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ANNUAL PROGRESS REPORT

(April-2018 to March-2019)

&

ACTION PLAN

(April-2019 to March-2020)

TO BE PRESENTED AT

ANNUAL ZONAL WORKSHOP FOR KVK OF ZONE-VIII

(Gujarat, Goa & Maharashtra)

ORGANIZED BY

DIRECTOR, ATARI ZONE-VIII, ICAR, PUNE

HELD AT

INCIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

CENTRAL COASTAL AGRICULTURAL RESEARCH INSTITUTE

ELA, VELHA, GOA

During JUNE 14-16, 2019

PREPARED/COMPILED By

Dr. K. P. Baraiya, Senior Scientist & Head
Smt. A. K. Baraiya, Scientist
Shri S. H. Lakhani, Scientist
Dr. J. N. Thaker, Scientist

KRISHI VIGYAN KENDRA

JUNAGADH AGRICULTURAL UNIVERSITY
JAMNAGAR - 361 006
GUJARAT

CONTENT

ANNUAL PROGRESS REPORT-2018-19

(1st APRIL - 2018 TO 31stMARCH-2019)

KRISHI VIGYAN KENDRA
JUNAGADH AGRICULTURAL UNIVERSITY, JAMNAGAR

DETAIL REPORT OF APR-2018-19

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		E mail	Website address & No. of visitors (hits)
	Office	FAX		
Krishi Vigyan Kendra Millet Research Station, JAU Air force Road, Opp. Digjam Mill Jamnagar- 361 006	(0288) 2710165	(0288) 2710165	kvkjamnagar@gmail.com kvkjamnagar@jau.in	www.jau.in 11347096

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

Address	Telephone		E-mail	Web address
	Office	FAX		
Junagadh Agricultural University, Junagadh – 362 001 (Gujarat)	PBX 2672080-90	(0285) 2672653	dee@jau.in	www.jau.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. K. P. Baraiya	Senior Scientist & Head Krishi Vigyan Kendra Junagadh Agricultural University, Air force Road, Opp. Digjam Mill Jamnagar- 361 006	9427980032	kvkjamnagar@gmail.com kvkjamnagar@jau.in

1.4. Year of sanction :ZARS (KVK) 2001, Letter No. F.No. 18(4)/99-NATP Dated October 31st, 2001
ICAR (KVK) 2004, Letter No. F.No. 8(1)/2002-AE-II(Pt.) Dated February 5th, 2004

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

Sl. No.	Sanctioned post	Name of the incumbent	Discipline	If Permanent, Please indicate		Date of joining	If Temporary, pl. indicate the consolidated amount paid (Rs./month)
				Current Pay Band	Current Grade Pay		
1	Senior Scientist & Head	Dr. K.P. Baraiya	Plant Protection	37400-67000	9000	17.08.2006	
2	Scientist	Shri S. H. Lakhani	Crop Production	15600-39100	6000	30.03.2015	
3	Scientist	Vacant	Plant Protection	15600-39100	6000		
4	Scientist	Vacant	Horti./ Ag. Engg	15600-39100	6000		

5	Scientist	Vacant	Ext. Education	15600-39100	6000		
6	Scientist	Dr. J. N. Thaker	Fisheries	15600-39100	8000	31.08.2006	
7	Scientist	Smt. A. K. Baraiya	Home Science	15600-39100	8000	17.08.2006	
8	Farm Manager	Shri H. S. Godhani	Agril. Ento.	39900-126600	-	19.09.2015	38090/-
9	Programme Assistant	Shri A. B. Parmar	Ext. Education	39900-126600	-	17.10.2018	38090/-
10	Computer Programmer	Shri C. P. Padhiyar	Computer Operator	39900-126600	-	29.12.2008	
11	Accountant / Superintendent	Shri B. H. Joshi	Adm.	39900-126600	-	11.6.2008	
12	Stenographer	Vacant	Adm.	19900-63200			
13	Driver	Vacant	Supt.	19900-63200		-	
14	Driver	Shri. D.M. Chauhan	Supt. (Fix)	19900-63200		9.10.2007	
15	Supporting staff	Shri B. V. Bamaniya	Supt.	14800-47100		01.11.2014	
16	Supporting staff	Shri P. S. Damor	Supt.	14800-47100		1.09.2006	

1.6. Total land with KVK (in ha) : 20.44 ha

Sl. No.	Item	Area in hectare(s)*
1	Under Building and Road	2.00
2	Under Demonstration units	0.70
3	Under crops	12.00
4	Orchard	3.50
5	Agro-forestry	0.24
6	Others (Farm Pond & Channels)	2.00
	Total	**20.44**

