

KRISHI VIGYAN KENDRA, PIPALIA
ANNUAL PROGRESS REPORT (April-2016-March-2017)
APR SUMMARY

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	62	1755	503	2258
Rural youths	2	32	36	68
Extension functionaries	2	55	0	55
Sponsored Training	16	613	376	989
Vocational Training	1	0	30	30
Total	83	2455	945	3400

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	55	13.5	
Pulses	10	4	
Cereals	10	5	
Vegetables	-	-	-
Other crops	60	24	
Spices	10	4	
Total	145	50.50	
Livestock & Fisheries	10	-	10
Kitchen garden	100	-	100
Total	110	-	110
Grand Total	255	50.50	110

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	2	6	6
Livestock	2	6	48
Various enterprises	1	3	15
Total	5	15	69
Technology Refined			
Crops	-	-	-
Livestock	-	-	-
Various enterprises	-	-	-
Total	-	-	-
Grand Total	5	15	69

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	2103	9436
Other extension activities	157	157

Total	2260	9593
--------------	-------------	-------------

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						Total
		Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	
	Text only	67	72	64	25	34	24	286
	Voice only	324	458	372	35	76	74	1339
	Voice & Text both	-	-	-	-	-	-	-
	Total Messages	391	530	436	60	110	98	1625
	Total farmers Benefitted	391	530	436	60	110	98	1625

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	276.98	-
Planting material (No.)	12000	1350
Bio-Products (kg)	5977	770950
Livestock Production (No.)	-	-
Fishery production (No.)	-	-

7. Soil, water & plant Analysis

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

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	2
2	Conferences	
3	Meetings	
4	Trainings for KVK officials	7
5	Visits of KVK officials	
6	Book published	0
7	Training Manual	0
8	Book chapters	0
9	Research papers	17
10	Lead papers	0
11	Seminar papers	1
12	Extension folder	5
13	Proceedings	1
14	Award & recognition	0

15	Ongoing research projects	2
----	---------------------------	---

DETAIL REPORT OF APR-2016-17

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		E mail
KrishiVigyan Kendra, Junagadh Agricultural University, Pipalia (Dhoraji) Dist: Rajkot, Gujarat-360410	Office 02824-292584	FAX ---	kvkpipalia@jau.in

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

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

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. N. B. Jadav	0285-2653009	09924012649	nb_jadav@yahoo.com

1.4. Year of sanction: 16, March-2012

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

S. No.	Item	Area (ha)
1	Under Buildings	-
2.	Under Demonstration Units	-
3.	Under Crops	20.00
4.	Orchard/Agro-forestry	-
5.	Others (specify)	20.00

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	-	-	-	-	550	On going
2.	Farmers Hostel	-	-	-	-	-	-	-
3.	Staff Quarters (6)	-	-	-	-	-	-	-
4.	Demonstration Units (2)	-	-	-	-	-	-	-
5	Fencing	-	-	-	-	-	-	-
6	Rain Water harvesting system	-	-	-	-	-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	-	-	-	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep (Bolero)	2013	661107	40024	Working
Mahindra Tractor	2013	565000	-	Working
Mahindra Tractor mini	2016	248000	-	Working

C) Equipments & AV aids

Name of the equipment	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
Mridaparikshak soil testing mini lab	2016-17	90300	Working

1.8. A). Details SAC meeting* conducted in the year (5th SAC)

Sl.No.	Date	Name and Designation of Participants	Salient Recommendations	Action taken
1.	24/10/2016	1 Dr. A. R. Pathak Hon'ble VC, JAU, Junagadh. 2 Dr. A. M. Parakhia DEE, JAU, Junagadh 3 Dr. V. N. Patel, Research Scientist (DFRS), Targhadia 4 Shri. R. R. Tilava, DAO, District Panchayat, Rajkot 5 Dr. H. D. Kansagara Dy. DAH, District Panchayat, Rajkot 6 Shri H. K. Sharma Assit. Director, NHRDF, Rajkot 7 Shri A. B. Varma NHRDF, Rajkot 8 Shri Prabhav Desai Manager, Milk Producer Co- operative Ltd., Rajkot 9 Dr. Amit H. Patel Veterinary Executive, Rajkot Dairy, Rajkot 10 Shri Sanjay Samani District Manager, GAIC, Rajkot 11 Shri D. P. Parmar DIC, Rajkot 12 Shri Amit Savani HDFC Bank, Rajkot 13 Shri J. V. Rathod Assit conservator of Forest, Forest dept., Rajkot 14 Dr. G. R. Sharma, Principal, Polytechnic in Agri. Engg., Targhadia 15 Shri Hiten Maheriya GGRC, Rajkot	1. Take more Add the training related to preparation of Jivamrut & take one treatment of Jivamrut in FLD/OFT 2. Take more demonstration for management of pink boll worm and white grub 3. Impart off campus training related to pink boll worm and white grub (where demonstration have been taken) 4. Add training related to pruning in horticultural crops 5. Impart more training related to value addition 6. Analysis of soil sample by purchasing soil sample kit from RF 7. Present scenario of diseases occurrence in animals to be presented in SAC 8. Add training related to Good Agricultural Practices 9. Report organic farming training in progress report and presentations	Suggestions accepted and incorporated in annual action plan

		16 Dr. M. M. Tajapara, I/C SS & H, Rajkot		
		17 Dr. N. S. Joshi SS & H, Amreli		
		18 Dr. Minaxi K. Bariya Scientist (Home Science), Pipalia		
		19 Shri S. V. Undhad Scientist (Plant protection), Pipalia		
		20 Dr. V. S. Prajapati Scientist (Animal Husbandry), Pipalia		
		21 Shri Harshukh R. Mathukiya Progressive farmers		
		22 Shri Chetanm Vajubhai Satasia Progressive farmers		
		23 Shri Ashwin Bachubhai Trada Progressive farmers		
		24 Shri Jentibhai Popatbhai Babaria Progressive farmers		
		25 Shri Navanitbhai K. Babaria Progressive farmers		
		Shri Arvindbhai		
		26 Bhimjibhai Paria Progressive farmers		
		27 Shri Champaksinh Chandubha Jadeja Progressive farmers		
		28 Shri Shaileshbhai B. Limbasia Progressive farmers		
		29 Hetal Padsumbiya Scientist (Home Science) KVK,		
		30 Targhadia Shri F. P. Kargathia Agricultural Officer KVK, Pipalia		
		31 Dr. N. B. Jadav, Senior scientist & Head, KVK, Pipalia		

Note : This yellow mark may be treated as an example

*** Attach a copy of SAC proceedings along with list of participants**

2. DETAILS OF DISTRICT (2016-17)

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

S. No	Farming system/enterprise
1	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)

S. 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 districts 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.

2.3 Soil type/s

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	

1.4. Area, Production and Productivity of major crops cultivated in the district (Year-15-16)

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /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	200
7	Coriander	2112	3168	150
8	Cumin	56	500	8.90
9	Garlic	143	8730	61.00
10	Chickpea	574	1292	225

2.5. Weather data

Sr. No.	Meteorological week	Rainfall	No of
		(mm)*	Rainy days *
1	25	11	1
2	26	16	2
3	27	-	
4	28	-	
5	29	37.5	3
6	30	41	2
7	31	385	4
8	32	20	2
9	33	-	-
10	34	59	1
11	35	22	1
12	36	-	-
13	37	18	1
14	38	242	4
15	39	-	-
16	40	130	3
17	41		
Total		987.5	24

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

Category	Population ('000Nos.)	Production ('000 tone)	Productivity
Cattle			
<i>Cows</i>	452	3326.90	
<i>Buffalo</i>	362	5284.70	
Sheep			
	263.40	266.81(wool)	
Goats	197	231.24	
Pigs	1		
Rabbits			
Poultry (Production of eggs in Lakh Nos.)			
Hens		3.92	
<i>Desi</i>	7.8	32.52	
<i>Improved</i>	13.4		
Ducks			
Turkey and others			

Category	Area	Production	Productivity
Fish	-	-	-
<i>Marine</i>	-	-	-
<i>Inland</i>	-	-	-
Prawn	-	-	-
Scampi	-	-	-
Shrimp	-	-	-

2.7 Details of Operational area / Villages (2016-17)

Sl. No	Taluka	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Dhoraji	Patanvav, Nani Parabdi	Groundnut, Cotton, Sesamum,	-Heavy infestation of pink ballworm in cotton	- IPM, IDM and INM in major crops
2	Jetpur	Amrapur, Mandlikpur	Wheat, Cumin, Chickpea, Garlic and onion.	-sucking pest in all crops	- Motivate the farmers for horticulture crop
3	Jamkadorna	Jashapar, NaniDudhivadar, Sanala	Enterprise are dairy business, vermi composting,	-Stem rot disease in groundnut	- To create awareness for value addition
4	Upleta	Nagvadar, Talangna		-Sesamum wilt	- Populirization of MIS
5	Gondal	Daliya, Shemla, Bhojpara		- Less area under horticultural crops	- Create awareness of artificial insemination
				- Infertility in livestock	

2.8 Priority/thrust areas

Crop/Enterprise	Thrust area
Groundnut	Increase productivity of crops by adopting recommended practices in IPM & IDM (Management of white grub and stem rot)
Cotton	-Integrated pest management (management of pink bollworm in Bt. cotton) & INM in cotton -Recycling of cotton stalk (Popularizing of cotton shredder)
Coriander, Sesame, etc.	Increasing the productivity of major crops by adopting recommended technologies, newly release variety and to create awareness of value addition
Cumin	Integrated disease management
Farm waste	Recycling of farm waste through composting, vermi compost, green manuring, etc.
Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques
Farm Women	Farm women empowerment by training in value addition, handi crafts, and small scale enterprises
Horticulture (Papaya, Pomegranate, Chilly etc.)	Post harvest technology and value addition in fruit and vegetable, INM, canopy management in orchard
Animal Husbandry	Increasing the productivity of livestock animals by adopting scientific practices and to create awareness about clean milk production

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

OFT (Technology Assessment and Refinement)				FLD (Oilseeds, Pulses, Cotton, Other Crops/Enterprises)			
1				2			
Number of OFTs		Total no. of Trials		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
5	5	66	66	50	50	160	255

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers	61	62	2100	2258	984	2513	12806	13138
Rural youth	2	2	50	68				
Extn. Functionaries	2	2	50	55				

Seed Production (Qtl.)			Planting material (Nos.)		
5			6		
Target	Achievement	Distributed to no. of farmers	Target	Achievement	Distributed to no. of farmers
216	277	-	-	18000	357

I.A TECHNOLOGY ASSESSMENT

Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	No. of trials	No. of farmers
Integrated Nutrient Management	Wheat	Use of bio fertilizer	3	3
Varietal Evaluation				
Integrated Pest Management	Groundnut	Integrated Pest Management	3	3
Integrated Crop Management				
Integrated Disease Management				
Small Scale Income Generation Enterprises				
Weed Management				
Resource Conservation Technology				
Farm Machineries				
Integrated Farming System				
Seed / Plant production				
Post Harvest Technology / Value addition				
Drudgery Reduction				
Storage Technique				
Nutrition Management (Women & Children)	Adolescent girls	Iron rich diet	15	15
Total			21	21

Summary of technologies assessed under livestock by KVKs

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease Management				
Evaluation of Breeds				
Feed and Fodder management	Buffalo	Protien and fiber rich diet	3	18
Nutrition Management	Cattle	Mineral rich diet	3	30
Production and Management				
Others (Pl. specify)				
Total			6	48

Summary of technologies assessed under various enterprises by KVKs

Thematic areas	Enterprise	Name of the technology assessed	No. of trials	No. of farmers
Integrated Nutrient Management	Wheat	Use of bio fertilizer	3	3
Integrated Pest Management	Groundnut	Integrated Pest Management	3	3
Nutrition Management (Women & Children)	Adolescent girls	Iron rich diet	15	15
Feed and Fodder management	Buffalo	Protien and fiber rich diet	3	18
Nutrition Management	Cattle	Mineral rich diet	3	30
			27	69

I.B. TECHNOLOGY REFINEMENT**Summary of technologies refined under various crops by KVKs**

Thematic areas	Crop	Name of the technology refined	No. of trials	No. of farmers
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	-	-	-	-
Others (Pl. specify)	-	-	-	-

Summary of technologies refined under various livestock by KVKs

Thematic areas	Name of the livestock enterprise	Name of the technology refined	No. of trials	No. of farmers
Disease Management	-	-	-	-
Evaluation of Breeds	-	-	-	-
Feed and Fodder management	-	-	-	-
Nutrition Management	-	-	-	-
Production and Management	-	-	-	-
Others (Pl. specify)	-	-	-	-
Total			-	-

Summary of technologies refined under various enterprises by KVKs

Thematic areas	Enterprise	Name of the technology assessed	No. of trials	No. of farmers
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

Note: Suppose **IPM in paddy** is the technology refined by 50 KVKs in the Zone with 5 trials by each KVK, then IPM in paddy needs to be considered as a single technology, with $50 \times 5 = 250$ trials and No. of KVKs will be 50. In addition, please note that even if IPM in paddy is done with various combinations of Technology Options (treatments), it may be considered as a single technology only.

