

ICAR-ATARI, Pune
DETAILS OF ANNUAL PROGRESS REPORT OF KVKs DURING 2019
(1st January 2019 to 31st December 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		
Krishi Vigyan Kendra, Junagadh Agricultural University, Targhadia, (Dist.: Rajkot) (Gujarat) - 360 003	Office (0281) 2784170	FAX 0281 2784170	kvkrajkot@gmail.com	www.jau.in

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

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

1.3. Name of the Senior Scientist and Head with Phone & Mobile No.

Name	Telephone / Contact		
	Office	Mobile	Email
Dr. B. B. Kabaria	(0281) 2784170	9374202518	drbbkabaria@gmail.com

1.4. Year of sanction: September – 2004

1.5. Staff Position (as on 31st December, 2019)

Sl. No.	Sanctioned post	Name of the incumbent	Discipline	Current Pay Band	Date of joining	If Temporary, pl. indicate the consolidated amount paid (Rs./month)
1	Senior Scientist and Head	Dr. B. B. Kabaria	Agril. Ento.	-	16-10-2016	-
2	SMS	Dr. M. M. Tajpara	Animal Science	87300/-	04-08-2015	1,16,277/-
3	SMS	Dr. J. H. Chaudhary	Agron.	63000/-	01-08-2017	76,170/-
4	SMS	Dr. M. K. Jadeja	Agril. Extension	89800/-	01-10-2019	1,08,364/-
5	SMS	Vacant	Horti.	-		
6	SMS	Shri D. P. Sanepara	Agril. Engg.	99400/-	08-11-2016	1,15,495/-
7	SMS	Mrs. H. H. Padsumbiya	Home Science	87300/-	17-08-2006	1,05,749/-
8	Farm manager	S. R. Rathva	Plant breeding	38090/-	30-7-2018	38,090/-

9	Programme Assistant	Shri A. B. Dabhi	Agron.	42300/-	07-08-2014	51,312/-
10	Computer Programmer	Miss. R. T. Padaliya	-	46200/-	03-01-2009	56,018/-
11	Acc. / Sup.	Vacant	-	-	-	-
12	Steno-grapher	Vacant	-	-	-	-
13	Driver	Vacant	-	-	-	-
14	Driver	Vacant	-	-	-	-
15	Supporting staff	Smt.U.G.. Zala	-	28000/-	16-09-2004	34,125/-
16	Supporting staff	Vacant	-	-	-	-

1.6. Total land with KVK (in ha) :

Sr. No.	Item	Area (ha)
1	Under Buildings	2.87
2.	Under Demonstration Units	0.50
3.	Under Crops	13.80
4.	Horticulture	0.50
5.	Farm Pond	0.48
6.	Others (Road & drainage)	1.85
	Total	20.00

1.7. Infrastructural Development:

A) Buildings

Sr. No	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	KVK	31-3-2011	550	5500000	-	-	-
2.	Farmers Hostel	KVK	31-3-2011	305	3000000	-	-	-
3.	Staff Quarters (6)	KVK	31-3-2011	400	4000000	-	-	-
4.	Poly House	RKVY	31-3-09	320	281602	-	-	-
5.	Net House	RKVY	31-3-09	150	64498	-	-	-
6.	Store room	RKVY	9-2-10	70.61	454500	-	-	-
7.	Training hall	RKVY	11-2-10	190.99	1395800	-	-	-
8.	Processing plant	RKVY	11-2-10	197.31	1536400	-	-	-
9.	Implement shed	RKVY	9-2-10	77.33	297800	-	-	-
10	Farm Godown	KVK	2012	-	400000	-	-	-
11	Processing Unit	ICAR	2019	196.80	3500000	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Toyota Qualis	2004	590000	343410	Working
Tata Sumo	2008	600000	250365	Not Working, Purchase from MP grant
Motorcycle	2010	50000	47886	Working

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
1	2	3	4
Generator set	2002	24900	Working
Color TV (Akai) with Remote	2002	13850	Working
Panasonic PT LC 50 LCD Project	2002	164368	Working
PA Audio Vision System	2002	20000	Working
Computer System Intel Pentium IV	2003	32000	Working
Computer Wipro Super Genius Desktop	2006	-	Working
Electronic Kelvinator Refrigerator	2006	10,500	Working
Solar steel digital water plant	2006	45000	Working
Balaji Bio Gas Plant	2007	32000	Working
Aspee Tractor Mounted Sprayer	2007	32000	Working
Laptop Computer (HCL)	2008	47500	Working
Air Assisted Blower type sprayer	2009	98750	Working
Photo copier Machine (Richo)	2009	115300	Working
LCD Projector with ceiling mount kit Model-PT-CB50NTE-2GA (Panasonic)	2009	92155	Working
DVD Home theater system with Speaker (HCL)	2009	28000	Working
LCD TV 22" Model- 22LG30 (L. G.)	2009	27287	Working
Cotton stalk Shredder	2009	121000	Working
Groundnut Digger-Tractor Operated	2009	78500	Working
Cultivator cum Rotavator	2009	90000	Working
Groundnut Decorticator	2009	95850	Working
Multi crop Thresher	2009	114000	Working
Processing Unit	2009	1685000	Working
Plantar – tractor operator	2009	44000	Working
Digital Camera (Nikon) P- 90 12.1	2010	24300	Working
Acer desktop veriten PC	2016	46032	Working
Digital Xerox machine with printer	2016	144391	Working
K-yan pro standerd	2016	110644	Working
Home UPS inverters system	2016	79000	Working

1.8. Details of SAC meetings to be conducted in the year

Date	Name & Designation of Participants	Salient Recommendations	Action taken
1	2	3	4
19/03/2019	Dr. A.R. Pathak, Honorable Vice Chancellor, JAU, Junagadh.	➤ FLDs should be conducted based on newly released varieties of groundnut i.e. GJG-32 ➤ It should be compulsory to carried out minimum two OFTs in each discipline of	All Suggestion accepted
	Dr. V.P. Chovatiya, Directorate of Research, JAU, Junagadh		
	Dr. P. V. Patel, Directorate of Extension, JAU, Junagadh		

Dr. D. S. Hirpara, RS (DFRS), Targhadia	<p>KVK center.</p> <ul style="list-style-type: none"> ➤ OFT should be planned on brinjal crop specific for Jasdan and Vichhiya taluka ➤ OFT should be planned on top dropping in cotton crop . ➤ Use wheat straw or sesame/cotton stalk as a mulching material in OFT. ➤ More training should be planned on value addition ➤ To conduct training on reduction of cost of cultivation techniques in different crops. ➤ Training should be planned on beauty parlour for rural women youth ➤ To help different entrepreneurs for linkage and marketing components in ARYA Project. ➤ Plant protection discipline work and charge of SMS should be hand over to Shri A.B. Dabhi, Training Asstt. ➤ Horticulture discipline work and charge of SMS should be hand over to Shri S.R. Rathava, training Asstt. ➤ The gram, wheat, greengram, blackgram and groundnut crop can be included instead of pigeon pea in seed production programme under Seed Hub project
Dr. G. R. Sharma, Principal, Polytechnic in Agril. Engg., Targhadia	
Shri. R. H. Ladani, Director of Horti., Rajkot	
Shri. V. K. Dholariya, Station Director, All India Radio, Rajkot	
Shri. Vasantbhai Joshi, Director, All India Radio, Rajkot	
Shri S. K. Tiwari, NHRDF, Rajkot	
Kiran patel, Reliance foundation, Jasdan	
Dr. N. B. Jadav, PC, KVK, Pipalia, Dist. Rajkot	
Shri. M. F. Bhoraniya, PC, KVK, Nana Kandhasar, Dist. Surendranagar	
Dr. H. C. Chhodvadiya, Asstt. Directorate of Extension, JAU, Junagadh	
Dr. A. M. Polara, Assi. Directorate of Extension, JAU, Junagadh	
Shree Navnitbhai Shantibhai Village : Jasapar, Tal: Jasdan, Dist.: Rajkot	
Shree Jyantibhai Popatbhai Babariya Village : Jasapar, Tal: Jasdan, Dist.: Rajkot	
Shree Vallabhabhai Lavajibhai Mungalpara, Village: Padasan Tal: Rajkot, Dist.: Rajkot	
Dinesh Kanera, Reliance foundation, Jasdan	
Dr. B. B. Kabaria, Senior Scientist & Head, KVK, Targhadia	

2. DETAILS OF DISTRICT

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

Sr. No	Farming system/enterprise
1	Groundnut – Wheat/ Cumin, Cotton – Summer Groundnut/ Pulses/sesame
2	Dairy product
3	Farm Waste Management specially for cotton stalk
4	Fruit and Vegetable Preservation
5	Value addition in Groundnut, Til ,Gram etc.

