ICAR-ATARI, Pune
DETAILS OF ANNUAL PROGRESS REPORT OF KVKs DURING 2018-19
(1st April 2018 to 31st March 2019)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address with PIN code	Telephone		E mail	Website address & No. of visitors (hits)
	Office	FAX		
Senior Scientist and Head Krishi Vigyan Kendra, Junagadh Agricultural University, Keriya Road, Model farm, Amreli (Gujarat)-365601	02792 227122	02792 227122	kvkamreli@gmail.com	-----

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

Address	Telephone		E mail	Website address
	Office	FAX		
Junagadh Agricultural University, Agril. Campus, Motibaugh, Junagadh-362001 (Gujarat)	0285 2672080-90	0285 2672004 2672653	-----	www.jau.in

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

Name	Telephone / Contact		
	Office	Mobile	Email
Dr. N. S. Joshi Ph.D, Horticulture	02792 227122	9428191963	nileshjoshi2207@gmail.com

1.4. Year of sanction: Deputy Secretary, ICAR, New Delhi, Letter No. 13-16/2003/1, Dt. 7.12.2004

1.5. Staff Position (as on March 31, 2019)

Sl. No.	Sanctioned post	Name of the incumbent	Discipline	If Permanent, Please indicate		Date of joining
				Current Pay Band	Current Grade Pay	
1.	Senior Scientist and Head	Dr. N. S. Joshi	Horticulture	37400-67000	9000	24/03/2015
2.	Subject Matter Specialist	Er. P. S. Jayswal	Agriculture Engineering	15600-39100	6000	10/09/2012
3.	Subject Matter Specialist	Dr. Neha Tiwari	Home Science	15600-39100	6000	01/04/2013
4.	Subject Matter Specialist	Dr. M. L. Patel	Plant Protection	15600-39100	6000	31/03/2015
5.	Subject Matter Specialist	Mr. P. J. Prajapati	Crop Production	15600-39100	6000	31/03/2015
6.	Subject Matter Specialist	Mr. V.S. Parmer	Agriculture Extension	15600-39100	6000	12/05/2016
7.	Subject Matter Specialist	Vacant	Animal Science	-----	-----	-----
8.	Programme Assistant/	Ms. K.K Gadhiya	Plant pathology	09300-34800	-----	30/07/2018

	Agricultural Officer					
9.	Computer Programmer	Mr. S .N. Joshi	-----	39900-126600	-----	01/07/2010
10.	Farm Manager	Mr. S.G Baria	Agriculture	09300-34800	-----	30/07/2018
11.	Accountant/ Superintendent	Mr. H. J. Ravaliya	-----	39900-126600	-----	01/12/2011
12.	Stenographer	Mr. A. H. Parmar	-----	28376	-----	18/11/2013
13.	Driver 1	Vaccant	-----	-----	-----	-----
14.	Driver 2	Vacant	-----	-----	-----	-----
15.	Supporting staff 1	Vacant	-----	------	-----	----
16.	Supporting staff 2	Vacant	-----	-----	-----	-----

1.6. Total land with KVK (in ha):

S. No.	Item	Area (ha)
1	Under Buildings	3.50
2.	Under Demonstration Units	1.50
3.	Under Crops	12.50
4.	Horticulture	0.50
5.	Pond	1.0
6.	Others if any (Polytechnic Home Sci. building)	1.0
	Total	**20**

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage			
			Complete			Incomplete
			Completion Year	Plinth area (Sq.m)	Expenditure (Rs.)	
1.	Administrative Building	ICAR	2008	500	3190000	NIL
2.	Farmers Hostel	ICAR	2008	305	2088000	
3.	Staff Quarters (6)	ICAR	2008	400	3204000	
4.	Farm Wall	ICAR	2008	-	-	
5.	RWH system	ICAR	2008	-	960000	
6.	Threshing yard	ICAR	2009	-	-	
7.	Godown and processing shed	RKVY	2009	70.62	500000	
8.	Poly House	RKVY	2010	320	281600	
9.	Net House	RKVY	2010	150	64450	
10.	Training hall	RKVY	2010	190.99	1396300	
11.	Pilot scale Process plant	RKVY	2010	197.31	1536400	
12.	Implement shed	RKVY	2010	77.33	286300	
13.	Farm Wall	ICAR	2016	-	497475	
14.	Goat Shed	ICAR	2016	14.05	69760	
15.	Vermicompost unit	ICAR	2016	45	73640	
16.	Administrative building (Renovation)	ICAR	2017	-	300000	
17.	Farm Wall	ICAR	2017	-	282554	

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total km run	Present status
M&M, Bolero XL	2006	4,86,500	278701	Condition is not good
Tractor	2005	3,80,000	---	Condition is not good
Motor Cycle	2010	42,831	17805	Working condition
Power Tiller with implements	2011	1,42,000	---	Working condition
Mini Tractor with implements	2014	3,74,820	---	Working condition

C) Equipments & AV aids

Name of the equipment / Implements	Year of purchase	Cost (Rs.)	Present status
Digital camera	2008-09	11070	Working condition
Air assisted blast type sprayer	2008-09	98750	Working condition
Vacuum cleaner, RO, water cooler	2008-09	41780	Working condition
Samsung A/C, Nos.-2	2008-09	47300	Working condition
Fax machine	2008-09	17500	Working condition
LCD projector	2008-09	98799	Working condition
Winnowing fan	2008-09	8500	Working condition
Chaff cutter	2008-09	30188	Working condition
Plasma TV, Nos.-2 (21 and 52”)	2008-09	139952	Working condition
Cotton stock shredder-Nos.-3	2008-09	363000	Working condition
Spiral binding machine	2008-09	9090	Working condition
Rotavator with cultivator, Nos.-2	2008-09	180000	Working condition
Inverter	2008-09	19800	Working condition
Manually operated seed dressing drum	2008-09	20930	Working condition
Exhibition display	2008-09	39974	Working condition
Decorticator groundnut machine	2008-09	98850	Working condition
Cotton shredder, Nos.-2	2008-09	242000	Working condition
Battery operated sprayer	2008-09	4940	Working condition
Aspee knapsack sprayer	2008-09	7400	Working condition
Bullock drawn pipe farm seed drill	2008-09	161000	Working condition
Zero till drill	2008-09	66725	Working condition
Bullock drawn clod breaker	2008-09	52000	Working condition
Tractor operated groundnut digger	2008-09	235500	Working condition
Multipurpose thresher (engine operated)	2008-09	114000	Working condition
Mobile seed processing unit	2008-09	1685000	Working condition
Electronic balance	2008-09	19425	Working condition
Power generated	2008-09	49500	Working condition
RO system	2008-09	24450	Working condition
Air condition Nos.-2	2008-09	51580	Working condition
Air condition, Nos.-3	2008-09	89970	Working condition
Photo copier	2008-09	124000	Working condition
LCD and accessories	2008-09	103912	Working condition
Oven and freeze	2008-09	30605	Working condition
Tractor drawn harrow cum cultivator	2008-09	75000	Working condition
Planter	2008-09	44000	Working condition
Rotavator	2008-09	96000	Working condition
Laptop	2008-09	47500	Working condition
Pipe frame blade harrow piece	2008-09	11000	Working condition
Solar equipments	2008-09	81830	Working condition

Gas connection for lab.	2009-10	9700	Working condition
Digital Sony Camera	2009-10	24750	Working condition
Post Whole Digger	2009-10	38000	Working condition
Motor, 1 Hp	2009-10	8650	Working condition
Power Generator	2009-10	45576	Working condition
Multi Crop thresher	2010-11	38000	Working condition
BOD incubator	2010-11	75863	Working condition
Compound light microscope	2010-11	90851	Working condition
Motor 7.5 Hp	2010-11	28600	Working condition
Motor 5 Hp	2010-11	17000	Working condition
Desktop Computer	2010-11	34810	Working condition
Hot air Oven	2010-11	15215	Working condition
Hot plate	2010-11	4725	Working condition
Physical Balance	2010-11	3623	Working condition
Refrigerator	2010-11	19200	Working condition
PH meter	2010-11	3990	Working condition
Conductivity bridge	2010-11	9450	Working condition
Chemical Balance	2010-11	45066	Working condition
Shaker-2 no.	2010-11	49000	Working condition
Flame Photometer	2010-11	44887	Working condition
Spectrophotometer	2010-11	39480	Working condition
Water Distillation Still	2010-11	157500	Working condition
Seed Drill	2010-11	27500	Working condition
Winnower	2010-11	37000	Working condition
Disc Plow	2012-13	30400	Working condition
Disc Harrow	2012-13	37500	Working condition
Nine tine Cultivator	2012-13	19600	Working condition
PC with Accessories (2 No.)	2013-14	65970	Working condition
Printer (2 No.)	2013-14	13898	Working condition
Scanner	2013-14	4309	Working condition
PC with Accessories (2 No.)	2015-16	77590	Working condition
Printer	2015-16	11900	Working condition
Rotavator (NICRA)	2015-16	70000	Working condition
Mobile shredder(NICRA)	2015-16	146000	Working condition
Chaff cutter(NICRA)	2015-16	57000	Working condition
Multi crop thresher(NICRA)	2015-16	155000	Working condition
Rear mounted reaper (NICRA)	2015-16	95000	Working condition
Digital Camera	2016-17	14400	Working condition
Desktop Computer	2016-17	34115	Working condition
Printer	2016-17	12546	Working condition
Automatic seed cum fertilizer drill(NICRA)	2016-17	66412	Working condition
Dibbler (03 nos.)	2016-17	6000	Working condition
Seed dressing drum (5 nos.) (NICRA)	2016-17	15000	Working condition
Rotavator (NICRA)	2016-17	89040	Working condition
Bund former (NICRA)	2016-17	13650	Working condition
Air conditioner (02 nos.)	2016-17	79980	Working condition
Desktop Computer	2016-17	34115	Working condition
Photo copier	2016-17	144391	Working condition
Integrated community computer	2016-17	110644	Working condition
Multi crop thresher	2017-18	187040	Working condition
Computer with UPS	2017-18	42889	Working condition
Computer with UPS (2 Nos.)	2018-19	88400	Working condition
Printer	2018-19	11416	Working condition

1.8. Details SAC meeting conducted in the year

Date	Name and Designation of Participants	Salient Recommendations	Action taken
26.03.2019	Dr. A. R. Pathak, Hon. Vice Chancellor, Junagadh Agricultural University, Junagadh	To arrange training programme of animal science with help from BMF, Amreli.	Suggestion accepted
		To arrange training programmes of beauty parlor (beautification) and computer training for women.	Suggestion accepted
		To assess the impact of NICRA	Suggestion accepted
		To arrange vocational training programmes on grafting in fruit crops and waste management	Suggestion accepted
		To conduct market intelligence training programmes	Suggestion accepted
		To update all KVK activities on university website	Suggestion accepted
		Refine the OFT including bio pesticides in plant protection OFT of sesame.	Suggestion accepted
		To increase number of press notes in news papers	Suggestion accepted
		Add sprouted pulses in home science OFT.	Suggestion accepted
	Dr. P.V. Patel , Director of Extension Education, JAU, Junagadh	To increase number of publications of research papers and popular articles	Suggestion accepted
		To include name of local check varieties in FLDs	Suggestion accepted
		To conduct training programmes on value addition	Suggestion accepted
		To take farmers feedbacks before and after training	Suggestion accepted
	Dr. V. P. Chovatia, Director of Research, JAU, Junagadh	To arrange all extension activities in Golden Village Rafala like FLDs, training programme	Suggestion accepted
		To arrange training programmes on Mushroom cultivation and its value addition	Suggestion accepted
		To add de-toping in high density planting OFT.	Suggestion accepted
		To conduct training programme on Apiculture.	Suggestion accepted
		To take feedbacks of wilt in gram (GJG-3)	Suggestion accepted
		To conduct final survey of NICRA.	Suggestion accepted
		To change quarter of training programme of organic farming and layout of orchard	Suggestion accepted
		To calculate area of irrigation increased through water harvesting structure in NICRA project	Suggestion accepted
	Dr. H. C. Chhodvadia, Asso. Ext. Education , JAU, Junagadh	To take five replications in wheat OFT and add one more treatment in mulching OFT.	Suggestion accepted

	Sh. B. V. Radadiya , Asso. Rec. Sci, ARS, JAU, Amreli	To conduct training programmes related to animal science discipline	Suggestion accepted
	Sh. K.K Patel, DAO, Amreli	To arrange collaborative training programmes of organic farming	Suggestion accepted
	Sh. Pravinbhai vagadiya, Progressive farmer	To conduct training programmes on mushroom cultivation and its value addition	Suggestion accepted

2. DETAILS OF DISTRICT

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

S. No	Farming system/enterprise
1	Dry Farming
2	Rainfed : Cotton, Groundnut, Sesame, Black gram, Green gram, Mango, Onion
3	Agriculture – Horticulture (Mango)
4	Agriculture – Dairy
5	Agriculture – Fisheries
6	Cotton based cropping system
7	Groundnut based cropping system
8	Sesame based cropping system
9	Enterprise: Poultry, Fishery, Dairy, Sericulture, Vermicompost

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

a) Soil type

Agro-climatic Zone	Characteristics
North Saurashtra Agro climatic Zone VI	Medium black soil, coastal alluvial soil, rocky soil and alkaline soil
	The climate of the district varies from moderately hot throughout the year except in winter. The climate is humid along with the coastal belt. The temperature varies from 8.01° Celsius in January to 43.7° Celsius in May. The average rainfall of last three years is 706 mm.

b) Topography

S. No.	Agro ecological situation	Characteristics
1	Medium black soil with 400-700 mm rainfall	-
2	Shallow black soils with 600-700 mm rainfall	-
3	Saline - alkali (Heavy texture) soils with 500-600 mm rainfall	Saline groundwater
4	Hilly soils with 300-600 mm rainfall	Well drained soils
5	Coastal alluvial soil with medium rainfall 750-1000 mm.	Saline groundwater

2.3 Soil Types

S. No	Soil type	Characteristics
1	Medium black	Major portion of the district is covered by the medium black soil, which is considered very productive. It is rich in lime, magnesia and alumina but poor in phosphorus, nitrogen and organic matters. It can retain considerable moisture and is much suitable for agriculture.
2	Coastal alluvial	The coastal alluvial soil is found on the coastal areas of Jafrabad and Rajula. Among the whole of the coastal areas, the land is sandy. However, the soils in Rajula and

		Jafrabad are less productive as they are saline. The soils in the northern part of the district including Babra and parts of Kunkavav Vadia and Dhari talukas are shallow and rocky. Certain areas in Amreli taluka known as Kharapat are poor in cultivation; but this taluka possesses the best land along the north and the south banks of the Shetrunji.
3	Rocky soils	The soil of Dhari taluka is lighter and near the Gir forest redder. The soil on the southern part of the district is light in colour with only few fertile gradients, and in many places, it is rocky and barren.