I.C. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

(A). Technologies Assessed/refined during 2016-17

INTEGRATED PEST MANAGEMENT

Problem definition: Low yield due to white grub infestation in groundnut

Technology Assessed: Management of white grub in groundnut

KVK, Pipalia in Gujarat conducted on-farm trial to assess effect of management of white grub in groundnut. The application of recommended practices (i.e. 1. Seed treatment with chloropyriphos @25 ml/kg. 2. Application of Chloropyriphos @ 4 lit./ha 3. Spraying the trees on bund with carbaryl@ 40g/15 lit water) gave highest yield of 2566 kg/ha with BCR Rs. 1.97 as compare to other treatments.

Table 1 Management of white grub in groundnut

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (kg/ha)</i>	<i>BCR</i>
Chloropyriphos @ 4 lit./ha at the time of attack (Farmers Practice)	3	1650	1:1.34
1. Seed treatment with Chloropyriphos @ 25 ml/kg 2. Application of Chloropyriphos @ 4 lit./ha 3. Spraying the trees on bund with carbaryl@ 40g/15 lit water (Recommended Practice)		2566	1:1.97
1. Application of carbofuran 3G@ 40kg/ha at time of sowing 2. Spraying the trees on bund with carbaryl@ 40g/15 lit water 3. Application of UREA @ 50 kg/ha with irrigation water at time of infestation. (Intervention)		1733	1:1.38

NUTRIENT MANAGEMENT

Problem definition: Less use of biofertilizer and more production cost

Technology Assessed: Response of Bio fertilizers to wheat yield

KVK, Pipalia of Rajkot district of Gujarat state took up on-farm trial on response of biofertilizers to wheat yield. The results indicated that the Application of Azatobacter& PSB culture (250g/10kg) + 75% of gave highest yield 5208 kg/ha with net return of Rs. 39238 and BCR 1.72 as compared to farmers practices and recommended practices.

Table 2 Response of Bio fertilizers to wheat yield

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (kg./ha)</i>	<i>Net Return (Rs./ha)</i>	<i>B:C Ratio</i>
Application of only DAP & Urea in different doses (Farmers Practice)	3	3792	14038	1:1.26
120-60-0 NPK kg/ha (Recommended Practice)		4292	23038	1:1.42
Application of Azatobacter& PSB culture (250g/10kg) + 75% of RDF (Intervention)		5208	39238	1:1.72

LIVESTOCK ENTERPRISES

Integrated Nutrient Management

Problem definition: Low milk production due to inadequate nutrition

Technology Assessed: Effect of supplementation of concentrate and mineral mixture on milk production of local buffalo breed

KVK, Pipalia of Rajkot district of Gujarat state took up on-farm trial on Effect of supplementation of concentrate and mineral mixture on milk production of local buffalo breed. The results indicated that feeding of concentrate mixture (5kg/animal/day) + Mineral mixture (50gm/ animal/ day) gave higher milk production/week 8.5 lit/day as compared to other treatments.

Table 3 Effect of supplementation of concentrate and mineral mixture on milk production of local buffalo breed

Technology Option	No .of trials	Av. Milk Production/ week (lit/day)	B:C Ratio
Routine Farmer Practice (Farmers practice)	18	6.4	1:1.7
Feeding of concentrate mixture (5kg/animal/day) (Recommended practice)		7.7	1:2.13
Feeding of concentrate mixture (5kg/animal/day)+ Mineral mixture (50gm/ animal/ day)		8.5	1:2.34

Integrated Nutrient and Disease Management

Problem definition: Low milk production due to Mineral imbalance and Parasitic Infestation

Technology Assessed: Low milk production due to parasitic infestation and mineral imbalance in cattle

KVK, Pipalia of Rajkot district of Gujarat state took up on-farm trial on Low milk production due to parasitic infestation and mineral imbalance in cattle. The results indicated that feeding of Dewormer bolus (3 gm/animal) + Mineral mixture (50gm/ animal/ day) gave higher milk production/week 6.15 lit/day as compared to other treatments and also decrease the parasitic infestation in cattle. This treatment helps to reduce the estrous interval as well as intercalving period.

Table 4 Low milk production due to parasitic infestation and mineral imbalance in cattle

Technology Option	No .of trials	Av. Milk Production/ week (lit/day)	B:C Ratio
Routine Farmer Practice (Farmers practice)	30	5.6	1:1.2
Feeding of Mineral mixture (50gm/ animal/ day) (Recommended practice)		6.04	1:1.34
Feeding of Dewormer bolus (3gm)+ Mineral mixture (50gm/ animal/ day)		6.15	1:1.53

HOME SCIENCE

Problem definition: Low iron content and inadequate knowledge about nutritional food

Technology Assessed: Prevention of Anemia among rural adolescent girls.

KVK, Pipalia of Rajkot district of Gujarat state took up on-farm trial on Prevention of Anemia among rural adolescent girls. The results indicated that feeding of Iron tablet per day + 50 gm roasted soybean + 100 gm rice flakes per day with existing dietary pattern gave higher av. Body weight of 1.190 kg with HB level 1.52 per cent as compared to other treatments.

Table1 Prevention of Anemia among rural adolescent girls.

Technology Option	No. of trials	Av. Body weight (kg.)	Av. HB level (%)
First group for control	15	0.860	0.56
iron tablet per day with existing dietary pattern (Recommended practice)		0.891	0.70
Iron tablet per day + 50 gm roasted soybean + 100 gm rice flakes per day with existing dietary pattern		1.290	1.79

II. FRONTLINE DEMONSTRATION

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

List of technologies demonstrated during previous year and popularized during 2015-16 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extensionsystem	Horizontalspread of technology		
					No. of villages	No. of farmers	Area in ha
1	Groundnut	IPM	IPM	FLDs, Field day	16	80	56
2	Groundnut	IDM	Trichoderma	FLDs, Demo, field day	25	247	87
3.	Chick pea	Varietal	GG-5	FLDs, Training	9	46	19
4.	Wheat	Varietal	GW-366	FLDs, Fielddays, Group discussion	22	187	112
5.	Cumin	Varietal	GC-4	Demonstration, goshies, Training	16	77	163
6.	Sesame	Varietal	GT-3	FLDs, Extension literature, Training	11	34	17
7.	Cotton	INM	INM	FLDs, Field day, Extension literature	30	225	128
8.	Cattle	Feed Management	Anabolite liquid	FLDs, Personal visit, Training, Extension literature	8	76	-
9.	Cattle	Nutrition Management	Mineral mixture	FLDs, Personal visit, Training, Extension literature	12	85	-
10.	Vegetable crops	House hold food security	Kitchen Gardening	FLDs, Training, Visit	10	0	0

* *Thematic areas as given in Table 3.1 (A1 and A2)*

- b. Details of FLDs implemented during 2016-17 (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	
1	Groundnut	Variety	GG-22	<i>Khariif</i> 2016-17	5	5.5	3	32	35	3 (irregular rainfall)
2	Groundnut*	IDM	Trichoderma	<i>Khariif</i> 2016-17	4	4	1	9	10	-
3	Sesame	Variety	GT-3	<i>Summer</i> 2016	5	5	2	8	10	-
4	Chickpea	Varietal	GG-3	<i>Rabi</i> 2016-17	4	4	2	8	10	-
5	Wheat	Varietal	GW-366	<i>Rabi</i> -2016-17	5	5	1	9	10	-
6	Cumin	Varietal	GC-4	<i>Rabi</i> 2016-17	4	4	2	8	10	-
7	Cotton	INM	INM	<i>Khariif</i> 2016-17	4	4	1	9	10	-
8	Cotton	IPM	IPM	<i>Khariif</i> 2016-17	20	20	7	43	50	-
9	Cattle	Feed Management	Calcium	2016-17	10	10	3	7	10	-
11	Vegetable Crops	Household food security by kitchen gardening and nutrition gardening	Kitchen Gardening	<i>Khariif</i> 2016-17	05	100	14	86	100	-

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	<i>Kharif</i>	Rainfed	MB	M	M	H	Cotton	26 th July to 2 nd August	-	987.5	24
Groundnut*	<i>Kharif</i>	Rainfed	MB	M	M	H	Wheat	23 th to 30 th June	-	987.5	24
Sesame	<i>Summer 15-16</i>	Irrigated	MB	M	M	H	Cotton	20 th Dec. to 5 th Jan.	5 th to 10 th March	987.5	24
Pulse											
Chick pea	<i>Rabi</i>	<i>Irrigated</i>	MB	M	M	H	Groundnut	15 th Nov. to 30 Nov.	15 Feb. to 15 March	987.5	24
Cereals											
Wheat	<i>Rabi</i>	<i>Irrigated</i>	MB	M	M	H	Groundnut	15 th Nov. to 30 Nov.	15 Feb. to 15 March	987.5	24
Spice & Other											
Cumin	<i>Kharif</i>	Irrigated	MB	M	M	H	Groundnut	15 th Nov. to 30 Nov.	15 Feb. to 15 March	987.5	24
Cotton (INM)	<i>Kharif</i>	Rainfed	MB	M	M	H	cotton	15 th June to 25 th July	5 Jan. to 20 Feb.	987.5	24
Cotton (IPM)	<i>Kharif</i>	Rainfed	MB	M	M	H	cotton	15 th June to 25 th July	5 Jan. to 20 Feb.	987.5	24
Cattle	-	-	-	-	-	-	-	-	-	-	-
Cattle	-	-	-	-	-	-	-	-	-	-	-
Kitchen garden	<i>Kharif</i>	Irrigated	MB	M	M	H	-	15 th June to 25 th July	-	987.5	24

Technical Feedback on the demonstrated technologies

Sl. No.	Crop	Variety/ Technology	Farmers' Feed Back
1	Groundnut	GG-22	-GG22 variety is high yielding as compare to GG-20
2	Cotton	INM	-INM in cotton increase the yield - INM reduce cost of cultivation and increase soil fertility
3	Cotton	IPM	-IPM in cotton use of pheromone trap and Beauveria reduce the infestation of pinkboll worm in BT cotton and increase the yield
4	G'nut (Component)	Trichoerma	-Application of trichoderma at proper time reduce stem rot incidence
5	Chick pea	ICM	-Thrichoderma effectively manage the wilt - regular spraying of Beauveria effectively control the Heliothies
6	Wheat	GW-366	-GW-366 variety of wheat is high yielding as compare to GW-496
7	Cumin	GC-4	-Wilt resistance as compare to other variety
8	Sesame	GT-3	-Bold seeded – wilt resistance- higher yield
9	Animal Husbandry	Anabolite liquid	-Increase in milk production after calving
10	Animal Husbandry	Mineral powder	-Increase in milk production and reduce calving interval
11	Home Science	Kitchen garden kit	- Vegetables are easily availaible

Farmers' reactions on specific technologies

Sl. No.	Crop	Variety/ Technology	Farmers' Reaction
1	Groundnut	IPM	Quality seed and high yielding
2	Cotton	INM	Integrated Nutrient management reduce the deficiency of micro nutrient
3	Cotton	IPM	-Use of pheromone trap and Beauveria was very beneficial
4	G'nut(Component)	Trichoerma	Use of trichoderma in groundnut is the best technology to control stem rot diseases
5	Chick pea	GG-3	Less occurrence of wilt and high yielding
6	Wheat	GW-366	High yielding variety
7	Cumin	GC-4	Quality seed and high yielding
8	Sesame	GT-3	Bold seeded and high yielding
9	Animal Husbandry	Anabolite liquid	Never gave calcium supplement on regular basis but now will give regularly
10	Animal Husbandry	Mineral powder	Never gave mineral supplement but now will give daily
11	Home Science	Kitchen garden kit	-vegetables are easily available and cheap

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	12	-	124	-
2	Farmers Training	8	-	264	-
3	Media coverage	-	-	-	-
4	Training for extension functionaries	1	-	26	-

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	BC R (R/C)	Gross Cost	Gross Return	Net Return	BC R (R/C)
						High	Low	Average										
Groundnut	Varietal Evaluation	Varietal demonstration	GG-22	35	5.5	50	18	27.81	25.28	10.01	50250	104287	54037	2.08	45978	94800	48822	2.06
Groundnut	Pest Management	Integrated Disease Management	GG-20	10	4	22.7	18.5	21.38	19.35	10.49	48578	80175	31597	1.65	45978	72562	26584	1.58
Sesamum	Varietal Evaluation	Varietal demonstration	G.Til-3	10	4	-	-	-	-	-	-	-	-	-	-	-	-	-

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

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										
Pigeonpea																		
Blackgram																		
Greengram																		
Chickpea	ICM	ICM	GC-2	10	4	32.5	22.5	28.8	25.1	14.74	57362	172500	115138	3.01	56712	150750	94038	2.66
Fieldpea																		
Lentil																		
Horsegram																		

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

Commercial Crops																			
Sugarcane																			
Potato																			
Cotton	Pest Management	IPM	10	4	25.5	17.5	19.65	17.05	15.25			29743	89512	59769	3.01	30918	101062	70144	3.27
Cotton	Pest Management	IPM	50	20	31	13.5	21.9	20	9.50			32618	114975	82357	3.52	29743	105000	75257	3.53
Medicinal & aromatic plants																			
Mentholment																			
Kalmegh																			
Ashwagandha																			
Fodder Crops																			
Sorghum (F)																			
Cowpea (F)																			
Maize (F)																			
Lucern																			
Berseem																			
Oat (F)																			

* 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 (Milk prod. /Lact)		% 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	Calcium Supplemnets	10	10	1795	1690	5.84	Milk/lact	Milk/lact	40000	89750	49750	2.24	35000	84500	49500	2.41	