2.2 Description of Agro-climatic Zone & major agro ecological situations

a) Soil type

Sr. No	Agro-climatic Zone	Characteristics
1.	North Saurashtra Agro Climatic Zone (VI)	The total geographical area of North Saurashtra Agro Climatic Zone is 35.2 lacs ha. Out of total area, 73.40 per cent area falls under arid and semi-arid region. The soils of this zone are shallow to moderately deep. The soils of Rajkot district is low in their availability of nitrogen while medium in phosphorus and high in available potash except the available phosphorus and potash is in medium category in adopted villages. Monsoon commences usually by the end of June and withdraws by middle of September. Average annual rainfall of districts is 648 mm while 1362.4mm during 2019-20.

b) Topography

Sr. No	Agro ecological situation	Characteristics
1.	Situation No. 4	Shallow black soil with 500-600 mm Rainfall
2.	Situation No. 14	Hilly Soils with 500-600 mm Rainfall

2.3 Soil types

Sr. No	Soil type	Characteristics	Area in ('000) ha
1.	Clay to clay loam	Medium black calcareous soil	258
2.	Sandy clay loam to Clayey	Well drained soil with rapid permeability	301
3.	Sandy to Sandy loam, Calcareous	Well drained soils	

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

Sr. No	Crop	Area (ha)	Production (Tone)	Productivity (Kg. /ha)
1.	Groundnut	225544	220892	979
2.	Cotton	273586	550495	2012
4.	Sesamum	999	700	701
5.	Castor	9406	20246	2152
6.	Wheat	13188	57637	4370
7.	Gram	863	1049	1215
8.	Cumin	5337	5852	1096

2.5 Weather data (2019)

Month	Rainfall (mm)	Temperature °C		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
January	-	28.6	10.6	60.7	28.2
February	-	30.0	13.2	64.5	30.8
March	-	33.5	17.3	68.5	28.6
April	-	40.5	21.5	73	26
May	-	40.4	24.5	73	28
June	133.5	38.7	25.6	81	45
July	269.2	35.4	25.2	84	59
August	474.1	30.8	23.6	91	79
September	420.7	31.6	23.5	92	79
October	53.4	33.7	20.5	79	53
November	9.5	31.8	18.0	76	52
December	-	27.7	12.6	67	42
	1360.4				

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

Category	Population ('000 Nos.)	Production ('000 tone)	Productivity
Cattle			
Cows	452	3326.90	
Buffalo	362	5284.70	
Sheep	263.40	266.81(Production of wool)	
Goats	197	231.24	
Pigs	1		
Crossbred			
Indigenous			
Poultry (Production of eggs in Lakh Nos.)			
Hens			
Desi	7.8	3.92	
Improved	13.4	32.52	
Ducks			
Others			
Horse and Camel			
Dogs	9		

2.7 Details of Operational area / Villages

Sr. No.	Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Jasdan	Cluster I	Barvala	* Groundnut, Cotton, Sesamum, Wheat, Cumin, Gram, Garlic, Onion. * Enterprises are dairy business, Vermi-composting, preparation of roasted groundnut and chicki from groundnut and sesame	Pink ball worm in Cotton, Heavy infestation of sucking pest in cotton, phytophthora disease in sesamum and white grub infestation in groundnut. Long inter-calving period in Buffalo, Nutritional deficiency in animal problem, feed and fodder, Less area under Horticultural crops	* IPM and INM in major crops of this area * Reducing the inter-calving period in Buffalo * Motivate the farmers for arid Horticultural crops. * Efficient use of irrigation water * To create the awareness for grading, processing and marketing (value addition)
			Kamlapur			
			Lilapur			
			Hadmatiya			
2	Vinchhiya	Cluster II	Amrapur	* Enterprises are dairy business, Vermi-composting, preparation of roasted groundnut and chicki from groundnut and sesame	Pink ball worm in Cotton, Heavy infestation of sucking pest in cotton, phytophthora disease in sesamum and white grub infestation in groundnut. Long inter-calving period in Buffalo, Nutritional deficiency in animal problem, feed and fodder, Less area under Horticultural crops	* IPM and INM in major crops of this area * Reducing the inter-calving period in Buffalo * Motivate the farmers for arid Horticultural crops. * Efficient use of irrigation water * To create the awareness for grading, processing and marketing (value addition)
			Hingolgadh			
			Gundala			
			Bhopra			
3	Rajkot	Cluster III	Lalavadar	* Enterprises are dairy business, Vermi-composting, preparation of roasted groundnut and chicki from groundnut and sesame	Pink ball worm in Cotton, Heavy infestation of sucking pest in cotton, phytophthora disease in sesamum and white grub infestation in groundnut. Long inter-calving period in Buffalo, Nutritional deficiency in animal problem, feed and fodder, Less area under Horticultural crops	* IPM and INM in major crops of this area * Reducing the inter-calving period in Buffalo * Motivate the farmers for arid Horticultural crops. * Efficient use of irrigation water * To create the awareness for grading, processing and marketing (value addition)
			Haripar			
			Makanpar			
			Umralli			
			Khachharia			
			Hodathali			

2.8 Priority thrust areas

Crop/Enterprise	Thrust area
Groundnut, Sesamum etc	Increasing the productivity of the major crops by adopting the recommended of dry farming technologies and to create awareness for value addition.
Water conservation	<i>In situ</i> soil moisture conservation and rainwater harvesting. Use of cotton stalk for organic manure.
Cotton	Motivating cotton growers to adopt IPM and INM practices for reducing the cost of production.
Arid Fruits	Promoting the arid horticulture.
Livestock prod.	Enhancing productivity of milch animals by proper feeding and breeding management.
Women empowerment	Providing self employment through skill oriented income generating activities
Agriculture	Developing interest among youth for agriculture as a profession.
Horticulture	Value addition in agriculture produces through proper grading, processing, marketing and information technology.
PHT	Minimizing the post harvest losses and to create the awareness for proper storage.
Income generating activities	Self employment among rural youth and skill oriented income generating activities.
Nutrition management	Care and importance of nutrition in children & pregnant women.

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
3	3	6	6	135	135	135	135

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
66	61	1650	1798	-	106	-	10253

Seed Production (Qtl.)		Planting materials (Nos.)	
5		6	
Target	Achievement	Target	Achievement
80.00	95.75	-	-

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
-	-	-	11482

3.1. B. Operational areas details during 2019

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	Proposed Intervention (OFT, FLD, Training, extension activity etc.)*
1	Groundnut	Variety	-	All cluster	FLD & Training
		White grub	-	All cluster	FLD, OFT and Training
		Stem rot	-	All cluster	FLD and Training
2	Cotton	Water stress	-	All cluster	OFT & Training
		Pink ball worm	-	All cluster	FLD and Training
3	Cumin	Wilt	-		FLD, OFT and Training
4	Gram	Variety	-	All cluster	FLD and Training

3.2. Technology Assessment

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

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

A.2 Abstract on the number of technologies assessed in respect of livestock enterprises

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

B. Achievements on technologies Assessed

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					
Varietal Evaluation					
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology	Groundnut	Effect of mulching on productivity of <i>kharif</i> groundnut	1	1	0.4
	Cotton	Water management in drip irrigated cotton crop (Plastic mulching in drip irrigated cotton crop)	1	1	0.4
Farm Machineries	Groundnut	Organic farming in <i>Kharif</i> Groundnut	1	1	0.4
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Mushroom cultivation					
Total					