2.4. Area, Production and Productivity of major crops cultivated in the district (2015-16)

S. No	Crop	Area (ha)	Production (MT.)	Productivity (Qt./ha)
1	Green gram	2702	1372	5.07
2	Tur	742	912	12.28
3	Wheat	7311	22734	31.09
4	Gram	1736	2394	13.79
5	Groundnut	101505	219818	21.65
6	Sesamum	7390	3519	4.76
7	Castor	1283	2235	17.42
8	Irrigated Cotton (Lint)	253961	811755 (bales)	543.38 (lint)
9	UnIrrigated Cotton (Lint)	124796	248417 (bales)	338.40 (lint)
10	Cumin	1234	436	3.53
11	Onion	4328	128928	297.89
12	Garlic	1277	5261	41.19
13	Bajra	2706	6399	23.64
14	Udad	1720	1028	5.97
15	Math	130	62	4.76
16	Soyabean	357	275	7.69
17	Sugarcan	57	3928	689.12

Source: District wise Area, Production and Yield of Important Food & Non-food crops in Gujarat State Year: 2014-15 & 2015-16 https://dag.gujarat.gov.in/

Area and Production Horticultural crops cultivated in the district (Year 2016-17)

S. No.	Crop	Area (ha)	Production (M.T.)	S. No.	Crop	Area (ha)	Production (M.T.)
1	Mango	6965	61918.85	16	Tomato	1091	26642.22
2	Chiku	552	4692	17	Cauliflower	167	2179.35
3	Citrus	719	8016.85	18	Cluster bean	326	2624.30
4	Ber	179	1410.52	19	Cow Pea	532	5910.52
5	Banana	227	8773.55	20	Cucurbits	1193	14435.30
6	Guavava	279	2561.22	21	Cumin	900	765
7	Pomegranate	109	1509.65	22	Chilli-Dry	227	424.49
8	Papaya	46	1955.46	23	Garlic	800	6016
9	Custard Apple	35	31.010	24	Coriander	1300	1664
10	Aonla	56	560.56	25	Ginger	03	53
11	Coconut	151	1283.50	26	Turmeric	13	243.10
12	Onion	3500	87325	27	Fenugreek	108	177.12
13	Brinjal	644	12042.80	28	Ajwain	491	456.63
14	Cabbage	539	10860.85	29	Rose	23	174.80
15	Okra	486	3912.30	30	Marigold	07	58.31

Director of Horticulture, Estimate of the horticulture crops, Year 2016-17

2.5. Weather data (2018-19)

Month	Rainfall (mm)	Temperature ^{o}C		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
April 2018	0.0	40.9	24.4	66.0	18.0
May 2018	0.0	42.7	26.7	75.0	24.0
June 2018	48.2	38.4	27.6	83.0	47.0
July 2018	282.8	31.8	25.5	90.	23.0
August 2018	62.6	31.3	24.8	89.0	69.0
September 2018	18.6	33.1	22.8	86.0	53.0
October 2018	10.2	37.8	22.2	69.0	25.0
November 2018	0.0	35.9	18.3	62.0	24.0
December 2018	0.0	30.2	12.8	65.0	28.0
January 2019	0.0	29.9	11.9	57.0	19.0
February 2019	0.0	32.2	15.0	67.0	24.0
March 2019	0.0	35.9	20.0	56.0	20.0
Total	**422.4**	-	-	-	-

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

Category	Population	Production '000Tones	Productivity
Cattle			
Crossbred	3400	9.22	8.659 kg/day
Indigenous	121300	148.43	4.747 kg/day
Buffalo	146200	199.79	5.229 kg/day
Sheep	130800	168.74 MT	1.472 kg/sheep
Goats	163500	11.33	0.468 kg/day
Poultry			
Hens	00	00	00
Desi	8200	4.99 lakh	113.95/season/year/layer
Category		Production (Q.)	Productivity
Fish (Reservoir)	---	---	---

Source: *35th issue on estimates of major livestock products for the year 2017-18, Gujarat state*

2.7. Details of Operational area / Villages

Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
Lathi	Amreli	Kerala (Jogani)	Cotton, Groundnut, Cumin, wheat	• Lack of irrigation facility • Poor quality of irrigation water • Wild animal problem • Poor fertility status of Land • Low yield of major crops	INM, IPM, Conserve moisture Agriculture, Training on MIS
Lathi	Amreli	Harsupur Devaliya	Cotton, Groundnut, Green gram, wheat	• Lack of irrigation facility • Poor quality of irrigation water • Wild animal problem • Low yield of major crops	INM, IPM, Conserve Moisture agriculture

Liliya	Amreli	Saladi	Cotton, Green gram	• Saline land and poor quality of irrigation water • Poor fertility status of Land	Conserve Moisture agriculture, OFT in cotton on BBF, Training on MIS
Liliya	Amreli	Jatruda	Cotton, Groundnut	• Saline land and poor quality of irrigation water • Poor fertility status of Land • Low yield of major crops	INM, IPM, Conserve Moisture agriculture
Babra	Amreli	Vandaliya	Cotton, Groundnut, Cumin, Wheat	• Low yield of major crops • Wild animal problem • Lack of irrigation facility	ICM, introduction of new varieties, Scientific cropping
Kukavav	Amreli	Lunidhaar	Cotton, Groundnut, Green gram, black gram	• Low yield of major crops • Wild animal problem • Lack of irrigation facility	ICM, introduction of new varieties, Scientific cropping
Bagasra	Amreli	Haalariya	Groundnut, cotton, Green gram, black gram	• Low yield of major crops • Wild animal problem • Lack of irrigation facility	ICM, introduction of new varieties, Scientific cropping
Dhari	Amreli	Ditla	Cotton, Groundnut, Mango	• Low yield of major crops • Wild animal problem	ICM, introduction of new varieties, Scientific cropping
Amreli	Amreli	Babapur	Cotton, Castor, Wheat	• Low yield of major crops • Wild animal problem • Poor quality of irrigation water	ICM, introduction of new varieties, Scientific cropping
Amreli	Amreli	Shedubhar	Cotton, Groundnut, Green gram, black gram	• Low yield of major crops • Wild animal problem • Poor quality of irrigation water	ICM, introduction of new varieties, Scientific cropping
Amreli	Amreli	Vaankiya	Cotton, Groundnut, pigeon pea	• Low yield of major crops • Wild animal problem • Poor quality of irrigation water	ICM, introduction of new varieties, Scientific cropping
Khambha	Amreli	Lakhapadar	Cotton, Groundnut, wheat, Pigeon pea	• Low yield of major crops • Wild animal problem	ICM, introduction of new varieties, Scientific cropping
Savar kundla	Amreli	Nesdi	Cotton, Groundnut, wheat, Pigeon pea, lemon	• Low yield of major crops • Wild animal problem	ICM, introduction of new varieties, Scientific cropping
Savar kundla	Amreli	Oliya	Cotton, Groundnut, wheat, Pigeon pea, lemon	• Low yield of major crops • Wild animal problem	ICM, introduction of new varieties, Scientific cropping
Rajula	Amreli	Maandardi	Cotton, Groundnut, wheat, Pigeon pea	• Low yield of major crops • Wild animal problem	ICM, introduction of new varieties, Scientific cropping

2.8. Priority thrust areas:

Sr. No.	Crop/Enterprise	Thrust area
1.	Cotton, Groundnut, Castor, Cumin, Wheat, vegetables, fruits, etc.	Integrated Crop Management in major crops
2.	Farm waste	Recycling of farm waste through composting, vermicompost, green manuring, etc.
3.	Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques
4.	Soil	Reclamation of saline & alkaline soils
5.	Farm Women	Farm women empowerment by training in value addition, handicrafts, and small scale enterprises
6.	Horticulture	Promotion of arid horticulture fruit crops
7.	Improved Implements	Popularization of the mechanized technological know how

3. TECHNICAL ACHIEVEMENTS

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

OFT				FLD			
1				2			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
7	7	18	18	39	39	880	880

Training				Extension Programmes			
3				4			
Number of Courses		Number of Participants		Number of Programmes		Number of participants	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
55	73	1865	3312	---	274	---	5382

Seed Production (Qtl.)		Planting materials (Nos.)	
5		6	
Target	Achievement	Target	Achievement
33.00	50.84	3000	4000

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
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3.1. B. Operational areas details during 2018-19

S.No.	Major crops & enterprises being practiced in cluster villages	Prioritized problems in these crops/ enterprise	Extent of area (Ha/No.) affected by the problem in the district	Names of Cluster Villages identified for intervention	Intervention (OFT, FLD, Training, extension activity etc.)
1.	Groundnut, Cotton, Sesamum, Wheat, Cumin, Chickpea, Garlic, Onion, Mango, lemon Enterprises are dairy business, vermi composting,	Heavy infestation of sucking pest in cotton, Sesame leaf blight, Stem rot disease in Groundnut, Mango Malformation, Less area under Horticultural crops	Every village of this district is facing problem.	Kerala(Jogani)	• IPM and INM in major crops of this area, • Motivate the farmers for arid Horticultural crops. • To create the awareness for grading, processing and marketing (value addition) • Various OFT, FLD, trainings, extension activities were carried out.
2.				Harsupur Devaliya	
3.				Saladi	
4.				Jatruda	
5.				Vaandaliya	
6.				Lunidhaar	
7.				Haalariya	
8.				Ditla	
9.				Babapur	
10.				Shedubhar	
11.				Vaankiya	
12.				Lakhapadar	
13.				Nesdi	
14.				Oliya	
15.				Maandardi	

3.2. Technology Assessment and Refinement

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

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Integrated Nutrient Management	1								1	**2**
Varietal Evaluation									1	**1**
Integrated Pest Management				1						**1**
Integrated Crop Management				1						**1**
Integrated Disease Management			1							**1**
Small Scale Income Generation Enterprises										**0**
Weed Management										**0**
Resource Conservation Technology				1						**1**
Farm Machineries										**0**
Integrated Farming System										**0**
Seed / Plant production										**0**
Value addition										**0**
Drudgery Reduction										**0**
Storage Technique										**0**
Mushroom cultivation										**0**
Total	**1**	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**1**	**7**

A2. Abstract on the number of technologies assessed in respect of livestock enterprises: NIL

B. Achievements on technologies Assessed

B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	Number of farmers	Area in ha (Per trail covering all the Technological Options)
Integrated Nutrient Management	Wheat	Effect of liquid bio fertilizer	2	2	0.4
	Garlic	Effect of multi micronutrients formulation	3	3	0.6
Varietal Evaluation	Onion	Varietal Evaluation	3	3	0.6
Integrated Pest Management	Cotton	Management of sucking pests	2	2	0.4
Integrated Crop Management	Cotton	High Density Planting in Cotton	2	2	0.4

Integrated Disease Management	Chickpea	Management of Wilt in chickpea	2	2	0.4
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology	Cotton	Ridge and furrow plantation	4	4	2.4
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Mushroom cultivation					
Total	-	-	18	18	5.2

B.2. Technologies assessed under Livestock and other enterprises: NIL

C1. Results of Technologies Assessed

Results of On Farm Trial

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feedback from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Cotton	Dry farming	Farmers do not adopt closer planting, there for get low cotton	High Density Planting in Cotton	2	120 X 45-60 cm (18519-13888 plants/ha)	Production	17.11 q/ha (195 Days)	Increase the plant population per unit	Increases production due to number	-	-

		yield due to less soil moisture and incidence of pest and disease.			90 X 30 cm (37037 plants/ha) (Var. GTHH-49 (bt))		23.50 q/ha (175 Days)	area and best utilization of land	of plants increase per unit		
Wheat	Dry Farming	Farmers do not use bio fertilizer.	Effect of liquid bio fertilizer on growth and yield of wheat.	2	Use only DAP and Urea in different dose	Production	44.50 q/ha	As compare to T1and T2 treatment production of wheat higher in treatment T3	Biofertilizers fix nitrogen & make available phosphorous thereafter increase production also they are low cost	-	-
					120-60-0 N.P.K. Kg/ha		46.80 q/ha				
					Soil application of Azotobacter & PSB @ 1 lit./ha with 100 kg FYM + 75 % RDF		49.90 q/ha				
Cotton	Rainfed	Injudicious use of Chemical pesticides due to lack of knowledge about the use of particular pesticides	Management of sucking pests in Cotton	2	High dose and Use of conventional Chemical pesticides	Production	1856 Kg/ha	As compare to T1 treatment production of cotton higher in treatment T2	Effective control of sucking pests and low cost of spray material	-	
					Three spray of imidacloprid 200 SL @ gai /ha (3 ml/10 lit. water) or thiamethoxam 25 WG @ 25 gai /ha (2 g / 10 lit. water) at 15 day interval starting from the pest infestation.		2269 Kg/ha				

Chickpea	Irrigated	Low yield in chickpea	Management of Wilt in chickpea	2	No use of seed treatment and Trichoderma	Production	14.0 q/ha	As compare to T1and T2 treatment production of chickpea higher in treatment T3	Less problem of wilt and healthy growth of plants	-	-
					Seed treatment of Carbendazim @ 3g/kg seed		16.94 q/ha				
					Soil application of Trichoderma @2.5 kg /ha with castor cake 500kg.		18.19 q/ha				
Cotton	Rainfed	Decreasing productivity of Cotton due to water logging, soil salinization in salt-affected lands. Heavy mortality, difficulties in intercultural operation due to lodging.	Effect of method of sowing on ridges on yield of Cotton	4	Traditional Sowing of Cotton on Flat bed(152 cm apart)	Production & Bolls per plant	2150 Kg/ha	As compare to T1 treatment production of cotton higher in treatment T2	Increased number of bolls per plants supports in increasing yield	-	-
							91 BpP				
					To prepare the field by ploughing followed by blade harrowing & planking and sow the crop on ridges (120 cm apart).		2540 Kg/ha				
							112 BpP				
Onion	Irrigated	Low productivity of non-descriptive local onion varieties	Assessment of onion varieties	3	local variety (pillipati)	Production	343.75 q/ha	As compare to T1and T2 treatment production of onion higher in treatment T3	Weight of onion bulb was higher than other variety also keeping quality is good	-	-
					Gujarat White Onion-1		375.60 q/ha				
					Gujarat Junagadh White Onion- 3		437.50 q/ha				

Garlic	Irrigated	Farmers not using the micronutrients	Effect of multi micronutrients formulation on garlic	3	120 DAP, 40 kg P Kg/ha	Production	63.75 q/ha	As compare to T1and T3 treatment production of garlic higher in treatment T2	Blub size was improved therefore production was higher	-	-
					Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1% at 60, 75 and 90 DAS		72.0 q/ha				
					Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1.5 % at 60, 75 and 90 DAS		71.4 q/ha				

Contd..

Technology Assessed	Source of Technology	Production	Please give the unit	Net Return (Profit) in Rs. / ha	BC Ratio
13	14	15	16	17	
120 X 45-60 cm (18519-13888 plants/ha)	JAU, Junagadh	17.11 (195 Days)	q/ha	52128	2.74
90 X 30 cm (37037 plants/ha) (Var.GTHH-49 (bt)		23.50 (175 Days)	q/ha	83150	3.60
Use only DAP and Urea in various dose	JAU, Junagadh	44.50	q/ha	59287.5	3.07
120-60-0 NPK kg/ha		46.80	q/ha	69710	3.54
Soil application of Azotobacter & PSB @ 1 lit./ha with 100 kg FYM +75% RDF		49.90	q/ha	85023	3.98
High dose and Use of conventional Chemical pesticides	JAU, Junagadh	1856	Kg/ha	74298	3.53
Three spray of imidacloprid 200 SL @ gai /ha (3 ml/10 lit. water) or thiamethoxam		2269	Kg/ha	98547	4.50

25 WG @ 25 gai /ha (2 g / 10 lit. water) at 15 day interval starting from the pest infestation.					
No use of seed treatment and Trichoderma	JAU, Junagadh	14.0	q/ha	30040	2.30
Seed treatment of Carbendazim @ 3g/kg seed		16.94	q/ha	42829	2.90
Soil application of Trichoderma @2.5 kg /ha with castor cake 500kg.		18.19	q/ha	48983	3.32
Traditional Sowing of Cotton on Flat bed(152 cm apart)	JAU, Junagadh	2150	Kg/ha	73200	3.44
To prepare the field by ploughing followed by blade harrowing & planking and sow the crop on ridges (120 cm apart).		2540	Kg/ha	92460	3.89
local variety (pillipati)	JAU, Junagadh	343.75	q/ha	301750	8.18
Gujarat White Onion-1		375.00	q/ha	363562.5	9.75
Gujarat Junagadh White Onion- 3		437.50	q/ha	383012.5	10.35
120 DAP, 40 kg P Kg/ha	JAU, Junagadh	63.75	q/ha	181250	2.31
Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1% at 60, 75 and 90 DAS		72.0	q/ha	280100	3.03
Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1.5 % at 60, 75 and 90 DAS		71.4	q/ha	273800	2.98

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

OFT – 1: Agronomy (Ongoing)

1. Title of Technology Assessed — Effect of liquid bio fertilizer on growth and yield of wheat.
2. Problem Definition — Farmers do not use bio fertilizer.
3. Details of technologies selected for assessment
   (1) Crop : Wheat
   (2) Season/ Year : Rabi 2016-17 to Rabi 2018-19
   (3) Spacing : 22.5 cm (row to row) by automatic seed drill.

T_1	Farmer practices	Use only DAP and Urea in various dose
T_2	Recommended Practices	120-60-60 NPK kg/ha
T3	Assessment	Soil application of Azotobacter & PSB @ 1 lit./ha with 100 kg FYM +75% RDF

4. Source of technology — Department of Agronomy, JAU, Junagadh
5. Production system and thematic area — Rainfed Farming
6. Performance of the Technology with performance indicators — Yield
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques — -
8. Final recommendation for micro level situation — -
9. Constraints identified and feedback for research — -
10. Process of farmers participation and their reaction — -

OFT -2: Agronomy (New)

1. Title of Technology Assessed — High Density Planting in Cotton
2. Problem Definition — Farmers do not adopt closer planting, there for get low cotton yield due to less soil moisture and incidence of pest and disease.
3. Details of technologies selected for assessment
   (1) Crop : Cotton
   (2) Season/Year : Kharif 2017-18 to Kharif 2019-20

T1:(Farmers' practices)	120 X 45-60 cm (18519-13888 plants/ha)
T2 :(Recommended Practice)	90 X 30 cm (37037 plants/ha) (Var. GTHH-49 (bt))

4. Source of technology — Cotton Research Station, JAU, Junagadh
5. Production system and thematic area — Rainfed Farming
6. Performance of the — Yield

	Technology with performance indicators	
7.	Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques	-
8.	Final recommendation for micro level situation	-
9.	Constraints identified and feedback for research	-
10.	Process of farmers participation and their reaction	-

OFT – 3: Plant Protection (Ongoing)

1. Title of Technology Assessed: Management of sucking pests in Cotton
2. Problem Definition: Injudicious use of Chemical pesticides due to lack of knowledge about the use of particular pesticides
3. Details of technologies selected for assessment:
   (1) Crop : Cotton
   (2) Season/ Year : Kharif -2016 to Kharif – 2018
   (3) Spacing : 120 x 45 cm

T_1	Farmer practices	High dose and Use of conventional Chemical pesticides
T_2	Assessment/ refined Practices	Three spray of imidacloprid 200 SL @ gai /ha (3 ml/10 lit. water) or thiamethoxam 25 WG @ 25 gai /ha (2 g / 10 lit. water) at 15 day interval starting from the pest infestation.

