) respondents had medium risk orientation followed by 26.00 per cent respondents belonged to high risk orientation. Whereas 8.00 and 6.00 per cent respondents had high and low risk orientation respectively. Least person (1.00 per cent) of the respondents belonged to very low risk orientation category.

2. Effectiveness of Sawaj trichoderma

Distribution of respondents according to use of trichoderma

The data presented in Table 3 revealed that majority (92.00 per cent) respondents use Sawaj trichoderma in Groundnut crop followed by 6.00 per cent respondents use in cumin and least percent (2.00 per cent) respondents use trichoderma in other crop like vegetable etc. This might be due to that in study area majority of the farmers' cultivated Groundnut crop and for the management of stem rot, farmers used Sawaj trichodrma.

Table:3 Distribution of respondents according to use of trichoderma in crop (N=100)

Sr. No.	Crop	Frequency	Percentage
1	Groundnut	92	92.00
2	Cumin	6	6.00
3	Other crops (Vege etc)	2	2.00
		100	100.00

General perception about Sawaj Trichoderma

Perception regarding the utility and effectiveness of Sawaj Trichoderma was obtained from respondents which divulges in Table 4. According to table 4, farmers gave first rank to statement pertaining to Trichoderma can be applied in standing crop and it is easy use with any carrier with weightage mean score 4.29. Whereas respondents gave 2nd and 3rd ranks to statements "Soil moisture is essential at time of application of Sawaj Trichoderma (WMS 4.07)" and "Trichoderma can be applied by mixing with FYM (WMS 3.87)" respectively. Similarly, Trichoderma can be applied with sand got 4th rank and Trichoderma is cheaper as compared to other fungicides (WMS 3.84) got 5th rank by respondents. No incidence of fungal diseases if Continuous application of Trichoderma for 2-3 years with WMS 3.81, it got 6th rank in 22 statements according to perception of respondents. Whereas Use of Sawaj Trichoderma improves crop growth (WMS 3.72) got 7th rank. Many a farmers opined that The crop yield increase by the use Sawaj Trichoderma (WMS 3.68) and statement got 8th ranking in its order. 27 per cent respondents were agreed and 23 per cent respondents were strongly agreed that Application of trichoderma is beneficial if there is incidence of soil borne fungi every year and ranked 9th while Application of Trichoderma is environmental friendly (WMS 3.53) got 10th rank. Similarly, very few respondents were opined that Sawaj Trichoderma is not beneficial and most of the respondents gave their disagree (24 %) and 72 per cent strongly disagree towards this statement and ranked 22nd rank and last. It shows the effectiveness of Sawaj Trichoderma for the respondent farmers. Apart from this, Majority of farmers were disagree (DA 26 % and 67 % SDA) with the statement 'Sawaj Trichoderma can be used with mixing with other chemical pesticides/chemical fertilizers' and got 2nd lowest weightage mean score and ranked 2nd last. Most of the respondents also shown there disagreeness over the statement 'Application of seed treatment with trichoderma restricts the putrefaction of groundnut seeds during storage' and got 20th rank on the basis of weightage mean score

Table: 4 General perceptions about Sawaj Trichoderma (N=100)

Sr. No.	Particular	SA	A	UD	DA	SD	WMS	Rank
1	There is no benefit of application of Trichoderma	0	0	4	24	72	1.32	XXII
2	Seed treatment with trichoderma increases germination	18	24	40	11	7	3.35	XII
3	Application of seed treatment with trichoderma restricts the putrefaction of groundnut seeds during storage	2	6	7	15	70	1.55	XX
4	Application of trichoderma is beneficial if there is incidence of soil borne fungi every year	23	27	42	5	3	3.62	IX
5	No incidence of fungal diseases if Continuous application of trichoderma for 2-3 years	34	26	32	3	5	3.81	VI
6	Trichoderma can be applied in furrows	2	5	59	20	14	2.61	XV
7	Trichoderma can be applied in standing crop and it is easy use with any carrier	56	26	12	3	3	4.29	I
8	Trichoderma can be applied with sand	38	24	28	5	5	3.85	IV
9	Trichoderma can be applied by mixing with FYM	41	25	22	7	2	3.87	III
10	Trichoderma is effective in wilt of cumin	4	12	45	14	25	2.56	XVI
11	Trichoderma is cheaper as compared to other fungicides	46	8	34	8	4	3.84	V
12	Sawaj Trichoderma can be used with any pesticides and chemical fertilizers	0	0	7	26	67	1.4	XXI
13	Trichoderma is available in required quantity at any stage of crop and time	8	13	44	23	12	2.82	XIV
14	Application of Trichoderma is environmental friendly	15	35	38	12	0	3.53	X
15	Soil moisture is essential at time of application of Sawaj Trichoderma	47	22	24	5	2	4.07	II
16	Excess use than recommended dose is harmful to crops	0	0	25	45	30	1.95	XIX
17	Sawaj Trichoderma should be stored in cool and dark place	1	3	52	32	12	2.49	XVII
18	Use of Sawaj Trichoderma improves crop growth	31	26	30	10	3	3.72	VII
19	Sawaj Trichoderma can be used in any type of soil	15	18	45	10	12	3.14	XIII
20	The crop yield increase by the use Sawaj Trichoderma	30	30	25	8	7	3.68	VIII
21	Use of Sawaj Trichoderma is safe against animal	12	25	63	0	0	3.49	XI

22	Due to establishment of Trichdoerma in soil, decomposition of crop reside/bio mass become very fast	4	9	27	28	32	2.25	XVIII

Effectiveness of Sawaj trichoderma to control the disease

The data in table no 5 depicted that the effectiveness of Sawaj Trichoderma to control the disease in particular crops. The data revealed that 68.00 percent farmers said that trichoderma controls the disease effectively followed by 22.00 percent farmers which responded that Trichoderma was highly effective in controlling the disease. While 8.00 and 2.00 percent farmers belong to less effective and not effective category respectively. no of the farmer said that trichoderma makes the disease problem worse. This might be due to that majority of the farmers apply trichoderma in standing crop. Because of that majority of farmers fell in effective category This is might be due to that the farmers used Sawaj trichoderma particularly in Groundnut crop for the management of stem rot and Sawaj trichoderma is effective control measure of stem rot. Because of that most of the farmers belonged to effective to highly effective category.

Table 5. Percent effectiveness of Sawaj trichodrma to control the disease (N=100)

Sr.No.	Controlling of disease	Frequency	Percent
1	Makes the disease problem worse	0	0.00
2	Not effective	2	2.00
3	Less effective (<50% control)	8	8.00
4	effective (50-75% control)	68	68.00
5	Highly effective (75 to 100 % control)	22	22.00
		100	100.00

3. Determine the adoption level of Sawaj trichoderma

The data in Table 6 indicated about adoption of Sawaj trichoderma. In case of stage of application of trichoderma, 75.00 per cent of the farmers said that application of trichoderma at the time of incidence followed by 17.00 farmers respond said that they apply trichoderma at the time of sowing and only 8.00 per cent farmers apply trichoderma at any stage of crop. In case of method of application, 57.00 per cent farmers applied trichoderma as broadcasting (carrier) whereas 30.00 per cent farmers applied trichoderma as furrow application. While 7.00 per cent farmers applied trichoderma with drenching method and least of farmers i.e.2.00 applied trichoderma as a seed treatment. In case of rate of application majority 54.00 percent of the farmers applied over dose of trichoderma in the crops followed by 42.00 percent farmers applied the trichoderma as per the recommended dose and only 4.00 percent farmers used trichoderma below recommended dose.