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

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

C1. Results of Technologies Assessed

Results of On Farm Trial

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter	Results of assessment	Feed back from the farmer	Any refinement needed	Justification for refinement
1	2	3	4	5	6	7	8	9	10	11	12
Groundnut	Rainfed	Higher use of chemical fertilizers	Organic farming in Kharif Groundnut	1	1.RDF (Chemical)+ Seed treatment 2. Only cow based 3. All Bio product.	Yield (Kg/ha) and White grub infestation (%)	-	-	-	-	-
Groundnut	Rainfed	High soil moisture losses during the crop period.	Effect of mulching on productivity of kharif groundnut	1	1. Without mulching (Farmers' practice) 2. Farm residues mulching (Recommended Technology)	Yield Kg/ha and Soil Moisture Content (%)	-	-	-	-	-
Cotton	Irrigated	Water scarcity in the region due to less rainfall.	Water management in drip irrigated cotton crop (Plastic mulching in drip irrigated cotton crop)	1	1.Without mulching and flood irrigation (Farmers' practice) 2. Plastic mulch (25 micron) with drip irrigation (Recommended Technology)	Yield (Kg/ha) and Soil Moisture Content (%)	-	Silver-black plastic mulch with drip irrigation enhanced the cotton yield 10.37%	Plastic mulch in drip irrigated in cotton crop save water and gave higher yield	-	

Contd..

Technology Assessed	Source of Technology	Production	Please give the unit (kg/ha, t/ha, lit/animal, nuts/palm, nuts/palm/year)	Net Return (Profit) in Rs. / unit	BC Ratio
13	14	15	16	17	18
Organic farming in Kharif Groundnut					
1.RDF (Chemical)+ Seed treatment	Junagadh Agricultural University	2000	Kg/ha	69800	3.18
2. Only cow based		2166	Kg/ha	87249	4.79
3. All Bio product		1853	Kg/ha	69817	3.84
Effect of mulching on productivity of kharif groundnut					
Technology option 1 Without mulching (Farmers' practice)		2185 (24.35 %)	Yield (Kg/ha) & (Soil Moisture content %)	84034	3.18
Technology option 2 Farm residues mulching (Recommended Technology)	Junagadh Agricultural University, Junagadh	2375 (26.85%)	Yield (Kg/ha) & (Soil Moisture content %)	92650	3.29
Water management in drip irrigated cotton crop (Plastic mulching in drip irrigated cotton crop)					
Technology option 1 Without mulching (Farmers' practice)		3125 (24.50%)	Yield (Kg/ha) & (Soil Moisture content %)	125175	3.68
Technology option 2 Plastic mulch (25 micron) (Recommended Technology)	RTTC, Junagadh Agricultural University, Junagadh	3550 (27.65%)	Yield (Kg/ha) & (Soil Moisture content %)	142950	3.73

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

OFT-1

1. Title of Technology Assessed : Organic farming in Kharif Groundnut

2. Problem Definition : High use of chemicals

3. Details of technologies selected for assessment:

1. RDF (Chemical)+ Seed treatment

2. Only cow based

3. All Bio product

4. Source of technology: Junagadh Agricultural University

5. Production system and thematic area : NRM

6. Performance of the Technology with performance indicators:

No	Name of the farmer	Name of the Village	Yield (Kg/ha)		
			T1	T2	T3
1	KVK Farm	Targhadia	69800	87249	69817
Average					

- 7 Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques : Chemical treatment has given higher production as compare to organic treatment.
8. Final recommendation for micro level situation :Yield can be increased and white grub infestation can be reduced with use of bio product with castor cake.
9. Constraints identified and feedback for research : - White grub infestation was observed more in organic are as compare to chemical treatment.
10. Process of farmers participation and their reaction : This was first trial for experimentation and it will be improved and repeated nest.

OFT-2

- 1 **Title of Technology Assessed : Effect of mulching on productivity of kharif groundnut**
- 2 Problem Definition : High soil moisture losses during the crop period.
- 3 Details of technologies selected for assessment : Impact of farm residues mulching on productivity of kharif groundnut (JAU Reco.)
T1: Without mulching
T2: Farm residues mulching (Groundnut shell)
- 4 Source of technology : JAU
- 5 Production system and thematic area : Resource Conservation Technology
- 6 Performance of the Technology with performance indicators:

Farmer No	Name of the farmer	Name of the Village	Yield (Kg/ha)		Soil Moisture content (%)	
			T1	T2	T1	T2
1	KVK Farm	Targhadia	2185	2375	24.35	26.85
Average			2185	2375	24.35	26.85

- 7 Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques: Farm residues mulching enhanced the kharif groundnut yield
- 8 Final recommendation for micro level situation: Use of farm residues mulch in kharif groundnut.
9. Constraints identified and feedback for research: -
10. Process of farmers participation and their reaction: --

OFT-3

1. **Title of Technology Assessed : Water management in drip irrigated cotton crop.**
2. Problem Definition : Water scarcity due to less rainfall and reduce yield of cotton crop
3. Details of technologies selected for assessment Impact of plastic mulching on productivity of drip irrigated cotton (JAU Reco.)
T1: Without mulching
T2: Plastic mulching (25 micron)
4. Source of technology : JAU
5. Production system and thematic area : Resource Conservation Technology
6. Performance of the Technology with performance indicators:

Farmer No	Name of the farmer	Name of the Village	Yield (q/ha)		Soil Moisture content (%)	
			T1	T2	T1	T2
1	Babubhai Ramani	Khorana	3125	3550	24.50	27.65
Average			3125	3550	24.50	27.65

7. Feedback, matrix scoring of various technology parameters done through farmer's participation / other scoring techniques : Silver-black plastic mulch with drip irrigation enhanced the cotton yield
8. Final recommendation for micro level situation :Use of silver black plastic mulch (25 micron) in drip irrigated cotton
9. Constraints identified and feedback for research: -
10. Process of farmers participation and their reaction: --

3.3. FRONTLINE DEMONSTRATION

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

List of technologies demonstrated during previous year and popularized during 2019-20 and recommended for large scale adoption in the district

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Groundnut	Varietal evaluation	Variety (GJG-22)	To test yield potentiality of newly released groundnut variety	8	10	4.0
2	Groundnut	Pest management	IPM	Management of white grub through seed treatment	7	10	4.0
3	Gram	Varietal evaluation	GJG-3	To test yield potentiality of newly released gram variety	9	10	4.0
4	Cotton	Plant protection	IPM	Management of pink bollworm in cotton	8	10	4.0
5	Cumin	Disease Management	IDM	Management of wilt through bio agent	7	10	4.0
6	Buffalo	Nutrient Management	Chelated mineral mixture powder	-	2	20	20
7	Buffalo	Nutrient Manage.	by Pass protein	-	2	10	10
8	Buffalo	Nutrient Manage.	By pass fat	-	2	10	10
9	Fodder	"Fodder managemen	Makhan grass	-	2	10	10

B. Details of FLDs implemented during 2019 oilseeds

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	
1	Groundnut	Varietal evaluation	Variety (GJG-22)	Kharif 2019	4.0	4.0	1	9	10	-
2	Groundnut	Pest management	IPM	Kharif 2019	4.0	4.0	0	10	10	-

Pulses :

Sr. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ Demonstration			Reasons for short-fall
					Proposed	Actual	SC/ST	Others	Total	
1	Gram	Varietal evaluation	Variety (GJG-3)	Rabi 2018-19	4.0	4.0	0	10	10	-

Others

Sr. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ Demonstration			Reasons for short-fall
					Proposed	Actual	SC/ST	Others	Total	
1	Cumin	IPM	Management of wilt through bio agent	Rabi 2018-19	4.0	4.0	1	9	10	-
2	Buffalo	Nutrient Management	By pass protein	-	-	-	-	10	10	-
3	Buffalo	Nutrient Management	By pass fat	-	-	-	2	8	10	-
4	Buffalo	Fodder Management	Jinjavo	Kharif 2019	-	-	2	8	10	-
5	Seasonal vegetables	Nutritional Garden	Kitchen Garden	Kharif 2019	-	-	-	5	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					
1	2	3	4	5	6	7	8	9	10	11	12
Groundnut	Kharif	RF	M. B.	L	M	H	Wheat/Cumin	28/6/19	1/10/19	1297.5mm	36
Cotton	Kharif	RF	M. B.	L	M	H	---	5/7/19	-	1297.5mm	36
Cumin	Rabi	Irrigated	M. B.	L	M	H	Cotton/G'nut	18/11/18	22/2/19	-	-
Gram	Rabi	Irrigated	M. B.	L	M	H	---	25/11/18	21/2/19	-	-

Technical Feedback on the demonstrated technologies

S. No.	Feed Back
1	To enhance the farmers to use recently developed certified varieties of different crops.
2	Proper use of fertilizers, insecticides, fungicide and management of irrigation as per recommendation to reduce the cost of production.
3	Thrips problem in most of the area.