* 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	Labor	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 seeds	Kitchen gardening	Nutrition management	100	100	20840	19880	4.60	Yield	Yield	115641	211250	95609	1.83	120275	214500	94225	1.78

FLD on Demonstration details on crop hybrids (*Details of Hybrid FLDs implemented during 2016-17*)

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

Note : Remove the Enterprises/crops which have not been shown

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	1	25	0	25	3	1	4	28	1	29
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)	1	25	0	25	3	1	4	28	1	29
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	0	0	0	0	0	0	0	0	0	0
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)	2	58	0	58	3	1	4	61	1	62
III Soil Health and Fertility Management										
Soil fertility management	1	30	0	30	0	0	0	30	0	30
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	1	32	0	32	5	0	5	37	0	37
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	2	62	0	62	5	0	5	67	0	67
IV Livestock Production and Management										
Dairy Management	1	0	22	22	0	3	3	0	25	25
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	34	0	34	4	0	4	38	0	38

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 ornafishes	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	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	1	27	0	27	1	0	1	28	0	28
Group dynamics				0			0	0	0	0
Formation and Management of SHGs	1	17	9	26	2	1	3	19	10	29
Mobilization of social capital				0			0	0	0	0
Entrepreneurial development of farmers/youths	1	29	0	29	0	0	0	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	73	9	82	3	1	4	76	10	86
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	28	632	157	789	56	27	83	688	184	872

Animal Nutrition Management	1	57	0	57	8	0	8	65	0	65
Disease Management	2	70	0	70	8	0	8	78	0	78
Feed & fodder technology	2	50	39	89	12	5	17	62	44	106
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	6	219	39	258	30	5	35	249	44	293
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	0	29	29	0	3	3	0	32	32
Design and development of low/minimum cost diet	1	0	0	0	0	33	33	0	33	33
Designing and development for high nutrient efficiency diet	1	0	35	35	0	3	3	0	38	38
Minimization of nutrient loss in processing	1	0	31	31	0	0	0	0	31	31
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	1	17	14	31	4	4	8	21	18	39
Value addition	1	0	30	30	0	2	2	0	32	32
Women empowerment	1	0	22	22	0	7	7	0	29	29
Location specific drudgery reduction technologies	1	0	49	49	0	13	13	0	62	62
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	8	17	210	227	4	65	69	21	275	296
VI Agril. Engineering										
Farm Machinery and its maintenance	0	0	0	0	0	0	0	0	0	0
Installation and maintenance of micro irrigation systems	1	32	0	32	3	0	3	35	0	35
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)	1	39	0	39	0	0	0	39	0	39
Total	2	71	0	71	3	0	3	74	0	74
VII Plant Protection										
Integrated Pest Management	1	49	0	49	5	0	5	54	0	54
Integrated Disease Management	3	124	0	124	0	0	0	124	0	124
Bio-control of pests and diseases	0	0	0	0	0	0	0	0	0	0
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	1	44	0	44	10	0	10	54	0	54
Total	5	217	0	217	15	0	15	232	0	232

Poultry production	0	0	0	0	0	0	0	0	0	0
Ornamental fisheries	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Freshwater prawn culture	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Cold water fisheries	0	0	0	0	0	0	0	0	0	0
Fish harvest and processing technology	0	0	0	0	0	0	0	0	0	0
Fry and fingerling rearing	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	29	34	63	3	2	5	32	36	68

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		M	F	T	M	F	T	M	F	T
Productivity enhancement infield crops				0			0	0	0	0
Integrated Pest Management	1	24	0	24	3	0	3	27	0	27
Integrated Nutrient management	1	26	0	26	2	0	2	28	0	28
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	50	0	50	5	0	5	55	0	55

Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	2	50	0	50	5	0	5	55	0	55

Table. Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		M	F	T	M	F	T	M	F	T
Crop production and management										
Increasing production and Productivity of crops	6	382	0	382	35	0	35	417	0	417
Commercial production of vegetables	0	0	0	0	0	0	0	0	0	0
Production and value addition										
Fruit Plants	0	0	0	0	0	0	0	0	0	0
Ornamental plants	0	0	0	0	0	0	0	0	0	0
Spices crops	0	0	0	0	0	0	0	0	0	0
Soil health and fertility management	2	97	0	97	5	0	5	102	0	102
Production of Inputs at site	0	0	0	0	0	0	0	0	0	0
Methods of protective cultivation	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	8	479	0	479	40	0	40	519	0	519
Post harvest technology and value addition										
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Farm machinery										
Farm machinery, tools an implements	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries										
Livestock production and Magt.	1	0	75	75	0	75	75	0	150	150
Animal Nutrition Management	2	50	45	95	12	5	17	62	50	112
Animal Disease Management	1	0	72	72	0	8	8	0	80	80
Fisheries Nutrition	0	0	0	0	0	0	0	0	0	0
Fisheries Management	0	0	0	0	0	0	0	0	0	0
Total	4	50	192	242	12	88	100	62	280	342
Home Science										
Household nutritional security	0	0	0	0	0	0	0	0	0	0
Economic empowerment of women	1	0	19	19	0	9	9	0	28	28
Drudgery reduction of women	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	2	0	59	59	0	9	9	0	68	68
Total	3	0	78	78	0	18	18	0	96	96
Agricultural Extension										
Capacity Building and Group	1	32	0	32	0	0	0	32	0	32
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	1	32	0	32	0	0	0	32	0	32
GRAND TOTAL	16	561	270	831	52	106	158	613	376	989

Name of sponsoring agencies involved GNFC Dhoraji 2. GSFC Dhoraji 3. ATMA Rajkot 4. State Agriculture Department 5. FTC Rajkot 6. State Animal Husbandry Department 7. State Horticulture Department 8. Rajkot Co-operative Dairy 9. Mission Mangalam

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		
		M	F	T	M	F	T	M	F	T
Crop production and management										
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
Organic 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
Post harvest technology and value addition										
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	1	0	30	30	0	0	0	0	30	30
Livestock and fisheries										
Dairy farming	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Sheep and goat rearing	0	0	0	0	0	0	0	0	0	0
Piggery	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
Income generation activities										
Vermicomposting	0	0	0	0	0	0	0	0	0	0
Production of bio-agents, bio-pesticides, bio-fertilizers etc.	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
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Mushroom cultivation	0	0	0	0	0	0	0	0	0	0
Nursery, grafting etc.	0	0	0	0	0	0	0	0	0	0
Tailoring, stitching, embroidery, dying etc.	0	0	0	0	0	0	0	0	0	0
Agril. para-workers, para-vet training	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										
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

IV. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	1625	1625	-	1625
Diagnostic visits	25	95	4	99
Field Day	18	189	3	192
Group discussions	16	1045	0	1045
Kisan Ghosthi	53	341	3	344
Film Show	16	554	2	556
Self -help groups	0	0	0	0
Kisan Mela	1	53	0	53
Exhibition	1	4259	0	4264
Scientists' visit to farmers field	78	246	0	246
Plant/animal health camps	7	228	0	228
Farm Science Club	0	0	0	0
Ex-trainees Sammelan	0	0	0	0
Farmers' seminar/workshop	2	156	0	156
Method Demonstrations	255	255	0	255
Celebration of important days	2	156	0	156
Special day celebration	2	134	0	134
Exposure visits	2	83	0	83
Others (pl. specify)	0	0	0	0
Total	2103	9412	24	9436

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	0
Extension Literature	5
News paper coverage	0
Popular articles	2
Radio Talks	0
TV Talks	0
Animal health camps (Number of animals treated)	150
Total	157

Name of KVK	Message Type	Type of Messages						Total
		Crop	Lives tock	Weath er	Mar ke-ting	Aw are-ness	Other enterp rise	
	Text only	67	72	64	25	34	24	286
	Voice only	324	458	372	35	76	74	1339
	Voice & Text both	-	-	-	-	-	-	-
	Total Messages	391	530	436	60	110	98	1625
	Total farmers Benefitted	391	530	436	60	110	98	1625

V. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS

KVK	Types of Activities	No. of Activities	Number of Parti	Related crop/livestock technology
KVK Pipalia (Rajkot-II)	Gosthies	5	164	Pest and disease management in major kharif crops, Package of practices of major rabi crops, Clean milk production and management of live stock
	Lectures organised	28	180	Pest and disease management in major kharif crops, Package of practices of major rabi crops, Clean milk production and management of live stock, Kitchen gardening and Value addition in different crops
	Exhibition	1	180	
	Film show	5	180	Crop Package of Practicies, Animal Nutrition, Processing and Value Addition, protected cultivation
	Fair			
	Farm Visit	5	180	
	Diagnostic Practicals			
	Distribution of Literature (No.)	10	180	
	Distribution of Seed (q)			
	Distribution of Planting materials (No.)			
	Bio Product distribution (Kg)	112	56	
	Bio Fertilizers (q)			
	Distribution of fingerlings			
	Distribution of Livestock specimen (No.)			
	Total number of farmers visited the technology week			180

VI. 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		130		
Oilseeds	Groundnut	GJG-17		35.1		
		GAUG-10		15.9		
		GJG-22		12.2		
Pulses	Black gram	Guj -1		7.68		
	Pigeon pea	Vaishali		42.5		
Spices	Coriander	Guj.Co.2		25.6		
Others	Sunhempp	local		8		
Total				276.98		

Production of planting materials by the KVKs

Crop	Name of the crop	Name of the variety	Name of the hybrid	Number	Value (Rs.)	Number of farmers
Vegetable seedlings	Brinjal	GJLB 4		6000	450	125
		GJHB 4		3000	450	120
	Tomato	GT 1		3000	450	112
Total				12000	1350	357

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity	Value (Rs.)	No. of Farmers
		Kg		
Bio Fertilisers	Sawaj Azotobacter	11.5	1380	3
	Sawaj PSB	17	2040	3
	Sawaj Rhizobium	13	1560	7
Bio-pesticide	Sawaj Beauveria	4407	661050	1100
Bio-fungicide	Sawaj Trichoderma	1570	109900	392
Others	Pheromone traps	4490	179600	850
	Pink bollworm lure	435	8700	119
Total		10943.5	964230	2474

Table: Production of livestock materials

Particulars of Live stock	Name of the breed	Number	Value (Rs.)	No. of Farmers
Dairy animals				
Cows				
Buffaloes				
Calves				
Poultry				
Broilers				
Layers				
Duals (broiler and layer)				
Japanese Quail				
Turkey				
Emu				
Ducks				
Piggery				
Piglet				
Fisheries				
Indian carp				
Exotic carp				
Total				

VII. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)	No. of soil health cards distributed
Soil					
Water					
Plant					
Manure					
Others (pl.specify)					
Total					

VIII. SCIENTIFIC ADVISORY COMMITTEE

Name of KVK	Date of SAC Meeting	Participants
Rajkot-II	24/10/2016	31

IX. NEWSLETTER/MAGAZINE

Name of News letter/Magazine	No. of Copies printed for distribution
JAU Newsletter	Online
KVK, Pipalia Newsletter	Online

KVK News Letter (Quarterly, Online)

KVK is already part of JAU newsletter, which is periodically

X. PUBLICATIONS

Category	Number
Research Paper	17
Technical bulletins	00
Technical reports	05
Other popular article	02
Newsletter	05
Abstract	04
Leaflet/Folder	05

(A) Literature developed/published:

Sr. No.	Title	Author	No. of copies
1.	Fangavel Kathod-Ek Amrut Aahar	Dr M K Bariya, Dr N B Jadav and F P Kargatiya	2000
2.	HaladarniVaignanikKhetiPadhdhati	F P KargatiyaDr N B Jadav and Dr M K Bariya	2000
3.	PashuomaJovamaltaRogoanetenaGhargaththuUpachar	Dr V S Prajapati, Dr N B Jadav and S V Undhad	2000
4.	Khetipakomarogonujaivikniyantran	S V Undhad, Dr N B Jadav and Dr V S Prajapati	2000
5.	Sajivkhetimakitakonujaivikniyantran	S V Undhad, Dr N B Jadav and N M Pithiya	2000

(B) Popular articles and research paper published:

Sr.	Particular	Author	Journal /Bulletin
1.	Dhudhalapashuonimavjat	V.S. Prajapati, Shri. S.V. Undhad and N.B.Jadav	KrushiJivan- Vol. 12, July, 2016
2.	Paasupalan ma Lila chara nu mahtva	V.S. Prajapati, N.B. Jadav and Shri. S.V. Undhad	KrushiGovidhya- Vol. 9, Jan, 2017 pp.-38
3.	Breeding Practices in Dairy animals under Milkshed area of South Gujarat	V.S. Prajapati, G. M. Chaudhari, V. L. Parmar, R. R. Singh and N. B. Jadav	Indian J. Vet. Sci. &BioTech, Volume 12, Issue 1, 2016, pp.-51-53
4.	Effect of Temperament on MehsanaBuffallo	H. A. Patel, J. B. Patel, V. D. Dodia, V. S. Pajapati and S. B. Patel	International Jr. of Sci. Emt.& technology, Volume 5 Issue 4, 2016, pp. 2265-2268
5.	Socio-Economic status of Livestock Farmers of Navasari District of South Gujarat	V.S. Prajapati, Singh RanaRanjeet and G. M. Chaudhari	International Journal of Agriculture Sciences Volume 8, Issue 13, 2016, pp.-1182-1183.
6.	Relational analysis of information needs of Groundnut Growers about Groundnut Production Technology	B. J.sangada, N.B.Jadav and GirishDeshmukh	International Journal of Agriculture Sciences Volume 8, Issue 13, 2016, pp.-1184-1185.
7.	Economic Impact OF Frontline Demonstration On Trichoderma Against Stem Rot (<i>Sclerotiumrolfsii</i>) In KharifGroundnut	N.B. Jadav, Shri. S.V. Undhad, M. K. Bariya. and A.M. Parakhia	International Journal of Agriculture Sciences Volume 8, Issue 26, 2016, pp.-1527-1528.
8.	Appropriateness of Training among the Organic Farming Growers in Gujarat State	Rohan Sharma, N.B.Jadav, Sandeep Chouhan and S.R.K. Singh	International Journal of Agriculture Sciences Volume 8, Issue 13, 2016, pp.-1540-1542.