Table: 6 Distribution of respondents according to adoption level of Sawaj trichoderma

(N=100)

Sr. No.	Characteristics	Frequency	Percentage
1	**Stage of Application**		
a.	At the time of sowing	17	17.00
b.	At the time of incidence	75	75.00
c.	Any stage of crop	8	8.00
		100	100.00
2	**Method of application**		
a	Seed treatment	2	2.00
b	Broadcasting (Carrier)	69	69.00
c	Furrow application	18	18.00
d	With irrigation	4	4.00
c	Drenching	7	7.00
		100	100.00
3	**Rate of application**		
a.	Under dose	4	4.00
b	Recommended dose	42	42.00
c	Over dose	54	54.00
		100	100.00

Different aspects related to Sawaj Trichoderma

From the Table 7 data inferred that among all the seven different aspect cost effective (MS=2.62) ranked first, quality product (WM=2.36) ranked second, increased crop yield (WM=2.32) ranked third, labour saving (WM=2.24)

ranked fourth, time saving (WM=2.08) ranked fifth, environment friendly (WM=2.04) ranked sixth and availability (WM=1.62) ranked seventh.

Table: 7 Distribution of the respondents according to different aspect (N=100)

Sr No.	Particular	Strongly agree	Agree	Disagree	WMS	Rank
1	Environment friendly	25	54	21	2.04	VI
2	Cost effective	67	28	5	2.62	I
3	Availability	14	34	52	1.62	VII
4	Labour Saving	30	64	6	2.24	IV
5	Time Saving	28	52	20	2.08	V
6	Increase crop yield	46	40	14	2.32	III
7	Quality of product	52	32	16	2.36	II

4. Constraints faced by the farmers in adoption of Sawaj trichoderma

The constraints were kept open ended. The responses were recorded in the schedule itself. The frequency for each constraint was worked out and the mean was calculated. The data was converted in to percentage. A rank was assign to each constraint and presented.

Table: 8 Constraints faced by the farmers in adoption of Sawaj trichoderma.

(N=100)

Sr. No.	Constraints	Percentage	Rank
1	Sawaj Trichoderma is not timely available	82.00	II
2	There is no soil moisture when it is necessary to apply Sawaj Trichoderma in standing crop	78.00	III
3	Castor cake to be applied as filler material for Sawaj Trichoderma is costly	64.00	V
4	Cannot be mixed with chemical fertilizers hence it increase labour cost	67.00	IV
5	Sawaj Trichoderma are not available at village places	87.00	I
6	Sawaj Trichoderma cannot be applied with drip irrigation	58.00	VI

The perusal of data presented in Table 8 revealed that majority of the farmers expressed constraints in adoption of sawaj trichoderma were: Sawaj Trichoderma are not available at taluka places (87.00 %) ranked first, Sawaj Trichoderma is not timely available (82.00%) ranked second, There is no soil moisture when it is necessary to apply Sawaj Trichoderma in standing crop (78.00 %) ranked third, Cannot be mixed with chemical fertilizers hence it increase labour cost (67.00%) ranked fourth, Castor cake to be applied as filler material for Sawaj Trichoderma is costly (64.00 %) ranked fifth and Sawaj Trichoderma cannot be applied with drip irrigation (68.00%) ranked sixth.

5. Suggestion obtained by the farmers in adoption of sawaj trichoderma

The data presented in Table 9 revealed that majority of the farmers suggested that Sawaj trichoderma provide at local dealer (86.00%) ranked first, Quantity discount (78.00%) ranked second, Timely available (73.00%) ranked third, Use of effective packing material to avoid transportation loss (68.00%) ranked fourth, Establish marketing channel at local level at cooperative (64.00%) ranked fifth, Increase awareness about use of Trichoderma (62.00%) ranked sixth and Impart training about method of application (58.00%) ranked seventh

Table: 9 Distribution of the respondents according to suggestion obtained about adoption of Sawaj trichoderma (N=100)

Sr. No.	Suggestions	Percentage	Rank
1	Sawaj trichoderma provide at local dealer	86.00	I
2	Timely available	73.00	III
3	Increase awareness about use of Trichoderma	62.00	VI
4	Impart training about method of application	58.00	VII
5	Establish marketing channel at cooperative	64.00	V
6	Use of effective packing material to avoid transportation loss	68.00	IV
7	Quantity discount	78.00	II

CONCLUSION:

It can be concluded that most of the farmers use trichoderma in groundnut crop for the management of stem rot disease. Majority of farmer's general perception about Sawaj trichoderma i.e. trichoderma can be applied in standing crop and it is easy use with any carrier, soil moisture is essential at the time of application, trichoderma can be applied by mixing with FYM. Majority of farmers applied trichoderma at the time of incidence of disease by broadcasting method and use overdose. In case of effectiveness of controlling the disease, majority (68.00 percent) of farmers were from effective category (50-75 percent disease control) followed by 22.00 percent farmers were from highly effective category (75-100 percent).

Majority of the farmers were agreed that Sawaj trichoderma is cost effective, quality product and increased crop yield. Least of farmers agreed about availability of Sawaj trichoderma. Major constraints faced by farmers in adoption were unavailability at village place, timely not available and essentiality of soil moisture at the time of application. Majority farmers suggested that Sawaj trichoderma made available at local level and quantity discount.

Message:

Extension functionaries are suggested that farmers are believing and using "Sawaj" trichoderma in the groundnut crop to control the stem rot disease. However, "Sawaj" trichoderma is also being used in the soil borne disease of the other field crops. To reduce the cost and efficient use of "Sawaj" trichoderma, it is suggested that extension functionaries give the emphasis on stage and method of application.

Technical Programme 4

Title : Impact of self help groups on empowerment of rural women in Rajkot district

Principal Investigator: Dr. N. B. Jadav, Senior Scientist & Head, KVK, JAU, Pipalia
Co-investigator: 1) Ms. P.S. Sharma, Scientist, KVK, JAU, Pipalia
2) Dr V S Prajapati Scientist,KVK, JAU, Pipalia
3) Sh. S. V. Undhad, Scientist,KVK, JAU, Pipalia
4) Sh. A. R. Parmar, Scientist,KVK, JAU, Pipalia
5) Sh. F. P. Kargatiya. Agril. Officer,KVK, JAU, Pipalia
6) Dr. A. M. Parakhia, DEE, JAU, Junagadh

INTRODUCTION:

A Self Help Group is a small economically homogeneous affinity group of the rural poor voluntarily coming together to save small amount regularly, which are deposited in a common fund to meet member's emergency needs and to provide collateral free loans decided by the group. Self Help Group (SHG) is a group formed by the community, which has specific number of members like 15 or 20. Usually, the number of members in one SHG does not exceed twenty. They come together for the purpose of solving their common problems through self-help and mutual help. It can be formal (registered) or informal. Members of SHG agree to save regularly and contribute to a common fund. The members agree to use this common fund and such other funds (like grants and loans from banks), which they may receive as a group, to give small loans to needy members as per the decision of the group. SHGs enhance the equality of status of women as participants, decision-makers and beneficiaries in the democratic, economic, social and cultural spheres of life. The basic principles of the SHGs are group approach, mutual trust, organization of small and manageable groups, group cohesiveness, sprit of thrift, demand based lending, women friendly loan, peer group pressure in repayment, skill training capacity building and empowerment.