4. Source of technology: JAU, Junagadh
5. Production system and thematic area: Rainfed Farming
6. Performance of the Technology with performance indicators: Yield
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques: -
8. Final recommendation for micro level situation: -
9. Constraints identified and feedback for research: -
10. Process of farmers participation and their reaction: -

OFT –4: Plant Protection (Ongoing)

1. Title of Technology Assessed: Management of Wilt in chickpea
2. Problem Definition: Low yield in chickpea

3. Details of technologies selected for assessment

(1) Crop : Chickpea
(2) Season/ Year : Rabi -2016 to Rabi – 2019
(3) Spacing : 45 x 10

T_1	Farmer practices	No use of seed treatment and Trichoderma
T_2	Assessment/refined Practices	Seed treatment of Carbendazim @ 3g/kg seed, Soil application of Trichoderma @2.5 kg /ha with Castor cake 500kg

4. Source of technology — JAU, Junagadh
5. Production system and thematic area — Rainfed Farming
6. Performance of the Technology with performance indicators — Yield
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques — -
8. Final recommendation for micro level situation — -
9. Constraints identified and feedback for research — -
10. Process of farmers participation and their reaction — -

OFT -5: Agriculture Engineering (ongoing)

1. Title of Technology Assessed — Effect of method of sowing on ridges on yield of Cotton
2. Problem Definition — Decreasing productivity of Cotton due to water logging, soil salinization in salt-affected lands. Heavy mortality, difficulties in intercultural operation due to lodging.
3. Details of technologies selected for assessment

T1- Farmers' practice : Traditional Sowing of Cotton on Flat bed

T2-Recommended Technology : To prepare the field by ploughing followed by blade harrowing & planking and sow the crop on ridges (120 cm apart). (Year 2013-14,)

4. Source of technology — Department of Agronomy, JAU, Junagadh
5. Production system and thematic area — Soil conservation and improvement
6. Performance of the Technology with performance indicators — Yield, CB ratio, Bolls per plant
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques — -

8. Final recommendation for micro level situation -
9. Constraints identified and feedback for research -
10. Process of farmers participation and their reaction -

OFT -6: Horticulture (New)

1. Title of Technology Assessed: Assessment of onion varieties
2. Problem Definition: Low productivity of non- descriptive local onion varieties
3. Details of technologies selected for assessment:

Farmer practices-Local variety (pillipati)
Gujarat White Onion-1
Gujarat Junagadh White Onion- 3

4. Source of technology: JAU, Junagadh
5. Production system and thematic area: Rainfed Farming, Integrated varietals management
6. Performance of the Technology with performance indicators: Yield
7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques: -
8. Final recommendation for micro level situation: -
9. Constraints identified and feedback for research: -
10. Process of farmers participation and their reaction: -

OFT -7: Horticulture (New)

1. Title of Technology Assessed: Effect of multi micronutrients formulation on garlic
2. Problem Definition: Farmers not using the micronutrients
3. Details of technologies selected for assessment:

1. Farmer practices-120 DAP, 40 kg P Kg/ha
2. Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1% at 60, 75 and 90 DAS (recommended Practices)
3. Apply foliar spray of multi-micronutrient formulation Grade IV (Fe-Mn-Zn-Cu-B, 4.0-1.0- 6.0-0.5-0.5 %) @ 1.5 % at 60, 75 and 90 DAS (Intervention)

4. Source of technology: JAU, Junagadh
5. Production system and thematic area: Irrigateded Farming, Integrated Nutrient management
6. Performance of the Technology with performance indicators: Yield
7. Feedback, matrix scoring of various technology parameters done through: -

	farmer's participation / other scoring techniques	
8.	Final recommendation for micro level situation	-
9.	Constraints identified and feedback for research	Need to be more trials
10.	Process of farmers participation and their reaction	Field days at farmers field, evaluation of the trial and their reaction towards the performance

D1. Results of Technologies Refined: NIL

3.3. FRONTLINE DEMONSTRATION

A. Follow-up for results of FLDs implemented during previous years
List of technologies demonstrated during previous year and popularized during 2017-18 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Castor	Varietal Evaluation	GCH-7	Trainings, demonstration, field days	7	10	4
2	Cotton	Varietal Evaluation	GCH-10(Bt)	Trainings, demonstration, field days	7	10	4
3	Vegetable crops	-	Vegetable seeds(JAU)	Trainings, demonstration, field days	-	50	-
4	Wheat	Nutrient	INM	Trainings, demonstration, field days	4	10	4
5	Cumin	Pest management	IPM	Trainings, demonstration, field days	2	10	4
6	Onion	Varietal Evaluation	GWO-1	Trainings, demonstration, field days	2	5	2
7	Coriander	Varietal Evaluation	GC-2	Trainings, demonstration, field days	3	10	4
8	Sesame	Varietal Evaluation	GT-3	Trainings, demonstration, field days	4	10	4
9	Black Gram	Varietal Evaluation	Guj. Urd.-1	Trainings, demonstration, field days	6	10	4
10	Green Gram	Varietal Evaluation	GM-5	Trainings, demonstration, field days	5	10	4
11	Okra	Varietal Evaluation	GJO-3	Trainings, demonstration, field days	2	5	2

B. Details of FLDs implemented during 2018-19(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	Castor	Varietal Evaluation	GCH-9	Kharif 18-19	4	4	2	8	10	-
2	Cotton	Varietal Evaluation	GTHH-49 (Bt)	Kharif 18-19	4	4	2	8	10	-
4	Wheat	Nutrient	INM	Rabi 18-19	4	4	0	10	10	-
5	Cumin	Pest management	IDM	Rabi 18-19	4	4	0	10	10	-
6	Onion	Varietal Evaluation	GJRO-11	Rabi 18-19	2	2	0	5	5	-
7	Coriander	Varietal Evaluation	GC-2	Rabi 18-19	4	4	1	9	10	-
8	Sesame	Varietal Evaluation	GT-3	Summer-19	4	4	2	8	10	-
9	Green Gram	Varietal Evaluation	GM-4	Summer-19	4	4	0	10	10	-
10	Black Gram	Varietal Evaluation	Guj. Urd-1	Summer-19	4	4	0	10	10	-
11	Okra	Varietal Evaluation	GO-6	Summer-19	2	2	1	4	5	-

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					
Castor	Kharif-18	Rainfed	M.Black	L	M	H	---	4th week of August 2018	2nd week to 4th week of January 2019	422	21
Cotton	Kharif-18	Rainfed	M.Black	M	L	H	Wheat	2nd Week of June to 2nd week of July 2018	3rd week of December 2018 to 2nd week of January 2019		
Wheat	Rabi 18-19	Irrigated	M.Black	L	M	H	Cotton	2nd to 3rd Week of November 2018	1st week to 2nd week of March 2019		
Cumin	Rabi 18-19	Irrigated	M.Black	M	L	H	Cotton	3rd to 4th Week of November 2018	1st week of March 2019		
Onion	Rabi 18-19	Irrigated	M.Black	L	M	H	Sesame	2nd to 3rd Week of December 2018	Yield awaited		
Coriander	Rabi 18-19	Irrigated	M.Black	H	M	M	Groundnut	2nd to 3rd Week of November 2018	1st week to 2nd week of March 2019		
Sesame	Summer 2019	Irrigated	M.Black	L	M	H	Wheat	4th Week of February 2019	Standing		
Black Gram	Summer 2019	Irrigated	M.Black	L	M	H	Groundnut	2nd to 3rd Week of February 2019	Standing		
Green Gram	Summer 2019	Irrigated	M.Black	L	M	H	Cotton	3rd to 4th Week of February 2019	Standing		
Okra	Summer 2019	Irrigated	M.Black	L	M	H	---	2nd to 3rd Week of February 2019	Standing		

Farmers' reactions on specific technologies

S. No	Crop	Variety/Input	Feed Back
1	Gram	GJG-3	► High Yield Variety ► Bold seeded Variety ► Stunt virus resistant Variety
2	Cumin	IDM	►Less problem of wilt due to application of Trichoderma ►Less problem of blight and powdery mildew due to spraying of carbendazim and Hexaconazole
3	Wheat	GW-173	►Resistant to Shoot borer ►High yielding ►Best for late sowing
4	Wheat	GJW-463	►High Yield Variety ►Grain quality is good
5	Green Gram	GAM-5	►Highly resistant to Yellow Mosaic Virus (YMV) ►Bold seed size with attractive shiny grain appearance
6	Groundnut	GJG-22	►Higher production ►Less stem rot problems ►Quality of seed is good
7	Sesame	GT-3	►Bold seeded, whiteness more and higher production then other varieties ►Better for Summer cultivation
8	Cotton	INM	► Less reddening of leaves ►Higher Yield
9	Cotton	GTHH-49	► Higher Yield ►Suitable for High density planting
10	Cotton	IPM	► Better control of pests ►Economic to other chemical pesticides
11	Castor	GCH-9	►Resistance to wilt, root rot and tolerant to sucking pests ►Higher Yield
12	Sorghum	GFS-5	►High yielder ►Resistance to major pests and diseases and suitable under drought condition
13	Pigeon Pea	GJP-1	►High yielding ►Bright white colored seed gives good price in market

Extension and Training activities under FLD

Sl. No.	Activity	No. of activities organized	Number of participants	Remarks
1	Field days	12	82	-
2	Farmers Training	9	252	-
3	Media coverage	-	-	-
4	Training for extension functionaries	2	61	-

C. Performance of Frontline demonstrations

Frontline demonstrations on oilseed crops

Crop	Thematic Area	technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Sesamum	Varietal Evaluation	Variety	GT-3	10	4	Standing												

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										
Blackgram	Varietal Evaluation	Variety	Guj. Urd.-1	10	4	Standing												
Greengram	Varietal Evaluation	Variety	GM-4	10	4	Standing												

FLD on Other crops

Category & Crop	Thematic Area	Name of the technology	No. of Farmers	Area (ha)	Yield (q/ha)				% Change in Yield	Other Parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demo			Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average												
Cereals																			
Wheat Timely sown	INM	INM	10	4	51.3	40.0	45.71	40.14	14.06	-	-	27,896	104,676	76,780	3.77	26,788	91,911	65,124	3.45
Vegetables																			
Okra	Varietal Evaluation	GO-6	5	2	Standing														
Onion	Varietal Evaluation	GJRO-11	5	2															
Coriender	Crop production	GC-2	10	4	15.2	7.6	11.75	9.87	18.51	-	-	19,378	52,875	33,497	2.72	18,548	42,441	23,893	2.31
Spices & condiments																			
Cumin	IPM	IPM	10	4	8.2	5.6	6.88	6.31	9.91	-	-	19,554	100,448	80,895	5.15	19,194	89,003	69,809	4.65

* 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 Farm Implements and Machinery

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total
Cotton shredder	Cotton	Bio compost	12	175	Field capacity	0.20 ha/hr	-	-	-	-	-	-	-	-	-	-

FLD on Demonstration details on crop hybrids

Crop	technology demonstrated	Hybrid Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)			
					Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average						
Castor	Varietal Evaluation	GCH-9	10	4	15.3	10.2	11.94	10.3	16.24	28,600	51,342	22,742	1.80
Cotton	Crop Production	GTHH-49(Bt)	10	4	13.2	6.6	9.0	8.0	13.9	26,500	46,904	20,404	1.77

3.4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Package and practice of cotton	1	24	00	24	00	00	00	24	00	24
Organic farming in Kharif crops	1	54	00	54	15	00	15	69	00	69
Integrated nutrients management in Rabi crops	1	70	00	70	03	00	03	73	00	73
Total	**3**	**148**	**00**	**148**	**18**	**00**	**18**	**166**	**0**	**166**
II Horticulture										
b) Fruits										
Cultivation of Fruit	1	37	00	37	3	00	03	40	00	40
Total (b)	**1**	**37**	**00**	**37**	**3**	**00**	**03**	**40**	**00**	**40**
f) Spices										
Production and Management technology	2	75	00	75	07	00	07	82	00	82
Total (f)	**2**	**75**	**00**	**75**	**07**	**00**	**07**	**82**	**00**	**82**
GT (a-g)	**3**	**112**	**00**	**112**	**10**	**00**	**10**	**122**	**00**	**122**
III Soil Health and Fertility Management										
Soil and Water Testing	1	23	00	23	03	00	03	26	00	26
Total	**1**	**23**	**00**	**23**	**03**	**00**	**03**	**26**	**00**	**26**
IV Livestock Production and Management	**0**									
V Home Science/Women empowerment										
Design and development of low/minimum cost diet	2	00	52	52	00	00	00	00	52	52
Value addition	2	00	90	90	00	08	08	00	98	98
Women empowerment	3	00	85	85	00	00	00	00	85	85
Women and child care	1	00	23	23	00	04	04	00	27	27
Total	**8**	**0**	**250**	**250**	**0**	**12**	**12**	**0**	**262**	**262**
VI Agril. Engineering										
Installation and maintenance of drip irrigation	1	23	00	23	03	00	03	26	00	26
Use of plastic in farming practices	1	30	00	30	05	00	05	35	00	35

Farm machinery and its maintenance	1	28	00	28	02	00	02	30	00	30
Application of renewable energy in agriculture	1	36	00	36	05	00	05	41	00	41
Total	**4**	**117**	**00**	**117**	**15**	**00**	**15**	**132**	**00**	**132**
VII Plant Protection										
Integrated pest management in ground nut	1	34	00	34	00	00	00	34	00	34
Integrated pest management in pulses	1	34	00	34	00	00	00	34	00	34
Integrated disease management in Rabi crops	1	37	00	37	03	00	03	40	00	40
Production of bio control agents and bio pesticides	1	37	00	37	05	00	05	42	00	42
Total	**4**	**142**	**0**	**142**	**8**	**0**	**8**	**150**	**0**	**150**
VIII Fisheries	**00**									
IX Production of Inputs at site	**00**									
X Capacity Building and Group Dynamics										
Farmer interest group formation	1	55	00	55	14	00	14	69	00	69
FIG formation	1	29	2	31	12	3	15	46	05	51
Youth development through update knowledge on major Rabi crops	1	22	00	22	06	00	06	28	00	28
Youth Development through update knowledge on major summer crop	1	19	07	26	02	03	05	21	10	31
Update knowledge level of farmers about major summer crops	1	21	00	21	08	00	08	29	00	29
Total	**5**	**146**	**09**	**155**	**42**	**06**	**48**	**193**	**15**	**208**
XI Agro-forestry	**00**									
GRAND TOTAL	**28**	**688**	**259**	**947**	**96**	**18**	**114**	**789**	**277**	**1066**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
High density planting in cotton	1	66	60	126	02	00	02	68	60	128
Organic farming certification procedure	1	73	00	73	00	00	00	73	00	73
Package and practice of onion and garlic	1	47	00	47	00	00	00	47	00	47