9.	Functional and mutual relationship between Profile characteristics of SHG&Non SHG members with their level of Empowerment: An Empirical Assessment	M. K. Bariya, P. R. Kanani, H. C. Chodavadia and D. V. Patel	International Journal of Agriculture Sciences Volume 8, Issue 27, 2016, pp.-1560-1563.
10	Impediments faced by women SHGs promoted under Integrated Watershed Management Programme	M. K. Bariya, P. R. Kanani, S. J. Parmar and M. K. Jadeja	International Journal of Agriculture Sciences Volume 8, Issue 27, 2016, pp.-1564-1567.
11.	Motivational factors and Utilization Pattern of Loan by Self Help Group Members	M. K. Bariya, Dr. P. R. Kanani, N. B. jadavand B. N. Kalasariya	International Journal of Agriculture Sciences Volume 8, Issue 27, 2016, pp.-1568-1570.
12.	Impact of KrishiVigyan Kendra in Amreli District of Gujarat State	H. C. chhodvadia, Dr. N. S. Joshi, M. K. Bariyaand A.M. Parakhia	International Journal of Agriculture Sciences Volume 8, Issue 27, 2016, pp.-1576-1579.
13.	Information needs of Groundnut Growers about Groundnut Production Technology	B. J. sangadaN.B.Jadav and J. G. Markna	International Journal of Agriculture Sciences Volume 8, Issue 47,2016, pp.-1949-1951.
14.	Suggestive Model for Transfer of Technology, Constraints faced in getting Information with respect to Gnut Production Technology	B. J. sangada, N.B.Jadav and M. G. Rahul	International Journal of Agriculture Sciences Volume 8, Issue 47, 2016, pp.-1952-1954.
15.	Impact of Training on Knowledge of Organic Farming in Gujarat State	Rohan Sharma, N.B. Jadav AndSandeepChouhan	International Journal of Agriculture Sciences Volume 8, Issue 47, 2016, pp.-1955-1956.
16.	Relational Analysis of Knowledge and Adoption ofOrganic Farming Practices in Gujarat State	Rohan Sharma, N.B.Jadav, Sandeep Chouhan, S.R.K. Singh andTusharAthare	Indian Res. J. Ext. Edu. 16 (3), September, 2016
17.	Effect of scheduling Irrigation and Organic manure on yield attributes, nutrient content and uptake of rabia maranthus (<i>amaranthuspaniculatus l.</i>) in Saurashtra Region	R.P. Solanki, R.M. Solanki, H.A. Patel, R.K. Odedra, V.S. Prajapati and V.D. Dodia	International Jr. of Sci. Emt.& technology, Volume 5 Issue 4, 2016
18.	Problems faced by the farmers in adoption of mitigation and adaptation of climate change practices in agriculture.	Singh R. J., Pandey D. K., Singh Ram, Jadav N. B. and Rajput R. P.	International Journal of Agriculture Sciences Volume 8, Issue 56, 2016, pp.-3086-3088.
19.	Stakeholder analysis for climate smart agriculture	Singh R. J., Jadav N. B. and Rajput R. P.	Marumegh Kisan e-patrika Volume 2, Issue 1, 2017, pp.- 41-43.

XIII. DETAILS ON HRD ACTIVITIES

A. HRD activities organized in identified areas for KVK staff by the Directorate of Extension

Name of the SAU	Title of the training programmes	No of programmes	No. of Participants	No. of KVKs involved
JAU, Junagadh	Training Methods for Trainers of Extension Institutes	1	-	8
	Community Radio for Agricultural Development	1	-	8
	Advance course in Agricultural Knowledge Management	1	-	8
	Advances in Horticulture, Animal health and Value addition	1	-	8
	Administrative Training programme	1	-	8
Total		5	-	40

B. HRD activities organized in identified areas for KVK staff by ATARI

Title of the training programmes	No of programmes	No. of Participants	No. of KVKs involved
Annual Zonal Workshop of KVK's - Zone -VI	1	-	Zone VI KVK's
To participate in Mid-Review and planning state level workshop of KVKs	1	-	Zone VI KVK's
		-	
Total	2	-	

C. HRD activities organized in identified areas for KVK staff by Other Institutes

Title of the training programmes	No of programmes	No. of Participants	Name Of Institute
"SAJIV KHETIMA PAK SANRAKSHAN" State level National Seminar	1	-	NAU, Navsari

Food and Nutritional Security of the Rural Households-Role of Women	1	-	MANAGE, Hyderabad
Advance in Rumen Manipulation to improve Livestock Productivity	1	-	Division of Animal Nutrition, CAFT, ICAR-IVRI, Izatnagar U.P, India
Total	3	-	

XIV. CASE STUDIES

Name of KVK: KVK, Pipalia Rajkot-II

TITLE: Case study on Integrated Management of Pink Bollworm in Bt. Cotton of Rajkot –II district of Gujarat State

(Prepared by: Undhad S. V., Jadav N. B., Sharma P. S., V.S. Parajapati and A.R. Parmar)

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 talukas. 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 boll 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
		Beuveria bassiana	
7	Selling of IPM inputs	Pheromone trap	315
		Pheromone lure	321
		Beuveria bassiana	619
8	Selling of IPM inputs through co-operatives	Pheromone trap	2250
		Beuveria bassiana	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	Beauveria bassiana	50	20	Spraying of Beauveria @ 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 Beauveria 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 farmer's 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

Total Number of Farmers =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

Total Number of Farmers =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.

Success Stories

Success Story: 1

Name of KVK: KVK, Pipalia Rajkot-II

(Prepared by: - Shri A.R. Parmar, Dr. N.B. Jadav, Dr. V. S. Prajapati, Shri S.V. Undhad, and P. S. Sharma)

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

Introduction:

Shri Hareshbhai Viradiya 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 strike 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 losses because of heavy pest and disease infestation. Now he decided to produce quality food from green house, with the help of scientists of Krishi Vigyan 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 motamahika 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 he face 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 adopts 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 Rs 8, 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/-
Grand Total (3 years)			66,500	24,90,000/-	6,05,000/-	18,85,000/-

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: 2

Name of KVK: KVK, Pipalia (Rajkot-II)

Title: Entrepreneurship Development through Dairy Farming without land

(Prepared by: - Dr. V. S. Prajapati, Dr. N.B. Jadav, Shri A.R. Parmar, Shri S.V. Undhad, and P. S. Sharma)

Introduction:

Dineshbhai Laxmanbhai Sojitra is a Progressive landless farmer of Village Upleta, Taluka Upleta and District Rajkot in Gujarat. He studied up to graduation, after graduation one incidence occurred, under such situation; it was difficult to fulfill the requirement of his family member without any other income sources. Therefore, he was in search of some alternate sources of income. At this time Dinesh Bhai was started small dairy unit with the 7 Gircows and 2 other non descriptive breed of animal. These animals were a burden rather than a source of income due to the meager productivity.

KVK Intervention:

Shri Dineshbhai is an educated farmer of Upleta village who came and did contact with KVK Pipalia through Rajkot cooperative dairy and getting more return from his

traditional practices. He inspired by KVK, Pipalia to established a modern scientific dairy farming unit in his farm i.e.; Dudhsagar farm. He was provided all the scientific information regarding housing, breeding, feeding and scientific management of a dairy farm. The Scientists of KVK started a series of activities i.e. training, demonstration, exposure visit etc to deal with the existing problems and observed a positive impact. Dineshbhai was always ready to adopt latest technology and scientific knowledge in his field.

At present, Dineshbhai has adopted the scientific concepts to rear his animals as per the suggestions given by KVK scientists. Dineshbhai has established improvised cattle shed at his home. In addition, he has procured chaff-cutter machine for reducing loss of fodder while feeding the animals. He has engineered with the help of scientists, indigenous technology for providing drinking water to the animals 24 hours a day. He uses animal mate in the shed to prevent the occurrence of bacterial/viral diseases and it also helps in proper sanitation of shed. He has just procured milking machine for time efficiency and clean milk production, and also provide balanced nutrition to their animals by adding some mineral mixtures and mixing of dry and green fodder as per requirement and also care about cattle shed must be remain clean by washing daily and by adjusting auto drainage system for collecting the urine and colleting the animal dugs. He has also generated extra income by selling of cow urine and animal dug also. Due to adoption of improved practices, his constant efforts, hard work and timely support from KVK and other line departments and Rajkot dairy he could achieved very impressive growth in dairy farming.

Output: Milk production and net profit for last three years

Years	Total animal	Milking animal	Total income	Total expenditure	Net profit	Profit/milking animal
2013-14	42	20	2400,000	16,00,000	8,00,000	40000
2014-15	55	25	30,00,000	18,00,000	12,00,000	40000
2015-16	55	25	30,00,000	18,00,000	12,00,000	40000

He had started animal husbandry since last 12 years and now a day he has 55 total number of animals in which 25 are milking animals and he has produced 12,00,000/- Rs. net profit excluding the expenditure of Rs. 18,00,000/- Rs out of Total income of Rs. 30,00,000/- . His annual milk production per animal is of Rs. 40,000/- per animal thus obtaining 30 lakhs of annual income.

In addition to these, Dineshbhai awarded a cash prize of 5000/- by state government for best farmer in Rajkot district level under Gujarat State's Best Animal Holder Competition and awarded second prize for his innovative work in “Innovative Farmers Meet-2016” organized by Junagadh Agricultural University, Junagadh.

Impact:

Being landless farmer Shri Dineshbhai has set an example for other farmers of the district to adopt animal husbandry as sole occupation and generate higher income by producing milk, cow urine and animal dug. He always encourages the farmers who has land to adopt at least small scale animal husbandry which help them to produce organic fertilizer to improves their soil fertility. In addition, from the small scale farmers can improve it to the large-scale milk production by using scientific technology of Animal husbandry. Hence, by observing these scientific practices for management of dairy farm, a number of farmers (15) started to manage their farm by this way and this technology disseminated as horizontal way.

Success Story/ Case study: 3**Name of KVK: KVK, Pipalia****Title: Introduction of new crop Turmeric.****Introduction:**

Name of Farmer : Shri Nikunjibhai Chandulal Vekariya
 Village : Rabarika Tal. Upleta, Dist.: Rajkot, Gujarat
 Education : BRS
 Age : 25 years
 Land : 2.76 ha.

KVK Intervention:

Shri Nikunjibhai is a young educated farmer of Rabarika village and adopted to start farming as occupation whereas youth of his age are worried about job. He was inspired to grow turmeric as a sole crop by KVK as it was new to this area during his visits to KVK.

Shri Nikunjibhai had planted 1 ha of turmeric var. selam. In addition, he has filled soil with organic matter @ 10 ton per hectare. He is adopting drip irrigation in his field. The entire planting was done on raised bed with 45 x 15 cm spacing. No additional chemicals i.e. fertilizers or pesticides were applied. The costing for seed material was Rs. 80000/- and cost of organic matter (FYM) 25000/-.

Output:

He mentioned that he harvested approximately 32-34 ton high quality fresh turmeric rhizomes from one hectare. He sold the half of his production as seed material to the farmers of surrounding area who were inspired to grow turmeric after his successful cultivation. He got 3500/- per quintal net income.

Impact:

Shri Nikunjibhai has set an example for other farmers of the district to adopt the new technology in agriculture for getting higher income.

Success Story/ Case study: 4**Name of KVK: KVK, Pipalia****Title: Improved Animal Husbandry Practices.****Introduction:**

Name of Farmer: Rameshbhai Veljibhai Ruparelia

Address : Near Sagar Pan,
 Jetpur Road, Gondal
 Taluka: Gondal,
 Dist: Rajkot, Gujarat.

Mobile No. +91 9909308451

Education: 8th pass**The contribution of farmer:**

Rameshbhai is an active farmer, involved in animal husbandry practices and agricultural farming since his youth. He possesses 65 Gir cows, and 4 acres of land covered under organic farming (Cow based Farming). His management practices have made him popular throughout the country and have been recognized by many institutions and organization. He is invited regularly by farmers' groups and different government

organization for delivering lectures on dairy management and organic (cow based farming) farming. He also organizes training programme for farmers who are interested in animal husbandry and organic farming. Rameshbhai apply for organic certification namely GOPCA and encourage other organic farmers by providing information, procedure and application form.