Farmers' reactions on specific technologies

S. No.	Feed Back
1.	White grub problem in groundnut
2.	Pink boll worm in cotton
3.	Reddening in cotton
4.	Late and poor germination was observed in cumin variety GC-4
5.	Cumin variety GC-4 is high yielding wilt observed in some area.
6.	Heavy infestation of thrips in crops like garlic, onion, cotton, cumin, etc
7.	Research needed for control of insect pests and diseases in organic farming

Extension and Training activities under FLD

Sl. No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	3	24-9-2019, 27-9-2019, 13-2-2020	78	-
2	Farmers Training	7	17-6-2019, 19-6-2019, 11-7-2019, 16-7-2019, 5-11-2020, 7-11-2020, 13-11-2020	188	-
3	Media coverage	-	-	-	-
4	Training for extension functionaries	-	-	-	-

C. Performance of Frontline demonstrations

Frontline demonstrations on oilseed crops

Crop	Thematic Area	technology demonstrated	Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
						Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
						High	Low	Average										
Groundnut	Varietal evaluation	Varietal evaluation	GJG-22	10	4.0	30.00	24.50	27.25	23.25	17.20	38200	125203	87003	3.27	37500	110420	72920	2.94
Groundnut	Pest Management	IPM	-	10	4.0	28.25	6.25	18.62	17.50	6.40	32056	93122	61066	2.90	31120	81003	49883	2.60

Frontline demonstration on pulse crops :

Crop	Thematic Area	technology demonstrated	Variety	No. of Farmers	Area (ha)	Eq 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										
Gram	Varietal evaluation	Varietal evaluation	GJG-3	10	4	31.25	11.25	18.62	15.75	18.22	19500	60225	40725	3.08	19300	51150	31850	2.65

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		disease percent		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average			Demo	Check								
Cumin	Disease Management	GC-4	10	4.0	22.5	5.0	9.68	8.20	18.05	6	14.3	40800	155000	114200	3.79	37560	131200	93640	3.49

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units (Animal/ Poultry/ Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Buffalo	Nutrient Management	Bypass Protein (22%)	10	1	1605 kg/lactation	1495 kg/lactation	7.36	-	-	59840	79598	19758	1.33	53682	68512	14830	1.27
Buffalo	Nutrient Management	By Pass Fat	10	1	7.9% Fate	6.4% fat	23.44	-	-	-	-	-	-	-	-	-	-
Fodder	Fodder Management	Jinjvo	10	1	82 q/ha	70 q/ha	17.14	-	-	-	-	-	-	-	-	-	-

FLD on Kitchen Gardening

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units
Vegetables	Nutritive & fresh healthy vegetables	Kitchen garden	10	10

Farm women reaction

- Kitchen gardening gives continuous supply of fresh vegetables at lower cost which gives daily nutritious diet
- In kitchen gardening, farm women are not applying any agrochemicals so it is organic and healthy
- Before demonstration, farm women were growing only three to four vegetable crops in their backyard but after demonstration they said that they grow different vegetable crops through kitchen gardening in scientific way
- They gave extra vegetables to their neighbors
- Farm women said that now we will generate income by selling of extra organic vegetables because now they are aware about precious organic vegetables

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										
Cropping Systems										
Crop Diversification	1	22		22				22		22
Seed production	1	25		25				25		25
Production of organic inputs	1	25		25				25		25
Others (pl specify)	1	41		41	5		5	46		46
Total	4	113	0	113	5	0	5	118	0	118
II Horticulture										
a) Vegetable Crops										
Total (a)										
b) Fruits										
Training and Pruning	1	19		19				19		19
Total (b)	1	19		19				19		19
c) Ornamental Plants										
Total (c)										
d) Plantation crops										
Total (d)										
e) Tuber crops										
Total (e)										
f) Spices										
Production and Management technology	1	42		42				42		42
Total (f)	1	42		42				42		42
g) Medicinal and Aromatic Plants										
Others (pl specify)	1	27		27				27		27
Total (g)	1	27		27				27		27
GT (a-g)	3	88	0	88	0	0	0	88	0	88
III Soil Health and Fertility Management										
Soil fertility management	1	36		36				36		36
Production and use of organic inputs	1	33		33				33		33
Soil and Water Testing	1	59		59	10		10	69		69
Others (pl specify)	1	29		29				29		29
Total	4	157	0	157	10	0	10	167	0	167
IV Livestock Production and Management										
Dairy Management	2	32		32	5		5	37		37
Animal Nutrition Manage.	1	21		21	4		4	25		25
Disease Management	1	21		21	3		3	24		24
Feed & fodder technology	1	19		19	2		2	21		21
Production of quality animal products	1	15		15	3		3	18		18
Others (pl specify)										
Total	6	108	0	108	17	0	17	125	0	125

V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1		20	20					20	20
Value addition	1		49	49		11	11		60	60
Women empowerment	2		73	73		9	9		82	82
Location specific drudgery reduction technologies	1		20	20		1	1		21	21
Rural Crafts	1		21	21		3	3		24	24
Total	6	0	183	183	0	24	24	0	207	207
VI Agril. Engineering										
Farm Machinery and its maintenance	1	23		23				23		23
Use of Plastics in farming practices										
Repair and maintenance of farm machinery and implements	1	34		34				34		34
Small scale processing and value addition	1	41	16	57				57		57
Post Harvest Technology	1	38		38	3		3	41		41
Resource conservation	1	26		26	2		2	28		28
Total	5	162	16	178	5	0	5	183	0	183
VII Plant Protection										
Integrated Pest Management	1	27		27				27		27
Bio-control of pests and diseases	2	54		54				54		54
Production of bio control agents and bio pesticides	1	26		26				26		26
Others (pl specify)	1	40		40				40		40
Total	5	147	0	147	0	0	0	147	0	147
GRAND TOTAL	33	775	199	974	37	24	61	828	207	1035

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										
Integrated Crop Management	2	56		56	2		2	58		58
Integrated nutrient management	2	56		56	1		1	57		57
Total	4	112	0	112	3	0	3	115	0	115
II Horticulture										
a) Vegetable Crops										
Off-season vegetables	1	21		21	4		4	25		25
Total (a)	1	21		21	4		4	25		25
b) Fruits										
Total (b)										
c) Ornamental Plants										
Total (c)										

d) Plantation crops										
Total (d)										
e) Tuber crops										
Total (e)										
f) Spices										
Processing and value addition	1	25		25	2		2	27		27
Others (pl specify)										
Total (f)	1	25		25	2		2	27		27
g) Medicinal and Aromatic Plants										
Total (g)										
GT (a-g)	2	46	0	46	6	0	6	52	0	52
III Soil Health and Fertility Management										
Balance use of fertilizers	2	42		42	9		9	51		51
Total	2	42		42	9		9	51		51
IV Livestock Production and Management										
Dairy Management	1	20		20	2		2	22		22
Disease Management	2	33		33	6		6	39		39
Feed & fodder technology	2	34		34	6		6	40		40
Production of quality animal products	1	21		21	5		5	26		26
Others (pl specify)										
Total	6	108	0	108	19	0	19	127	0	127
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1		28	28		5	5		33	33
Design and development of low/minimum cost diet	1		24	24					24	24
Value addition	1		28	28					28	28
Women empowerment	1		27	27		2	2		29	29
Rural Crafts	1		33	33		5	5		38	38
Total	5	0	140	140	0	12	12	0	152	152
VI Agril. Engineering										
Farm Machinery and its maintenance	1	25		25				25		25
Installation and maintenance of micro irrigation systems	1	26		26	1		1	27		27
Use of Plastics in farming practices	1	23		23	3		3	26		26
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition	1	28		28	2		2	30		30
Post Harvest Technology										