1.7. Infrastructural Development:

A) Buildings

Sl. No.	Name of building	Sourceof funding	Stage					
			Complete			Incomplete		
			Comp-letion Date	Plinth area (Sq.m)	Expen-diture (Rs.)	Star-ting Date	Plinth area (Sq.m)	Status of const-ruction
1.	Administrative Building	KVK	15-8-11	550	5500000			
2.	Farmers Hostel	KVK	15-8-11	305	3000000			
3.	StaffQuarters (6)	KVK	15-8-11	400	4000000			
4.	Demonstration Units of vegetable	KVK + ATMA	31-3-07	-	-	-	-	-
5	Poly House	RKVY	31-3-09	320	281602	-	-	-
6	Net House	RKVY	31-3-09	150	64498	-	-	-
7	Training Hall	RKVY	20-2-10	190.99	1395800	-	-	-
8	Process Plant	RKVY	20-2-10	197.31	1536400	-	-	
9	Implement shed	RKVY	11-2-10	77.33	297800	-	-	-

10	Rain Water harvestingsystem	KVK	31-3-2007	26m×26m (2 Ponds)60m×60m (1 Pond)	999000	-	-	-
11	Fencing	-	Not	Available	-	-	-	-
12	Threshing floor	-	Not	Available	-	-	-	-
13	Farm godown	-	Not	Available	-	-	-	-
14	ICT lab	-	Not	Available	-	-	-	-
15	Other	-	Not	Available	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Toyota **Quallis** (GJ-10G 433)	2004-05	490200	463568	Working (it is required to be right up)
Hero Honda **splender** (bike) GJ-10 BB-1634	2010-11	46475	20547	Working

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Presentstatus
Captain Mini Tractor	2001-02	166125	Working
Telephoneline	2001-02	19850	Working
Multi tool carrier complete set	2001-02	6500	Working
Photocopier	2001-02	125000	Working
Over headprojector	2001-02	17600	Working
Computer	2002-03	29500	Working
HP Laser printer	2002-03	20390	Working
U.P.S. (3 KVA)	2002-03	38000	Working
Spectrophotometer	2005-06	89160	Working
Flame photometer	2005-06		Working
Physicalbalance	2005-06	10640	Working
Chemicalbalance	2005-06	100000	Working
Water distillation still	2005-06	96118	Working
Kieldahi digestion and distillation	2005-06	49644	Working
Shaker	2005-06	80080	Working
Grinder	2005-06		Working
Refrigerator	2005-06	16772	Working
Oven	2005-06	30550	Working
Hot plate	2005-06		Working
Aspee tractor mounted sprayer	2006-07	32000	Working
Air assisted blower type sprayer	2009	98750	Working
Laptop computer (HCL)	2009	47500	Working
Digital camera (Nikon)P-90 12.1	2009	24300	Working
Cotton stalk shredder	2008-09	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
EPBX System	2012	44000	Working
Vertical Autoclave	2012	78190	Working

Laminar Airflow	2012	127440	Working
Electronic Balance (200 gm)	2012	12600	Working
EC/ Conductivity meter	2012	6300	Working
Portable pH Meter	2012	6300	Working
Compound microscope	2012	4410	Working
Trinocular microscope	2012	112000	Working
Digital temperature & humidity indicator cum controller	2012	34750	Working
Digital TDS meter	2012	3985	Working
Research centrifuse with accesaries	2012	42480	Working
Stabilizer	2012	10440	Working
Hot air oven	2012	41580	Working
BOD incubator	2012	46305	Working
Digital camera SLR (Canon)	2012	44750	Working
AC 1.5 tonn	2012	45990	Working

1.8. A). Details SAC meeting conducted in the year

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	01-10-2005	21	-	-
2.	07-10-2006	30	-	-
3.	02-11-2007	31	-	-
4.	17-10-2008	30	-	-
5.	14-09-2009	33	-	-
6.	29-4-2010	35	-	-
7.	07.04.2011	37	-	-
8.	10.04.2012	32	-	-
9.	02.04.2013	37	-	-
10.	27.12.2013	26	-	-
11.	21.02.2015	25	-	-
12.	29.01.2016	22	-	-
13.	25.10.2016	27	-	-
14.	12.04.2018	30	-	-
15.	25.03.2019	35	As below	As below

The Fifteenth Scientific Advisory Committee meeting of Krishi Vigyan Kendra, JAU, Jamnagar was held at Training Hall, Krishi Vigyan Kendra, JAU, Porbandar (Khapat) on 25th March, 2019.

Committee made the following recommendation after active interaction.