As the rural poor are incapacitated due to various reasons, because most of them are socially backward, illiterate, with low motivation and poor economic base. Individually, a poor man is not only weak in socio-economic term but also lacks access to the knowledge and information which are the most important components of today's development process. However, in a group, they are empowered to overcome many of these shortcomings. Hence, the role of SHGs is highly essential in not only for eradicating illiteracy, poverty but also to make rural villagers especially women that much empower so that they can easily stand equal to men with their income generation activities. To mitigate the problem of unemployment and underemployment, the role of women should not only be confined to generate employment, but also to provide employment to others. They have to undertake entrepreneurial activities to create additional wealth for the nation and to solve the problem of unemployment and poverty. Entrepreneurship developments among women, particularly among rural women will ultimately going to strengthen the rural and national economy.

Women's empowerment is "a process whereby women become able to organize themselves to increase their own self-reliance, to assert their independent right to make choices and to control resources which will assist in challenging and eliminating their own subordination". Hence the present study includes this method and focus interviews are conducted to get a deeper understanding on the phenomenon. The above studies carried out in various Krishi Vigyan Kendra operational villages of the District which will definitely give an idea on how the SHGs, Microcredit result in empowerment using socio cultural, personal, economic and political variables to study the impact of function of SHG on Women Empowerment. The study will undertake with following specific objectives:

OBJECTIVES:

1) To study the socio-economic profile of SHGs beneficiaries.
2) To examine the personal and socio-economic benefits derived by the members after joining the SHGs.
3) To analyze all impediments factors faced by self-help group women in empowerment of women.
4) To seek suggestions from the SHGs member to overcome the constraints.

METHODOLOGY:

Selection of Respondents:

The study was conducted in Krishi Vigyan Kendra, Junagadh Agricultural University, Pipalia (Rajkot II) operational area of Saurashtra region. Ten KVK Operational villages were selected for the present study where Self Help Group (SHG) women were working and doing entrepreneurship development activities among rural women. From each selected village one SHGs group was selected purposively and hence eight (8) SHGs members (Total: 80) from each selected group will be randomly selected for the study.

Table: 1 Selection of respondents according to village and Taluka of Rajkot district.

Sl.No.	Taluka	Village	Respondents
1.	Dhoraji	1. Fareni	8
		2. Motimarad	8
		3. Vadodar	8
		4. Kalana	8
		5. Bhola	8
2.	Jamkandorna	1. Vegdi	8
		2. Jashapar	8
		3. Boria	8
3.	Upleta	1. Supedi	8
		2. Motivavdi	8
		Total	**80**

An interview schedule was prepared to collect the required information according to the specified objectives of the study. Data will be collected by personal interview method. The collected data will be quantified, categorized and tabulated. Analysis will be carried out by using frequencies, percentages.

FINDINGS:

1) Characteristics of the respondents:

The data presented in table 2.1 indicates that more than half of the respondents (58.75%) were in the age group of up to 35 years or we can say that belongs to young age group. Only 22.50 percent of self help group women were of the middle age group and very low percentage of the total sample (18.75%) were of old age group. The reason may be young farmwomen or other housewives are now ready to come out of the four walls of the home with full enthusiasm due to many more awareness regarding concepts like self-employment, women empowerment etc. While in case of education that is presented in tale 2.2 which revealed that majority of the beneficiaries (37.50%) educated up to higher secondary level, whereas 26.25 percent and 23.75 percent were educated up to primary level and secondary level of education. Only meagre (6.25%) of the self help group women were illiterate.

Table 2. Distribution of respondents according to their personal and socio-economic characteristics. (N=80)

Sr.	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 years)	47	58.75
	Middle age (36 to 55 years)	18	22.50
	Old age (above 55 years)	15	18.75
2	**Education**		
	Illiterate	5	6.25
	Primary (1 to 7^{th} std.)	21	26.25
	Secondary (8 to 10^{th} std.)	19	23.75
	Higher Secondary (11^{th} to 12^{th} std.)	30	37.50
	Graduate (above 12^{th} std.)	5	6.25
3	**Annual Income**		

	Up to 20,000	10	12.50
	Between 20,000 to 40000	49	61.25
	Above 40000	21	26.25
4	**Occupation**		
	House wife	13	16.25
	Agricultural and allied activities	38	47.50
	Small and independent business	4	5.00
	Daily labour	25	31.25
5	**Social Participation**		
	Low social participation (below 1.02.)	16	20.00
	Medium social participation (1.03 to 3.37.)	51	63.75
	High social participation (Above 3.37)	13	16.25
6	**Training undergone**		
	Untrained	12	15.00
	less trained (below 2.2)	45	56.25
	More trained (above 2.2)	23	28.75
7	**Amount saved and deposited Rs./month**		
	Less than Rs. 50/-	8	10.00
	Rs. 50 to 100/-	29	36.25
	More than Rs. 100/-	43	53.75
8	**Age of SHGs**		
	less than 5 years	28	35.00
	5 to 10 Years	39	48.75
	More than 10 years	13	16.25

Annual income earned by the beneficiaries which is discussed in table 2.3 shows that more than half of the group women had annual income between 20,000 to 40,000 annually. While 26.25 percent of women were having an annual income of above rupees 40,000 and only 12.50 percent of women were those who agree that they can earn a sum amount of up to Rs 20,000 annually. In table 2.4 apart from self-help worker the other occupations performed by the beneficiaries were discussed which were performed by the group worker simultaneously with the self-help group activities. It resulted that majority (47.50%) of the women were involved in agricultural and allied activities followed by 31.25 percent and 16.25 percent who works as daily labour and household related activities means were housewives respectively.

Further in Table 2.5 concluded that more than one half (63.75 per cent) of the respondents belonged to medium social participation followed by 20.00 per cent respondents had low social participation. While 16.25 per cent respondents had high social participation. More than one half (56.25 per cent) respondents were less trained and 28.75 respondents were more trained, while 15.00 per cent respondents were untrained. As far as amount saved and deposited monthly by the group members is concerned, it was described in table 2.7 which concludes that more than half (53.75 %) beneficiaries accepted that they save more than Rs. 100 per month after started working with the self help groups. It can be due to any income generation activity performed by the particular group. Similarly 36.25 percent assured that they save an amount range of Rs. 50 to Rs.100 monthly followed by only 10 percent agree that they are able to save less than Rs 50 monthly after working in the group activities of the group in SHG.

The age of self help groups is also analysed in the table and discussed in table 2.8 which shows that 48.75% of the total self help groups were having age of 5 to 10 years. While 35 percent of the self help groups were started soon with having an age span of less than 5 years followed by 16.25% self help groups who were very old and are working for more than 10 years successfully.

2) Personal and socio-economic benefits derived by the members after joining the SHGs.

Table 3 depicts the personal and socio-economic benefits derived by the self-help group women after joining the group. Table clearly reveals that women got highly benefitted in dealing with banking related formalities and do all the banking related formalities smoothly after joining the group and thus ranked I with Weighted mean score of 3.14. There is a less concept of the word saving money with the help of agencies like bank and post office but after joining the group its knowledge and concept got increased and hence ranked II (MS=3.11). Similarly rank III(MS=3.06) and rank IV(MS=2.88) were given to the benefits derived by the women like support from family in doing activities of the group and uplift in social status respectively after becoming a self-help group member. There is a vast increase in duration of meetings with extension officers and other village level workers and hence increases the socio economic benefits to the group member which in result ranks V with a mean score of 2.74.