Others (Rain water harvesting)	1	49		49	2		2	51		51
Resource conservation										
Total	5	151	0	151	8	0	8	159	0	159
VII Plant Protection										
Integrated Pest Management	1	20		20	6		6	26		26
Bio-control of pests and diseases	1	20		20				20		20
Production of bio control agents and bio pesticides	1	25		25				25		25
Total	3	65	0	65	6	0	6	71	0	71
GRAND TOTAL	27	524	140	664	51	12	63	575	152	727

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										
Crop Diversification	1	22		22				22		22
Seed production	1	25		25				25		25
Integrated Crop Management	2	56		56	2		2	58		58
Integrated nutrient management	2	56		56	1		1	57		57
Production of organic inputs	1	25		25				25		25
Others (pl specify)	1	41		41	5		5	46		46
Total	8	225	0	225	8	0	8	233	0	233
II Horticulture										
a) Vegetable Crops										
Off-season vegetables	1	21		21	4		4	25		25
Total (a)	1	21		21	4		4	25		25
b) Fruits										
Training and Pruning	1	19		19				19		19
Total (b)	1	19		19				19		19
c) Ornamental Plants										
d) Plantation crops										
e) Tuber crops										
Total (e)										
f) Spices										
Production and Management technology	1	42		42				42		42
Processing and value addition	1	25		25	2		2	27		27
Total (f)	2	67		67	2		2	69		69
g) Medicinal and Aromatic Plants										
Others (pl specify)	1	27		27				27		27
Total (g)	1	27		27				27		27
GT (a-g)	5	134	0	134	6	0	6	140	0	140

III Soil Health and Fertility Management										
Soil fertility management	1	36		36				36		36
Production and use of organic inputs	1	33		33				33		33
Balance use of fertilizers	2	42		42	9		9	51		51
Soil and Water Testing	1	59		59	10		10	69		69
Others (pl specify)	1	29		29				29		29
Total	6	199	0	199	19	0	19	218	0	218
IV Livestock Production and Management										
Dairy Management	3	52		52	7		7	59		59
Animal Nutrition Management	1	21		21	4		4	25		25
Disease Management	3	54		54	9		9	63		63
Feed & fodder technology	3	53		53	8		8	61		61
Production of quality animal products	1	15		15	3		3	18		18
Others (pl specify)	1	21		21	5		5	26		26
Total	12	216	0	216	36	0	36	252	0	252
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	2		48	48			5	5	53	53
Design and development of low/minimum cost diet	1		24	24					24	24
Storage loss minimization techniques	1		28	28					28	28
Value addition	1		49	49		11	11		60	60
Women empowerment	2		73	73		9	9		82	82
Location specific drudgery reduction technologies	1		20	20		1	1		21	21
Rural Crafts	2		54	54		8	8		62	62
Women and child care	1		27	27		2	2		29	29
Total	11	0	323	323	0	31	36	5	359	359
VI Agril. Engineering										
Farm Machinery and its maintenance	2	48		48				48		48
Installation and maintenance of micro irrigation systems	1	26		26	1		1	27		27
Use of Plastics in farming practices	1	23		23	3		3	26		26
Production of small tools and implements										
Repair and maintenance of farm machinery and implements	1	34		34				34		34
Small scale processing and value addition	2	69	16	85	2		2	87		87

Post Harvest Technology	1	38		38	3		3	41		41
Others (Rain water harvesting)	1	49		49	2		2	51		51
Resource conservation	1	26		26	2		2	28		28
Total	10	313	16	329	13	0	13	342	0	342
VII Plant Protection										
Integrated Pest Management	1	27		27				27		27
Integrated Disease Management	1	20		20				20		20
Bio-control of pests and diseases	2	54		54				54		54
Production of bio control agents and bio pesticides	2	51		51				51		51
Others (pl specify)	2	60		60	6		6	66		66
Total	8	212	0	212	6	0	6	218	0	218
GRAND TOTAL	60	1299	339	1638	88	31	124	1408	359	1762

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Tailoring and Stitching	1		36	36					36	36
TOTAL	1		36	36					36	36

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Increasing production and productivity of crops										
Commercial production of vegetables										
Production and value addition										
Fruit Plants	1		49	49		11	11		60	60
Ornamental plants										
Spices crops										
Soil health and fertility management	1	41		41	16		16	57		57
Production of Inputs at site										
Methods of protective cultivation										
Others (pl. specify)										
Total	2	41	49	90	16	11	27	57	60	117
Post harvest technology and value addition										
Processing and value addition	1		23	23					23	23
Others (pl. specify)										
Total	1		23	23					23	23
Farm machinery										

Farm machinery, tools and implements	1	34		34				34		34
Others (pl. specify)										
Total	1	34		34				34		34
Livestock and fisheries										
Livestock production and management										
Animal Nutrition Management										
Animal Disease Management										
Fisheries Nutrition										
Fisheries Management										
Others (pl. specify)										
Total										
Home Science										
Household nutritional security										
Economic empowerment of women	1		50	50		9	9		59	59
Drudgery reduction of women										
Others (pl. specify)										
Total	1		50	50		9	9		59	59
Agricultural Extension										
CapacityBuilding and Group Dynamics										
Others (pl. specify)	1	41		41	3		3	43		43
Total	1	41		41	3		3	43		43
GRAND TOTAL	6	116	122	238	19	20	39	134	142	276

3.5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	21	148	9	157
Diagnostic visits	2	18	2	20
Field Day	3	135	1	136
Group discussions	3	67	-	67
KisanGhoshi	14	111	2	113
Film Show	8	1109	14	1123
Self -help groups	2	31	2	33
Kisan Mela	3	-	-	-
Exhibition	4	958	9	967
Scientists' visit to farmers field	10	145	2	147
Plant/animal health camps	2	216	5	221
Farm Science Club	-	-	-	-
Ex-trainees Sammelan	1	95	1	96
Farmers' seminar/workshop	2	345	4	349
Method Demonstrations	3	99	1	100
Celebration of important days	5	588	16	604
Special day celebration	6	5901	55	5956
Exposure visits	2	109	5	114
Others (pl.specify)				
Total	91	10075	168	10243

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	2
Extension Literature (Booklet)	1
News paper coverage	6
Popular articles	-
Radio Talks	-
TV Talks	2
Animal health camps (Number of animals treated)	2(221)
Others (pl. specify)	
Total	13

➤ **Celebration of Mahila Krishi Divas under Mahila Sashaktikaran week :**

KVK, Targhadia celebration of Mahila Krishi Divas under Mahila Sashaktikaran week on 6th August 2019 at KVK, Targhadia. Total 130 farm women participated in this programme and 310 farm women participated in different training programme. Mr. S. K. Joshi, JDA-Rajkot, Mr. R. R. Tilva, DAO-Rajkot, Dr. B. J. Vaghasiya, Deputy director of Animal Husbandry-Rajkot, Dr. B. B. Kabaria, Senior Scientist and Head, KVK, Targhadia were present and give information about new technology of Agriculture, Kitchen Garden, Nursery, polyhouse, nethouse, Dairy Farming, Value addition of different fruit crops, Balance nutrition of child and mother etc. Certificate distribution was conducted to selected progressive farm women of Rajkot district.