Sl. No.	Name and Designation of Participants	Salient Recommendations	Action taken
1	Dr. A. R. Pathak, Hon'ble Vice Chancellor, JAU, Junagadh	➢ Arrange FLD on latest variety of pearl millet	Suggestion accepted and incorporated in action plan
		➢ Arrange training on micro irrigation system	Suggestion accepted and incorporated in action plan
		➢ Analyze maximum soil and water sample at KVK Soil Testing Laboratory	Suggestion accepted and incorporated in action plan
2	Dr. V. P. Chovatiya, Director of Research, JAU, Junagadh	➢ Arrange training on processing of dragon fruit and pearl millet	Suggestion accepted and incorporated in action plan

		➢ Arrange training on horticultural crops cultivation	Suggestion accepted and incorporated in action plan
		➢ Informed farmers in advance about weather and technical suggestion on precaution measures through SMS	Suggestion accepted and implemented
3	Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh	➢ Presentation of SAC should be in English and vocal language should be in Gujarati	Suggestion accepted and implemented
4	Shri Vitthalbhai Sanghani progressive farmers of Jamnagar	➢ Increase organic farming and advice about dangerousness effect of chemical on human being.	Suggestion accepted and incorporated in action plan. Maximum emphasis on organic farming in every programme.

❖ 15th SAC proceeding along with list of participants in Annexure -1.

2. DETAILS OF DISTRICT

The district of Jamnagar is lies in North Saurashtra Agro climatic zone(VI) with an area of 35.02 lakh hectare land. The total geographical area of entire district (21.8 – 22 ON, 69.0 – 70.7 E) occupies 14125 km^2 i.e. 14.125 lakh ha area in the west of Gujarat state. The climate is arid (80%) and semi arid (20%) with a mean moisture index of 67.5. About 95 to 98% of annual rainfall comes during the monsoon month of June to October, July and August being the rainiest months. The co-efficient of variation ranges between 50 and 82%. The annual potential evapo-transpiration ranges between 1500 and 1650mm, three times the precipitation, resulting in no flow in the ephemeral channels for the most of the year. The district is a water scarcity area droughts are common in this region draughts of moderate to severe intensity occur once in 2 to 3 years. Although the integrated drainage system from the story/rocky/gravelly surfaces and torrential nature of precipitation generate 40 to 60% of rainfall as runoff, steeper slopes and absence of checks allow the water to quickly flow to the sea. Being is hard rock terrain, the groundwater potential is very low, is already over exploited and mined, resulting in either the saline water ingress in the costal aquifers, or drying up of the ground water up to a depth of 100m. Consequently a need for holistic approach to water resource development in the district. Wind velocity prevailing in the district is higher order (14.1 km) ha on an annual average basis due to sea coast area.

According to physiographically, major portion of the area in the district have an altitude ranging between 25 to 150 meters, which consists ten taluka having gentle slope to moderate slope. The district is marked by radical drainage pattern. Deccan trap basalt occupies a major part of the district. The Quaternary formations include milliolite, limestone, alluvium and Geolian sediments. The dominant land forms are colluvial plains and rocky uplands. Low hills occur in the southern part of district and are dissected by numerous large and small seasonal streams, most of which drain towards north and form potential drainage basins. The district is characterized by shallow, black soil and coastal alluvial soils with large variations in depth, texture, structure salinity, and water erosion. Nearly two third area of the district is under cultivation. The major factors of land degradation are accelerated water erosion and Salinization.

Basic information of operational district, Jamnagar and Devbhumi Dwarka:

Sr. No.	Details	JAMNAGAR	DEVBHUMI DWARKA
1	Total geographical area	6.075 lakh ha.	4.07509 lakh ha.
2	Total cultivable area	4.32 lakh ha.	2.52 lakh ha.
3	Net cultivated area	3.53 lakh ha.	2.38 lakh ha

4	Total are aunder forest	0.43 lakh ha.		0.1736 lakh ha	
5	Total irrigated area	0.939 lakh ha.		0.23092 lakh ha.	
6	Number of holdings	1.44 lakh		1.17 lakh	
7	Average annual rainfall	550 mm.		550 mm.	
8	Soil type	Medium black		Medium black	
9	Total number of villages	419 (8 city)		280 (8 city)	
10	Totalpopulation	13.89 lakh (2011)		7.48 lakh (2011)	
	(a) Male	7.18lakh .		3.84lakh .	
	(b) Female	6.71 lakh		3.64lakh .	
11	Literacy percentage	Rural	Urban	Rural	Urban
	a. Male	86.95	79.55	76.14	80.74
	b. Female	76.22	62.18	55.41	61.36
12	Number of talukas	6 (Six),		4 (Four)	
		Jamnagar		Jamkhambhalia	
		Dhrol		Jamkalyanpur	
		Jodiya		OkhaMandal (Dwarka)	
		Kalavad		Bhanvad	
		Lalpur			
		Jamjodhpur			