Communication exposure helps people to gain general awareness as well as provides scientific and technical information and plays an important role to improve their socio-economic standards. Rank VI(MS=2.71) goes to the

benefits like the information regarding mass media exposure such as use of internet, TV and radio which drastically got increased after becoming a member. Table clearly illustrates that the SHG members were having good communication ability and thus ranked VII with mean score of 2.70 which concludes that with the exposure of becoming a member of a self-help group women had the remarkable ability to communicate with others with full confidence and can stand in a group of people with full courage and can hinder their shy nature by coming out of the four walls of the house. Rank VIII (MS=2.66) and rank IX (MS=2.59) goes to the benefits like SHG member can do effective and fabulous ability to do accounting and monitoring each activity of the group effectively and there is a great role of family in decision making processes towards the benefits of SHG activities respectively. And lastly rank X with a score of 2.51 goes to the benefits derived by the group member that income generated by the SHG member after joining the group is sufficient to fulfill her economic needs.

Table 3. Socio-economic and personal benefits derived by members after joining SHGs

(N=80)

Sr. No.	Statement	Strongly Agree	Agree	Dis agree	Strongly Disagree	WMS	Rank
1	Communication ability got enhanced after joining the SHG	20	26	24	10	2.7	VII
2	Intensity of Mass media usage like use of radio, TV, newspaper got increased	20	26	25	9	2.71	VI
3	Duration of meeting with extension officers or other village level workers was increased after joining the SHG	23	24	22	11	2.74	V
4	Social status got increased after joining the SHG	29	22	19	10	2.88	IV
5	Ability to do accounting and monitoring effectively after joining the SHG	19	28	20	13	2.66	VIII
6	Dealing with banking related formalities and its feasibility got increased after joining the SHG	39	21	12	8	3.14	I
7	Income generated after joining the SHG are sufficient to fulfill your economic needs	16	24	25	15	2.51	X
8	Concept of saving money with the help of bank and postal agency got increased after joining the SHG	35	24	16	5	3.11	II
9	Whether after joining the SHG, family support in doing activities of the group got uplift.	36	22	13	9	3.06	III
10	Family helps in decision making process taken towards the benefits of SHG	17	25	26	12	2.59	IX

3. Impediments factors faced by self-help group women in empowerment of women

Women's in SHGs were challenged in diverse ways. The groups identified numerous challenges and hurdles which make their operations difficult. The causes of the impediments may arise from within the family or their own organization (SHG) or emanate from out of the external environment and their community. The study has used 7 key variables that affect the performance of SHGs and tries to analyze the chief variables among them that pose problems and act as impediments to the effective functioning of the SHG

Table 4. Impediments faced by Self-help group women in empowerment (N=80)

Sr. No.	Constraints	Most Imp	Imp	Less Imp	Not Imp	MS	Rank
A	**Record maintenance**					**3.2**	**I**
1	Lack of knowledge of record keeping	42	19	11	8	3.19	II
2	weak calculation	39	18	16	7	3.11	III
3	lack of interest	46	17	12	5	3.3	I
B	**Problem in saving money**					**2.65**	**IV**
1	Money not deposited in time	27	23	23	7	2.87	I
2	depend on male member	25	15	22	16	2.56	II
3	Low important to SHG	24	14	21	21	2.51	III

C	**Handling of Bank Account**					**2.63**	**V**
1	Unaware about the rules of bank	22	23	19	16	2.64	II
2	unable to do formalities of bank like transaction, opening account and loan procedure	26	19	18	17	2.68	I
3	lacking support and cooperation of bank manager	22	21	19	18	2.59	III
D	**Lack of coordination among members**					**2.32**	**VII**
1	Breaking the group	11	19	24	26	2.19	III
2	quarreling women with each other	15	22	23	20	2.4	I
3	lack of interpersonal trust	12	24	26	18	2.38	II
E	**Internal loaning and loaning through bank**					**3.04**	**II**
1	Many women seek loan together	36	22	17	5	3.11	II
2	Loan is not returned in time	33	19	21	7	2.97	V
3	Negative attitude of bank employee	33	21	20	6	3.01	IV
4	Loan not used in proper Purpose	32	22	16	10	2.95	VI
5	Complicated procedure of getting loan	40	19	15	6	3.16	I
6	Banks are situated far away from SHG office	34	21	18	7	3.02	III
F	**Group meeting**					**2.55**	**VI**
1	All women do not attend meeting	15	27	26	12	2.56	I
2	All women do not attend meeting on time	17	23	26	14	2.53	III
3	Do not participate in activity	16	25	26	13	2.55	II
G	**Problem in taking group decision**					**2.83**	**III**
1	Aged person force their decision together	30	20	21	9	2.89	I
2	Argument in every matter	28	20	18	14	2.76	III
3	In all decision ask to their family member	29	21	17	13	2.82	II

** MI = Most Important, I = Important, NI = Not Important, LI= Less important*

1) Record maintenance

The data presented in Table 4 indicates that 'Lack of interest with MS=3.3' were assigned rank first, while 'Lack of knowledge of record keeping with MS=3.19' were ranked second and due to lack of interest there is a problem arise of weak calculation in solving the record keeping related queries(MS=3.11) which holds the third rank.

From the above discussion, we can conclude that the major impediments of SHG women in record keeping is lack of interest in maintaining the records and reason might be that the majority of the respondents were illiterate and had only primary level education so proper training should be imparted to the training area of record maintenance so the account will be maintained accordingly increase the level of empowerment and the formal education should be imparted and so that the level of education increase and hence the impediment like weak calculation can be removed easily.

2) Problem in saving money

As far as problem faced in saving money is concerned in Table 4, the main impediments of SHG omen were 'money not deposited in time' were assigned rank first(MS=2.87). Other constraint is many women are 'depend on male member' with a mean score of 2.56 and hence scored rank II which can be due to the low level of education and less empowerment towards their independency. It is interesting to note that everybody had much importance of SHGs and thus scored third rank as a part of constraint faced with a mean score of 2.51.

3) Handling of bank account

The data shows in Table 4 regarding the impediments in SHG women were "unable to do the formalities of bank, MS=2.68" and "unaware about the rules of bank, MS=2.64" were rank first and second respectively. Rank III goes to the impediment like "lacking support and cooperation of bank manager" with a Mean score of 2.59.

It is seen from the above discussion that the self help group women were educated up to primary level of education so they are unable to do formalities of bank like transaction, opening account and loan procedure and unaware about the rule of bank were the main impediments they usually face in their empowerment.

4) Lack of coordination among members

From the Table, it is clearly seen that in case of lack of coordination among members majority of the respondents were not facing these types of constraints, but sometimes in some groups women face a problem of quarrelling among themselves and thus rank first was given to it with a mean score of 2.4. Similarly might be due to interpersonal misunderstandings, interpersonal trust got decreased (rank II, MS=2.38) and even in meager cases, trust and coordination got imbalanced within the group and thus cause breaking the group (rank III, MS=2.19) as a impediment faced by the SHG women.

These types of constraints may be faced by the women because some of the SHGs were very new and having a less experience of working together as age of SHG is even less than five years.

5) Internal loaning and loaning through bank

The data presented in the table shows that only the major impediment was due to less educational status many SHG women feels that there is a complicated procedure of getting loan through banks and thus rank first with a mean score of 3.16. Similarly, "many women seek loan together (MS=3.11)" and 'banks are situated far away from SHG office (MS=3.02)' ranks second and third respectively in terms of constraints faced by the members of the group. Sometimes due to negative attitude of some authorities of the bank employee can be major constraints and thus scored fourth rank with weighted mean score of 3.01. While loan amount is returned almost all of the time without any problem because of the smooth functioning of the group and thus scored V rank (MS=3.11) and at last loan amount whatever is sanctioned for the benefit and empowerment of the group by the banks is always used in its proper purpose and hence scored sixth rank with Mean score of 2.95.