➤ **Celebration of ‘Swachhta Hi Seva’ under Swachh Bharat Pakwada :**

KVK, Targhadia celebration of ‘Swachhta Hi Seva’ under Swachh Bharat Pakwada from 11th September to 2nd October, 2019 by KVK, Targhadia.

- Spath taking and lunching of Swachh monitoring system by KVK staff.
- Cleaning and Sweeping of entire office premises / cleaning of KVK campus.
- Swachhta Awareness at local level
- Cleaning and beautification of surrounding areas,
- Vermicomposting/Composting of biodegradable waste management& other activities on generate of wealth for waste
- Farmers and students rally under SHS at KVK, Rajkot-I of Office area, and different activities under this programme. Total 290 farmers, farm women and students participated in this event.

➤ **Telecast/ Webcast of launching of PM Kisan Samman Nidhi Yojna :**

Krishi Vigyan Kendra, Rajkot-1(Gujarat) has arranged Telecasting/Webcasting of launching of PM Kisan Samman Nidhi Yojna on 11.09.2019. **Shri Kunvarjibhai Mohanbhai Bavaliya**, Minister Of Water Supply, Animal Husbandry, Rural Housing In Government Of Gujarat, Dr. B. J. Vaghasiya, Deputy director of Animal Husbandry-Rajkot, Shri Govindbhai S. Ranpariya Chairman, Gopal dairy , Rajkot, Dr.D.S.Hirpara, ADR-Main Dry Farming Research Station, Dr.B.B.Kabaria, Senior Scientist & Head, were present to make this programme successful. Total 239 Farmers and farm women were participated in this programme.

➤ **Celebration of Soil health day :**

On 5th December 2019 the World Soil Day was celebrated by Krishi Vigyan Kendra, Targhadia (Rajkot-1) at Village: Lilapur, Taluka: Jasdan, Dist: Rajkot in collaboration with Reliance Foundation-Jasdan. Total 60 Farmers were participated in this event. Dr.J.H.Chaudhary, Scientist (Agronomy), Mr.S.R.Rathva (Farm Manager) and Mr. Dinesh Kanara (Programme Officer) has introduced farmers during this event. Dr.J.H.Chaudhary informed farmers about the importance of soil in Agriculture. Role of soil health for crop production. How to take soil sample for analysis of available nutrients from soil. Importance of Soil Health Card. How to increase and maintain soil fertility for long run. Use of Bio-Fertilizers, Organic Matters, Green Manuring, Crop Residue Recycling for soil fertility improvement and increase crop production. Also SHCs were distributed to farmers.

➤ **Celebration of Good governance, Kishan and Vigyan Day :**

On 25th December celebration of Sushasan Day, Kishan and Vigyan Day was carried out at Krishi Vigyan Kendra, Junagadh Agricultural University, Targhadia (Rajkot-1). Shree R.C.Faldu, Cabinet Minister for Agriculture, Rural Development and Transport. Government of Gujarat, Gandhinagar and Shree Kunvarjibhai Bavaliya, Cabinet Minister for Water Supply, Animal Husbandry, Rural Housing, Government of Gujarat, Gandhinagar was the Chief Guests of this programme. Other VIP Dignitaries Dr.V.P.Chovatiya, Vice Chancellor, Junagadh Agricultural University, Junagadh, Shree Anil Ranavasiya, DDO, Rajkot, Shree Praveen Choudhary, DDO, Junagadh, Shree J.D.Jadeja, DDO, Dev Bhumi Dwarka, Shree Mohanbhai Kundariya, Member of Parliament, Rajkot, Shree Rameshbhai Dhaduk, Member of Parliament, Porbandar, Shree Govindbhai Patel, MLA, Rajkot (South), Shree Arvindbhai Raiyani, MLA, Rajkot (East), Shree Lalabhai Sagathiya, MLA, Rajkot (Rural), 50 Officers from various Government Departments and 4500 farmers has participated in this programme.

In Charge Collector and DDO, Rajkot Shree Anil Ranavasiya has welcomed to all. Shree R.C.Faldu, Cabinet Minister for Agriculture, Rural Development and Transport has talked about the importance of this 25th December, Sushasan Day, Birth Anniversary of Late Prime Minister of India, Shree Atal Ji and Different Schemes launched by Government for Farmers. Shree Kunvarjibhai Bavaliya, Cabinet Minister for Water Supply, Animal Husbandry, Rural Housing has talked about the schemes already launched and some new will be launched by Government in Animal Husbandry and Irrigation Department. After the completion of this programme, Tree Plantation was carried out.

Shree S.K.Joshi, JDA(Extension), Rajkot, Shree R.R.Tilva, DAO, Rajkot, Shree Dilip Rathod, DAO, Junagadh, Shree Gajera, DAO, Morbi, Dr.B.B.Kabaria, Head, KVK, Targhadia, Dr.D.S.Hirpara, RS(DF), Targhadia, Dr.J.H.Chaudhary, Scientist, KVK, Targhadia, Dr.G.R.Sharma, Principal(Polytechnic in Agril.Engg.), Targhadia and team of KVK, Dry Farming Research Station and Agriculture Department has did best efforts to make this programme successful.

➤ **QUINQUENNIAL REVIEW TEAM (QRT) visited at KVK :**

QRT on 18th December: Dr. K. S. Khokhar, Ex-VC, CCSHAU, Hisar, Chairman; Dr. A. K. Mehta, Ex-ADG, ICAR, Member; Dr. Sudhir Raizada, Ex-ADG, ICAR, Membe; Dr. R. P. S. Rata, Ex-Director Extension, BAU, Sabaur, Member; Dr. Indrajeet Mathur, Ex-Director Extension, MPUAT, Udaipur, Member; Dr. Lakhani Sinsh, Director, ATARI-Pune, Member Secretary; Mr. J. Mathew, AAO, ATARI- Pune visited at KVK-Targhadia. They visited the different demonstration units and discussion with progressive farmers. Also, the QRT members has motivated the KVK staff and farmers through tree plantation at KVK campus Targhadia.

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 (qt)	Value (Rs)	Number of farmers
Cereals						
Oilseeds	Groundnut	GJG-31	-	17.10	2.65	-
		GG-20	-	14.10	2.18	-
		GJG-22	-	45.90	2.43	-

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity (Kg)	Value (Rs.)	No. of Farmers
Bio Fertilisers				
Bio-pesticide	Trichoderma (Savaj)	7800	70/-	3400
	Beauveria (Savaj)	3682	150/-	2700
Bio-fungicide				
Bio Agents				
Others				
Total				

4. LITERATURE DEVELOPED/PUBLISHED (with full title, author & reference)

A. KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.) : Nil

B. Literature developed/published

Item	Title	Authors name	Number
Research papers	Boosting chickpea production through front line demonstrations under NFSM project in Rajkot district of Gujarat State	H.A. Manvar, M. A. Vakaliya, B. B. Kabaria	-
	Role of Self Help Groups in Women Empowerment and Health	H.A. Manvar, J. B. Kathiriya & D. S. Thakar	-
Technical reports	Monthly, Quertly, six monthly, nine monthly, Annual, ZREAC, Agresco and SAC		8
News letters	-	-	4
Technical bulletins	-	-	4
Popular articles	-	-	4
Extension literature	-	-	-
Others (Booklet)	Safal kheduto ni prernadayi gathao	H. A. Manvar, B. B. Kabaria, D. P. sanepara M. M. Tajpara, J. H. Chaudhary	500
TOTAL	12		

C. Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD/ Audio-Cassette)	Title of the programme	Number
1	DVD	Success Story	4

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

Success story : 1

(A) Title: Entrepreneurship through Modern & Scientific Dairy Farming

(B) Bio-data of Farmer:

1. Name of Farmer: Maheshbhai Kanubhai Ramani

2. Present Address: Village: Magharvada Taluka & Dist: Rajkot

3. Date of Birth: 19-09-1976

4. Education: 8th pass

5. Source of Income:

(I) Agriculture: Yes

(II) Animal Husbandry: Yes

Buffaloes: 08 (Jafrabadi)

Cow : 02 (Gir)

(III) Business: --Nil--

(IV) Any other: --Nil--

6. Information about farmer:

7. Land holding (ha.): 4.0 ha

Irrigated: 4.0 ha

Source of Irrigation: Open well & Tube well

Method of Irrigation: Drip Irrigation & Furrow irrigation

Un-irrigated: --Nil--

8. Information regarding innovation:

Maheshbhai is a progressive livestock owner of the village of Magharvada village of Rajkot district. He started the business by purchasing 08 Jaffrabadi buffaloes and 2 Gir cow under the guidance of scientist of Krishi Vigyan Kendra, Targhadia. In which they made a comfortable shed, manger for animals in a modern way. To control the temperature use of fogger system, and also, use of grooming brush for grooming which often increase the milk production. They also use the chaff cutter for cutting the green and dry grass, resulting as 30% of the food is saved and improves the digestion of food.