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

S. No	Farming system/enterprise			
1	Crops	Cereals	:	Pearl millet, Sorghum, Wheat, Maize
		Pulses	:	Greengram, Blackgram, Chickpea, pigeonpea
		Oilseeds	:	Groundnut, Sesamum, Castor, Mustard,
		Cash crops	:	Cotton,
		Spices and condiments	:	Cumin, Fennel, Coriander, ajwan, Ishabgul
		Vegetables	:	Onion, garlic, potato, chilli, binjal, tomato, cauliflower, Cowpea, cabbage, okra, peach, cucurbits etc
		Horticulture	:	Chiku, pomegranate, lemon (Citrus), Jamun, Aonla, guava, custard apple, papaya, coconut, ber, Almond, Banana, Dragon fruit, Drum stick
		Floriculture	:	Rose, merry gold, vevanti, etc
		Other Crops	:	Chikori, Fenugreek, Mulberi neem
2	Live stock	Bullocks and cows		
		Buffaloes		
		Sheep		
		Goats		
		Horse and camel		
		Poultry		
		Others animals		
3.	Fishery	340 km coastal belt		4832 tonnes fish production

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

a) Soil type

S. No	Agro-climatic Zone	Characteristics

Zone–VI	North Saurashtra	The influence area of North Saurashtra Agroclimatic Zone is spread among five districts *viz*., Amreli (7 taluukas out of 10), Bhavnagar (7 talukas out of 14), Jamnagar (all the 10 talukas), Rajkot (9 talukas of 13) and Surendranagar (6 talukas out of 9) covering 39 talukas in all. The influence area of the zone lies between 21°-02' to 23°-16' North Latitude and 68°-56' to 72°-12' East Longitude. It is founded in the north by the Gulf of Kutch and parts of Rajkot as well as Surendranagar districts, in the East by the Ahmedabad district and ncoastal part of Bhavnagar district, on the South by the Junagadh district and parts of Amreli as well as Rajkot district, to the west by Are bian sea. The North Saurashtra region which comprises the peninsular part of Gujarat has low to medium rainfall and shallow to medium black soils and also coastal saline alluvial soils. In this Agro-climatic zone, cotton (Bt), groundnut, pearl millet, wheat are the major crops which contribute considerably to the economy of the state. In Saurashtra, among this zone taking in to consideration the rainfall pattern, the topography, soil characteristics, the climate and the cropping pattern have been identified in Gujarat. The North Saurashtra zone have five main / sub station cum testing centre of University like Dry Farming Research Station with KVK, Targhadia (Rajkot District), Main Millet Research Station with KVK, Jamnagar, Oilseeds Research Station (Sesamum, Mustard, Sunflower) with KVK, Amreli, Dry Farming Research Station, Nanakandhasar, (Surendranagar District) and Dry Farming Research Station, Jamkhambhalia (Jamnagar District).

b) Topography

Agro – Ecological situation in the District

The advent of southwest monsoon greatly influences seasonal patterns of rainfall distribution in the district. Thus, mean annual rainfall provides useful comparison of agricultural potential of a given situation in the district. The mean rainfall in the district 539.17mm

The physiography of entire region of district is more or less flat. However, the region is undulating with slopes having little hilly areas from 25 to150 meters Physical features of the area vary from flat landto150 meters above mean sea level. Most of the area falls in the range of 25m to 150m above mean sea level.

Based on the soil survey information of the zone, the soils of the district hence been broadly classified in tofine categories Available information about the properties of these soils and their textures has been considered. The types of soils categories are as under: -

Shallow black soils

Medium black soils

Saline alkali soils

Costal alluvial soils

Hilly soils

While delineating the zoneinto district agro ecological situations, there major factors including various soil types, altitude and the rainfall patterns have primarily been considered. The district can be delineated into five agro ecological situations.

Although, each of the situations has rainfed and irrigated condition, but irrigation has not been considered in identification of the agro ecological situations. While deciding the major crops, cropping patterns and constraints in production, mention has been made of both these conditions one or the other agro ecological situation occurs in the influence area of the district. The fact that this does not preclude the existence of more than one agro ecological situations within the same area.