From the above discussion, it is concluded that the complicated procedure of getting a loan and many women seek loan together are the major impediments faced by self-help group women because of majority of the women had low level of literacy and poor economic conditions.

6) Group meeting

The data depicted in the table reveals that in the area of group meeting first and major impediment who secured first rank is "all the women do not attend the meeting on time (MS=2.56)" and also many a times women were not ready to participate in the activities of the group may be due to some personal reasons or other which ranks second with MS=2.55. Lastly in few cases problem arise by the self-help group women is that they are not free sometimes which can cause untimely participation in attending the group meeting with holding third rank in terms of impediments faced by them (MS=2.53)

It might be that SHG women were daily labour so she cannot attend meeting on time and already late in meeting which directly affect their participation in the group activity.

7) Problems in taking group decision

In case of the problems in taking group decision data show in table that first rank goes to the constraint 'aged person in the family force their decision together (MS=2.89)'. Many a times self-help group women have to ask their family members to take decision in group activities and scored second rank with a weighted mean score of 2.82. At last may be due to poor educational status and burden of the family women argument in every matter only in few cases and thus scored third rank as a whole with a weighted mean score of 2.82.From the above discussion, it can be concluded that women live in joint family and due to family pressure they have to ask to their family in all decisions so it is the major impediment to SHG women.

After assembling the whole table, the table again categorized and ranks were given to all the seven key variables to know the factors which affect the performance of SHGs and act as impediments to the effective functioning of the SHG. Table 3 revealed that first and foremost important impediment faced by the self-help group women members is that they face a lot of problem in record maintenance and thus rank first with a weighted mean score of 3.2. It may be due to low education as we have already discussed above in the subtitles of the constraint record maintenance. Second rank and third rank goes to constraint like 'internal loaning and loaning through bank, MS=3.04' and 'problem in taking group decision, MS=2.83' respectively. Constraint like problem in saving money ranks fourth (MS=2.65) overall which may be due to female dependency on male member in terms of money management which really needs empowerment. Sometimes group members are not that much aware about the rules of the banks, their formalities of handling bank account, transaction procedure and many more procedures of procuring loans for the betterment of the group activities effectively which is again a major constraint because of their low literacy level and ranks V with a MS=2.63. Ranks VI and ranks VII were recorded by the constraint like 'Group meeting, with MS=2.55' and 'Lack of coordination among group members with MS=2.32' respectively.

It may be concluded that due to family pressure as most of the women were in joint family, were not able to join the meetings timely and also as far as coordination is concerned which is the last ranked impediment because women were joining the group after a good coordination among members which is even essential for the better functioning of the group effectively.

4. Suggestions for the improvement and better functioning of the SHGs

Table 5 represents the suggestions for the improvement and better functioning of the self help groups. The self help groups have indeed positively contributed towards the progress of rural masses. On the basis of the findings of the study suggestions have been made which would help to improve the functioning of the self help group and the members and in turn would help the empowerment of rural women. The table contains the eight suggestions to overcome the constraints faced by the group member in improvement and better working of the self help groups. The list shows in the table is further classified in eight ranks started from I to VIII. Table revealed that for the smooth functioning of the self-help group first and foremost rank goes to regular meeting of the group members and thus scored first rank with a weighted mean score 3.34. Similarly, IInd and IIIrd ranks go to the suggestions like regular training (MS=3.24) and group

discussion (MS=3.21) are the most important suggestions to overcome the constraints faced by the group members. It can be concluded that according to the group members' suggestions, members of the group should encourage to arrange more and more training meeting programmes regularly which helps to discuss and overcome all problems and barriers which are responsible for becoming obstacles in working of self help groups.

Table 5 List of suggestions for the improvement and better functioning of the SHGs

(N=80)

Sr.No.	Suggestions	MI	Imp	LI	NI	MS	Rank
1	Regular meeting	44	27	1	8	3.3375	I
2	Regular savings	28	18	19	15	2.7375	VI
3	Internal loaning	30	20	11	19	2.7625	V
4	Bank loaning	38	15	10	17	2.925	IV
5	Small Scale business	26	18	20	16	2.675	VIII
6	Regular repayment of loan	31	15	14	20	2.7125	VII
7	Group discussion	40	20	17	3	3.2125	III
8	Regular training	41	23	10	6	3.2375	II

Table further shows that fourth rank goes to bank loaning and internal loaning with a mean score of 2.92 and 2.76 respectively. It can be concluded that there should be a provision of encouraging habit of group loaning and bank loaning effectively for any specific purposes should be provided for effective functioning of self help groups. Rank sixth and seventh goes to regular savings (MS=2.74) and regular repayment of loan (MS=2.71) which concludes that habit of regular savings and timely repayment of loans which definitely helps to contribute for the better functioning of the group.

And lastly the last or we can say VIIIth rank goes to the suggestion i.e. provision of small scale business activities so that with the help of those small business activities there is a raise in their income and substantially will affect the economic impact and thus there will be growth in the savings and incomes of the self help group members.

CONCLUSION:

The study revealed that self help group are mainly dominated by young age group who were having higher secondary level of education. Majority of the self help group workers were saving Rs 50-100 sum of amount monthly with the help of income generation activities performed by the group. Majority of the workers were involved in agriculture and other allied fields along with the group activities. Most of the self help groups were working smoothly with a age span of 5 to 10 years and maximum percentage agree that there first and foremost benefits derived after becoming a member of the SHG is dealing with banking related formalities and its feasibility got increased followed by other benefits like increase in social status, communication skills and many more.

Despite lack of knowledge about record keeping ideas while working in the group or dealing with bank related procedures for loan seeking formalities and other constraints face by the group women, the overall empowerment is highly got increased after becoming the member. Constraints can be overcome with the help of regular meetings among the group members and regular training organization may be at village level or district level with the help of extension specialists.

Technical Programme 5

Title : Perception of effectiveness of Sawaj-brand bio fertilizers under field condition at its end users

Principal investigator : Dr.N.B.Jadav, Senior Scientist & Head, KVK,JAU, Pipalia

Co-investigator :
1) Sh. S.V. Undhad, Scientist, KVK, Pipalia
2) Dr.V.S.Prajapati, Scientist, KVK, Pipalia
3) P.S.Sharma, Scientist, KVK, Pipalia

Associate:
1) Dr.P.R.Kanani, ADE, DEE, JAU, Junagadh
2) Dr.G.R.Gohil, Training Asso, DEE,JAU,Junagadh
3) Dr.A.M.Parakhia, DEE, JAU, Junagadh

INTRODUCTION:

Biofertilizers are used to improve the fertility of the land by using biological wastes and biological wastes do not contain any chemicals which are harmful to the living soil. Biofertilizers generate plant nutrients like nitrogen and phosphorus through their activities in the soil and make available to plants in gradual manner. They are beneficial in enriching the soil with microorganisms which increases quality of nutrient in soil and also impart strength to combat with diseases (Savci 2012). The main sources of biofertilizers are bacteria, fungi and cyanobacteria. The most striking relationship that these microorganisms have with plants is symbiosis in which the partners derive benefits from each other. The most important microorganisms which have symbiotic relationship with plants are *Mycorrhiza, Rhizobium* and *Cyanobacteria*. These delivers number of benefits including plant nutrition, disease resistance and tolerance to adverse soil and climatic conditions.