Concept and importance of INM	1	73	00	73	00	00	00	73	00	73
Organic fertilizers preparation	1	60	00	60	17	00	17	77	00	77
Scientific production of kharif crops	1	52	0	52	8	0	8	60	00	60
Scientific production of cotton	1	31	0	31	4	0	4	35	00	35
Total	**7**	**402**	**60**	**462**	**31**	**0**	**31**	**433**	**60**	**493**
II Horticulture										
a) Vegetable Crops										
Nursery raising	1	28	08	36	00	00	00	28	08	36
Total (a)	**1**	**28**	**08**	**36**	**00**	**00**	**00**	**28**	**08**	**36**
b) Fruits										
Organic farming in Horticultural crop	2	88	06	94	03	04	07	91	10	101
Total (b)	**2**	**88**	**06**	**94**	**03**	**04**	**07**	**91**	**10**	**101**
c) Ornamental Plants	00									
d) Plantation crops	00									
e) Tuber crops	00									
f) Spices	00									
g) Medicinal and Aromatic Plants	00									
GT (a-g)	**3**	**116**	**14**	**130**	**3**	**4**	**7**	**119**	**18**	**137**
III Soil Health and Fertility Management	00									
IV Livestock Production and Management	00									
V Home Science/Women empowerment										
Value addition in fruits	1	00	70	70	00	30	30	00	100	100
Developing entrepreneurial skill among farm women through bakery products	1	00	77	77	00	03	03	00	80	80
Income generation activities for employment of rural women	2	00	106	106	00	32	32	00	138	138
Designing and development of low cost diet	2	00	69	69	00	11	11	00	80	80
Household food security by kitchen gardening and nutrition gardening	2	00	73	73	00	03	03	00	76	76
Importance of kitchen gardening	1	00	36	36	00	04	04	00	40	40
Total	**9**	**0**	**431**	**431**	**0**	**83**	**83**	**0**	**514**	**514**
VI Agril. Engineering										
Rain water harvesting	1	48	00	48	2	00	2	50	00	50
Farm machinery and its maintenance	1	27	00	27	03	00	00	30	00	30
Post harvest technology	1	22	00	22	03	00	03	25	00	25

Installation and maintenance of micro irrigation system	1	35	00	35	05	00	05	40	00	40
Total	**04**	**132**	**00**	**132**	**13**	**00**	**10**	**145**	**00**	**145**
VII Plant Protection										
Integrated disease management in oil seed crops	2	77	00	77	07	00	07	84	00	84
Integrated pest management	1	45	07	52	00	00	00	45	07	52
Importance of botanical pesticides for management to control pest	1	59	00	59	02	00	02	61	00	61
Scientific cultivation of pulse production under NFSM	1	49	00	49	00	00	00	49	00	49
Integrated pest and disease management in disease in field crop	1	51	00	51	00	00	00	51	00	51
Integrated management of fall army warm in maize	1	32	00	32	3	0	3	35	0	35
Role of Bio agents & its uses	1	49	00	49	9	0	9	58	0	58
Total	**8**	**362**	**7**	**369**	**21**	**0**	**21**	**383**	**7**	**390**
VIII Fisheries	0									
IX Production of Inputs at site	0									
X Capacity Building and Group Dynamics										
Leadership development	1	37	00	37	12	00	12	49	00	49
Update knowledge on organic farming	1	00	31	31	00	25	25	00	56	56
Use of mass media	1	20	00	20	05	00	05	25	00	25
Update knowledge level of farmer about major summer crops	1	21	00	21	08	00	08	29	00	29
Use of mass media	1	32	00	32	3	0	3	35	0	35
Total	**5**	**110**	**31**	**141**	**28**	**25**	**53**	**138**	**56**	**194**
XI Agro-forestry	0									
GRAND TOTAL	**36**	**1122**	**543**	**1665**	**96**	**112**	**205**	**1218**	**655**	**1873**

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Package and practice of cotton	1	24	00	24	00	00	00	24	00	24
Organic farming in Kharif crops	1	54	00	54	15	00	15	69	00	69
Integrated nutrients management in Rabi crops	1	70	00	70	03	00	03	73	00	73
High density planting in cotton	1	66	60	126	02	00	02	68	60	128
Organic farming certification procedure	1	73	00	73	00	00	00	73	00	73

Package and practice of onion and garlic	1	47	00	47	00	00	00	47	00	47
Concept and importance of INM	1	73	00	73	00	00	00	73	00	73
Organic fertilizers preparation	1	60	00	60	17	00	17	77	00	77
Scientific production of kharif crops	1	52	0	52	8	0	8	60	00	60
Scientific production of cotton	1	31	0	31	4	0	4	35	00	35
Total	**10**	**550**	**60**	**610**	**49**	**0**	**49**	**599**	**60**	**659**
II Horticulture										
a) Vegetable Crops										
Nursery raising	1	28	08	36	00	00	00	28	08	36
Total (a)	**1**	**28**	**08**	**36**	**00**	**00**	**00**	**28**	**08**	**36**
b) Fruits										
Cultivation of Fruit	1	37	00	37	3	00	03	40	00	40
Organic farming in Horticultural crop	2	88	06	94	03	04	07	91	10	101
Total (b)	**3**	**125**	**6**	**131**	**6**	**4**	**10**	**131**	**10**	**141**
c) Ornamental Plants										
d) Plantation crops										
e) Tuber crops										
f) Spices										
Production and Management technology	2	75	00	75	07	00	07	82	00	82
Total (f)	**2**	**75**	**00**	**75**	**07**	**00**	**07**	**82**	**00**	**82**
g) Medicinal and Aromatic Plants										
GT (a-g)	**6**	**228**	**14**	**242**	**13**	**4**	**17**	**241**	**18**	**259**
III Soil Health and Fertility Management										
Soil and Water Testing	1	23	00	23	03	00	03	26	00	26
Total	**1**	**23**	**00**	**23**	**03**	**00**	**03**	**26**	**00**	**26**
IV Livestock Production and Management										
V Home Science/Women empowerment										
Design and development of low/minimum cost diet	2	00	52	52	00	00	00	00	52	52
Value addition	2	00	90	90	00	08	08	00	98	98
Women empowerment	3	00	85	85	00	00	00	00	85	85
Women and child care	1	00	23	23	00	04	04	00	27	27
Value addition in fruits	1	00	70	70	00	30	30	00	100	100
Developing entrepreneurial skill among farm women through bakery products	1	00	77	77	00	03	03	00	80	80

Income generation activities for employment of rural women	2	00	106	106	00	32	32	00	138	138
Designing and development of low cost diet	2	00	69	69	00	11	11	00	80	80
House hold food security by kitchen gardening and nutrition gardening	2	00	73	73	00	03	03	00	76	76
Importance of kitchen gardening	1	00	36	36	00	04	04	00	40	40
Total	**17**	**0**	**681**	**681**	**0**	**95**	**95**	**0**	**776**	**776**
VI Agril. Engineering										
Installation and maintenance of drip irrigation	1	23	00	23	03	00	03	26	00	26
Use of plastic in farming practices	1	30	00	30	05	00	05	35	00	35
Farm machinery and its maintenance	2	56	0	56	4	0	4	60	0	60
Application of renewable energy in agriculture	1	36	00	36	05	00	05	41	00	41
Rain water harvesting	1	48	00	48	2	00	2	50	00	50
Post harvest technology	1	22	00	22	03	00	03	25	00	25
Installation and maintenance of micro irrigation system	1	35	00	35	05	00	05	40	00	40
Total	**8**	**249**	**0**	**249**	**28**	**0**	**28**	**277**	**0**	**277**
VII Plant Protection										
Integrated pest management in ground nut	1	34	00	34	00	00	00	34	00	34
Integrated pest management in pulses	1	34	00	34	00	00	00	34	00	34
Integrated disease management in Rabi crops	1	37	00	37	03	00	03	40	00	40
Production of bio control agents and bio pesticides	1	37	00	37	05	00	05	42	00	42
Integrated disease management in oil seed crops	2	77	00	77	07	00	07	84	00	84
Integrated pest management	1	45	07	52	00	00	00	45	07	52
Importance of botanical pesticides for management to control pest	1	59	00	59	02	00	02	61	00	61
Scientific cultivation of pulse production under NFSM	1	49	00	49	00	00	00	49	00	49
Integrated pest and disease management in disease in field crop	1	51	00	51	00	00	00	51	00	51
Integrated management of fall army warm in maize	1	32	00	32	3	0	3	35	0	35
Role of Bio agents & its uses	1	49	00	49	9	0	9	58	0	58
Total	**12**	**504**	**7**	**511**	**29**	**0**	**29**	**533**	**7**	**540**
VIII Fisheries										
IX Production of Inputs at site										
X Capacity Building and Group Dynamics										
Farmer interest group formation	1	55	00	55	14	00	14	69	00	69
FIG formation	1	29	2	31	12	3	15	46	05	51
Youth development through update knowledge on major Rabi	1	22	00	22	06	00	06	28	00	28

crops										
Youth Development through update knowledge on major summer crop	1	19	07	26	02	03	05	21	10	31
Update knowledge level of farmers about major summer crops	1	21	00	21	08	00	08	29	00	29
Leadership development	1	37	00	37	12	00	12	49	00	49
Update knowledge on organic farming	1	00	31	31	00	25	25	00	56	56
Use of mass media	1	20	00	20	05	00	05	25	00	25
Update knowledge level of farmer about major summer crops	1	21	00	21	08	00	08	29	00	29
Use of mass media	1	32	00	32	3	0	3	35	0	35
Total	**10**	**256**	**40**	**296**	**70**	**31**	**101**	**331**	**71**	**402**
XI Agro-forestry	00									
GRAND TOTAL	**64**	**1810**	**802**	**2612**	**192**	**130**	**319**	**2007**	**932**	**2939**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Procedure for organic farming certification	1	32	00	32	07	00	07	39	00	39
Plant protection appliances equipment	1	23	00	23	04	00	04	27	00	27
Introduction of integrated farming system	1	37	00	37	03	00	03	40	00	40
Renewable energy	1	47	00	47	07	00	07	54	00	54
TOTAL	**4**	**139**	**00**	**139**	**21**	**00**	**21**	**160**	**00**	**160**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Youth development through update knowledge on major Rabi crop	1	44	00	44	06	00	06	50	00	50
TOTAL	**1**	**44**	**00**	**44**	**06**	**00**	**06**	**50**	**00**	**50**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Procedure for organic farming certification	1	32	00	32	07	00	07	39	00	39
Plant protection appliances equipment	1	23	00	23	04	00	04	27	00	27
Introduction of integrated farming system	1	37	00	37	3	00	03	40	00	40
Renewable energy	1	47	00	47	07	00	07	54	00	54
Youth development through update knowledge on major Rabi crop	1	44	00	44	06	00	06	50	00	50
TOTAL	**5**	**183**	**0**	**183**	**27**	**0**	**27**	**210**	**0**	**210**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Pre-seasonal training for Kharif crop (Input dealer/ext. functionary)	1	44	00	44	00	00	00	44	00	44
Child care and development	1	00	60	60	00	05	05	00	65	65
TOTAL	**2**	**44**	**60**	**104**	**05**	**00**	**05**	**44**	**65**	**109**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Pre Seasonal training on Rabi crop	1	21	00	21	08	00	08	29	00	29
TOTAL	**1**	**21**	**00**	**21**	**08**	**00**	**08**	**29**	**00**	**29**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Pre-seasonal training for Kharif crop (Input dealer/ext. functionary)	1	44	00	44	00	00	00	44	00	44
Child care and development	1	00	60	60	00	05	05	00	65	65
Pre Seasonal training on Rabi crop	1	21	00	21	08	00	08	29	00	29
TOTAL	**3**	**65**	**60**	**125**	**8**	**5**	**13**	**73**	**65**	**138**

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Scientific production of kharif crops	1	52	0	52	8	0	8	60	00	60
Scientific production of cotton	1	31	0	31	4	0	4	35	00	35
Total	**2**	**83**	**0**	**83**	**12**	**0**	**12**	**95**	**0**	**95**
Production and value addition										
Organic farming in horticulture crops	1	42	00	42	0	0	0	42	0	42
Total	**1**	**42**	**00**	**42**	**0**	**0**	**0**	**42**	**0**	**42**
Home Science										
Importance of kitchen gardening	2	0	67	67	0	8	8	0	75	75
Total	**2**	**0**	**67**	**67**	**0**	**8**	**8**	**0**	**75**	**75**
Agricultural Extension										
Use of mass media	1	32	00	32	3	0	3	35	0	35
Total	**1**	**32**	**00**	**32**	**3**	**0**	**3**	**35**	**0**	**35**
Plant Protection										
Integrated management of fall army warm in maize	1	32	00	32	3	0	3	35	0	35
Role of Bio agents & its uses	1	49	00	49	9	0	9	58	0	58
Total	**2**	**81**	**0**	**81**	**12**	**0**	**12**	**93**	**0**	**93**
GRAND TOTAL	**8**	**238**	**67**	**305**	**27**	**8**	**35**	**265**	**75**	**340**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Value addition and bakery product	1	0	37	37	0	0	0	0	37	37
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**37**	**37**	**0**	**0**	**0**	**0**	**37**	**37**
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Income generation activities	0	0	0	0	0	0	0	0	0	0
Agricultural Extension	0	0	0	0	0	0	0	0	0	0
Grand Total	**1**	**0**	**37**	**37**	**0**	**0**	**0**	**0**	**37**	**37**

Details of trainings organized under ASCI

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Organic grower	1	20	00	20	00	00	00	20	00	20
Tractor operator	1	20	00	20	00	00	00	20	00	20
TOTAL	**2**	**40**	**00**	**40**	**00**	**00**	**00**	**40**	**00**	**40**

3.5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel
Advisory Services	57	57	-
Diagnostic visits	58	132	00
Field Day	17	273	-
Group discussions	15	160	-
Kisan Ghosthi	8	218	-
Film Show	8	515	-
Self -help groups	-	-	-

Kisan Mela	1	2500	780
Exhibition	1	326	0
Scientists' visit to farmers field	96	269	-
Plant/animal health camps	-	-	-
Farm Science Club	-	-	-
Ex-trainees Sammelan	-	-	-
Farmers' seminar/workshop	-	-	-
Method Demonstrations	7	237	-
Celebration of important days	2	351	-
Special day celebration	4	344	-
Exposure visits	-	-	-
Others (pl. specify)	-	-	-
Total	**274**	**5382**	**780**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	-
Extension Literature	5
Newspaper coverage	16
Popular articles	-
Radio Talks	-
TV Talks	-
Animal health camps (Number of animals treated)	-
Others (pl. specify)	-
Total	**21**

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

Production of seeds by the KVKs

Crop	Name of the crop	Name of the variety	Name of the hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers
Cereals						
Truthful	Wheat	GW-463	-	17.70	-	-
Oilseeds						
Foundation	Groundnut	GJG-22	-	26.60	-	-
Breeder	Sesame	GT-5	-	1.84	-	-
Pulses						
Foundation	Chickpea	GG-5	-	4.70	-	-
Total				**50.84**		

Production of planting materials by the KVK

Crop	Name of the crop	Name of the variety	Name of the hybrid	Number	Value (Rs.)	Number of farmers
Commercial	-	-	-	-	-	-
Vegetable seedlings	Brinjal	GJB-3	-	3000	1500	256
	Tomato	GT-3	-	1000	500	115
Fruits	-	-	-	-	-	-
Ornamental plants	-	-	-	-	-	-
Medicinal and Aromatic	-	-	-	-	-	-
Plantation	-	-	-	-	-	-
Spices	-	-	-	-	-	-
Tuber	-	-	-	-	-	-
Fodder crop saplings	-	-	-	-	-	-
Forest Species	-	-	-	-	-	-
Others	-	-	-	-	-	-
Total	**-**	-	**-**	**4000**	**2000**	**371**

Bio-Products (Only selling)

Bio Products	Name of the bio-product	Quantity (Kg)	Value (Rs.)	No. of Farmers
Bio Fertilizers	Rhizobium	44lit	5280	30
	Azatobactor	53 lit	6360	30
	PSB	54 lit	6480	36
Bio-pesticide	MDT tube	42	21000	8
Bio-fungicide	Beauveria bassiana	4607	691050	662
	Trichoderma	2481	173670	485
	Metarhizium	203	30450	52
Bio Agents	-	-	-	-
Others	Pheromone trap	1516	30320	130
	Gossy Lure	3436	34360	75
Total	-	-	**998970**	**1508**

Production of livestock materials: NIL

Soil/Water testing sample analysis

Sr. No.	Type of Sample	Numbers of sample	Income (Rs.)
1	Soil	78	23,400
2	Water	47	3,760
	Total	**125**	**27,160**

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

A. KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.): Quarterly Newsletter publication by university.

B. Literature developed/published

Item	Title	Authors name	Number
Research papers	Yield gap analysis through front line demonstration in castor.	P.J. Prajapati, N.S. Joshi, , M.L. Patel, & V. S Parmer	-
	Training need of farmers with respect to new agriculture services	H.C. Chhodavadia, N.S. Joshi, V. S Parmer, M.L. Patel, & P.J. Prajapati,	-
	Constraints faced by respondents in adoption of SAWAJ Trichoderma	N.S. Joshi, M.L. Patel, V. S Parmer, R.B. Baldaniya & P.J. Prajapati,	-
	Assessment of Knowledge Level of Farmers About Organic Farming In Amreli District of Gujarat	P. J. Prajapati, M. L. Patel & H C. Chhodavadia	-
	Awareness of scientific information for management to control pink boll worm by various training programme	M. L. Patel, A. M. Parakhia, N.S. Joshi, H.C. Chhodavadia, P.J. Prajapati, P. S. Jayswal & V. K. Karangiya	-
	Temperature trend in Bharuch district of Gujarat	K.N. Sondarva, P.S. Jayswal, M.G. Varma & V.A. Patel	-
	Impact of frontline demonstrations on yield of chickpea (Cicer arietinum L.) in Amreli district of Gujarat state	P J Prajapati, N S Joshi, M L Patel, V S Parmar, K K Gadhiya and N J Hadiya	-
Book chapters	Soil Health and Climate Change (Book titled: Advances in Agriculture Sciences, Vol.-3)	P.S. Jayswal & K.N. Sondarva	-
	Effect of Tillage on Soil Properties (Book titled: Advances in Agriculture Sciences, Vol.-6)	P.S. Jayswal & K.N. Sondarva	-
Technical reports	ZREAC Rabi, Kharif, AGRESCO, SAC, Monthly, Quarterly, Six monthly, Nine monthly, Annual report in English and Gujarati language	-	-
News letters	-	-	-
Technical bulletins	-	-	-
Popular articles	-	-	-
Extension literature	-	-	-
Others (Pl. specify)	-	-	-

C. Details of Electronic Media Produced: NIL

D. Success Stories / Case studies.

- **Success story:** Plastic mulch and drip irrigation in horticultural crop

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

Sr. No.	Crop/ Enterprise	Innovative Technology
1	Cumin	Line sowing instead of broadcasting
2	Cotton	Irrigation in alternate furrow
		Application of fertilizer in nitrogenous form
3	Groundnut	Application of fertilizer in SSP and Ammonium Sulphate form
4	Wheat	Spraying of DiEthane M-45 at milking stage to avoid diseases.

F. Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1.	All Line sowing crops	Manually operated seed drill	Sowing purpose
2.	Groundnut/Cotton	Sprayer operating by Bicycle	Spraying purpose
3.	Cotton	Extraction of cow urine with dhatura and desi akda	For the control of sucking pest of cotton
4.	Cotton	Fermented Bajra extract	Larvae of cotton pest
5.	Pulses and cereals	Use of Neem leaves	Storage purpose
6.	Castor	Use of milk of Castor	Stem rot of castor

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

A. Practicing Farmers

a) Power point presentation
b) Posters
c) Live samples

B. Rural Youth

a) Power point presentation
b) Posters
c) Live samples
d) Film/ video show

C. In-service personnel

a) Power point presentation
b) Posters
c) Live samples

5.2. Indicate the methodology for identifying OFTs/FLDs

For OFT:

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

For FLD:

i) New variety/technology
ii) Poor yield at farmers level
iii) Existing cropping system

5.3. Field activities

Name of villages identified/adopted with Amreli block name (from which year)	No. of farm families selected per village	No. of survey/ PRA conducted	No. of technologies taken to the adopted villages	Name of the technologies found suitable by the farmers of the adopted villages	Impact (production, income, employment, area/technological horizontal/vertical)	Constraints if any in the continued application of these improved technologies
Kerala (Jogani)	Whole village	15	07	• New varieties of various crops like groundnut, cotton, sesame, wheat etc. • INM • IPM • IDM • Natural resource conservation • New farm machineries • Animal feed management	• Overall increase in production of crops and income of farmers. • Due to good results of crop demonstration adoption of new varieties increased and area under crop increased.	• Getting farmers convinced about new technology adoption.
Harsupur Devaliya						
Saladi						
Jatruda						
Vandaliya						
Lunidhaar						
Haalariya						
Ditla						
Babapur						
Shedubhar						
Vaankiya						
Lakhapadar						
Nesdi						
Oliya						
Maandardi						

5.4. No. and Name of villages adopted for Doubling Farmers Income.

Sr. No.	Village name	Benchmark survey
1.	Karjala	Done
2.	Nesdi	Done
3.	Oliya	Done
4.	Saladi	Done
5.	Sedubhar	Done

6. LINKAGES

A. Functional linkage with different organizations

Name of organization	Nature of linkage
Dy. Director of Agriculture.	Conducting training programmes
Dy. Director of Agril. Extension (FTC)	Conducting training programmes
Dy. Director of Horticulture	Conducting training programmes
Dy. Director of Animal Husbandry	Conducting training programmes
Dy. Director of Soil Conservation	Conducting training programmes
Dy. Director of Social Forestry	Conducting training programmes
Amreli Jilla Madhya sahakari bank	Conducting training programmes
Milk Co-Operative Society	Conducting training programmes
State Bank of India	Conducting training programmes
National Bank for Agriculture & Rural Development (NABARD)	Conducting training programmes
NHRDF	Conducting training programmes
Doordarshan Kendra	Conducting training programmes
All India Radio	Conducting training programmes
District Rural Development Agency	Conducting training programmes
ATMA	Conducting training programmes
Mahindra & Mahindra Co. Ltd.	Conducting training programmes

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Agricultural Technology Information Centre (ATIC)	2005-06	State Government	7,50,000
National Initiative on Climate Resilient Agriculture (NICRA)	2015-16	CRIDA, Hyderabad	15,50,000
Cluster base FLD of Rabi Pulses under NFSM	2015-16	ICAR, New Delhi	1,50,000
National Mission on Oilseeds and Oil Palm (NMOOP)	2015-16	ICAR, New Delhi	1,82,546
Sub-Mission for Seed and Planting Material (SMSP)	2016-17	ICAR, New Delhi	2,34,375

C. Details of linkage with ATMA

a) Is ATMA implemented in your district **Yes**

If yes, role of KVK in preparation of SREP of the district? **Providing field data.**

Coordination activities between KVK and ATMA

S. No.	Programme	Particulars	No. of programmes attended by KVK staff	No. of programmes Organized by KVK	Other remarks (if any)
01	**Meetings**	Field day	3	-	-
02	**Research projects**	-	-	-	-
03	**Training programmes**	6	6	-	-
04	**Demonstrations**				
05	**Extension Programmes**				
	Kisan Mela	1	1	-	-
	Technology Week	1	-	1	-
	Exposure visit	-	-	-	-
	Exhibition	1	-	1	-
	Soil health camps	-	-	-	-
	Animal Health Campaigns	-	-	-	-
	Special day celebration	3	-	3	-
06	**Publications**	-	-	-	-
07	**Other Activities**				
	Farmers field visit	20			ATMA & KVK combined activity
	Best farmer award visit	21			
	ATMA AMC/GB/ KVK SAC meeting	5			
	ATMA & KVK combine planning meeting	8			

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

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

F. Details of linkage with RKVY: NIL

7. Convergence with other agencies and departments: NIL

8. Innovator Farmer's Meet

Sl.No.	Particulars	Details
1.	Have you conducted Farm Innovators meet in your district?	No

9. Farmers Field School (FFS): NIL

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

Crop	Variety/Input	Farmers' reaction
Gram	GJG-3	► High Yield Variety ► Bold seeded Variety ► Stunt virus resistant Variety
Cumin	IDM	►Less problem of wilt due to application of Trichoderma ►Less problem of blight and powdery mildew due to spraying of carbendazim and Hexaconazole
Wheat	GW-173	►Resistant to Shoot borer ►High yielding ►Best for late sowing
Wheat	GJW-463	►High Yield Variety ►Grain quality is good
Green Gram	GAM-5	►Highly resistant to Yellow Mosaic Virus (YMV) ►Bold seed size with attractive shiny grain appearance
Groundnut	GJG-22	►Higher production ►Less stem rot problems ►Quality of seed is good
Sesame	GT-3	►Bold seeded, whiteness more and higher production then other varieties ►Better for Summer cultivation
Cotton	INM	► Less reddening of leaves ►Higher Yield
Cotton	GTHH-49	► Higher Yield ►Suitable for High density planting
Cotton	IPM	► Better control of pests ►Economic to other chemical pesticides
Castor	GCH-9	►Resistance to wilt, root rot and tolerant to sucking pests ►Higher Yield
Sorghum	GFS-5	►High yielder ►Resistance to major pests and diseases and suitable under drought condition
Pigeon Pea	GJP-1	►High yielding ►Bright white colored seed gives good price in market

10.2.Technical Feedback from the KVK Scientists (Subject wise) to the research institutions/universities: We have presented in ZREAC and AGRESCO meetings of university.

11. Technology Week celebration during 2018-19: Yes

Period of observing Technology Week: From 24.09.2017 to 28.09.2017
Total number of farmers visited : 326
Total number of agencies involved : 04
Number of demonstrations visited by the farmers within KVK campus: 12

Other Details

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Gosthies	4	92	Groundnut, Sesamum, Cotton, Wheat
Lectures organized	27	326	Horticultural and agricultural crops
Exhibition	5	326	-
Film show	5	326	-
Fair	1	326	-
Farm Visit	5	326	Groundnut, Sesamum
Diagnostic Practical	0		-
Supply of Literature (No.)	4	326	All crops
Supply of Seed (q)	0		-
Supply of Planting materials (No.)	4	20	Brinjal, tomato, beans
Bio Product supply (Kg)	0	0	-
Bio Fertilizers (q)	0	0	-
Supply of fingerlings	0	0	-
Supply of Livestock specimen (No.)	0	0	-
Total number of farmers visited the technology week	-	326	-

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

13. IMPACT

A. Impact of KVK activities (Year 2012-15).

Sr. No.	Technological indicator	Impact of Krishi Vigyan Kendra				Difference	Rank
		Before		After			
		Frequency	Percent	Frequency	Percent		
1	Introduction of new verities	26	23.21	86	76.79	53.57	**I**
2	Increase in yield / productivity	50	44.64	62	55.36	10.71	**VIII**
3	Increase in area	53	47.32	59	52.68	5.36	**X**
4	Increase in production	33	29.46	79	70.54	41.07	**II**
5	Extent of adoption	42	37.50	70	62.50	25.00	**IV**
6	Increase in income	42	37.50	70	62.50	25.00	**IV**
7	Generation of employment	52	46.43	60	53.57	7.14	**IX**
8	Expansion of an enterprise	49	43.75	63	56.25	12.50	**VII**
9	Introduction of new enterprise	49	43.75	63	56.25	12.50	**VII**
10	Increase in marketable farm produce	45	40.18	67	59.82	19.64	**V**

11	Creation of infrastructure	42	37.50	70	62.50	25.00	**IV**
12	Opening of farm school	47	41.96	65	58.04	16.07	**VI**
13	Decrease in yield gaps	41	36.61	71	63.39	26.79	**III**

B. Cases of large scale adoption

B. 1. Cotton shredder

KVK advised farmers, the stalks to be mixed with soil either directly or by mechanized chopping. KVK demonstrated the cotton shredder developed by Junagadh Agricultural University in many villages of Amreli district and advised famers; to collect the cotton stalks after harvest and mechanically chopped by cotton shredder. Farmers get organic manure after composting of shredded material. It adds organic matter to the soil and reduces the risk of soil erosion.

Where cotton stalks are mechanically chopped and integrated into the soil, 48% of the nitrogen, 41% of the phosphor and 74% of the potassium taken from the soil by the cotton plant is returned to the soil (Basoglu, 1964).

Cotton stubbles contain more than 1.11% of Nitrogen, 0.1% of Phosphorous, and 3.98% Potash. This means that the grown crop can supplement 1.5 tons of Carbon, 20-25 kg of Nitrogen and 72 kg of Potash from the cotton stubbles collected from one hectare of cotton cultivated area. After shredding, the chips used as a feeding material for composting process, or in vermicompost preparation and other compost pits. Commercial microbial cultures can be used on the chips/ powder of stubbles to fasten the decomposition process. Machine cut cotton stalk of particle size, 2 to 2.5 cm which is recommended for quick composting.

Output: KVK demonstrated this technology in more than 100 villages of Amreli and also covered 675 hectare. More and more numbers of farmer are asking for demonstration of cotton shredder, as this helps them to improve nutrient quality of their soil.

Table 1: Year wise use of cotton shredder by farmers and area covered.

Year	Crop	No. of farmers	Area (ha)
2018-19	Cotton	12	175
2017-18	Cotton	10	80
2016-17	Cotton	10	120
2015-16	Cotton	10	150
2014-15	Cotton	10	150

B. 2. Use of IPM to control pink boll worm in cotton crop

An awareness programme in Amreli district by Krishi Vigyan Kendra, Junagadh Agricultural University, Amreli was launched which was supported by ATMA, State department and NGOs; for organizing training programme about IPM of pink boll worm in cotton crop.

Advance planning was made and implemented strategies to control pink boll worm by using various IPM tools like bio-pesticides, mechanical devices and also provided valuable information for management by cultural practices like deep ploughing, timely sowing varieties of cotton, early mature variety and avoided crop ratooning. Proper literatures like folders, pamphlets, leaf lets, text messages and audio-visual aids were provided to the farmers.

Farmers of Amreli district were benefited by scientific and technological information about IPM of pink boll worm of cotton and necessary guidance was also provided by scientists of Krishi Vigyan Kendra, Junagadh Agricultural University, Amreli (Gujarat).

Output: Due to continuously providing knowledge of scientific package of practices and technologies to farmers by various training programmes, farmers got aware about various benefit of modern and scientific approach to control pink boll worm through utilization of bio-pesticides and mass trapping of pink boll worm adults by mechanical devices like pheromone trap and this reduced the application of hazardous pesticides and also farmers started useing bio materials for control of pink bollworm of cotton which was purchased from Krishi Vigyan Kendra, JAU, Amreli at very nominal prices as compared to marketed rate produced by Junagadh Agricultural University under Savaj brand.

Table: Selling of bio-products:

Bio-product	Sold Qty.			Benefitted farmers		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Beauveria bassiana	17000	7235	4607	1450	1150	662
Pheromone trap	7050	2354	1516	540	295	130
Gossy Lure	8500	9403	3436	485	685	75
			Total	**2475**	**2130**	**867**

C. Details of impact analysis of KVK activities carried out during the reporting period: From 2015-16 to year 2018-19 Impact study will be done in year 2019-20

14. Kisan Mobile Advisory Services

Month	No. of SMS sent	No. of farmers to which SMS was sent	No. of feedback / query on SMS sent
April 2018	2	189660	-
May	5	474150	-
June	2	189660	-
July	2	189660	-
August	2	189660	-
September	1	94830	-
October	3	284490	-
November	2	189660	-
December	4	379320	-
January 2019	3	284490	-
February	3	284490	-
March	2	189660	-

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marke-ting	Aware-ness	Other enterprise	Total
KVK, JAU, Amreli	Text only	31	2	1	0	2	3	**39**
	Voice only	0	0	0	0	0	0	**0**
	Voice & Text both	0	0	0	0	0	0	**0**
	Total Messages	**31**	**2**	**1**	**0**	**2**	**3**	**39**
	Total farmers Benefitted	**2939730**	**189660**	**94830**	**0**	**189660**	**284490**	**3698370**

15. PERFORMANCE OF INFRASTRUCTURE IN KVK

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

Sl. No.	Demo Unit	Year of establishment	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1.	Herbal Garden	May-2007	0.5	40	-	-	-	-	Demonstration purpose
2.	Orchard Unit	2008	0.5	62	-	-	-	-	
3.	Net House	2009	0.15	-	-	-	-	-	
4.	Poly House	2009	0.25	-	-	-	-	-	

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

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty. (q)	Cost of inputs	Gross income	
Cereals									
Wheat	16/11/19	02/03/19	0.5	GJW-463	Truthful	17.7	15,000	-	-
Pulses									
Gram	17/11/19	03/03/19	0.5	GJG-3	Truthful	4.7	12,000	-	
Oilseeds									
Groundnut	09-26/07/18	16-19/11/18	6.0	GJG-22	Foundation	26.6	1,80,000	-	-
Sesame	26/07/18	09/10/18	1.5	GJT 5	Breeder	1.84	30,000	-	-
Fibers	-	-	-	-	-	-	-	-	-
Spices & Plantation crops									
Floriculture	-	-	-	-	-	-	-	-	-
Fruits	-	-	-	-	-	-	-	-	-
Vegetables									
Onion			0.1	GO-11	Truthful		10,000		

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

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

E. Utilization of hostel facilities: NIL

F. Database management

S. No	Database target	Database created
1.	-	

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

Amount sanction (Rs.)	Expenditure (Rs.)	Details of infrastructure created / micro irrigation system etc.	Activities conducted					Quantity of water harvested in '000 litres	Area irrigated / utilization pattern
			No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)		
3,00,000	3,00,000	2.0 ha	2	7	-	158	8	-	-
40,000	40,000	-	1	6	-	132	4	-	-