In addition, the milking machine and cow mat also uses which is provided by the Krishi Vigyan Kendra, Targhadia. So there is a minimum problem of mastitis and teat infection in buffalo. Thus they earn a net profit of Rs 1,20,000 per month.

9. Horizontal spread of innovation:

Today Maheshbhai Ramani has become the ideal for youth. They adopt modern and scientific dairy farming method for entrepreneurship. Due to low rainfall and un irrigated area, there is less profit in agriculture. Thus, through the dairy farming profession can become economically prosperous.

10. Outstanding contribution in the field of agriculture:

They use farm yard manure in own farm along with milk production. This has also seen the maximum increase in crop production.

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

- Use of cow urine, butter milk, bajra flour etc for insect pest and disease management.
- Use of small or wrinkle seeds of groundnut for sowing purpose.
- Farmers grow maize as a mixed crop in groundnut and inter crop in cotton is best practices for sucking pest management by attracting the natural enemies.
- Cotton Stalk Shredder, Wheel Hoe
- Cotton Stalk Puller
- Tractor mounted sprayer
- Chaff Cutter for Minimizing the Animal Fodder Waste
- IPM in Cotton-Use of Trap crop, Pheromone trap, etc.
- Minimizing the chemical Fertilizer and Maximizing organic manure.
- Value addition in different agriculture crops like groundnut, sesame etc.

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Groundnut	Farmers maintain a set furrow system and apply manure and fertilizers every year in the same furrow.	To get residual effect of manure and fertilizers in succeeding crop
2	Groundnut	Some farmers near the river bed, apply sand in the set furrow for increasing infiltration rate of	To reduce the water Logging condition in the
3	Kharif crops	Farmer apply life saving supplementary irrigation to the crops during moisture stress condition	For life saving irrigation to minimize the risk of crop failure
4	Cotton	Farmers grow Maize after 3-4 rows of cotton	To increase the natural enemies and fodder purpose
5	Cotton	After heavy rain, farmer apply irrigation to balance the salt concentration at top of soil	To balance the salt concentration
6	Groundnut	Farmers grow maize as mix crop in groundnut	To increase natural enemies & fodder purpose

5. No. and Name of villages adopted for Doubling Farmers Income. Indicate whether benchmark survey of the villages are done or not. : Yes, 1. Khoran and 2. Adhiya

6. LINKAGES

A. Functional linkage with different organizations

Name of organization	Nature of linkage
Dy. Director of Agriculture.	Most of the Organizations are members of Scientific Advisory Committee (SAC) of KVK and have linkage with different activities of KVK viz., Training Programme, Khedut Sibir, Farmers day, Animal treatment Camp, Farmers fair, Film Show, Ex-training meeting and Soil health card etc.
Dy. Director of Agril. Extension (FTC)	
Dy. Director of Horticulture	
Dy. Director of Animal Husbandry	
Dy. Director of Social Forestry	
Jilla Udhyong Kendra	
Milk Co-Operative Society (Gopal Dairy)	
Bank of Baroda	
National Bank for Agriculture & Rural Development (NABARD)	

NHRDF
Doordarshan Kendra
All India Radio
WALMI
District Rural Development Agency(DRDA)
ATMA
GLDC
District Watershed Development Agency (DWDA)
GGRC
Reliance foundation
GSFC
GNFC
IFFCCO
KRIBHCO
Center for Environment Education (CEE)

B. Details of linkage with ATMA

a) Is ATMA implemented in your district : Yes

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	Staff meeting	4	-	-
02	Research Projects	-	-	-	-
03	Training Programmes	Farmers Training	7	5	-
04	Demonstrations	Technology Deminstrations	5	5	
05	Extension Programmes				
	KisanMela	Participant in Mela	7	-	-
	Technology Week		7	1	-
	Exposure visit	Exposure visit by ATMA of Progresive farmers	-		
	Exhibition	Exhibition organized at KVK	7	1	
	Soil health camps	-	-	-	-
	Animal Health Campaigns	-	-	-	-
	Others (Pl. specify)	-	-	-	-
06	Publications	-	-	-	-
	Video Films	-	-	-	-
	Books	-	-	-	-
	Extension Literature	-	-	-	-
	Pamphlets	-	-	-	-
	Others (Pl. specify)	-	-	-	-
07	Other Activities (Pl.specify)	-	-		
	Watershed Approach	-	-	-	-
	Integrated Farm Development	-	-		

7. Convergence with other agencies and departments: Yes

8. Innovator Farmer's Meet

Sl.No.	Particulars	Details
1	Have you conducted Farm Innovators meet in your district?	Yes
	On 23rd December 2019 "Kisan Divas" was celebration at Krishi Vigyan Kendra, Rajkot-I. Total 52 farmers are participated in this programme. Mrs. H. H. Padsumbiya and Dr. M. K. Jadeja Scientists KVK, Targhadia and officers companies were present in this event. Also some farmers shared their views on innovativeness and cleanliness drive in Agriculture.	

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

1. To enhance the farmers to use recently developed certified varieties of different crops.
2. Proper use of fertilizers, Irrigations, insecticides and fungicides as per recommendation to reduce the production cost.
3. Cumin variety GC-4 is high yielding but gradually losing wilt resistant character
4. Pink ball worm in cotton
5. Reddening in cotton
6. Heavy infestation of thrips in crops like garlic, onion, cotton
7. Late and poor germination was observed in cumin variety GC-4
8. Research needed for control of insect-pests and diseases in organic farming
9. White grub problem in groundnut
10. Problem of repeat breeding in cattle & buffaloes.

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

Yellowing and drying of cotton plants immediately after rainfall.
Newly released garlic variety is poor in yield.
Management of thrips is problem in all the major crops in district.

10. Technology Week celebration during - Yes

KVK, Targhadia celebration of Krishi Technology week from 26th to 31st August, 2019 at KVK, Targhadia. Dr. A.R. Pathak, Honorable Vice Chancellor, Junagadh Agricultural University, Junagadh, Dr. V.P. Chovatiya, Directorate of Research, JAU, Junagadh and Dr. V. V. Rajani, Directorate of Extension Education, JAU, Junagadh, Shri Khachadiya shaheb, others line department officers and officers from NGOs were present and the information given regarding Improved crop cultivation practices of different crops grown in dry farming region, selection of variety for dry farming, Practical demonstration on moisture conservation technology of crops, High tech production of horticultural crop, scientific management of different disease, feeding, breeding and scientific management in animals, solution for repeat breeding in cow and buffaloes, Balance use of chemical fertilizer and organic farming, Judicious use of insecticide and pesticide for the control of pest and disease, Practical demonstration of improved agriculture implements like Chaff cutter, cotton stalk shredder, agro processing unit, hand wheel hoe, rotavator, thresher, tractor mounted sprayer, mobile chopper, solar cooker solar lantern, and solar light etc., Value addition in Agri. Crops. Total 782 farmer, farm women and extension personal actively participant in technology week.