Biofertilizers are defined as preparations containing living cells or latent cells of efficient strains of microorganisms that help crop plants to uptake of nutrients by their interactions in the rhizosphere when applied through

seed or soil. They accelerate certain microbial processes in the soil which augment the extent of availability of nutrients in a form which easily assimilated by plants. In arid and semi-arid area where the moisture is limiting factor there is no chance or sometime less chances of giving top dressing of fertilizers. In such situation biofertilizers are the cheap source to maintain fertility as well as soil moisture.

In semi-arid regions of tropical and subtropical countries, the soils are nutritionally deficient and due to moisture limitation, chemical fertilizers cannot be applied in adequate quantities. Crops grown in such areas, therefore, the supply of nitrogen is largely dependent on biological nitrogen fixation. In rain fed agriculture, these inputs gain added importance in view of their low cost, as most of the farmers are small and marginal and cannot afford to buy expensive chemical fertilizers. Biofertilizers are also ideal input for reducing the cost of cultivation and for practicing organic farming.

Very often microorganisms are not as efficient in natural surroundings as one would expect them to be and therefore artificially multiplied cultures of efficient selected microorganisms play a vital role in accelerating the microbial processes in soil.

Poor microbial load, higher contamination and use of improper strains resulted in mixed response of biofertilizers. Here the research institutes have a great responsibility towards ensuring the correct and high quality product enters the market along with government and thereby ensuring that substandard product do not enter the market. New practices take time to pick up success or failure of new products entering the market will depend on the proper marketing, branding, promotional policies of government for which study needs to be conducted at every level of production, consumption and factors affecting them.

Keeping in view the continued demand of crop nutrition and its biological availability through microbes, Government of India, Ministry of agriculture, and Department of agriculture & cooperation initiated “National project on development and use of biofertilizers” in 1983 accordingly; a national center and six regional centers were created to cater the needs of bio fertilizer developmental activities in India. Initially the availability of biofertilizers in different parts of the country was meager. The project was aimed to provide quality biofertilizers like *Rhizobium* for crop specific legume and oil seeds, *Azotobacter* and *Azospirillum* for cereals, millets, sugarcane, vegetables, plantation, Phosphate Solubilizing Microorganisms for all major crops and soils.

Junagadh Agricultural University developed *Rhizobium, Azotobacter* and Phosphate Solubilizing Bacteria as ‘*Sawaj*’ trade name. University provide facility to buy ‘*Sawaj*’ bio fertilizers at university campus, KVKs (Krishi Vigyan Kendra) and various NGOs (Non-Government Organizations) to the farmers.

Production and selling of ‘*Sawaj*’ bio fertilizers from Junagadh Agricultural University.

Sr. no.	Year	Azotobacter (Bottles) (500 ml)	Rhizobium (Bottles) (500 ml)	PSM (Bottles) (500 ml)
1	2011-2012	4500	-	-
2	2012-2013	13088	-	-
3	2013-2014	889	189	513
4	2014-2015	1981	11698	1987
5	2015-2016	2857	2857	2857
6	2016-2017*	2716*	2994*	4520*

*Up to 28th February, 2017

Source: *www.jau.in/coa/index.php/department/plant-pathology*

Selling of ‘*Sawaj*’ biofertilizers from Krishi Vigyan Kendra, JAU, Pipalia.

Sr. no.	Year	Azotobacter (Bottles) (500 ml)	Rhizobium (Bottles) (500 ml)	PSM (Bottles) (500 ml)
1	2014-2015	-	-	-
2	2015-2016	60	6	61
3	2016-2017	34	26	23
4	2017-18	131	122	175

Source: *KVK,JAU, Pipalia Store record*

Rhizobium are soil bacteria that fix Nitrogen after becoming established inside root nodules of legumes (Fabaceae). There are several different genera of Rhizobia, all of them belong to the Rhizobiales, a probably-monophyletic group of Proteobacteria and they are soil bacteria characterized by their unique ability to infect root hairs of legumes and induce effective ‘N’ fixing nodules to form on the roots. They are rod shaped living plants which exist only in the vegetative stage. Unlike many other soil microorganisms, Rhizobia produce no spores and they are aerobic and motile. (Baset *et al*. 2010)

Azotobacter is a genus of usually motile, oval or spherical bacteria that form thick-walled cysts and may produce large quantities of capsular slime. They are aerobic, free-living soil microbes which play an important role in the nitrogen cycle in nature, binding atmospheric nitrogen, which is inaccessible to plants, and releasing it in the form of ammonium ions into the soil (nitrogen fixation). In addition to being a model organism for studying diazotrophs, it is used by humans for the production of bio fertilizers, food additives, and some biopolymers. (Sartaj *et al.* 2012)

Phosphate Solubilizing Bacteria has great role as for plant growth it is usually abundant in soil. Phosphate Solubilizing Bacteria plays a vital role in the formation of amino acids and proteins from ammonium ions, which are absorbed by roots, from the soil. It is also responsible for the transfer of carbohydrates, proteins, etc. from the level to the roots. It also plays a vital role in the uptakes of other elements particularly nitrogen, phosphorus and calcium, Phosphate solubilizing bacteria regulates the permeability of the cellular membrane. It activates number of enzymes, e.g. alcohol dehydrogenase and its deficiency decreases photosynthesis. Phosphate Solubilizing Bacteria increases the resistance of crops to hot and dry conditions and insect pest and diseases. It increases the stiffness of straw in cereals and therefore the loading of cereal is reduced. It improves the quality of fruits and grains. (Khosro and Yousef, 2012)

The bio fertilizer and bio pesticide technology is basically a microbial technology. The field extension workers are the link between the newly recommended technology and farmers. They have a major role to communicate this specialized technology to farmers. Accordingly, in order to acquaint about the developments regarding bio fertilizer and bio pesticide technology, the extension officials of the state governments are being trained in the project, about the current developments of bio fertilizer and bio pesticide technology.

Government has to ensure that the bio-organism based product entering the market must meet with the quality standard. Initially, government subsidized the biofertilizers and bio pesticides, so that small and marginal farmers could easily be adopting it. A proper marketing strategy depending on the socioeconomic condition, market heterogeneity and buying capacity of the consumer need to be planned to decide on various intermediaries for distribution and adoption of new technology by the farmers. Later on awareness on the proper application procedures, limitations of product, and long term benefits of product needs to be created in farmers especially in interiors of the country. The government could also encourage the private firms and research institutes to come together, cooperate and promote training and extension activity at farm level for farmers.

Sometime, the technology is available however the farmers do not use the technology. There are certain reasons for not use of the technology. This might be due to poor awareness, unfavorable attitude and low knowledge regarding the technology. The bio fertilizer and bio pesticide technology can help the farmers of arid and semi-arid areas of Junagadh district in increasing crop production especially in *Kharif* season crops viz. groundnut, cotton, pulses, til, vegetables etc.

Looking to above facts a study entitled "**Perception of effectiveness of Sawaj-brand bio fertilizers under field condition at its end users"** was undertaken with following objectives

OBJECTIVES:

1) To study the profile characteristics of respondents.
2) To find out the effectiveness of SAWAJ- brand bio fertilizers.
3) To know the problems faced by respondents in adoption of bio fertilizers.
4) To seek the suggestions to overcome the constraints.