16. FINANCIAL PERFORMANCE

A. Details of KVK Bank accounts

Bank account	Name of the bank	Location	Branch code	Account Name	Account Number	MICR Number	IFSC Number
With Host Institute	State Bank of India	Agril campus, Junagadh	-	-	-	-	-
With KVK	State Bank of India	Amreli (Current A/C) Amreli (Saving A/C)	0312	KVK Fund A/c	10837874780 10837877690	365002601	SBIN0000312

B. Utilization of KVK funds during the year 2018-19 (Rs. in lakh)

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**	80.00	76.00	72.00
2	**Traveling allowances**	1.25	1.0	0.76
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	13.00	12.00	12.80
B	POL, repair of vehicles, tractor and equipments	-	-	-
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	-	-	-
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	-	-	-
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	-	-	-
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	-	-	-
G	Training of extension functionaries	-	-	-
H	Maintenance of buildings	-	-	-
I	Establishment of Soil, Plant & Water Testing Laboratory	-	-	-
J	Library	-	-	-
TOTAL (A)		**94.25**	**89.00**	**85.56**
B. Non-Recurring Contingencies				
1	**Works**	-	-	-
2	**Equipments including SWTL & Furniture**	-	-	-
3	**Vehicle** (Four wheeler/Two wheeler, please specify)	-	-	-
4	**Library** (Purchase of assets like books & journals)	-	-	-
TOTAL (B)		-	-	-
C. REVOLVING FUND		-	-	-
GRAND TOTAL (A+B+C)		**94.25**	**89.00**	**85.56**

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

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year
April 2016 to March 2017	28.04	40.97	32.63	36.38
April 2017 to March 2018	36.38	26.98	19.04	44.32
April 2018 to March 2019	44.32	22.02	11.93	54.42

17. Details of HRD activities attended by KVK staff during year

Name of the staff	Designation	Title of the training programme	Institute where attended	Dates
Dr. M. L. Patel	Action plan and Review workshop of NICRA	KVK, Jalna, Maharashtra	02	10-11/09/2018
Dr. M. L. Patel	Training of trainers program under skill development training program	AAU, Anand	03	25-27/09/2018
Prof. V.S Parmer	Training of trainers program under skill development training program	KVK, Bhavnagar	03	25-27/09/2018
Prof. V.S Parmer	A Review workshop for cluster frontline demonstration on oilseed and pulses organized	AAU, Anand	03	
Mr. P. J. Prajapati	Extension Strategies for Doubling the Farmers' Income for Livelihood Security	Anand	2	26-27/04/2018
Mr. P. J. Prajapati	Preparation and dissemination of Agromet Advisories at Block level	KVK, Aurangabad (Maharashtra)	2	06-07/07/2018
Mr. P. J. Prajapati	Agromet and Media Workshop	GIDM,Gandhinagar	1	26/10/2018

18. Other Schemes Activities

18.1 Agriculture Technology Information Centre Activities (ATIC):

I. Trainings

Sr. No.	Types of training	No. of Training	No. of participants
1	On Campus	13	339
2	Off Campus	10	535
	Total	**23**	**874**

II. Front Line Demonstration: (ATIC)

Sr. No.	Crop	Season	Component /Variety	No. of FLD	Area (ha.)	Average yield (Q/ha)		% increase in productivity over local check
						Demo.	Local check	
1	Green gram	Summer 18	GAM-5	25	6.25	7.99	6.70	21.34
2	Sesame	Summer 18	GT-3	25	6.25	6.82	5.90	20.61
3	Cotton	Kharif 18-19	G.Cot.10 (Bt)	20	08	10.07	8.33	26.89
4	Cotton	Kharif 18-19	IPM	50	12.5	10.85	9.15	18.62
5	Groundnut	Kharif 18-19	GJG-22	20	05	11.05	8.81	30.15
6	Groundnut	Kharif 18-19	IPM	50	12.5	10.85	9.15	18.62
7	Sesame	Kharif 18-19	GT-3	10	2.5	6.5	5.16	28.36
8	Wheat	Rabi 18-19	GW 463	25	6.25	41.84	31.93	31.04
9	Gram	Rabi 18-19	GJG-3	25	6.25	20.10	16.66	20.62
10	Cumin	Rabi 18-19	IDM	25	6.25	7.98	6.73	18.58
			Total	**275**	**71.75**			

18.2 Activities under National Innovations on Climate Resilient Agriculture (NICRA)

I. Trainings:

Thematic area	No. of Courses	No. of beneficiaries		
		Male	Female	Total
Role of Micro irrigation in Water Management	1	47	00	47
Importance of soil health card	1	43	00	43
Developing entrepreneurial skill through bakery products	1	22	58	80
Organic Farming	1	70	0	70
Importance of bio-pesticides in field crops	1	140	0	140
Total	**5**	**322**	**58**	**380**

II. Front Line Demonstration: (NICRA) Kharif 2018

Sr. No.	Crop	Season	Component /Variety	No. of FLD	Area (ha)	Average yield (Q/ha)		% increase in productivity over local check
						Demo.	Local check	
1	Green gram	Kharif 18-19	Variety (GAM-5)	05	2.0	7.8	6.3	24.7
2	Sesame	Kharif 18-19	Variety (GT-4)	20	8.0	8.4	7.1	18.2
3	Castor	Kharif 18-19	Variety (GCH-9)	05	2.0	14.7	11.9	22.9
4	Sesame	Kharif 18-19	Castor cake, Trichoderma	20	8.0	7.7	6.2	25.3
	Cotton	Kharif 18-19	1) Sowing of castor (1 kg) as a Trap crop, maize (1 kg) as a border crop and blackgram (2 kg) as a intercrop 2) Installation of pheromone trap @2 trap/ acre	20	8.0	16.2	13.7	23.1
			Total	**70**	**28**			

III. Front Line Demonstration: (NICRA) Rabi 2018-19

Sr. No.	Crop	Season	Component /Variety	No. of FLD	Area (ha)	Average yield (q/ha)		% increase in productivity over local check
						Demo.	Local check	
1	Wheat	Rabi 2018-19	Variety (GW-173)	05	2.0	43.0	36.4	18.13
2	Gram	Rabi 2018-19	Variety (GJG-3)	20	8	15.40	13.00	18.46
3	Dragon Fruit	Rabi 2018-19	-	05	-	-	-	-
			Total	**30**	**10**			

III. Livestock:

Intervention undertaken	No. of units	No. of farmers covered
Year round fodder production strategies	8 ha	20
	2 ha	05
Mineral Mixture Supplementation	50 Animals	50
Feeding management	50 Animals	50

IV. Extension Activities

Thematic area	No. of activities	No. of beneficiaries		
		Male	Female	Total
Agro advisory services	18	663	176	839
Method demonstration	27	371	143	514
Field Day	15	194	34	228
Group discussion	28	421	123	544
Diagnostic visit	39	390	162	552
Awareness	20	283	165	448
Exposure visit	9	245	70	315
Total	**156**	**2567**	**873**	**3440**

V. Equipment Procurement of Farm Machinery/Implements for Custom Hiring Centre:

Name of the implement	No. of units	Rent / hour	No. of beneficiaries	Revenue generated (Rs.)	Implement used for which crop
Battery operated sprayer	5	23	51	290	Cotton, Groundnut, Sesame
Rotavator	2	36	51	10600	Cotton and Groundnut
Mobile Shredder	1	101 hrs	15	10100	Cotton
Motor operated Chaff cutter	2	48 hrs	8	4890	Sorghum Maize Hy. Napier Bajra
Multipurpose thresher	1	8 hrs	4	800	Green Gram, Sesame
Drip Line Collector	5	16	20	400	Cotton
Automatic seed-cum-fertilizer drill	1	13	19	1790	Groundnut, Wheat
Secateur	10	11	18	360	Lemon
Seed dressing drum	5	8	11	80	Groundnut
Total	**32**	**264**	**197**	**29310**	

18.3 I. Activities-Cluster base Front Line Demonstrations of Rabi and Summer Pulses under NFSM:

Sr. No.	Types of training	No. of Training	No. of participants
1	On campus	1	43
2	Off campus	1	80
3	Field Day	2	29
4	Field visit	3	7
5	Sponsored training	1	60
	Total	**8**	**219**

II. Cluster Front Line Demonstrations of Rabi Pulses under NFSM:

Sr. No.	Crop	Season	Component /Variety	No. of FLD	Area (ha)	Average yield (q/ha)		% increase in productivity
						Demo.	Local check	
1	Pigeon pea	Kharif 18-19	GJP-1 Trichoderma HNPV, Rhizobium, Pheromone Trap, Helilure, Pendimethalin	50	20	7.40	6.48	14.87
2	Green gram	Kharif 18-19	GM-4 Beauveria, Trichoderma, Rhizobium, PSB	50	20	6.56	5.45	20.38
3	Gram	Rabi 18-19	GJG 3, Trichoderma,pheromone trap, Helilure, HNPV	50	20	23.5	18.6	26.34
			Total	**150**	**60**			

18.4. I. ACTIVITIES-CLUSTER BASE FRONT LINE DEMONSTRATIONS OF OILSEED UNDER NMOOP:

Sr. No.	Types of training	No. of Training	No. of participants
1	Off campus	1	23
2	Field Day	3	41
3	Sponsored training	1	110
	Total	5	174

II. CLUSTER FRONT LINE DEMONSTRATIONS OF OILSEED UNDER NMOOP:

SN	Crop	Season	Component /Variety	No. of FLD	Area (ha)	Average yield (q/ha)		% increase in productivity over local check
						Demo.	Local check	
1	Ground nut	Summer 2018	GJG -31	50	20	21.97	18.75	17.17
2	Ground nut	Kharif - 2018-19	GJG-22 , Metarhizium Rhizobium, PSB	27	6.80	17.25	13.67	26.91
3	Ground nut	Kharif - 2018-19	Metarhizium Rhizobium, PSB	23	9.20	14.83	12.60	18.27
	Sesame	Kharif - 2018-19	GT-4 and Trichoderma, Azadirechtin, Beauveriya, Pendimethalin	50	20	06.75	05.69	19.03
			Total	**150**	**60**			

19. SPECIAL EVENTS CELEBRATED

❖ **Mahila Sashaktikaran Pakhavadiyu:**

Mahila Sashaktikaran Pakhavadiyu was celebrated from 01 August 2018 to 14 August, 18. Various lecture and activities were planned like dairy activities, importance of balance diet, entrepreneurship development through bakery products, storage of grains, organic farming and role of women in agriculture to motivate the farm women regarding their self-development in agriculture and allied filed. In this programme, 100 farm women take active participation.

❖ **Technology week:**

Technology week have celebrated from 24 September 2018 to 28 September 2018 at Krishi Vigyan Kendra, Amreli, with a view to create mass awareness among the farmers about the location specific advanced technologies for the sustainable agricultural production. Seminars and demonstrations on advanced technologies in agriculture and allied discipline such as horticulture, plant protection, crop production, agriculture engineering, animal science, and home science have been conducted during the week. Total 326 participants including 257 farmwomen and 69 farmers from about 14 villages of amreli district were benefitted.

- **Dignitories visit at KVK:**

Hon'ble Parshottambhai Rupala sir, Union minister of the State-Agriculture, farmers welfare & panchayati raj's and Member of Parliament (Amreli), Hon'ble Narayanbhai Kachhadia visited at kvk, JAU, Amreli and delivered various fruitful information by Hon'ble minister to 110 farmers and farm women. on this event Hon'ble Dilipbhai Sanghani, Chairman of GUJCOMASOL and Chairman of NASCOB, Hon'ble Dr. A. R. Pathak sir, Vice Chancellor, Junagadh Agricultural University, Junagadh, Dr. V. P. Chovatia, Director of Research, Junagadh Agricultural University, Junagadh, Dr. A. M. Parakhia sir, Director of Extension Education, Junagadh Agricultural University, Junagadh, Mr. Yogendra Kumar, MKD, IFFCO remain present on 13 august 2018.

- **Women agriculture day**-

Women Agriculture Day Celebrated on Saturday. On 06/08 / 2016 at Krishi Vigyan Kendra, keriya Road, Amreli with the co-operation of DAO and ATMA. On this occasion, Mr. K.K.Patel, District Agricultural Officer, Amreli, , Dr. B.A.Monapara, Research Scientist, ARS Amreli, Dr. P.R.Chhodavadia, Deputy Director Agriculture, Mr. Savaliya Sir, Deputy Director of Animal Husbandry and Mr. J.D.Vala, Horticulture Department remains present in this programme. Prof. Hemangiben Mehta, Asstt. Professor, Polytechnic in Home Science delivered lecture women empowerment, achievement of great women of the world. Prof. Neha Tiwari delivered lecture on women rights small scale industries. Nitaben Chauhan gave information about 181 Mahila Help Line. Parulben Mahida gave information about Role of Police for women and different services by police department. Various Lectures on role of women agriculture, value addition, food grain storage, organic farming and control of pink boll warm were given by scientist and officers. Women have purchase vegetables seeds and seedlings from the KVK nursery. 120 women of Amreli district participated this programme

❖ **Swachta hi Seva and Tree Plantation:**

Swachta hi Seva and Tree Plantation programme was organized during 15th September, 2018 to 2nd October, 2018 at Krishi Vigyan Kendra, JAU, Amreli total 251 participants took part in various activities like,

- ✓ Organize cleaning streets, drains and back alleys through awareness drives
- ✓ Organize waste collection drives in households and common or shared spaces
- ✓ Conduct door-to-door meeting to drive behaviour change with respect to sanitation behaviors
- ✓ Organize awareness campaigns around better sanitation practices like using a toilet, hand washing, health and hygiene awareness

- ✓ Conduct Village or School-level rallies to generate awareness about sanitation
- ✓ Wall paintings of Swachhata

- **Other events celebration –**

So. No.	Special events	Date	Male	Female	Total
1.	Interaction of Hon'ble Prime Minister with members of SHGs and women groups on	12/06/2018	--	--	80
2.	Kisan Mahila Divas	15/10/2018	00	60	60
3.	Skill development training under ASCI for organic grower	16/01/2019 to 16/02/2019	20	00	20
4.	Skill development training under ASCI for tractor operator	16/01/2019 to 16/02/2019	20	00	20
5.	PM . Kisan Sanman Nidhi Yojna	24/02/2019	286	00	286
6.	Input dealer training	48 weeks	54	03	57
7.	World soil health day	05/12/2018	124	00	124
8.	Swacchta hi sewa	17/12/2018 to 31/12/2018	All KVK, Amreli staff with participants of different village		
9.	Kisan mela	15/02/2019	--	--	2473
10.	International women day celebration	08/03/2019	00	40	40

20. Project (Completed)

Project 1- (Old): Adoption of Improved Cultivation Practices of Gram in Amreli District

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Introduction

Gram is one of the important pulse crops in Amreli district of Saurashtra region. Gram has great importance in human diet due to its content protein. Among the pulse crop, Gram is an important and unique food legume because the variety of food products like snake food, sweets, condiments and vegetables are prepared from its worldwide. Amreli is agriculture dominated district. About 80 % of population is engaged in agriculture and allied activities. The Amreli district offers good scope for Agricultural development. Agricultural Production potential depends mostly on the management practices. These practices vary significantly across various agro-ecological regions due to many factors.

It showed improvement in gram production is needed through conservation, diversification of agriculture and to enhance adoption level of improved gram production technology. So to increase the productivity, particularly under rainfed gram growing regions is one of the major challenges and concern which need to be addressed on priority basis. Variety of seed is one of the important factors for increasing productivity among the other yield attributing input available in gram cultivation. The genetic potential of grain yield of gram is still under estimated as a result of strong and dominating effects of economy. The fact is that the ultimate aim of gram growers is to get higher remunerative income through use of superior varieties existing once in yielding ability, disease and insect resistance and other characteristics.

But many hurdles for successfully adoption of improved cultivation practices of gram in Amreli district. Gram crop is suffering from various insect, pest, disease, weed and Nutrient deficiency among them the pest attack create more losses throughout their production and farmers uses various pesticide for production of Gram.

There is less area 2400 ha in the Amreli under gram crop. Gram is one of the important pulse crop which are source of protein for human being. Now a day's demand of gram is also increases day by day. So it is necessary to know the constraints faced by the farmers in adoption of gram crop.

Keeping this fact in view, it is necessary to carried out study on adoption of improved cultivation practices of gram in Amreli district, with following specific objectives.

Objectives

1. To study the profile characteristics of the respondents.
2. To know the adoption level of respondents regarding improved cultivation practices of gram.
3. To study the constraints faced by the respondents in adoption of improved cultivation practices of gram.
4. To study the suggestions made by the respondents to overcome the constraints.