Sl. No.	Agro Ecological Situation	Soil texture	Altitude	Principal crops	Special features	Approximate area (000ha)	Taluka included	Characteristics
AES-1	Shallow Black soils with 500-600 mm Rainfall	Sandy clay loam to clayey	75 – 150	Groundnut, wheat, sorghum, pearlmillet	Well drained soils with rapid permeability	124	Kalawad, Jamjodhpur, Bhanvad, Okha	Moisturestress, temperaturestress
AES-2	Shallow Black soils with 600-700 mm Rainfall	Clayey	75 – 150	Groundnut, wheat, sorghum, pearlmillet	Slightly well drained soils with rapid permeability	180	Part of Kalyanpur, Jamnagar, Jamkhambhalia, Lalpur, Dhrol, Jodia	Moisturestress, temperature stress
AES-3	Coastal Alluvial soils with 300-400 mm Rainfall	Clayey loam to clayey	50	Groundnut, pearlmillet, sorghum, chickpea	Low nitrogen and phosphus	181	Jodia, part of Okha, Jamkhambhalia, Kalyanpur& Jamnagar	Salt affected salinity
AES-4	Coastal Alluvial soils with 500-700 mm Rainfall	Silt clay	25-50	Groundnut, pearlmillet, sorghum, chickpea	Low nitrogen and phosphorus	299	Kalyanpur, Jodia& Jamnagar, Khambhadia, Lalpur, Dwarka	Salt affected salinity
AES-5	Coastal Alluvialshallow black soils with 300-400 mm Rainfall	Sandy loam toclay loam	0-25	Sorghum, Pearlmillet, Groundnut, Sesamum	Aridclimate	31	Okha	Known salinityforgenus ephedra seacoast very rich in Alghlflor and fanner of economic importance.

2.3 Soil type

As the geographical formation of Saurashtra is to volcanic origin, the soils are generally desired from basaltic rock known as Daccan trap. This is the commonest rock in India and due to its extensive occurrence in south is called “Daccan Traps”. In many parts, they6 have flat top features and hence, are also known as plateau basalt. The trap rocks, which occupy a large part of western cost of India, is also covering North Saurashtra zone. The most common colour of the trap rock in the region is dark grey. On weathering, trap rock form a ferruginous gravelly material known as murrum, which under lie-soil formed in situ. Soils, thus derived are either brown red in colour or regular, the black soil. In district black or

brown colour is predominant. The soils are shallow to moderately deep. The detailed soil survey information for the soils of Jamnagar district are as under.

S. No	Soil type	Characteristics	Area in ha
1	Shallow black soils	These soils have developed from basaltic trap especially from granite and gneiss parent materials. They light grey in colour. Taxonomically, they are classified as *Ustorthents* and *Ustochrepts*. Soils depth varies for cm to 45 cm. They are gravelly but mainly they are sandy clay loam to clayey in texture. The clay on tent in surface soil varies from 20% to 77.49% and calcium carbonate content varies from 3.76 to 26.71 per cent. The soil structure is weak, mainly sub angular blocky and occasionally crumb. Since these soils lack district profile layering and are shallow, capacity to retain moisture is not sufficient. The soils are neutral to alkaline in reaction p^H ranges from 7.3 – 8.4) and from fertility point of view, these are medium in available nitrogen, low to medium in available phosphorus and adequate in availability of potash.	124000 ha (Kalawad, Jamjodhpur, Bhanvad, Okha)
2.	Medium black soils	The major portion of Jamnagar (Some part of Kalyanpur, KHambhaliya& Jamnagar, major part of Lalpur, Dhrol, Jodiataluka is covered under medium black soils. These residual soils have basaltic trap parent materials. These soils vary in depth from 30 to 60 cm or more at few places. They are calcareous in nature. A layer of murrum (Unconsolidated material of decomposed trap and limestone) is generally found in sub soil layer. The drainage does not pose any problem, because of porous sub soil layer. Morphologically, the profile of these soils has A-C horizon characteristics, having moderate sub angular blocky structure. They are plastic and sticky and hard in consistency on drying. The colour of these soils varies from very dark brown to light grey. Taxonomically, these soils are classified as *Ustochrepts* in *Inceptisol* order. The soils are dominated by smectite group of clay minerals which give to mild cracking in dry season, due to which these are further classified as *Vertic – Ustochrepts* at sub group level. The soils are clay loam to clayey in texture. The souls are highly retentive of moisture because higher percentage of clay content. The percentage of clay content in the surface varies from 31.79 to 73.27 per cent, while no definite trend of clay content in different horizon of the profile is observed. The chemical composition of these soils is neutral to alkaline reaction (p^H7.4 to 8.9). Calcium is the dominant exchangeable cation followed by magnesium. The soils are generally low to medium in available nitrogen, phosphorus and adequately supplied with potassium. The calcium carbonate contents various from 5.26 to 20.36 per cent in these soils.	180000 ha (Part of Kalyanpur, Jamnagar, Jamkham-bhalia, Lalpur, Dhrol, Jodia)
3.	Saline alkali soils	Saline alkali souls are extensively distributed on the coastal are3a as well as inlands. These soils are located in the districts of Jamnagar (Jodia, part of Okhamandal, Kalyanpur, Jamkhambhaliya and jamnagartalukas). These soils are originated as a result of higher water table, low rainfall and high evaporation losses during summer months resulting into upward movement of salts, poor drainage, use of saline ground water and ingress	181000 ha (Jodia, part of Okha, Jamkhambhalia,