METHODOLOGY:

Selection of respondents:

The study was conducted in Krishi Vigyan Kendra, Junagadh Agricultural University, Pipalia (Rajkot-2) operational area of Saurashtra region. The village-wise list was prepared of farmers, who purchased bio fertilizers (PSM, Azotobacter, Rhizobium) from the KVK- Pipalia during 2016-2017 and 2017-18. Out of listed farmers two taluka was purposively selected on the basis of highest purchased bio fertilizer and five villages from each taluka was selected randomly and respondent selection made from ten villages. Selection of respondents made randomly, from each village ten farmers selected as a respondents and total 100 farmers interviewed as per the objective of the study.

Table :1 Selection of respondents according to village, taluka of Rajkot district.

Sr. No.	Taluka	Villages	Respondents
1.	Dhoraji	1. Moti Parabadi	10
		2. Bhola	10
		3. Patanvav	10
		4. Vadodar	10
		5. Chadvavadar	10
2.	Upleta	1. Thank	10
		2. Arani	10
		3. Talngana	10
		4. Isvariya	10
		5. Timbadi	10
		Total	100

To determine perception of effectiveness about use of "Sawaj" bio fertilizer, twenty-three item statements were presented and assessment based on a five point Likert-type rating scale of strongly agree, coded 5, agree coded 4, undecided coded 3, disagree coded 2 and strongly disagree coded 1, mean scores was calculated. To assess the constraints in use of "Sawaj" bio fertilizer, nine item statements were presented and assessment based on yes and no,

percentage of statements were work out and ranked it. For the suggestions to overcome the constraint was kept open-handed and percentage work out and on basis of percentage ranked given.

FINDINGS:

(4) Characteristics of Respondents:

The data presented in Table 2.1 indicated that majority (54.00 per cent) of the respondents was in the middle age group followed by 29.00 and 17.00 per cent of the respondents belonged to the old and young age group respectively. This might be due to that young age farmers moved towards urban area for other business and especially male elder were the respected members and they possess decision making power about all family matters and farming. While in case of education that is presented in Table 2.2, majority 38.00 per cent of the respondent were educated up to secondary level whereas, 34.00 per cent of the respondents were educated up to primary level followed by 12.00 per cent respondents were educated up to higher secondary level, 9.00 per cent respondents were graduate and 7.00 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that about 46.00 per cent of respondents had small farmers and 32.00 per cent respondents were medium farmers. Whereas 14.00 and 8.00 per cent respondents were marginal and big farmers respectively. The data in Table 2.4 represented about annual income of the respondents, indicated that 34.00 per cent farmers had high annual income followed by 31.00 per cent farmers had medium annual income. The respondents belonged to low annual income category was 18.00 per cent. Whereas 11.00 and 6.00 per cent respondents were very high and very low annual income respectively.

The data in Table 2.5 represented about social participation of the farmers, the data indicated that 55.00 per cent of the respondents had medium social participation whereas 24.00 and 21.00 per cent respondents had low and high social participation respectively. This might be due to that 71.00 per cent respondents were middle and old age group.

Table:2 Distribution of respondents according to their personal, socio-economic characteristics. (N=100)

Sr.	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 years)	29	29.00
	Middle age (36 to 55 years)	54	54.00
	Old age (above 55 years)	17	17.00
	Total	100	100.00
2	**Education**		
	Illiterate	7	7.00
	Primary (1 to 7th std.)	34	34.00
	Secondary (8 to 10th std.)	38	38.00
	Higher Secondary (11th to 12th std.)	12	12.00
	Graduate (above 12th std.)	9	9.00
	Total	100	100.00
3	**Size of land holding**		
	Marginal (up to 1 ha)	14	14.00
	Small farmers (1.01 to 2 ha)	46	46.00
	Medium (2.01 to 4 ha)	32	32.00
	Big farmers (Above 4 ha)	8	8.00
	Total	100	100.00
4	**Annual income**		
	Very low annual income (up to ₹ 50,000)	6	6.00
	Low annual income (₹ 50,001 to 1,00,000)	18	18.00
	Medium annual income (₹ 1,00,001 to 1,50,000)	31	31.00
	High annual income (₹ 1,50,001 to 2,00,000)	34	34.00
	Very high annual income (above ₹ 2,00,000)	11	11.00
	Total	100	100.00
5	**Social participation**		
	Low social participation (below 1.01)	24	24.00
	Medium social participation (1.01 to 3.28)	55	55.00
	High social participation (above 3.28)	21	21.00
	Total	100	100.00
6	**Extension participation**		
	Low extension participation (below 12.68)	27	27.00
	Medium extension participation (12.68 to 36.54)	51	51.00
	High extension participation (above 36.54)	22	22.00

	Total	100	100.00
7	**Innovativeness**		
	Low innovativeness (below 1.08)	29	29.00
	Medium innovativeness (1.08 to 2.64)	56	56.00
	High innovativeness (Above 2.64)	15	15.00
	Total	100	100.00
8	**Risk orientation**		
	Very low (up to 16 score)	2	2.00
	Low (17 to 26 score)	9	9.00
	Medium (27 to 32 score)	53	53.00
	High (33 to 43 score)	29	29.00
	Very high (above 44 Score)	7	7.00
	Total	100	100.00

The data regarding extension participation represented in Table 2.6 on the basis of data it is cleared that 51.00 per cent respondent had medium extension participation followed by 27.00 and 22.00 per cent respondents had low and high extension participation respectively. The reason behind this might be that in study area, respondents were progressive farmers as compare to other area. Table. 2.7 data inferred that majority 56.00 per cent of the respondents had medium innovativeness while 29.00 per cent respondents had low innovativeness followed by 15.00 per cent respondents had high innovativeness category.

Table 2.8 revealed that almost half (53.00 per cent) of the respondents had medium risk orientation followed by 29.00 per cent respondents belonged to high risk orientation. Whereas 7.00 and 9.00 per cent respondents had vey high and low risk orientation respectively. Least person (2.00 per cent) of the respondents belonged to very low risk orientation category.

3. Effectiveness of Sawaj bio fertilizer

General perception about Sawaj Bio fertilizer

The data presented in Table 5 indicated general perception of farmers about Sawaj bio fertilizer. Twenty-two item statements presented and means score work out according to means score ranked given. General perception of farmers were: Use of bio fertilizers in every crop is useful (WMS=4.38) ranked first, Use of bio fertilizers improves crop growth (WMS=4.25) ranked second, Bio fertilizers can be applied in standing crop (WMS=4.11) ranked third, The crop yield increase by the use of bio fertilizers (WMS=3.97) ranked fourth and Sawaj bio fertilizers can be used at any stage of crop (WMS=3.90) ranked fifth and last ranked given to There is no addition of any nutrients by application of Sawaj bio fertilizers in soil (WMS=1.68) ranked twenty, Application of seed treatment with Bio fertilizer restricts the putrefaction of groundnut seeds during storage (WMS=1.75) ranked twenty one and Use of bio fertilizers is safe against animals (WMS=1.82) ranked twenty.