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

A. Introduction of alternate crops/varieties

State	Crops/cultivars	Area (ha)	Number of beneficiaries
Gujarat	Groundnut	1300	900

B. Major area coverage under alternate crops/varieties

Crops	Area (ha)	Number of beneficiaries
Oilseeds	1300	900
Pulses		
Cereals		
Vegetable crops		
Tuber crops		
Total		

C. Farmers-scientists interaction on livestock management

State	Livestock components	Number of interactions	No.of participants
Farmer's meeting	2	98	
Farmer's seminar	-	-	
Group meeting	3	57	
Total	5	155	

D. Animal health camps organized

State	Number of camps	No.of animals	No.of farmers
Gujarat	1	110	85
Total	1	110	85

E. Seed distribution in drought hit states

State	Crops	Quantity (qtl)	Coverage of area (ha)	Number of farmers
Gujarat	Chick pea	12.50	20	50
Total				

F. Large scale adoption of resource conservation technologies

State	Crops/cultivars and gist of resource conservation technologies introduced	Area (ha)	Number of farmers
Gujarat	Adoption of Trichoderma culture powder for the management of stem rot disease in groundnut	5322	46789
	Adoption of <i>Bt.</i> cotton varieties.	328897	82224
	Farmers prefers to sow semi spreading and high yielding variety of groundnut i.e. GG-20 and GJG-22.	204808	51702
	Most of the farmers adopt new variety of cumin (GC-4) which is resistant to wilt disease	20108	5102
	Intercropping/mix cropping in groundnut and cotton was adopted for minimize the risk factor in dry land agriculture with preservation of natural enemies	21789	6342
	Farmers are ready to use of rotavator/ cotton shredder/ mobile chopper for increasing the organic matter in soil particularly in cotton system.	174532	43633
Total			

G. Awareness campaign

State	Meetings		Gosthies		Field days		Farmers fair		Exhibition		Film show	
	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers
Gujarat	5	236	7	109	--	-	-	-	1	602	2	54
Total	5	236	7	109					1	602	2	54

12. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Cumin Variety (GC-4)	232	84	30000	45000
Improved variety of Gram (GJG-3)	157	72	27500	35000
Wheat variety (GW-496, 366)	268	75	32500	37500
Use of Trichoderma culture powder for the control of stem rot in groundnut	347	67	28125	31500

B. Cases of large scale adoption

- Adoption of *Trichoderma* culture powder for the management of stem rot disease in groundnut
- Adoption of *Bt.* cotton with INM and IPM concepts.
- Farmers prefers to sow semi spreading and high yielding variety of groundnut i.e. GJG-22.
- Most of the farmers adopt new variety of cumin (GC-4) which is resistant to wilt disease
- Intercropping/mix cropping in groundnut and cotton was adopted for minimize the risk factor in dry land agriculture with conservation of natural enemies.
- Farmers are ready to use of rotavator/ cotton shredder/ mobile chopper for Increasing the organic matter in soil particularly in *Bt.* Cotton cropping system

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

13. Kisan Mobile Advisory Services

Month	No. of SMS sent	No. of farmers to which SMS was sent	No. of feedback / query on SMS sent
January 2019	2	3000	-
February	2	3000	-
March	2	3000	-
April	2	3000	-
May	2	3000	-
June	2	3000	-
July	2	3000	-
August	2	3000	-
September	2	3000	-
October	2	3000	-
November	2	3000	-
December	2	3000	-

Name of KVK	Message Type	Type of Messages					Total
		Crop	Livestock	Weather	Marketing	Aware-ness	
	Text only			22			22
	Voice only						
	Voice & Text both						
	Total Messages						
	Total farmers Benefitted			3000			

14. 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.)		Remark
				Variety	Produce	Qty.	Cost of inputs	Gross	
1	Water Harvest Structure	2001	40x 30x 15 mt	-	-	-	-	-	-
2	Arid Horticulture	-	-	-	-	-	-	-	-
3	Soil Testing Lab	2006	-	-	-	-	710000	-	-
4	Bio Gas Plant	2006	-	-	-	-	42000	-	-
5	Tractor mounted sprayer	2007	-	-	-	-	43000	-	-
6	Dibbler	2007	-	-	-	-	900	-	-
7	Cotton Stalk Shredder	2007	-	-	-	-	43000	-	-
8	Cotton Stalk Puller	2007	-	-	-	-	1200	-	-
9	Wheel Hoe	2007	-	-	-	-	1260	-	-
10	Veterinary mobile unit	2008	-	-	-	-	600000	-	-
11	Processing Unit	2009					1685000		
12	Vermi composting unit	2009	0.05						
13	Nadep composting	2014							
14	Crop cafeteria	2009	0.10						
15	Agro-met advisory service	2013							
16	Farm pond	2001	0.48						
17	Organic farming unit in 1 ha.	2016	1.00						
18	KVK Museum	2011							

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

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals									
Pulses									
Oilseeds			1.80	GJG-31	Breeder	1410 Kg	-	2,18,550/-	
			3.34	GG-20	Breeder	1710 Kg	-	2,65,050/-	
			8.66	GJG-22	Truthful	4590 Kg	-	2,60,100/-	
Fibers									
Spices & Plantation crops									
Floriculture									
Fruits									
Vegetables									
Others (specify)									

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

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1	Trichoderma (Savaj)	7800 Kg	70/-	78,000/-	-
2	Beauveria (Savaj)	3682 Kg	150/-	36820/-	-

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

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

15. 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	SBI	Junagadh					
With KVK	SBI	Rajkot	463	TRAINING ORG.KVK.JAU. TARGHADIA	10353003175	360002002	SBIN0000463

B. Utilization of KVK funds during the year 2019-20 (Up to Feb. 2020) (Rs. in lakh)

S. No.	Particulars	Sanctioned	Released	Expenditure
13.1	Recurring Contingencies			
13.1.1	Pay & Allowances	77.00	57.00	65.00
13.1.2	Traveling allowances			
13.1.3	Contingencies	12.00	9.00	14.00
<i>13.1.4.1</i>	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance			
<i>B</i>	POL, repair of vehicles, tractor and equipments			
<i>C</i>	Meals/refreshment for trainees			
<i>D</i>	Training material			
<i>E</i>	Frontline demonstration except oilseeds and pulses			
<i>F</i>	On farm testing			
<i>G</i>	Training of extension functionaries			
<i>H</i>	Maintenance of buildings			
<i>I</i>	Establishment of Soil, Plant & Water Testing Laboratory			
<i>J</i>	Library			
13.1	Total Recurring	12.00	9.00	14.00
13.2	Non-Recurring Contingencies			
13.2.1	Works			
13.2.2	Equipments including SWTL & Furniture			
13.2.3	Vehicle (Four wheeler)	8.00	8.00	0.00
24.2.4	Library			
13.2	Total Non Recurring	8.00	8.00	0.00
13.3	REVOLVING FUND			
13.4	GRAND TOTAL (A+B+C)	97	74	79

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

Year	Opening balance as on 1 st April	Income during the year	Expenditure during the year	Net balance in hand as on 1 st April of each year
April 2017 to March 2018	24,73,689	24,24,186	23,39,682	25,78,697
April 2018 to March 2019	25,78,697	25,57,179	24,79,409	26,56,467
April 2019 to Feb. 2020	26,56,467	18,11,211	18,88,218	25,79,460

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

SN	Duration	Name of Scientist	Topic/Objective	Venue	Type
1	10-11/01/2019	Dr. J. H. Chudhriy	National seminar on “Innovative Approaches for Rural and Agriculture Advancement “	JNKVV College of Agriculture Tikamgarh M.P.	Seminar
2	4-6/06/2019	Dr. M. M. Tajpara	Annual Review workshop of TDC-NICRA	CRIDA, Hyderabad, Telangana, India	Workshop
3	14-16/06/2019	Dr. B. B. Kabaria	Annual Zonal Workshop of KVKs	ICAR-CCARI, Goa	Workshop
4	16-25/09/2019	H. A. Manvar	Integrated Approaches Towards Addressing Hidden Hunger Challenge	MPUAT, Udaipur, Rajasthan	Training
5	12/12/2019	Dr. B. B. Kabaria	Zonal Review Workshop on ARYA	Kolhapur, Maharashtra, India	Workshop