Extent of Publicity of his innovation/contribution/success story:

Rameshbhai basically from sandhvaya village and started his occupation with one Gir Cow in jamvadi village of gondal Taluka. In initial stage, He taking land on lease while his sole intention was only organic farming i.e. based on Gir Cow. He started onion cultivation with inputs such as cow dung, cow urine, ash obtained from cow dung cake etc. He stated that “it was his major breakthrough of his life”. He obtained production worth of 46 lakhs. After that he opted for turmeric cultivation which is new in the area on organic basis in which he had bumper production of 36000 kg per acre. Since then he is cultivating turmeric and such other crops on purely organic basis. He is also producing cow based different products. He has invented based on his knowledge automatic seed drill for turmeric sowing in raised bed with pair row system.

Awards

1. Rameshbhai had participated in milk production competition yojana organized by State animal husbandry department, Gujarat and was awarded as runner up.
2. Awarded 2nd prize for his innovative work in “Innovative Farmers Meet-2016” organized by DEE, JAU, Junagadh on 08-09/03/2016.

Newspaper articles

His articles are published in various local as well as daily newspapers of different states.

Success Story/ Case study: 5

Name of KVK: KVK, Pipalia

Title: High yield in wheat crop using SSP.

Introduction:

Name of Farmer : Parshotambhai Kanubhai Senjaliya
 Village : At post: Sardharpur, Ta: Jetpur, Dist: Rajkot, Gujarat
 Education : 10th pass
 Age : 45 years
 Land : 1.28 ha

KVK Intervention:

Shri Parshotambhai is an educated farmer of Sardharpur village and always ready to adopt latest technology and scientific knowledge in his field. He was inspired for adoption of latest and scientific technologies in crop production by KVK during his visits to KVK. The farmer was given FLD on wheat by KVK Pipalia (Rajkot-II).

As per guidance and information given from scientist from KVK Pipalia Parshotambhai had used SSP i.e. Single Super Phosphate and Urea in the crop and got bumper yield in wheat crop. He stated that the use of SSP and Urea Alone had significantly increased the yield of his crop. He had used SSP 40 kg as basal dose and 10 kg urea while

sowing the wheat (GW-366) per vigha (1600m²). He had irrigated his crop at 15 days interval. He applied second split application of 12 kg Urea after 35 DAS.

Output:

He got a yield of 1620 kg wheat per vigha. Again sulphur content in SSP also helps in the effective uptake of NPK by the crop. He said the cost of cultivation per vigha was Rs. 3515/- and got yield of Rs. 40400/-. He got a profit of Rs. 36885 and after selling the dry wheat fodder of Rs. 5000/- the net return per vigha he obtained was Rs. 41885/-.

Impact:

He has set an example of use of Integrated Nutrient Management practices for getting higher yield in crop production. He had demonstrated the use of SSP as alternate source of phosphatic fertilizer instead of traditional practice of using DAP. The farmer was given FLD on wheat by KVK Pipalia (Rajkot-II) hence many of the farmers had visited his field number of times. After getting bumper yield he got popular among the group of farmers growing wheat. His practiced has become popular among the farmers and they have started adopting it.

XV. FINANCIAL PERFORMANCE

13.1 Details of KVK Bank accounts

Bank account	Name of the Bank	Location	Account Number
With Host Institute	---	--	---
With KVK	State Bank of India	Galaxy chowk, Dhoraji	32586636847

13.2 Utilization of KVK funds during the year 2016-2017 (Upto March- 17)

Sr. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	49.00	41.19	46.84
2	Traveling allowances	1.50	14.38	9.42
3	Contingencies	16.00		
TOTAL (A)		66.50	55.57	56.26
B. Non-Recurring Contingencies				
1	Works	28.08	24.38	24.38
2	Equipments including SWTL & Furniture	1.60	0	0
3	Vehicle (Four wheeler)	0	0	0
4	Library (Purchase of assets like books & journals)	0	0	0
TOTAL (B)		29.68	24.38	24.38
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		96.18	79.95	80.64

13.3 Status of revolving fund

Year	Opening balance as on 1 st April	Income during the year	Expenditure during the year	Net balance
April 2012 to March 2013	100000	10970	0	110970
April 2013 to March 2014	110970	48464	28	159406
April 2014 to March 2015	159406	424853	299225	285034
April 2015 to March 2016	285034	217280	266000	236314
April 2016 to March 2017	236314	1833862	1047720	1022456

XVI Technical Programme

1. Departmental Research

Project: 1

Title: Assessment of farmer's opinion towards use of chemical fertilizer in Bt. cotton

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

Co-investigator:

- 1) Sh. S.V. Undhad, Scientist
- 2) Dr.V.S.Prajapati, Scientist
- 3) Dr.M.K.Bariya, Scientist
- 4) Sh.A.R. Parmar, Scientist
- 5) Sh. F.P.Kargatiya, Agril. Officer
- 6) Dr.A.M.Parakhia, DEE,

INTRODUCTION:

India has to produce 380 million tonnes against the present production of 206 million tonnes of food grain per annum in order to feed a population of 4 billion by 2025. As there is no scope for horizontal expansion of our agricultural land additional amount of food grain has to be harnessed vertically in which fertilizer takes the lead role. Where there is no doubt on the yield propelling effect concerns have been expressed about the environmental impact of fertilizer use. There are some claims of dire consequences with fertilizer use and more particularly against N fertilizers. This makes some sense as fertilizer recovery efficiency of N " seldom exceeds 50 per cent. A major portion of the applied fertilizer is lost from soil-plant system by leaching, runoff, denitrification and volatilization and pollutes the soil, water and air; the vital resources of nature.

Chemical fertilizer consumption in India has increased significantly in the last three decades. Total NPK (N, P₂O₅ and K₂O) consumption increased nine-fold (from 2 million to 18 million tonnes) between 1969-1970 and 1999-2000. Per-hectare NPK consumption increased from 11 to 95 kg in the same period. After reaching a record level in 1999-2000, fertilizer consumption in India has been irregular. It has fluctuated around 17 million tonnes since 2000/01.

Cotton is the major fibre crop of India, In 2003-04; it occupied an area of 8.5 million ha and accounted for 6.0 percent (1.01 million tonnes) of total fertilizer consumption. Fertilizer use on irrigated cotton (153.5 kg/ha) was higher than on rainfed cotton (97.7 kg/ha). The shares of irrigated and rainfed cotton in total fertilizer consumption were 2.7 and 3.3 percent, respectively. The average per-hectare use of fertilizer on cotton was 116.8 kg (89.5 kg/ha N, 22.6 kg/ha P₂O₅ and 4.8 kg/ha K₂O). 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 %).

Fertilizer is one of the major contributors to increased crop production. Recently, concern has been expressed that over-reliance on mineral fertilizers may cause unsustainable environmental penalties like eutrophication of surface water, nitrate (NO₃⁻) pollution of groundwater, heavy metal pollution of soil, atmospheric pollution due to emission of nitrous oxide and ammonia, acid rain, etc. Though there are incidences of these problems in several parts of the world, very few of such problems in India can be linked to fertilizer use.

Thus, it is necessary to know the opinion of cotton growers about the use of chemical fertilizer. The study will undertake with following specific 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 of chemical fertilizer use.
- 3) To assess farmers' opinion towards the use of chemical fertilizers.
- 4) To study the farmers' adoption rate of chemical fertilizer.
- 5) To ascertain the constraints associated with the adoption [usage] of fertilizers by farmers.

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 taluka viz. Dhoraji, Upleta and Jam kandorana were selected purposively for the study and six villages were selected from each of taluka. Thus, total 18 villages selected from three taluka and 10 respondents were selected randomly from each village, total 180 respondents were selected for the study.

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

Sr. No.	Taluka	Villages	Respondents
1.	Upleta	1. Mervadar	10
		2. Vadla	10
		3. Nagvadar	10
		4. Dhank	10
		5. Sajliyali	10
		6. Motiparabadi	10
2.	Dhoraji	1. Naniparabadi	10
		2. Patanvav	10
		3. Bhola	10
		4. Vadodar	10
		5. Jamnavad	10
		6. Samdhiyala	10
3.	Jam Kandorana	1. Bandhiya	10
		2. Boriya	10

		3. Sanala	10
		4. Jasapar	10
		5. Meghvad	10
		6. Dharidhar	10
Total			180

To determine farmers perceived knowledge towards chemical fertilizer use, seven item statements were presented and assessment based on a four point Likert-type rating scale of very high, coded 4, high coded 3, low coded 2 and very low coded 1, mean scores was calculated. For measuring the opinion of respondents about use of chemical fertilizer in Bt. Cotton was measured on four point Likert scale with values of 4,3,2 and 1 assigned to strongly agree, agree, disagree and strongly disagree respectively. For measuring the constraints a responses were recorded in the schedule itself. The frequency for each constraint was worked out and mean was calculated.

FINDINGS:

(1) Characteristics of Respondents:

The data presented in Table 2.1 indicated that majority (59.44 per cent) of the respondents was in the middle age group followed by 25.56 and 15.00 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 35.56 per cent of the respondent were educated up to primary level whereas, 26.67 per cent of the respondents were educated up to secondary level, 18.89 per cent of the respondents were educated up to higher secondary, 12.22 per cent respondents were graduate and 6.67 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that about 47.22 per cent of respondents had medium size of land holding whereas, 32.22 and 20.56 per cent respondent's possessed large and small size of land holding respectively. The data in Table 2.4 represented about experience as Bt. Cotton growers, indicated that 55.44 per cent of the respondents had medium experience as cotton growers whereas 23.33 and 22.22 per cent respondents had high and low experience as a Bt. Cotton growers respectively. This might be due to that 85.00 per cent respondents were middle and old age group.

Table : 2 Distribution of respondents according to their personal, socio economic characteristics.

N=180

Sr. No.	Characteristics	Frequency	Percentage
1.	Age		
	Young age (Up to 35 years)	27	15.00
	Middle age (36 to 55 years)	107	59.44
	Old age (above 55 years)	46	25.56
2.	Education		
	Illiterate	12	6.67
	Primary (1 to 7 th std.)	64	35.56

	Secondary (8 to 10 th std.)	48	26.67
	Higher Secondary (11 th to 12 th std.)	34	18.89
	Graduate (above 12 th std.)	22	12.22
3.	Size of land holding		
	Small size (up to 1ha)	37	20.56
	Medium size (1.1 to 2 ha)	85	47.22
	Big size (above 2 ha)	58	32.22
4.	Experience as a cotton grower		
	Low experience as a cotton grower (below 5.01)	40	22.22
	Medium experience as a cotton growers (between 5.01 to 9.01)	98	54.44
	High experience as a cotton growers (more then 9.01)	42	23.33
5.	Cotton yield index		
	Low cotton yield index (Below 84.76)	29	16.11
	Medium cotton yield index (between 84.76 to 112.10)	114	63.33
	High cotton yield index (More then 112.10)	37	20.56
6.	Source of information		
	Low level of source of information (Below 22.66)	38	21.11
	Medium level of source of information (Between 22.66 to 38.43)	92	51.11
	High level of source of information (more then 38.43)	50	27.78
7.	Mass media exposure		
	Low mass media exposure (Below 4.75)	47	26.11
	Medium mass media exposure (Between 4.75 to 8.66)	85	47.22
	High mass media exposure (More then 8.66)	48	26.67
8.	Scientific orientation		
	Low scientific orientation (Below 34.40)	38	21.11
	Medium scientific orientation (Between 34.40 to 53.60)	102	56.67
	High scientific orientation (More then 53.60)	40	22.22

The data regarding cotton yield index represented in Table :2.5 on the basis of data it is clear that 66.33 per cent respondent had medium cotton yield index followed by 25.56 and 16.11 per cent respondents had high and low cotton yield index respectively. The reason behind this might be that in study area, respondents were progressive farmers as compare to other area. Table.2.6 data inferred that majority 51.11 per cent of the respondents had medium source of information while 27.78 per cent respondents had high source of information followed by 21.11 per cent respondents had low source of information about use of chemical fertilizer in Bt. Cotton.

The results in Table 2.7 indicate that majority (47.22 per cent) of the cotton growers had medium mass media exposure; followed by 26.67 and 26.11 per cent respondents had high and low mass media exposure respectively. This might be due to that the programmes related to agriculture are not regularly attended by the farmers. Table 2.8 revealed that majority 56.67 per cent respondents had medium scientific orientation whereas 22.22 and 21.11 per cent respondents had high and low scientific orientation respectively.

2. Farmers level of general knowledge about use of chemical fertilizer in Bt. cotton

Table 3 indicates that all the respondents perceived their general knowledge level on fertilizers and use low; in the following order: method of application of chemical fertilizer (M=1.98), time of application of different chemical fertilizer (M=1.94), recommended dose

of chemical fertilizer in Bt. Cotton ($M=1.86$), different type of chemical fertilizer ($M=1.85$) etc. The overall mean of knowledge domain was 1.82, indicating that generally, the knowledge level of the farmers was low. This could have serious influence on the acceptance and use of fertilizer technologies among the farmers. This is because they do not understand well the technology, it is not compatible with existing practice or because they have perceived the technology to be too complicated.