		of sea water (in coastal areas). The souls are classified as *Fluvaquents, Halaquents,* and*Haplaquents* (Entisol): *Haplaquents* and *Haptaquepts* in order – *Inceptisol.* Texturally these soils vary from sandy loam to clay. The degree of salinity and alkalinity is also highly variable. In Jamnagar district, the saline and alkaly soils are widely distributed mainly termed as coastal soil. The soils are sandy loam to clay loam in texture. The EC varies from 1.54 to 38.6 m.mhos/cm and ESP ranges from 9.2 to 74.64% in surface soil. The p^H varies from 7.6 to 9.00 in surface soils and normally calcareous in nature. Most of these soils are low to medium in available nitrogen and phosphorus and high in available potash.	Kalyanpur& Jamnagar)
4.	Costal alluvials oils	these soils are located in the district of Jamnagar consisting Kalyanpur, Jodia and Jamnagar, Jamkhambhadia, Lalpur, Dwarka (OkhaMandal) and Dhrol, talukas. These soils are sandy clay loam to clay in texture. These soils are also affected with salts and are saline sodic in nature. The surface soil varies from 1.54 to 38.6 m.mhos/cm in Electrical conductivity, and from 9.2 to 74.64 in Exchangeable sodium percentage. The soil reaction varies with situation ranging from moderately alkaline or highly alkaline (p^H 7.6 to 9.0). The souls are normally medium in fertility. Taxonomically, these souls are classified as *Halaquents* and *Haplaquents* – Entisol and *Helaquepts* and *Hapdaquents* in Inceptisol order.	299000 ha (Kalyanpur, Jodia& Jamnagar, Khambhadia, Lalpur, Dwarka)
5.	Hilly soils	These soils occur in some parts Bhanvad and Jamjodhpurtalukas of Jamnagar district. Because of the steep slope and erosion, the profile is not developed. These soils are developed because of weathering of parent materials existing basaltic trap limestone and sand stone. These soils are shallow to moderately deep and are coarse to find in their texture. The texture varies from loamy sand to clay loam to clay. They have under composed rock fragments and are low in fertility status. These soils are placed in to *Ustorthents* and those near foothills and valley are comparatively deeper can be placed under *Ustochrept s*and can be classified under estisol and *Inceptisol* orders respectively.	31000 ha (Some part of Bhanvad and Jamjodhpur)

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

S. No	Crop	Jamnagar			Devbhumi Dwarka		
		Area (ha)	Production (Qtl)	Productivity (Qtl /ha)	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
	Oilseeds						
1	Groundnut	132795	5168380	38.92	245540	9821600	40.00
2	Sesamum	4822	23660	4.91	1458	6124	4.20
3	Castor	7095	243950	34.38	280	9800	35.00
4	Soybean	1793	12855	7.17	16	112	7.00
	Total Oilseeds	214358	0	0.00	177640	0	0.00
	Cash Crops						
5	Cotton	173236	5112160	29.51	7204	194508	27.00
6	sugarcane	82	4101	50.00	68	3399	50.00
	Total Cash Crops	98753	0	0.00	81837	0	0.00
	Food Grain						
7	Wheat	7030	265030	37.70	51570	1753380	34.00
8	Pearlmillet	242	6490	26.82	3278	91784	28.00
9	Sorghum	4429	46508	10.50	3671	40377	11.00