Methodology

The present study was conducted in Amreli district of Saurashtra region. Three taluka like Dhari, Amreli, Babra where major number of FLDs given in previous years purposively selected and from each taluka three villages selected randomly. Total nine villages from selected talukas constitute the total sample size 90 means each village 10 farmers selected for study.

Ex-post-facto research design was used in the present investigation. The interview schedule was developed keeping in view the specific objectives of the study and the data was collected by survey method during 2018-19.

Table 1. List respondents selected for the study

Sr. No.	Name of Taluka	Name of Village	No. of respondents
1.	**Amreli**	Haripura	10
		Keriya nagas	10
		Babapur	10
2.	**Dhari**	Ditla	10
		Sarasiya	10
		Gigasan	10
3.	**Bagasara**	Halariya	10
		Vaghaniya Juna	10
		Rafala	10
		Total	**90**

Adoption of the respondents about improved practice of gram was measured by computing the adoption score. In all seventeen statements in respect to improved practice of gram were prepared with the help of experts from the JAU,Junagadh; KVK, Amreli and CoA, JAU, Motabhandariya. If respondent has given "fully adopted" answer to any sub-questions under the head, the "three" score was given likewise "two" score for "Partially adopted" and "ONE" score was given for those who had given "Not adopted" answer.

The respondents were grouped into three levels of adoption by using mean and standard deviation.

Sr. No.	Category	Range
1.	Low level of adoption	$\leq \overline{X}$ - S.D.
2.	Medium level of adoption	In between $\overline{X} \pm$ S.D.
3.	High level of adoption	$\geq \overline{X}$ + S.D.

Constraints refer as the items of difficulties as perceived by the respondents to adopt improved practice of gram. Percentage was worked out for each of the constraints and overall ranks

were assigned on the basis of percentage. Based on the constraints perceived by the respondents to adopt improved practice of gram, possible suggestions were seeked from them. Percentage was work out for each suggestion and overall ranks were assigned on the basis of percentage.

Result discussion

Personal Profile of Respondents Cultivate Gram

Age

Respondents were asked to indicate their age in at the time of interview complete years and classified in three groups as shown in Table-2. The data presented in Table -5 shows that majority of the respondents 54.44 per cent were found in middle age group, whereas 28.89 per cent and 16. 67 per cent of them were in the young age group and old age group, respectively.

Table 2. Personal profile of the farmers **n=90**

Sr. No.	Age	Frequency	Per cent
1.	Young age group (up to 30 years)	26	28.89
2.	Middle age group (between 31 to 50 years)	49	54.44
3.	Old age group (above 50 years)	15	16.67
	Total	**90**	**100**
Sr. No.	**Education**	**Frequency**	**Per cent**
1.	Illiterate	10	11.11
2.	Primary (1^{st} to 7^{th} standard)	13	14.44
3.	Secondary (8^{th} to 10^{th} standard)	28	31.11
4.	Higher secondary (11^{th} to 12^{th} standard)	30	33.33
5.	Graduate and above (above 12^{th} std.)	09	10.00
	Total	**90**	**100**
Sr. No.	**Land holding**	**Frequency**	**Per cent**
1.	Marginal farmers (up to 1.00 ha)	12	13.33
2.	Small farmers (1.01 to 2.00 ha)	27	30.00
3.	Medium farmers (2.01 to 3.00 ha)	35	38.88
4.	Large farmers (More than 3.00 ha)	16	17.79
	Total	**90**	**100**
Sr. No.	**Occupation**	**Frequency**	**Per cent**
1.	Farming	40	44.44
2.	Farming + Animal Husbandry	26	28.89
3.	Farming + Business	18	20.00
4.	Farming + Animal Husbandry + Business	06	06.67
	Total	**90**	**100**
Sr. No.	**Annual Income**	**Frequency**	**Per cent**
1.	up to Rs. 1,00,000/-	49	54.45
2.	Rs. 1,00,001 to 2,00,000/-	22	24.44
3.	Above Rs. 2,00,000/-	19	21.11
	Total	**90**	**100**
Sr. No.	**Farming experience**	**Frequency**	**Per cent**
1.	Low level of experience (up to 8 year)	33	36.66
2.	Medium level of experience(9 to 15 year)	38	42.22
3.	High level of experience (more than 15 year)	19	21.11
	Total	**90**	**100**
Sr. No.	**Mass media exposure**	**Frequency**	**Per cent**
1.	Low mass media exposure	20	22.22
2.	Medium mass media exposure	56	62.22
3.	High mass media exposure	14	15.56
	Total	**90**	**100**
Sr. No.	**Social participation**	**Frequency**	**Per cent**

1.	No social participation	32	35.56
2.	Poor social participation	34	37.78
3.	Moderate social participation	11	12.22
4.	Good social participation	13	14.44
	Total	**90**	**100**
Sr. No.	**Scientific orientation**	**Frequency**	**Per cent**
1.	Low level of scientific orientation	16	17.78
2.	Medium level of scientific orientation	53	58.89
3.	High level of scientific orientation	21	23.33
	Total	**90**	**100**
Sr. No.	**Risk orientation**	**Frequency**	**Per cent**
1.	Low level of risk orientation	20	22.22
2.	Medium level of risk orientation	54	60.00
3.	High level of risk orientation	16	17.78
	Total	**90**	**100**
Sr. No.	**Innovativeness**	**Frequency**	**Per cent**
1.	Low Innovativeness	19	21.11
2.	Medium Innovativeness	27	30.00
3.	High Innovativeness	44	48.89
	Total	**90**	**100**

Education

The information regarding formal education availed by the respondents were classified in to five categories. The data in this respect are presented in Table – 2

The data in the Table -2 observed that 33.34 per cent of the respondents had higher secondary education followed by 31.11 per cent, 14.44 per cent and 11.11 per cent of them had, secondary education and primary level of education, respectively. Only 10.00 per cent of the respondents were graduate and above.

Land Holding

The data pertaining to size of land holding of respondents were presented in Table- 2.The data presented in Table- 2 shows that 38.88 per cent of the respondents had medium land holding, followed by 30.00 per cent, 17.79 per cent and 13.33 per cent who had small land holding, large land holding and marginal land holding, respectively.

Occupation

The data presented in Table- 2 indicated that 44.44 per cent of the respondents were engaged in farming only whereas, 28.89 per cent and 20.00 per cent of the respondents were engaged in farming with animal husbandry and farming with business, respectively. Only 6.67 per cent of the respondents were engaged in farming with animal husbandry and business.

Annual Income

The data presented in Table- 2 revealed that majority of 54.45 per cent of the respondents earning annual income up to 1,00,000/- followed by 24.44 per cent and 21.11 per cent of them who were having annual income in between Rs. 1,00,001 to 2,00,000/- and above Rs.2,00,000/- , respectively.

Farming Experience

The data presented in Table- 2 observed that 42.22 per cent of the respondents had medium level of experience followed by 36.67 per cent and 21.11 per cent of them who had low level of experience and high level of experience, respectively.

Mass Media Exposure

The data presented in Table- 2 exposed that majority of 66.22 per cent of the respondents had Medium mass media exposure followed by 22.22 per cent and 15.56 per cent of them who had low mass media exposure and high mass media exposure, respectively.

Social Participation

The data presented in Table- 2 indicated that 37.78 per cent of the respondents had poor social participation followed by 35.56 per cent, 14.44 per cent and 12.22 per cent of them who had no social participation, good social participation and moderate social participation, respectively.

Scientific Orientation

The data presented in Table- 2 found that majority of the respondents 58.89 per cent had medium level of scientific orientation. About 23.33 per cent of respondents had high level of scientific orientation and rest 17.78 per cent had low level of scientific orientation.

Risk Orientation

The data presented in Table- 2 revealed that majority of the respondents 60.00 per cent had medium level of risk orientation followed by low and high level risk orientation with 22.22 per cent and 17.78 per cent of the respondents, respectively.

Innovativeness

The data presented in Table- 2 observed that 48.89 per cent of the respondents had high level of innovativeness followed by 30.00 per cent and 21.11 per cent of them who had medium level of innovativeness and low level of innovativeness, respectively.

Adoption of Improved Cultivation Practices of Gram

Adoption is a decision to continue use of an innovation. In this study it means acceptance of full use of recommended technology by farmers. It is rigidly stated that recommended package of practices is an instrument for making agriculture a better and more profitable enterprise. In this context it is also stressed that taking scientific knowledge to the door of sixty million farm families in India is possible only through intensive training of farmers, both in package of practices and specialized technique of production.

Table 3. Practice wise adoption of improved cultivation practices of gram in Amreli district
n=90

Sr. No.	Statement	Fully Adopted (%)	Partially Adopted (%)	Not adopted (%)	Mean Score	Rank
1.	Apply enriched compost @ 6 t/ha or vermicompost @ 2 t/ha need not to apply inorganic fertilizers.	16.67 (15)	55.55 (50)	27.78 (25)	1.89	09
2.	Cultivation of Gujarat gram 3 and GJG 5 in your farm.	43.33 (39)	45.56 (41)	11.11 (10)	2.32	02
3.	Cultivate irrigated varieties of gram at first fortnight of November and unirrigated variety in october.	22.22 (20)	60.00 (54)	17.78 (16)	2.04	06
4.	Cultivate gram between two row 30 to 45 cm gaps.	48.89 (44)	32.22 (29)	18.89 (17)	2.30	03
5.	Regular variety seed rate:60 kg and bold large variety seed rate: 75-80 Kg.	31.11 (28)	(35)	(27)	2.01	08
6.	Treat seeds with Rhizobium culture @ 25 g/kg seed + phosphate solubilizing bacterial culture (Bacillus subtilis) 30 g/kg seed along with recommended dose of fertilizers (20:40 N:P_2O_5 kg/ha)	8.89 (08)	35.56 (32)	55.55 (50)	1.53	15
7.	Apply phosphate solubilizing microorganism cultures as seed treatment @ 30 g/kg seed in gram crop in place of phosphatic fertilizer	8.89 (08)	27.78 (25)	63.33 (57)	1.46	16
8.	Seed treatment of carbendazim 1g+thiram 2 g/kg seed along with soil application of Trichoderma viride @ 2.5 kg mixed in 250 kg either castor cake or FYM/ha at the time of sowing in furrow for	15.56 (14)	46.67 (42)	37.78 (34)	1.78	12

	management of wilt and to get higher seed yield.					
9.	Apply 20 kg nitrogen 40 kg phosphorus and 20 kg sulfur as basal dose.	14.44 (13)	74.44 (67)	36.67 (10)	2.03	07
10.	Unirrigated gram you are use 2% urea at time of flowering and pod making.	18.89 (17)	44.44 (40)	36.67 (33)	1.82	10
11.	Use of pendimethalin as pre-emergence weed.	5.56 (05)	47.78 (43)	46.67 (42)	1.59	14
12.	Use of two spraying of kadvi mehadi leaf extract or five per cent neem leaf extract at 15 days interval for Halicoverpa armigera in chickpea	3.33 (03)	26.67 (24)	70.00 (63)	1.33	17
13.	For Stunt Virus do you used Phosphamidone 8 ml 10lit water and dimethoate 10 ml 10lit water	38.89 (35)	34.44 (31)	26.67 (24)	2.12	05
14.	To spray fenvalerate at 50 per cent flowering followed by second spray of profenofos at 50 per cent pod formation for management of pod borer.	44.44 (40)	35.56 (32)	20.00 (18)	2.24	04
15.	To apply two spray of profenofos and chlorantraniliprole at 50 % flowering and second at 15 days after first spray for economic management of pod borer.	47.78 (43)	33.89 (35)	13.33 (12)	2.34	01
16.	Use of pheromone trap)vighe–1(, Putting the support of birds for pod borer.	17.78 (16)	45.56 (41)	36.67 (33)	1.81	11
17.	For pod borer do you applying NPV 250 LE/ha at time of flowering in 15 day interval two spray.	14.44 (13)	46.67 (42)	38.89 (35)	1.76	13

It was clearly show from table 3 that in case of fully adopted improved cultivation practices, 48.89 percent of the respondents were cultivate gram between two row 30 to 45 cm gaps followed by 47.78 per cent of the respondent were apply two spray of profenofos and chlorantraniliprole at 50 % flowering and second at 15 days after first spray for economic management of pod borer and 44.44 per cent respondent were spray fenvalerate at 50 per cent flowering followed by second spray of profenofos at 50 per cent pod formation for management of pod borer respectively. Whereas, 43.33 per cent of the respondents were fully adopted to cultivate GJG-3 and GG 5 which also remarkable.

However, in case of partially adoption of improved cultivation practices, majority of the respondents 74.44 per cent apply 20 kg nitrogen 40 kg phosphorus and 20 kg sulfur as basal dose followed by 60.00 per cent of the respondents were cultivate irrigated varieties of gram at first fortnight of November and un irrigated variety in October and 55.55 per cent of the respondents were apply enriched compost @ 6 t/ha or vermicompost @ 2 t/ha need not to apply inorganic fertilizers.

On the other hand, not adopted improved cultivation practices, majority of the respondents 70.00 per cent not adopted, use of two spraying of kadvi mehadi leaf extract or five per cent neem leaf extract at 15 days interval for Halicoverpa armigera followed by 63.33 per cent of the respondents not adopted, Apply phosphate solubilizing microorganism cultures as seed treatment @ 30 g/kg seed in gram crop in place of phosphatic fertilizer and 55.55 per cent respondent were not adopted, treat seeds with rhizobium culture @ 25 g/kg seed + phosphate solubilizing bacterial culture (Bacillus subtilis) 30 g/kg seed along with recommended dose of fertilizers (20:40 $N:P_2O_5$ kg/ha), respectively.

Table 4. Distribution of respondents according to their level of adoption regarding improved cultivation practices of gram n=90

Sr. No	Level of Adoption	Frequency	Per cent
1.	**Low level of Adoption**	**19**	**21.12**
2.	**Medium level of Adoption**	**58**	**64.44**
3.	**High level of Adoption**	**13**	**14.44**
Total		**90**	**100**

SD= 3.14 Means =32.38

It was clear from table 4 that majority of the respondents 64.44 per cent had medium level of adoption followed by 21.12 per cent and 14.44 per cent of them who had low level of adoption and high level of adoption, respectively.

The probable reason might be high innovativeness and good education level. Further might be a reason that, FLDs given by the KVK, Amreli in study area.

Constraints Faced by the Farmer's Adoption of Improved Cultivation Practices of Gram

Constraints in adoption of new technology never end. However they can be minimized. The respondents were requested to express the constraints faced by them in adoption of improved cultivation practices of gram.

Table 5. Constraints faced by the respondent's adoption of improved cultivation practices of gram n=90

Sr. No.	Constraints	F	Percentage	Rank
1	Lack of knowledge about bio fertilizer	45	50.00	VI
2	Non availability of improved seed	39	43.33	IX
3	Lack of knowledge about Plant based botanical Insecticides and Pesticides	77	85.56	II
4	Non availability of fertilizers in time	63	70.00	IV
5	Non availability of NPV in market	42	46.67	VIII
6	Unavailability of vermicompost as per recommendation	78	86.67	I
7	Unavailability of farm yard manure	74	82.22	III
8	No information about seed treatment	58	64.44	V
9	lack of guidance about recommended technology	44	48.89	VII

The data presented in table 5 found that major constraints perceived by respondents were, Unavailability of vermicompost as per recommendation 86.67 per cent and ranked at first position followed by lack of knowledge about plant based botanical insecticides and pesticides 85.56 per cent, Unavailability of farm yard manure 82.22 per cent, Non availability of fertilizers in time 70.00 per cent, No information about seed treatment 64.44 per cent, Lack of knowledge about bio fertilizer 50.00 per cent, lack of guidance about recommended technology 48.89 per cent, non-availability of NPV in market 46.67 per cent, Non availability of improved seed 43.33 per cent which ranked at II,III,IV,V,VI,VII,VIII and IX position respectively.

Suggestions from the Farmers to Overcome the Constraints

An attempt was also made to ascertain suggestions from farmers to overcome various constraints faced by them in adoption of improved cultivation practices of gram. The respondents were requested to offer their valuable suggestion against difficulties faced by them in the adoption of improved cultivation practices of gram. The data were collected and summarized in table 5.

Table 6. Suggestions from the respondents to overcome the constraints n=90

Sr. No.	Suggestion	F	Percentage	Rank
1	Timely availability of improved seed	52	57.78	V
2	Availability of all input through co- operatives	81	90.00	I
3	Assured availability of bio fertilizer and bio pesticide	59	65.56	IV
4	Provision of training in regards about Plant based botanical Insecticides and Pesticides	49	54.44	VI
5	Knowledge about seed treatment methods should provided	73	81.11	III
6	Providing seeds, pesticides and fertilizers at reasonable rate	75	83.33	II

The data presented in Table - 6 revealed that major suggestions given by respondents were, Availability of all input through co- operatives 90.00 per cent and ranked at first position followed by providing seeds, pesticides and fertilizers at reasonable rate 83.33 per cent, Knowledge about seed treatment methods should provided 81.11 per cent, Assured availability of bio fertilizer and bio pesticide 65.56 per cent, Timely availability of improved seed 57.78 per cent, provision of training in regards about plant based botanical insecticides and pesticides 54.44 per cent which ranked at II,III,IV,V and VI position respectively.