Table:3 Distribution of respondents according to their knowledge about use of chemical fertilizer in Bt. Cotton

N=180

Sr. No.	Knowledge level	Very High	High	Low	Very low	WMS	SD
1	Different type of chemical fertilizer	12	25	67	76	1.85	0.8999
2	Method of application of chemical fertilizer in Bt. Cotton	18	28	66	68	1.98	0.9685
3	Precautions measure before application	10	19	74	77	1.79	0.8456
4	Recommended dose of chemical fertilizer in Bt. Cotton	14	23	66	78	1.86	0.9222
5.	Time of application of different chemical fertilizer in Bt. Cotton	12	34	66	68	1.94	0.9137
6.	Recommended micro nutrient chemical fertilizer in Bt. Cotton	9	16	68	87	1.71	0.8303
7.	Hazards involved in chemical fertilizer	8	14	64	94	1.64	0.8093
Pooled knowledge						1.82	0.8842

* High knowledge : [means>2.50]

3. Farmers' adoption of use of chemical fertilizer in Bt. cotton

Table 4 indicated that the adoption behaviour of cotton growers in study area. Adoption level is 58.88 per cent compared to non adoption by 41.11 per cent. As evidence in Table 3, low knowledge of fertilizer technology by the adopters will affect proper application of recommended practices among the farmers. However, the high adoption rate irrespective of the low knowledge status of the respondents in an indication that adoption of technologies such as fertilizer is influenced by other factors other than knowledge about the technology.

Table :4 Distribution of respondents according to adoption of recommended fertilizer in Bt. Cotton

N=180

Adoption status	Frequency	Percentage (%)
Adopted	106	58.88
Non adopted	74	41.11

4. Farmers' opinion towards the use of chemical fertilizer in Bt. cotton

Responses on perceived opinion towards fertilizer use in Table.5 shows that respondents have unfavourable opinion towards the technology. Respondents agreed that fertilizer increases production cost ($M=3.27$); deteriorate soil fertility ($M=3.24$), application of nitrogenous fertilizer increase pest population ($M=2.60$). The favourable opinion towards technology are bio fertilizer /FYM is way of reduce chemical fertilizer ($M=3.13$) and reduce

the uses of chemical fertilizer through drip irrigation (M=2.50). However, respondents disagreed with statements such as: potasic fertilizer improve the boll and cotton quality (M=2.20), promote weed growth (M=2.13), need micro nutrient content fertilizer (M=1.96), double crop yield (M=1.81), chemical fertilizer increased reddening (M=1.73), only nitrogenous fertilizer is useful (M=1.63) and not useful in Bt. Cotton (M=1.59).

Table: 5 Farmers opinion towards the use of chemical fertilizer in Bt. cotton N=180

Sr. No.	Farmers opinion	Strongly agree	Agree	Dis agree	Strongly disagree	WMS	SD
1	Increase production cost	79	78	15	8	3.27*	0.7952
2	Double crop yield	8	24	73	75	1.81	0.8330
3	Only nitrogenous fertilizer is useful	5	8	82	85	1.63	0.6970
4	Need micro nutrient content fertilizer	12	34	69	65	1.96	0.9054
5	Potasic fertilizer improve the boll and cotton quality	17	55	55	53	2.20	0.9711
6	Chemical fertilizer increased reddening	6	14	85	75	1.73	0.7462
7	Ditoriate soil fertility	74	85	12	9	3.24*	0.7883
8	Promote weed growth	5	57	74	44	2.13	0.8121
9	Application of nitrogenous fertilizer increase pest population	28	77	50	25	2.60*	0.9130
10	Not useful in Bt. cotton	4	8	78	90	1.59	0.6833
11	Reduce the uses of chemical fertilizer through drip irrigation	24	67	65	24	2.50*	0.8937
12	Bio fertilizer /FYM is way of reduce chemical fertilizer	65	82	25	8	3.13*	0.8147
Pooled opinion						2.30	0.8210

* Agreed [means>2.50]

5. Constraints faced by cotton growers in adoption of chemical 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:6 Constraints faced by cotton growers in adoption of chemical fertilizer in Bt. Cotton. N=180

Sr. No.	Constraints	Percentage	Rank
1	Non availability of fertilizer at the time of application	76.11	I
2	High cost of fertilizer	56.67	IV
3	Inadequate information about use of chemical fertilizer	69.44	II
4	Lack of capital	47.22	VII
5	Reduce soil productivity	62.78	III
6	Lack of awareness about use of micro nutrients	54.44	VI

The perusal of data presented in Table 6 revealed that majority of the cotton growers (more than 60 per cent) expressed Non availability of fertilizer at the time of application

(76.11 %), Inadequate information about use of chemical fertilizer (69.44%) and Reduce soil productivity (62.78 %). While other general constraints faced by the respondents as expressed less than 60 per cent respondents were: High cost of fertilizer (56.67 %), Lack of awareness about use of micro nutrients content fertilizer (54.44 %) and lack of capital (47.22 %).

CONCLUSION AND RECOMENDATION:

The study revealed that cotton farming is dominated by middle age group having primary level education in medium size of land holding. Majority of cotton growers had 5 to 9 year of experience as cotton growers with medium yield index and medium scientific orientation. One half of the cotton growers had medium level of source of information and mass media exposure. Despite low level of knowledge and unfavourable opinion towards chemical fertilizer technology, the overall adoption and use of fertilizers by the farmers was high. But chemical fertilizer usage was seriously constrained by non availability of fertilizer at time of application and inadequate information; reduce soil productivity and high cost of fertilizer. Therefore, transforming factors such as youth in agriculture, training and practical demonstration of technologies, knowledge as well as access to subsidy facilities are required to serve as opportunity to change farmers' opinion towards chemical fertilizer use. Programms that will involve more youth should be put in place by the government.

Project: 2

Title: Determinates of knowledge of cotton growers about IPM practices

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

INTRODUCTION:

India is the pioneer country for the commercial cultivation of hybrid cotton. 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. The 1st commercial hybrid - Hybrid 4 (H- 4) was released in 1970 from Main Cotton Research Station of Gujarat Agricultural University.

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. The approach to overcome these ill effects of pesticides to a certain extent is Integrated Pest Management practices. The IPM approach is gaining importance and is being increasingly adopted in country. Keeping above points in mind the study was undertaken with the following specific objectives:

OBJECTIVES:

1. To describe the personal and socioeconomic characteristics of the cotton growers.
2. To study the knowledge of cotton growers about IPM practices.
3. To assess the source of information by cotton growers.
4. To explore the relationship between characteristics and their knowledge of IPM practices.
5. To find out the constraints faced by cotton grower in adoption of IPM practices.

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 for the study and five villages were selected from each of taluka. Thus, total 15 villages selected from three talukas and 10 respondents were selected randomly from each village, total 150 respondents were selected for the study.

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

Sr. No.	Taluka	Villages	Respondents
1.	Dhoraji	1.Bhal Gamda	10
		2.Patanvav	10
		3.Dumiyani	10
		4.Fareni	10
		5.Chinchod	10
2.	Upleta	1.Arani	10
		2.Talngana	10
		3.Mekha timbi	10
		4.Kudech	10
		5.Jam timbi	10
3.	Jam Kandorana	1.Boriya	10
		2.Jasapar	10
		3.Sanala	10
		4.Bandhiya	10
		5.Rayadi	10
Total			150

Measurement of extent knowledge

For measuring the knowledge of respondents about integrated pest management, the teacher made knowledge test was developed and used

A set of fifty-five objective questions was prepared by referring related review of literature and in consultation with field experts. The objective questions were prepared in which the responses can be recorded as yes/no, correct/incorrect, identification of pest etc. The set of questions was circulated to Department of Agril. Entomology and department of agril. Extension, JAU, Junagadh for addition, alteration and deletion of the questions. The anomalies in the questions were rectified by making necessary correction for finalising the

knowledge test final schedule. Finally, a set of fifty-two objective questions was kept in the schedule while exercising the matter to measure the knowledge of respondents. A unit score was given to correct answer 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 level of knowledge.

FINDINGS:

1. Characteristics of Respondents:

The data presented in Table 2.1 indicated that majority (61.33 per cent) of the respondents was in the middle age group followed by 22.67 and 16.00 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 37.33 per cent of the respondent were educated up to primary level whereas, 28.67 per cent of the respondents were educated up to secondary level, 13.33 per cent of the respondents were educated up to higher secondary, 15.35 per cent respondents were graduate and 5.33 per cent respondents were illiterate.

The data presented in Table 2.3 revealed that about 50.67 per cent of respondents had medium size of land holding whereas, 30.67 and 18.67 per cent respondent's possessed large and small size of land holding respectively. The data in Table 2.4 represented about annual income, indicated that 60.67 per cent of cotton grower belong to medium annual income group while 29.33 per cent and 10.0 per cent of the cotton growers fall in to the high and low annual income group, respectively. This might be due to that cotton is a cash, irrigated crops and farmers are getting assured good yield. Therefore, majority respondents viz, 60.67 and 29.33 percent fall in the category of medium annual income group followed by high income groups.

The data regarding cotton yield index represented in Table :2.5 on the basis of data it is clear that 64.67 per cent respondent had medium cotton yield index followed by 21.33 and 14.0 per cent respondents had high and low cotton yield index respectively. The reason behind this might be that in study area, respondents were progressive farmers as compare to other area. Table.2.6 data inferred that majority 72.0 per cent of the respondents belong to received less training while 10.67 per cent respondents had received more training followed by 17.33 per cent respondents had untrained about on IPM strategies in Bt. Cotton.

The results in Table 2.7 indicate that majority (72.67 per cent) of the cotton growers had medium extension participation; followed by 14.67 and 12.67 per cent respondents had high and low extension participation, respectively. This might be due to that the programmes related to agriculture are not regularly attended by the farmers. Table 2.8 revealed that majority 62.67 per cent respondents had medium scientific orientation whereas 19.33 and 18.0 per cent respondents had high and low scientific orientation respectively.

Table : 2 Distribution of respondents according to their personal, socio ecomic characteristics.

N=150

Sr.No.	Characteristics	Frequency	Percentage
1.	Age		
	Young age (Up to 35 years)	24	16.00
	Middle age (36 to 55 years)	92	61.33
	Old age (above 55 years)	34	22.67

2.	Education		
	Illiterate	8	5.33
	Primary (Up to 8 th std.)	56	37.33
	Secondary (9 to 10 th std.)	43	28.67
	Higher Secondary (11 th to 12 th std.)	20	13.33
	Graduate (above 12 th std.)	23	15.33
3.	Size of land holding		
	Small size (up to 1ha)	28	18.67
	Medium size (1to 2 ha)	76	50.67
	Big size (above 2 ha)	46	30.67
4.	Annual income		
	Low (Up to Rs. 50,000)	15	10.00
	Medium (Rs. 50,001 to 1,00,000)	91	60.67
	High (Above Rs. 1,00,000)	44	29.33
5.	Cotton yield index		
	Low cotton yield index (below 62.72)	21	14.00
	Medium cotton yield index (between 62.72 to 92.72)	97	64.67
	High cotton yield index (More than 92.72)	32	21.33
6.	Training received		
	Untrained (0 score)	26	17.33
	Less trained (> mean)	108	72.00
	More trained (< mean)	16	10.67
7.	Extension Participation		
	Low extension participation (below 5.48)	19	12.67
	Medium extension participation (between 5.48 to 10.82)	109	72.67
	High extension participation (more than 10.82)	22	14.67
8.	Scientific orientation		
	Low scientific orientation (Below 19.21)	27	18.00
	Medium scientific orientation (between 19.21 to 30.52)	94	62.67
	High scientific orientation (Above 30.52)	29	19.33

2. Knowledge level of cotton growers about IPM

Table 3 indicates that all the respondents perceived their general knowledge level on IPM strategies, were 66.0 per cent of the cotton growers was medium. Whereas, 23.33 per cent had low and 10.67 per cent had high knowledge about integrated pest management practices in Bt. Cotton, respectively. This might be due to fact that the cotton growers had medium social participation, medium extension contact and medium adoption index. These facts had favourably helped to cotton growers in getting more knowledge about IPM in Bt. Cotton.

Table:3 Distribution of respondents according to their knowledge level with respect to IPM practices.

N =

150

Sr. No.	Knowledge level	Frequency	Percentage
1	Low level of knowledge (below 23.86 score)	16	10.67
2	Medium level of knowledge (23.86 to 40.60 score)	99	66.00
3	High level of knowledge (above 40.60 score)	35	23.33

3. Source of information about IPM practices.

The extent of use of information sources was measured by taking into account the different 15 sources were listed in the schedule. Each respondent was asked as how often they got needed information from each of the listed source. In table 4 revealed that the respondents received information about IPM was rated 'Agro input dealer' with weightage mean score (WMS) 3.25, "Friends/relatives (WMS 3.23)", "Neighbors (WMS 3.09)", "SAU Scientists/KVK (WMS 2.62)", "State dept./Agricultural officer (WMS 2.59)", "Magazine (WMS 2.52)", "Newspaper (WMS 2.51)", "Television (WMS 2.31)", "Family members (WMS 2.23)", "Gram sevak (WMS 2.17)", "Kishan call center (WMS 2.04)", Radio (WMS 1.88)", "I khedut portal (WMS 1.64)", WhatsApp (WMS 1.49)" and Internet (WMS 1.37).