10	Maize	1558	11221	7.20	1292	9041	7.00
	Total Food Grains	39957	0	0.00	33113	0	0.00
	Pulse Crops						
11	Greengram	2346	17100	7.29	1839	13793	7.50
12	Blackgram	2645	19176	7.25	265	1935	7.30
13	Cowpea	156	586	3.76	129	409	3.17
14	Pigeon pea	3729	77190	20.70	500	10055	20.11
15	Moothbean	197	827	4.20	163	589	3.61
16	Chickpea	10222	158030	15.46	21078	313425	14.87
17	Cluster bean	41	769	18.75	34	617	18.16
18	Other pulses	8	0	0.00	7		
	Total Pulses	21493	0	0.00	17812		
	SPICES AND CONDIMENTS						
19	Cumin	2351	19987	8.50	1949	15413	7.91
20	Fenugreek	49	771	15.67	41	615	15.08
21	Coriander	1258	18237	14.50	1042	14498	13.91
22	Ajwan	2742	23312	8.50	2273	17978	7.91
24	Chilli	848	16104	19.00	702	12931	18.41
25	Garlic	328	26084	79.50	272	21456	78.91
	Total spices	7576	104495	13.79	6279	82891	13.20
	VEGETABLE						
27	Onion	109	22311	204.00	91	18436	203.41
28	Potato	55	8011	146.50	45	6612	145.91
29	Brinjal	960	177547	185.00	795	146664	184.41
30	Tomato	1288	383764	298.00	1067	317397	297.41
31	Cauliflower	53	7792	146.91	44	6432	146.32
32	Cowpea	431	32230	74.80	357	26499	74.21
33	Cabbage	443	74681	168.40	368	61672	167.81
34	Okra	1526	109848	72.00	1264	90286	71.41
37	Cucurbits	790	129113	163.40	655	106610	162.81
38	Cluster bean	2474	238732	96.50	2050	196628	95.91
39	Other vegetable	87	9668	110.50	73	7969	109.91
	Total Vegetable	8216	1193698	145.29	6809	985205	144.70
	FRUIT CROPS						
40	Chiku	136	15754	115.70	113	12989	115.11
41	Pomegranate	309	27500	89.01	256	22639	88.42
42	Citrus	141	10412	74.09	116	8560	73.50
44	Aonla	19	1148	60.00	16	942	59.41
45	Guava	7	284	43.33	5	232	42.74
46	Custard apple	36	2685	75.54	29	2208	74.95
47	Papaya	264	165079	625.01	219	136672	624.42
48	Coconut	276	23224	84.10	229	19111	83.51
49	Ber	192	18193	94.79	159	14983	94.20
50	Kharek	50	2488	50.00	41	2038	49.41
51	Banana	24	10587	440.00	20	8762	439.41
52	Mango	257	15678	61.00	213	12867	60.41
53	Cashew nut	2	22	10.00	2	17	9.41
54	Other fruits	97	7596	78.47	80	6247	77.88
55	**Total Fruits**	1809	300650	166.20	1499	248265	165.61
56	**FLOWERS**						
57	Rose	36	3363	93.18	30	2769	92.59
58	Merry gold	77	6261	81.79	63	5151	81.20
60	Jasmine	2	142	86.67	1	117	86.08
62	Lilly	1	93	85.00	1	77	84.41
63	Other flowers	90	8011	88.79	75	6595	88.20
	Total flowers	206	17871	86.91	170	14709	86.32
	OTHER CORPS						

64	Chikori	27	2365	86.50	23	1947	85.91
65	Palma Rosa	24	2939	125.00	19	2424	124.41
	Total Other crops	51	0	0.00	42	0	
	Fodder crops						
67	Lucern	604	72510	120.00	501	59794	119.41
68	Sorghum	9110	1366542	150.00	7550	1128004	149.41
69	Maize	1591	0	0.00	1319	0	
	Total Fodder crops	11306	0	0.00	9369	0	