Conclusion-

It can be concluded from the above study that, majority of the respondents were found in middle age group, had high secondary level of education and had medium to small land holding also, they were engaged in farming. However majority of the respondents earning annual income up to 1,00,000 and had medium to low level of experience who used medium level of mass media exposure and also had poor social participation, whereas, majority of the respondents had medium level of scientific orientation and risk orientation also who were high to medium level of innovativeness. Results further shows that majority of the respondents had medium level of adoption respect to improved cultivation practices of gram. Major constraints perceived by respondents were, Unavailability of vermin-compost as per recommendation, lack of knowledge about plant based botanical insecticides and pesticides and unavailability of farm yard manure. Major suggestions given by respondents were, Availability of all input through co- operatives; providing seeds, pesticides and fertilizers at reasonable rate and knowledge about seed treatment methods should provided.

Project 2 -Constraints Faced By Mango Growers of Amreli Districts

Shri. P. J. Prajapati, Subject Matter Specialist (Agronomy),
Dr. N. S. Joshi, Programme co-ordinator, KVK, JAU, Amreli,
Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh
Dr. M. L. Patel, Subject Matter Specialist (Plant Protection),
Prof. V.S. Parmar, Subject Matter Specialist (Agricultural Extension)

Project 3- Knowledge Level of Farmer about Management Practice of Plan Protection In Groundnut

Dr. M. L. Patel, Subject Matter Specialist (Plant Protection),
Dr. N. S. Joshi, Programme co-ordinator,
Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh

- **Both project (2&3) will be extended to next year**

APR SUMMARY

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

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	56	1738	849	2587
Rural youths	5	210	00	210
Extension functionaries	3	73	65	138
Sponsored Training	8	265	75	340
Vocational Training	1	0	37	37
Total	**73**	**2286**	**1026**	**3312**

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	10	4	-
Pulses	20	8	-
Cereals	10	4	-
Vegetables	20	8	-
Other crops	10	4	-
Hybrid crops	20	4	-
Total	**90**	**32**	-
Livestock & Fisheries	-	-	-
Other enterprises	12	175	-
Total	**12**	**175**	**-**
Grand Total	**102**	**207**	**-**

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	7	18	18
Livestock	-	-	-
Various enterprises	-	-	-
Total	**7**	**18**	**18**
Technology Refined			
Crops	-	-	-
Livestock	-	-	-
Various enterprises	-	-	-
Total	-	-	-
Grand Total	**7**	**18**	**18**

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	274	5382
Other extension activities	21	-
Total	**295**	**5382**

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	Total
KVK, JAU, Amreli	Text only	31	2	1	0	2	3	**39**
	Voice only	0	0	0	0	0	0	**0**
	Voice & Text both	0	0	0	0	0	0	**0**
	Total Messages	**31**	**2**	**1**	**0**	**2**	**3**	**39**
	Total farmers Benefitted	**2939730**	**189660**	**94830**	**0**	**189660**	**284490**	**3698370**

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	50.84	-
Planting material (No.)	4000	2000
Bio-Products (kg)	-	-
Livestock Production (No.)	-	-
Fishery production (No.)	-	-

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	78	23,400
Water	47	3,760
Plant	-	-
Total	**125**	**27,160**

8. HRD and Publications

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

Annexure-1

Plastic mulch and drip irrigation in horticultural crop

1. **Situation analysis/Problem statement:**

Amreli district comes under North Saurashtra sub climatic zone of Gujarat Plains And Hills Region climatic zone. The normal onset of rainfall is 2nd week of June and cessation of rainfall is 2nd week of September. The average cropping intensity of Amreli district is 119%. The average sowing area of Groundnut, Cotton, Sesame and Bajra is 248.1, 227.1, 18.6 and 13.4 (000 ha) respectively. The Cluster frontline demonstration on pulse and oilseed crops was carried out in *Kharif* -2018. The soil type of cluster frontline demonstrated field is medium black soil. The rainfall of Amreli district in monsoon season is 410 mm which is 61.18% of the average rainfall (from 1988 to 2018). There are severe dry spells and intensive rainfall recorded during monsoon 2018. Pegging, flowering and pod development phases are critical for irrigation during which period adequate soil moisture is essential in groundnut which is comes in crop by 40 to 50 DAS. The severe dry spell was occurred during 23 july to 17 august when groundnut is in peg formation stage. There are also intensive rainfall was observed during month of July. There was 171 mm rainfall occurred in 4 days that is detrimental for all the crops.

2. **Plan, Implement and Support**:

An awareness programmes were organized on drip irrigation and importance of mulch in horticultural crops. Different training on horticulture crops and micro irrigation methods organized at KVK as well as at village level. Regular support and information given by KVK, Scientist and also by line departments.

Rakholiya Dvarkeshdas Valjibhai a farmer from Motabhandariya village of Amreli district who before cultivated cotton and groundnut now interested to cultivated water melon, cucumber, musk melon and other vegetable crop in their 2 ha land. Krishi Vigyan Kendra Amreli with help of department of renewable energy, college of engineering, JAU, Junagadh provided plastic mulch for 1 acre of land. Dvarkeshdas also add their money for 2 ha land plastic mulch and drip irrigation system.

3. **Output**:

Due to continuously providing knowledge of scientific package of practices by the KVK as well as university scientist, Darkeshdas gain knowledge about horticulture crops, know about organic cultivation and he also implement organic concent on their field. He made different product like *panchgavy, Jivamrut* also use butter milk as well as university products like *Beauveria bassiana* and *Metarhizzium anisopliae.*

4. Outcome

Darkeshdas is now key parsons to spread these technologies in village. KVK, Amreli arranged farm visit of farmers, input dealers and agriculture students to aware and spread the technology. Farmers from villages like Lathi, Babra, Babapur, Sarbada, Gavdka and Khijadiya visited a farm and aware about plastic mulch and importance of horticulture crops.

5. Impact:

Darkeshdas cultivated Musk melon, watermelon and cucumber in their 2 ha field. Total production of watermelon was 120q , musk melon 60q and 10q cucumber in 2 ha land. Over all cultivation cost was 34,400/- and gross income was 3, 28,000/- . So he earn 2, 93,600/- net income in summer season.

Annexure-2

Success story: Impact of Cluster Front Line Demonstration of NFSM project in Amreli District of Gujarat

5. **Situation analysis/Problem statement:**

In Amreli district, Cotton, Groundnut, Sesame, Wheat, Bajra, Castor, Sorghum and Pulses are main field crops. The project aimed to aware farmers about latest improved varieties and technology demonstrated to the farmers through CFLDs under NFSM project. Farmers were using traditional practices and local varieties for the production of pulses and only using conventional pesticides throughout the season. In Amreli district majority of farmers were growing only cotton crops instead of short duration crops, it requires water for irrigation purpose and only same uptake of the nutrients by the plants. It leads to deficits the nutrient availability in monocropping patterns.

6. **Plan, Implement and Support**:

An awareness programmes were organized on CFLDs under NFSM project in Amreli district by Krishi Vigyan Kendra, Junagadh Agricultural University, Amreli. It was supported by ATMA, State department and NGOs; for organizing training programme. CFLDs under NFSM project was sanctioned by ICAR, ATARI, Pune and these CFLDs were implemented by KVK, Amreli in adopted villages. Various clusters are made to demonstrate the technologies in different villages.

Advance planning was made and implemented strategies

- Demonstration of latest recommended varieties of pulses.
- To control various pests and diseases by using Integrated Pest and Disease Management (IPDM) using bio-pesticides like Beauveria Bassiana, trichoderma harzianum, Pheromone traps etc.
- Nutrient Management by biofertilizers viz. Rhizobium and PSB
- Mechanical devices and also provided valuable information on cultural practices like Deep ploughing, Timely sowing of varieties and Early mature varieties
- Improving soil texture and structure by removing & mixing residual of other crops like maize, wheat using farm implement like rotavator,
- Avoid mono-cropping.
- Distributed proper literatures viz. folders, pamphlets, leaf lets, text messages and audio-visual aids to the farmers.
- Making Soil Health card for improvement of soil health.

Farmers of Amreli district were benefited by scientific and technological information about IPDM of various pests and diseases and necessary guidance was also provided by scientists of Krishi Vigyan Kendra, Junagadh Agricultural University, Amreli (Gujarat).

7. **Output**:

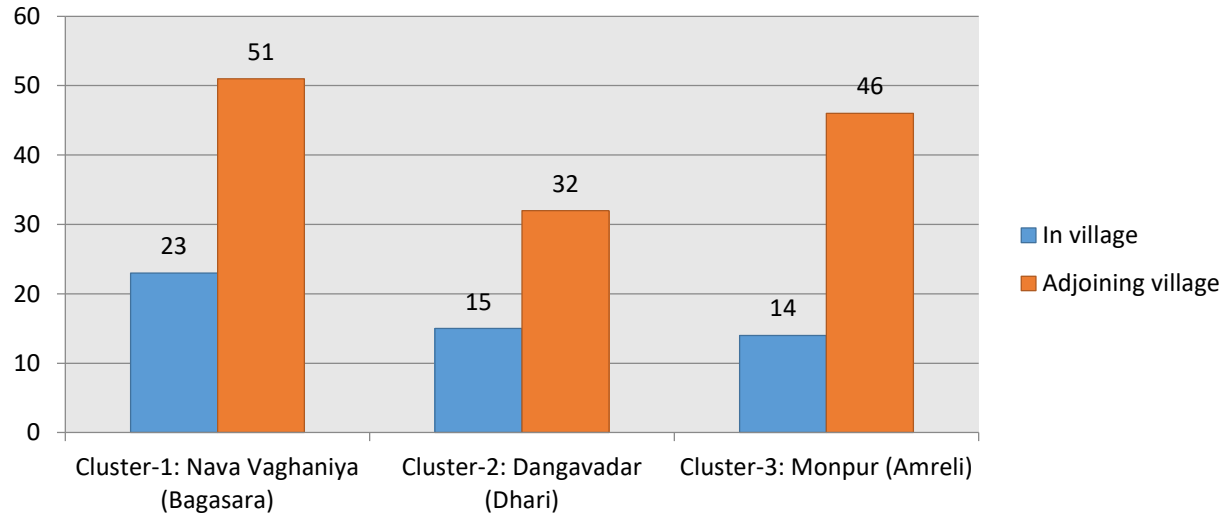
Due to continuously providing knowledge of scientific package of practices, Varietal adoptions, and technologies to farmers by various training programmes under NFSM project, farmers aware about various benefit of modern and scientific approach to control of pests and diseases of pulses crops through utilization of bio-pesticides and mass trapping of Heliothis adults in pigeon pea by mechanical devices like pheromone trap. This is reduced the application of hazardous pesticides and save the cost of chemical pesticides.

4. Impact:

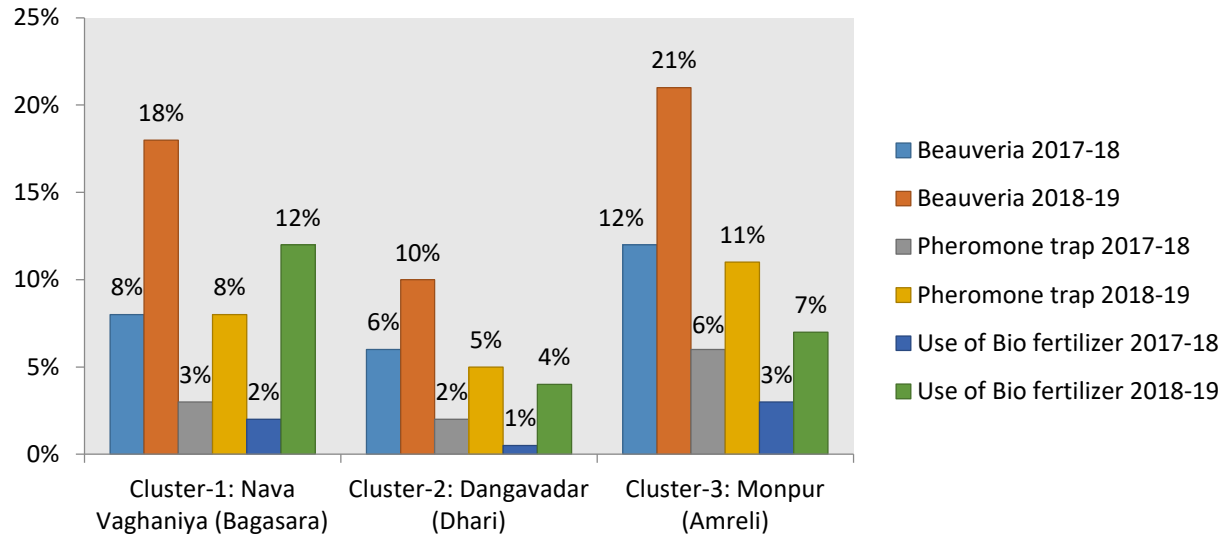
Due to Demonstrations of latest improved varieties, organizing various training programmes and lectures in sponsored training programmes, farmers have stated regularly using recommended varieties, bio pesticides like *Beauveria bassiana*, *Metarhizzium anisopliae*, *Azadirechtin* and bio

fertilizers in their field. Bio pesticides and bio products are economic and eco friendly will helps to the farmers in upcoming years on economical as well as social platform. There is proper impact observed in horizontal spread of varieties and Bio components shown in Figur 1 and 2.

Figur-1: Horizontal Spread of Latest Variety of Green gram (GM-4) Demonstrated in CFLDs under NFSM (No. of Farmers)



Figur-2: Use of different Bio component through Implementaton of CFLDs programme



5. Feedback of farmers:

- Latest varieties given in demonstration is high yielding and resistant to several pests and diseases viz. wilt in pigeon pea, strerility mosaic in green gram.
- All bio-products are highly effective for controlling Sucking pests and caterpillar in pulses crops.
- They are not harmful to Soil and environment.
- They are easy to apply.
    - They are cheaper than chemical products, therefore are benefitted to reduces the cost of spray.

Details of technology demonstrated under cluster demonstrations: Kharif-Oilseeds (2018-19)

1. **State-wise, crop-wise one promising technology demonstrated along with specific characteristics of technology demonstrated (Quality photographs may also be provided)**

State A:
Crop 1: Groundnut
Variety: GJG-22
Promising technology demonstrated: Component demonstated like Beauveriya bassiana, Trichoderma, HaNPV, Azadirechtin, Pheromone trap with Heli lure
Specific characteristics of technology and performance

Specific characteristic	Performance/Yield/disease Management (q/ha)	 CFLDs on Groundnut at Rafala village
High yielding and tolerant to Collar rot and GJG-22 is high yielding and slightly stem rot resistance variety	25.75	

Yield (q/ha)

- Demonstration (q/ha): 25.75
- District average (previous year)(q/ha):17.31
- State average(Previous year)(q/ha):14.41
- Variety potential yield (q/ha): 27.26

2. **State-wise success stories of farmers where highest yield was obtained (With quality photographs)**

i. **Name of KVK** : Krishi Vigyan Kendra, JAU, Amreli (Gujarat)
ii. **Name and address of farmer** : Vekariya Madhubhai Ranchhodbhai, Village: Rafala, Ta. Bagasara Dist.-Amreli
iii. **Crop and variety:** Ground nut-GJG:22
iv. **Details of technology demonstrated:** Metarhizium anisoplie, Rhizobium and PSB
v. **Performance of technology vis-à-vis local check (increase in productivity and returns)** Madhubhai has obtained yield 21.89 % as compared to local variety and by used of new technological demonstrated, he could increased return Rs. 93807.5/ha. to local check
vi. **Institutional Involvement :** Regularly visited by farmer at KVK for new technological improvement of his farm. Trained the farmer by scientists about latest scientific technology and package of practices before implementation of cluster FLDs, Regular field visited, Telephonic guidance as and when required, Timely literature distributed, etc.
vii. **Success Point** : Farmer obtained high Price. Madhubhai was used only chemical pesticides and fertilizers but after contacted with scientists, he started IPM and IDM components for control of pests and diseases and grown latest variety which is moderately resistance to stem rot
viii. **Farmers feedback :** Madhubhai said that Ground nut- GJG:22 variety also gave higher yield and save the cost of pesticides and Moderately resistance to stem rot.