Table :4 Distribution of respondents according to source of information
N=150

Sr. No	Sources	Frequency of getting information				Weighate Mean score	Rank
		Most often	Often	Some times	Never		
1	Family members	22	28	62	38	2.23	IX
2	Neighbors	55	62	25	8	3.09	III
3	Friends/relatives	64	65	12	9	3.23	II
4	Gram Sevak	17	45	35	53	2.17	X
5	SAU Scientists /KVK	35	47	44	24	2.62	IV
6	State dept / Agricultural officer	28	57	40	25	2.59	V
7	Agro input dealer	69	58	15	8	3.25	I
8	News paper	24	55	44	27	2.51	VII
9	Radio	15	24	39	72	1.88	XII
10	Television	24	28	68	30	2.31	VIII
11	Magazine	24	55	46	25	2.52	VI
12	Internet	2	14	21	113	1.37	XV
13	WhatsApp	5	7	44	94	1.49	XIV
14	I Khedut Portal	5	8	65	72	1.64	XIII
15	Kisan call centre	17	24	57	52	2.04	XI

4. Relationship of characteristics of respondents and their knowledge about IPM

The correlation co-efficient was computed to ascertain the association between cotton growers level of knowledge and their selected characteristics. The data in Table 5 revealed that there was negative and significant association between cotton growers' knowledge about IPM strategies and their age. The direction of association was negative and significant which indicated that cotton growers' knowledge increased significantly with decrease in their age. This might be happened because a great majority respondents fall in medium to young age group. Size of land holding is non significance associated with cotton growers' knowledge about IPM practices. 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, cotton yield index, training

received, extension participation and scientific orientation were positively and significantly associated with knowledge of IPM strategies of cotton growers. It proves that increasing IPM knowledge 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 krishi mela, training etc and get scientific knowledge.

Table:5 correlation coefficient between cotton growers level of knowledge and their selected characteristics.
N=150

Sr. No.	Name of selected characteristics	“r” value (df=148)
1	Age	-0.4527**
2	Education	0.5079**
3	Size of land holding	0.1205 ^{NS}
4	Annual income	0.1910*
5	Cotton yield index	0.3577**
6	Training received	0.4549**
7	Extension participation	0.3269**
8	Scientific orientation	0.5462**

* Significant at 0.05 (r=0.160)

**Significant at 0.01 (r=0.209)

5. Constraints faced by cotton growers in adoption of IPM practices

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 into percentage. A rank was assigned to each constraint and presented.

Table:6 Constraints faced by cotton growers in adoption of IPM practices
N=150

Sr.	Constraints	Percentage	Rank
1	Time being results of IPM practices	76.67	II
2	Non availability of IPM component	60.00	V
3	Complexity of cotton pest	48.33	VIII
4	Chemical control gives quick results	82.22	I
5	Less awareness about adverse effect of chemical pesticides	51.11	VII
6	Use of high dose of chemicals in initial stage of spraying	65.56	IV
7	Long duration strategies	70.00	III
8	Misinterpretation of IPM strategies by input dealers	54.44	VI
9	Small holding difficult to use community base IPM strategies	45.56	IX
10	Inadequate knowledge of IPM	31.67	XI
11	Lack of skill labour and high wages	41.11	X
12	Diversified weather condition	22.78	XII

It is obvious from the Table 6 majority of the cotton growers expressed chemical control gives quick results (82.22 %), Time being results of IPM practices (76.67%), Long

duration strategies (70.00%), Use of high dose of chemicals in initial stage of spraying (65.56%), Non availability of IPM component (60.00%), Misinterpretation of IPM strategies by input dealers (54.44%) and Less awareness about adverse effect of chemical pesticides (51.11%)

Other general constraints faced by cotton grower in adoption of IPM strategies were : Complexity of cotton pest (48.33%), Small holding difficult to use community base IPM strategies (45.56), Lack of skill labour and high wages (41.11%), Inadequate knowledge of IPM (31.67%) and Diversified weather condition (22.78%).

From above discussion, it could be concluded that more number of cotton growers faced the problem of chemical control gives quick results (rank first), Time being results of IPM practices (rank second), Long duration strategies (rank third), Use of high dose of chemicals in initial stage of spraying (rank fourth), Non availability of IPM component (rank fifth), Misinterpretation of IPM strategies by input dealers (rank seventh) and Less awareness about adverse effect of chemical pesticides (rank eighth).

CONCLUSION AND RECOMMENDATION:

It can be concluded that majority of cotton growers belong to middle age, educated up to primary level, medium size of land holding and had medium annual income. Most of cotton growers in study area had medium yield index, medium extension participation and medium scientific orientation with less trained category. Cotton growers received their needed information about IPM practices most often from agro input dealer, friends/relative, neighbour and from SAU/KVK scientist. Knowledge of IPM of cotton growers was positively associated with characteristics like, education, yield index, training received, extension participation and scientific orientation while age and size of land holding was negative and non-significance association with their knowledge of IPM practices. Over all knowledge of cotton growers about IPM practices was medium level but adoption of IPM practices was seriously constrained by chemical control gives quick results, IPM practices has time being and long duration strategies. To increase the knowledge of cotton growers they should be facilitated with technical know how and motivated to participate in extension activities.

XVII PLEASE INCLUDE INFORMATION, WHICH HAS NOT BEEN REFLECTED ABOVE (WRITTEN IN DETAILS)

17.1 Participation in Krishi Mahotsav:

(a) Krushi Mahotsav- 2016

Programme of Krushi Mahotsav at District Panchayat seat for two days with seminar and exhibition, our three scientists delivered number of lecture in Krushi Mahotsav -16. In exhibition one stall allotted to Krishi Vigyan Kendra, Pipalia, at stall one scientist remained present and advise to farmers about its problems and selling of university production (Trichoderma, Beauveria, Azotobacter, PSB and vegetable seeds) and distribution of farmer useful extension literature.

Sr. No.	Name of Scientist	Place	Date	Lecture delivered	Beneficiaries		Total
					Male	Female	
1.	1. Dr N K Gontia, Convenior, Dean, CAET, JAU, Junagadh	Lions school Ground, Jetpur	23-5-2016	4	1188	621	1813
	2. Dr K H Dabhi, Co-convenior Research Scientist, Wheat Research Station, JAU, Junagadh						
1.	3. Dr K D Patel, Member Associate Prof., Dept. Of Horticulture, JAU, Junagadh		24-5-2016	4	1848	602	2454
	4. Dr N B Jadav, Co-convenior SS&H, KVK Pipalia						
	5. Shri S V Undhad, Member Sci.(Pl.Pro.), KVK Pipalia						
	6. Dr V S Prajapati Sci.(LPM), KVK Pipalia						
	7. Ms M K Baria Sci.(Home Sci.), KVK Pipalia						
	8. N M Pithiya, AO, KVK Pipalia						
	9. F P Kargatiya, AO, KVK Pipalia						

17.2 Special Campaign on “Management of Pink Bollworm in Bt Cotton”:

1) Off Campus Training

Sr.No.	Date	Village	Taluka	District	Beneficiaries
1	31/05/2016	Kumbhaji Derdi	Dhoraji	Rajkot	103
2	26/06/2016	Thanagalol	Jetpur	Rajkot	850
3	29/06/2016	Amrapur	Upleta	Rajkot	45
4	20/07/2016	Moti Marad	Dhoraji	Rajkot	52
5	21/07/2016	Sanala	Jamkandorna	Rajkot	125
6	29/07/2016	Moti Vavdi	Dhoraji	Rajkot	54
7	30/07/2016	Vadodar	Dhoraji	Rajkot	56
8	30/07/2016	Bhader	Dhoraji	Rajkot	155
	04/01/2017	Pithadiya	Jetpur	Rajkot	61
Total					1501

2) On Campus Training:

Sr. No.	Date	Training name	No. Participant	Particulars	Remarks
1	26/07/2016	Effective Integrated approach for control of pinkboll worm	152	Sponsored training by State Agriculture Department	Lecture delivered by KVK scientist
2.	30/07/2016	Effective Integrated approach for control of pinkboll worm	35	Farmer Friends of BCI Project of 5 talukas	Lecture delivered by shri.S.V.Undhad
3.	6/8/2016	Effective Integrated approach for control of pinkboll worm	40	Participation of farmers and farm women from different	Lecture delivered by shri.S.V.Undhad

3) Agro Input Dealers Training:

Sr. No.	Date	Training name	No. Participant	Particulars	Remarks
1	12/07/2016	Effective Integrated approach for control of pinkboll worm	29	Agro Input Dealers of Dhoraji Taluka place	Lecture delivered by KVK scientist
2.	13/07/2016	Effective Integrated approach for control of pinkboll worm	32	Agro Input Dealers of Dhoraji Taluka villages	Lecture delivered by KVK scientist
3.	14/07/2016	Effective Integrated approach for control of pinkboll worm	78	Farmers of Vimalnagar State Agriculture Department	Lecture delivered by KVK scientist
4.	15/07/2016	Effective Integrated approach for control of pinkboll worm	35	Agro Input Dealers of Jamkandorna Taluka	Lecture delivered by KVK scientist
5.	06/08/2016	Effective Integrated approach for control of pinkboll worm	36	Agro Input Dealers of Upleta Taluka	Lecture delivered by KVK scientist
6.	23/08/2016	Effective Integrated approach for control of pinkboll worm	56	Agro Input Dealers of Jetpur Taluka	Lecture delivered by KVK scientist

4. Diagnostic visit: 31 at different farmers' field

5. Telephonic guidance: 157

6. Input Selling:

Name of the bio-product	Quantity	No. of Farmers
	Kg	
Sawaj Beauveria(<i>Beauveria Bassiana</i>)	4407	1100
Pheromone traps	4490	850
Pheromone traps through Taluka Co-operatives	25000	4500 Approx.
Pink bollworm lure	435	119
	10943.5	2474

17.3 Celebration of World Soil Day and Pre-Rabi Krushi Sammelan:

World Soil Health Day and Pre-rabi Krishi Sammelan was celebrated at Krishi Vigyan Kendra, J.A.U., Pipalia on 5th December, 2016. In which 62 farmers and farm women from different Taluka of KVK Jurisdiction had participated. Officers from Agricultural department, Jetpur, DRDA Dhoraji and Block technology manager from ATMA Rajkot had actively participated.

Dr M. K. Bariya, scientist (Home Science), Krishi Vigyan Kendra, J.A.U., Pipalia welcomed all the participants and officials of line departments attending the world soil day 2016 and Pre-Rabi Krushi Sammelan function and briefed on importance of this programme. Dr N. B. Jadav, Senior Scientist and Head, Krishi Vigyan Kendra, JAU, Pipalia highlighted the event and methods of collecting soil sample and encourage the farmers about the importance of soil health. Shri S. V. Undhad, scientist (Plant Protection), Krishi Vigyan Kendra, J.A.U., Pipalia covered different topics like deficiency of micro-nutrients in soil, efficient and balanced use of fertilizers, Scientific cultivation of major rabi crops, soil health and integrated pest and disease management for Rabi crops and techniques. Dr. V. S. Pajapati, scientist (animal husbandry), Krishi Vigyan Kendra, J.A.U., Pipalia aware the participants

about clean milk production and balanced nutrition for animals. Dr M. K. Bariya, scientist (Home Science), Krishi Vigyan Kendra, J.A.U., Pipalia also motivated the farm women for soil and water sample analysis and emphasis on to save their land.

At the end of the programme farmer- scientist interaction had been made and farmers were actively participated in discussion and get the solution of their problems. In addition to this, a farm implement demonstration, literature distribution and small exhibition was also arranged to aware farmers about new technology.

In conclusion session farmers encouraged for soil and water testing, use of chemical fertilizer only on the basis of recommendations in soil health card.

Finally, the Programme was concluded by performing the vote of thanks by Shri F. P. Kargatiya, (A. O.), KVK, J. A. U., Pipalia (Rajkot-II).

17.4 Celebration of “Mahila Krushi Diwas”:

Mahila Krushi Diwas was celebrated at Krishi Vigyan Kendra, J.A.U., Pipalia on 6th August, 2016. In which 94 farm women from different Taluka of KVK Jurisdiction had participated. Dr A M Parakhia had remained present and addressed the farm womens on their role and importance in agriculture, their contribution in dairy technology. Following lecture delivered by KVK Scientist afterwards,

1. Activities of Krishi Vigyan Kendra, Pipalia – Dr.N.B.Jadav
2. Contribution of women in agriculture- M. K. Bariya
3. Management of Pink Bollworm in cotton- Shri.S.V.Undhad
4. Clean milk Production – Dr.V.S.Prajapati

17.5 Two Days Training on Soil Health Card under NMSA Scheme at KVK Pipalia

Two Days Training on Soil Health Card under NMSA Scheme was organized at Krishi Vigyan Kendra, J.A.U., Pipalia on 1st and 2nd February, 2017. In which 93 farmers of KVK Jurisdiction had participated.

Day 1: 1st February 2017

Dr N. B. Jadav, Senior Scientist & Head, Krishi Vigyan Kendra, J.A.U., Pipalia welcomed all the participants attending the training programme and briefed on importance of this programme. Pinki Sharma, Scientist (Home Science), Krishi Vigyan Kendra, JAU, Pipalia highlighted the event and activities of KVK. Shri S. V. Undhad, Scientist (Plant Protection), Krishi Vigyan Kendra, J.A.U., Pipalia gave a brief talk about the types of soil, soil texture and structure. F P Kargatiya, AO, Krishi Vigyan Kendra, J.A.U., Pipalia discussed about soil and water sampling techniques, different instruments for soil sampling depending upon the depth and soil types. Dr N. B. Jadav, Senior Scientist & Head, Krishi Vigyan Kendra, J.A.U., Pipalia had discussed about contents of different chemical fertilizers, RDF of different crops and how to increase fertilizer use efficiency. Shri A. R. Parmar, Scientist (Horticulture), Krishi Vigyan Kendra, J.A.U., Pipalia gave a brief talk about the micro-nutrients, their deficiency and symptoms.