Table: 3 General perceptions about Sawaj bio fertilizer (N=100)

Sr.No.	Particular	SA	A	UD	DA	SD	WMS	Rank
1	There is no addition of any nutrients by application of Sawaj bio fertilizers in soil	0	4	15	26	55	1.68	XXII
2	The germination of crop improves by the application of Bio fertilizers	38	24	28	5	5	3.85	VI
3	Application of seed treatment with Bio fertilizer restricts the putrefaction of groundnut seeds during storage	0	6	14	29	51	1.75	XXI
4	Application of bio fertilizers every year is beneficial	28	24	32	7	9	3.55	IX
5	Continuous application of bio fertilizers for 2-3 years increase fertility of soil	23	27	42	5	3	3.62	VIII
6	Bio fertilizers can be applied through spray pump	2	5	59	20	14	2.61	XV
7	Bio fertilizers can be applied in standing crop	48	24	21	5	2	4.11	III
8	Bio fertilizers can be applied with other bio fertilizers	28	10	41	12	9	3.36	XI
9	Rhizobium can also be used in other crops except groundnut	8	13	44	23	12	2.82	XIV
10	Only beneficial for seed treatment	0	8	54	22	16	2.54	XVI
11	Bio fertilizers can be used with any pesticides and chemical fertilizers	30	30	25	8	7	3.68	VII
12	Sawaj bio fertilizers can be used at any stage of crop	41	25	22	7	5	3.9	V
13	Use of bio fertilizer is not harmful to environment	15	18	45	10	12	3.14	XII
14	Soil moisture is necessary for bio fertilizers	5	3	32	26	34	2.19	XVIII
15	Excess use than recommended dose is harmful for crops	4	9	27	28	32	2.25	XVII
16	Bio fertilizer should be stored in cool and dark place	10	14	43	22	11	2.9	XIII
17	Use of bio fertilizers improves crop growth	54	26	14	3	3	4.25	II

18	Bio fertilizers can be used in any type of soil	32	9	43	7	9	3.48	X
19	The crop yield increase by the use of bio fertilizers	45	25	18	6	6	3.97	IV
20	Use of bio fertilizers is safe against animals	2	4	18	26	50	1.82	XX
21	With the storage of bio fertilizers in soil speedily degradation of organic matter occurs	0	1	28	30	41	1.89	XIX
22	Use of bio fertilizers in every crop is useful	60	22	15	2	1	4.38	I

3. Constraints faced by the farmers in adoption of Sawaj bio fertilizer

The constraints were kept open ended. The responses were recorded in the schedule itself. The frequency for each constraint was worked out and the mean was calculated. The data was converted in to percentage. A rank was assign to each constraint and presented.

Table: 4 Constraints faced by respondents in adoption of bio fertilizer N=100

Sr.	Constraints	Frequency	Percentage	Rank
1	Sawaj Bio fertilizer is not timely available	82	82.00	I
2	Sawaj Bio fertilizer are not available at taluka places	61	61.00	IV
3	Unawareness about Sawaj Bio fertilizer impact	76	76.00	II
4	Lack of practical training about use of Bio fertilizer	42	42.00	VII
5	Non-availability of subsidy	57	57.00	V
6	Non-availability of agricultural literature in village	35	35.00	VIII
7	In case of high temperature biofertilizer application is not successful	45	45.00	VI
8	Lack of awareness about the concentration, time and method of biofertilizer application	68	68.00	III

The perusal of data presented in Table 4 revealed that majority of the farmers expressed constraints in adoption of Sawaj bio fertilizer were: Sawaj Bio fertilizer is not timely available (82.00 %) ranked first, Unawareness about Sawaj Bio fertilizer impact (76.00%) ranked second, Lack of awareness about the concentration, time and method of biofertilizer application (68.00 %) ranked third, Sawaj Bio fertilizer are not available at taluka places (61.00%) ranked fourth, Non-availability of subsidy (57.00 %) ranked fifth. While least importance was given to In case of high temperature biofertilizer application is not successful (45.00%) having rank sixth, Lack of practical training about use of Bio fertilizer (42.00%) having rank seventh and Non-availability of agricultural literature in village (35.00%) having rank eighth.

4. Suggestion obtained by the farmers in adoption of sawaj bio fertilizer

The data presented in Table 5 revealed that majority of the farmers suggested that Sawaj bio fertilizer provide at local dealer (87.00%) ranked first, Quantity discount (85.00%) ranked second, timely available (78.00%) ranked third, establish marketing channel at local level at cooperative (69.00%) ranked fourth, impart training about method of application (57.00%) ranked fifth and Increase awareness about use of Bio fertilizer (48.00%) ranked sixth.

Table: 5 Distribution of the respondents according to suggestion obtained about adoption of Sawaj bio fertilizer (N=100)

Sr. No.	Suggestions	Frequency	Percentage	Rank
1	Sawaj Bio fertilizer provide at local dealer	87	87.00	I
2	Timely available	78	78.00	III
3	Increase awareness about use of Sawaj Bio fertilizer	48	48.00	VI
4	Impart training about method of application	57	57.00	V
5	Establish marketing channel at local level at cooperative	69	69.00	IV
6	Quantity discount	85	85.00	II

CONCLUSION:

It can be concluded that majority of farmers are middle age, educated up to secondary level and small farmers. One half of the farmers belong to high to medium annual income category looking to the social and extension participation Sawaj bio fertilizer users had medium participation also they have medium innovativeness and were medium to high risk orientated farmers. Farmers general perception about Sawaj bio fertilizer were use of bio fertilizers in every crop is useful, use of bio fertilizers improves crop growth, bio fertilizers can be applied in standing crop and the crop yield increase by the use of bio fertilizers.

Adoption of bio fertilizer was seriously constrained by following factors viz., Sawaj bio fertilizer is not timely available, unawareness about Sawaj bio fertilizer impact, lack of awareness about the concentration, time and method of bio fertilizer application, Sawaj bio fertilizer are not available at taluka places. Major suggestion perceived by the farmers were provided at local level and quantity and timely available.

Message:

Training organizers of transfer of technology center should conduct training on "Sawaj" biofertilizer to create awareness and its efficient use among the farmers.

APR SUMMARY

(Note: While preparing summary, please don't add or delete any row or columns)

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	50	1214	497	1711
Rural youths	0	0	0	0
Extension functionaries	5	**155**	**14**	**169**
Sponsored Training	22	850	748	1598
Vocational Training	1	0	30	30
Total	78	2219	1289	3508

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	40	16	40
Pulses	10	4	10
Cereals	10	5	10
Vegetables	17	6.8	17
Other crops	73	29.2	73
Hybrid crops	0	0	0
Total	150	61	150
Livestock & Fisheries	10	0	10
Other enterprises	50	0.5	50
Total	60	0.5	60
Grand Total	210	61.5	210

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	3	9	9
Livestock	2	6	24
Various enterprises	1	3	3
Total	6	18	36
Technology Refined			
Crops	0	0	0
Livestock	0	0	0
Various enterprises	0	0	0
Total	0	0	0
Grand Total	6	18	36

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	1811	11838
Other extension activities	25	3445
Total	**1836**	**15283**

5. Mobile Advisory Services

		Type of Messages

Name of KVK	Message Type	Crop	Livestock	Weather	Marke-ting	Awar e-ness	Other enterprise	Total
	Text only	68	75	65	30	31	21	290
	Voice only	321	452	374	32	75	71	1325
	Voice & Text both	-	-	-	-	-	-	-
	Total Messages	389	527	439	62	106	92	1615
	Total farmers Benefitted	389	527	439	62	106	92	1615

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	**522.95**	**-**
Planting material (No.)	**1250**	**1750**
Bio-Products (kg)	**10419**	**786090**
Livestock Production (No.)	-	-
Fishery production (No.)	-	-

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	50	-
Water	-	-
Plant	-	-
Total	**50**	**-**

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	2
2	Conferences	4
3	Meetings	10
4	Trainings for KVK officials	4
5	Visits of KVK officials	0
6	Book published	2
7	Training Manual	0
8	Book chapters	0
9	Research papers	6
10	Lead papers	1
11	Seminar papers	8
12	Extension folder	10
13	Proceedings	1
14	Award & recognition	3
15	On going research projects	2