At the end of each session farmer-scientist interaction had been made and farmers were actively participated in discussion and get the solution of their problems. In addition to this, a farm implement demonstration, literature distribution and small exhibition was also arranged to aware farmers about new technology.

Day 2: 2nd February 2017

Shri S. V. Undhad, Scientist (Plant Protection), Krishi Vigyan Kendra, J.A.U., Pipalia gave a detailed talk on integrated nutrient management in different crops. Shri A. R. Parmar, Scientist (Horticulture), Krishi Vigyan Kendra, J.A.U., Pipalia gave a brief talk about integrated nutrient management in different horticultural crops. N M Pithiya, AO, Krishi Vigyan Kendra, J.A.U., Pipalia discussed about soil health card and the interpretation of soil health card and water sample report. F P Kargatiya, AO, Krishi Vigyan Kendra, J.A.U., Pipalia discussed about use of fertigation techniques in filed and horticultural crops.

At the end of each session farmer-scientist interaction had been made and farmers were actively participated in discussion and get the solution of their problems. In addition to this, a farm implement demonstration, literature distribution and small exhibition was also arranged to aware farmers about new technology.

In conclusion session farmers encouraged for soil and water testing, use of chemical fertilizer only on the basis of recommendations in soil health card.

Finally, the Programme was concluded by performing the vote of thanks by Pinki Sharma, Scientist (Home Science), Krishi Vigyan Kendra, J.A.U., Pipalia (Rajkot-II).

17.6 Celebration of Jai Kisan Jai Vigyan week in the Zone

Jai Kisan Jai Vigyan week was celebrated at Krishi Vigyan Kendra, J.A.U., Pipalia from 23rd to 29th December, 2016. In which 72 farmers from different Taluka of KVK Jurisdiction had participated during on campus training and 32 famers had participated in kisan gosthi conducted at jamnavad village.

On campus:

Dr N. B. Jadav, Senior Scientist and Head, Krishi Vigyan Kendra, J.A.U., Pipalia welcomed all the participants briefed on importance of this programme. He highlighted the event and importance of technology and its use in modern agriculture. He also briefed the farmers about the recent trends developed and the scenario of today's agriculture. Shri S. V. Undhad, scientist (Plant Protection), Krishi Vigyan Kendra, J.A.U., Pipalia covered different topics like importance of nutrient management, Scientific cultivation of major rabi crops, and integrated pest and disease management for Rabi crops and techniques. Dr. M. K. Bariya, scientist (home science), Krishi Vigyan Kendra, J.A.U., Pipalia aware the participants about the importance of secondary agriculture apart from traditional farming. A brief talk was given on need and importance of post-harvest technologies, value addition and marketing of agricultural products. Shri F. P. Kargatiya, (A. O.), KVK, J. A. U., Pipalia narrated on the diversification of cropping pattern in agriculture due to climate change and covered different topics like Scientific cultivation of vegetable crops and fruit crops.

At the end of the programme farmer- scientist interaction had been made and farmers were actively participated in discussion and get the solution of their problems. In addition to this, a farm and farm implement demonstration, literature distribution and small exhibition was also arranged to aware farmers about new technology.

Finally, the Programme was concluded by performing the vote of thanks by Shri F. P. Kargatiya, (A. O.), KVK, J. A. U., Pipalia (Rajkot-II).

Kisan Gosthi:

Farmer-scientist interaction had been made and farmers were actively participated in discussion and get the solution of their problems where Shri S. V. Undhad, scientist (Plant Protection), Krishi Vigyan Kendra, J.A.U., discussed on different topics nutrient management, Scientific cultivation of major rabi crops, and their integrated pest and disease management for Rabi crops and techniques.

17.7 “Mera Gaon Mera Gaurav” Scheme:

The Mera Gaon Mera Gaurav scheme was implemented during the year 2016-17. Under this scheme, following two teams of scientists carry out activities.

Name of institute/university: KRISHI VIGYAN KENDRA, JAU, PIPALIA

No. of teams formed: 2 (Team-27, 28)

No. of villages selected: 10

No. of Team of Scientists	No. of Scientists	No. of Villages	No. of Blocks	No. of Districts	Bench Mark Survey conducted (No. of villages)
2	6	10	4	1	10

Activities undertaken:

- 1) To identify a villages and strength interface with farmers.
- 2) Periodically update farmers about agricultural activities through training, demonstration, phone and mobile message.
- 3) To organize farmer’s meet by visiting the selected village as per need and facilitate the participation of specialists of the concerned institutes.
- 4) To identify technical problems at village level and make use of those in prospective research programmes

Table 1: Activities organized by KVK, JAU, Pipalia under MGMG

Sr. No.	Name of activity	No. of activities conducted	No. of farmers participated and benefited
1	Visit to village by teams	51	800
2	Interface meeting/Goshthies	8	200
3	Training organized	15	520
4	Demonstrations conducted	11	49
5	Mobile based advisories (No.)	650	650
6	Literature support provided	18	3200
7	Awareness created	15	1800
	Total	768	7219

Table 2: other activities organized by KVK, JAU, Pipalia

Sr. No.	Name of activity	No. /Area (ha)	No. of farmers benefitted
1	Linkages developed with other agencies (No. of agency)	5	343
2	Facilitation for new varieties, seeds, technology		
	a. New varieties (No.)	2.84 ha	9
	b. Technology (No.)	5.05 ha	40
	c. Seeds (q)	-	-
	d. New crops (No.)	-	-

17.8 "PPV & FRA" Awareness cum Training Programme

“Awareness cum training programme on PPV &FRA”

One-day awareness cum training programme on “Protection of plant variety and farmers’ right act-2001” was organized by KVK, Pipalia on 18th March 2017. Total 40 farmers had participated in this training programme.

17.9 Exposure Visit of farmers:

Sr. No.	Date	Scientist	Village	No. of participant	Place visited
1.	01-10-2016	M.K.Bariya	Nani parabadi	30	JAU, Junagadh
2.	06-03-2017	Shri S V Undhad	Jasapar, Raydi	53	Technology cum Machinery Demonstration fair at CAET, JAU, Junagadh

17.10 Dignitaries /Scientist visit:

Sr.No.	Dignitaries/Scientist	Date	Purpose of visit
1.			
2.	Dr. A. R. Pathak sir Hon. Vice chancellor Junagadh Agril. University Junagadh	7-6-2016	KVK-visit
		13-7-2016	KVK-Visit
3.	Dr. A. M. Parakhia Director of Extension Education Junagadh Agril. University Junagadh	3-6-2016	KVK-visit
		16-6-2016	KVK-Visit
		13-7-2016	KVK-Visit
		26-7-2016	KVK-Visit
		6-8-2016	To Participate in Celebration of “Mahila Krushi Diwas”
		29-9-2016	KVK-Visit
		14-12-2016	KVK-Visit
	2-1-2017	KVK-Visit	
4.	Dr. I. U. Dhruj Associate Director of Research JunagadhAgril.University, Junagadh	5-10-2016	KVK-Visit
5	Sh. P.D. Rathod Sir, JDA, Rajkot	21-7-2016	KVK-Visit
6.	Dr. V. J. Bhatiya Nodal Scientist Mega seed, JAU, Junagadh	26-8-2016	To visit seed production of Pigeon Pea

17.11 Proceeding of the 5th Scientific Advisory Committee (SAC) Meeting of KVK Pipalia (Rajkot-II) held on 24th Oct. 2016

The fifth Scientific Advisory Committee meeting of Krishi Vigyan Kendra, Junagadh Agricultural University, Pipalia held at Krishi Vigyan Kendra, Junagadh Agricultural University, Targhadia on 24th October, 2016. The meeting was chaired by Hon'ble Vice Chancellor, Dr. A. R. Pathak, Junagadh Agricultural University, Junagadh.

The following members were remained present in the meeting.

Sr. No.	Name & Designation	Position	Sr. No.	Name & Designation	Position
1	Dr. A. R. Pathak Honorable Vice Chancellor, JAU, Junagadh.	Chairman	17	Dr. N. S. Joshi Senior Scientist & Head, KVK, JAU, Amreli	Invitee Member
2	Dr. A. M. Parakhia Director of Extension Education, JAU, Junagadh	Member	18	Dr. Minaxi K. Bariya Scientist (Home Science), KVK, JAU, Pipalia	Member
3	Dr. V. N. Patel, Research Scientist (DFRS), Targhadia	Member	19	Shri S. V. Undhad Scientist (Plant protection), KVK, JAU, Pipalia	Member
4	Shri. R. R. Tilava, DAO, District Panchayat, Rajkot	Member	20	Dr. V. S. Prajapati Scientist (Animal Husbandry), KVK, JAU, Pipalia	Member
5	Dr. H. D. Kansagara Dy. DAH District Panchayat, Rajkot	Member	21	Shri Harshukh R. Mathukiya Progressive farmers Thanagalol, Ta: Jetpur Dist:Rajkot	Member
6	Shri H. K. Sharma Assit. Director, NHRDF, Rajkot	Member	22	Shri Chetanm Vajubhai Satasia Progressive farmers Thanagalol, Ta: Jetpur Dist:Rajkot	Member
7	Shri A. B. Varma NHRDF, Rajkot	Invitee Member	23	Shri Ashwin Bachubhai Trada Progressive farmers Dudhivadar, Dist:Rajkot	Member
8	Shri Prabhav Desai Manager, Milk Producer Co- operative Ltd., Rajkot	Member	24	Shri Jentibhai Papatbhai Babaria Progressive farmers Jasapar, Dist:Rajkot	Member
9	Dr. Amit H. Patel Veterinary Executive, Rajkot Dairy, Rajkot	Member	25	Shri Navanitbhai K. Babaria Progressive farmers Jasapar, Ta:Jamkandorna Dist:Rajkot	Member
10	Shri Sanjay Samani District Manager, GAIC, Rajkot	Member	26	Shri Arvindbhai Bhimjibhai Paria Progressive farmers Gadhaka Dist:Rajkot	Invitee Member
11	Shri D. P. Parmar DIC, Rajkot	Member	27	Shri Champaksinh Jadeja Progressive farmers Dhebachda, Dist:Rajkot	Invitee Member
12	Shri Amit Savani HDFC Bank, Rajkot	Invitee Member	28	Shri Shaileshbhai B. Limbasia Progressive farmers	Invitee Member

				Dungarka, Dist:Rajkot	
13	Shri J. V. Rathod Assit conservator of Forest, Forest dept., Rajkot	Member	29	Hetal Padsumbiya Scientist (Home Science) KVK, Targhadia	Invitee Member
14	Dr. G. R. Sharma, Principal, Polytechnic in Agri. Engg., Targhadia	Invitee Member	30	Shri F. P. Kargathia Agricultural Officer KVK, Pipalia	Invitee Member
15	Shri Hiten Maheriya GGRC, Rajkot	Member	31	Dr. N. B. Jadav, Senior scientist & Head, KVK, Pipalia	Member Secretary
16	Dr. M. M. Tajapara, I/C Senior Scientist & Head, KVK, JAU, Targhadia	Member			

In the beginning, Dr. V. N. Patel, Research Scientist & ADR, Dry Farming Research station, Junagadh Agricultural University, Targhadia welcomed Chairman of the Committee and Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh, Dr. A. R. Pathak, Dr. A. M. Parakhia, Director of Extension Education, JAU, Junagadh and all the members and Progressive farmers of the cluster villages of KVK, Pipalia.

Hon. Vice Chancellor, Dr. A.R. Pathak, inaugurated the meeting by lighting the lamp. Chairman of the meeting and all the members of SAC meeting were also welcomed with flowers.

Dr. N. B. Jadav, Senior Scientist & Head, KVK, Pipalia presented the progress report of the year 2016-17 (April'16 to Oct.'2016) including training achievements, extension activities, etc. conducted by this center and action plan for the Year 2017-18 (April-17 to March-18). All scientists of KVK viz, Dr. M. K. Bariya, Shri S. V. Undhad and Dr. V. S. Prajapati presented the progress report (April'16 to Oct. 16) of Home science, Plant protection and Animal Husbandry discipline, respectively.

The following suggestions were made by the SAC members during the meeting.

Honourable Vice Chancellor, Junagadh Agricultural University, Junagadh

1. Add the training related to preparation of Jivamrut & take one treatment of Jivamrut in FLD/OFT
2. Take more demonstration for management of pink boll worm and white grub
3. Impart off campus training related to pink boll worm and white grub (where demonstration have been taken)
4. Add training related to pruning in horticultural crops
5. Impart more training related to value addition

Director of Extension Education, JAU, Junagadh

1. Analysis of soil sample by purchasing soil sample kit from RF
2. Present scenario of diseases occurrence in animals to be presented in SAC
3. Add training related to Good Agricultural Practices
4. Report organic farming training in progress report and presentations

In chairman remarks, Hon'ble Vice Chancellor, Dr. A. R. Pathak, Junagadh Agricultural University, Junagadh appreciated the work done by the center. He gave emphasis on management of pink bollworm in Bt. Cotton through FLD, training related to value addition, Diagnostic visit, and emphasis on integrated management of white grub etc. Finally, the meeting was concluded by performing the vote of thanks by Dr. M. K. Bariya, Scientist (Home Science), KVK, Pipalia (Rajkot-II).