* Source : DAO, &Dy.Dir.Hort., Jamnagar

2.5. Weather data (January-18 to March-19)

Weekly mean Weather data-at Jamnagar during-2018									
Week No	**Temp. °c**		**R.H.%**		**WS**	**BSS**	**Eo**	**Rain**	**Rainy**
	Max	**Min**	**I**	**II**	**(kmph)**	**(hrs)**	**(mm)**	**(mm)**	**Days**
1-J (2018)	25.9	10.9	80	27	3.8	9.1	3.1		
2	26.7	15.1	70	35	5.7	6.4	3.7		
3	28.7	13.9	86	34	4.5	9.1	3.4		
4	26.6	12.5	90	26	4.3	9.1	3.3		
5	28.2	13.3	86	29	4.2	9.1	3.6		
6-F	27.6	14.9	80	31	4.3	7.6	3.8		
7	29.2	15.5	72	26	6.4	9.1	4.3		
8	31.3	17.9	95	29	5.4	8.9	4.5		
9	34.0	18.8	71	25	21.7	32.6	5.8		
10-M	33.0	18.2	85	24	6.9	10.0	6.4		
11	32.2	17.8	90	32	8.2	10.0	6.3		
12	32.7	21.0	80	28	9.1	9.7	7.0		
13	38.6	21.9	78	18	8.5	10.0	9.4		
14-A	34.7	21.9	88	35	9.3	9.5	9.1		
15	35.7	24.2	88	46	9.8	9.5	9.2		
16	36.3	24.0	80	31	9.8	10.6	9.3		
17	37.1	23.6	74	30	9.8	10.6	9.3		
18	36.6	25.9	78	37	13.2	10.3	9.6		
19-M	35.7	26.0	85	48	11.8	10.5	8.7		
20	36.5	26.7	84	46	14.8	10.2	9.3		
21	37.3	27.3	81	44	13.3	11.1	9.4		
22	35.6	28.2	82	45	14.4	11.0	9.0		
23-J	35.6	29.2	77	51	16.9	10.6	9.2		
24	36.0	29.3	77	49	18.9	10.6	9.2		
25	35.1	28.3	78	56	15.8	10.6	8.8		
26	35.7	27.8	81	55	12.5	5.0	7.0	22.0	2
27-J	35.2	27.6	79	59	14.7	6.4	6.5	3.0	
28	33.8	27.5	84	65	12.7	1.1	5.2	3.0	1
29	31.1	26.2	93	78	12.4	0.4	4.3	251.0	4
30	32.8	26.9	86	63	16.6	2.0	4.7		
31	33.2	26.9	85	61	15.7	2.9	4.9		
32-A	31.8	26.1	87	67	12.7	2.0	4.7	7.5	1
33	31.1	26.1	90	78	11.6	0.7	4.2	31.0	2
34	30.4	24.8	93	79	9.2	2.4	3.6	32.5	2
35	30.7	24.7	91	75	8.4	2.4	3.8	9.5	2
36-S	30.3	23.5	89	61	8.9	6.4	4.3	10.5	1
37	30.3	23.5	87	59	7.2	6.9	4.5		
38	31.6	24.4	85	53	8.5	9.2	4.9		
39	34.1	22.5	93	42	6.2	8.5	4.8		
40-O	37.3	23.6	86	30	3.9	9.4	5.5		
41	37.4	23.5	81	26	3.4	8.2	5.8		
42	36.0	21.6	90	25	3.7	9.1	5.3		
43	36.0	20.5	85	31	3.5	9.6	5.5		
44	35.6	19.6	69	27	3.8	9.5	5.2		
45-N	32.9	18.0	61	23	3.1	9.6	4.6		
46	32.9	19.7	78	38	3.3	9.2	4.5		
47	33.2	18.1	73	26	3.3	9.3	4.3		

48	30.5	15.9	72	40	4.0	7.3	3.9		
49-D	29.1	14.0	74	31	3.5	7.3	3.9		
50	27.2	13.8	72	33	7.8	8.7	3.7		
51	26.4	11.3	67	27	6.8	8.0	3.6		
52	26.5	11.2	65	24	4.9	9.1	3.4		
Mean	**32.7**	**21.4**	**81**	**42**	**8.9**	**8.4**	**5.8**	**370.0**	**15**
Highest	**38.6**	**29.3**	**95**	**79.28**	**21.7**	**32.6**	**9.6**		
Lowest	**25.9**	**10.9**	**61.28**	**18**	**3.1**	**0.4**	**3.1**		

* Source: Meteorological observatory, Millet Research Station, JAU, Jamnagar

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

Category	Population	Production	Productivity
Cattle	349229	2475.2 qtl. total milk	
Crossbred			8.585 lit/day
Indigenous			3.375 lit/day
Buffalo	209616		4.451 lit/ha
Sheep	232530	295.16 lakh kg wool	
Crossbred			
Indigenous			
Goats	173022		0.274 lit/ha
Pigs		290097.9 Qtl meat	
Crossbred			
Indigenous			
Poultry	38041	12.77 lakh eggs	
Hens			
Desi			
Improved			
Horse &	410		
Camels	2260		
Donkey	2577		
Total Milk			
Total egg			
Total wool			

Category	Area	Production	Productivity
Fish			
Marine			
Inland			
Prawn			
Scampi			
Shrimp			

Source: Assistant Directorate of Fishries, Jamnagar

2.7 Details of Operational area/ Villages (2018-19 to 2020-21)

Sl No	Taluka	Name of the village	Major crops & enterprises	Major problem identified	Identified thrust area
1	**Jamnagar**	Chandragadh, Khojaberaja,	Cotton, groundnut,	Heavy infestation of sucking pest in	

		Lothiya, NaniBanugar, Suryapara	sesame, castor, greengram, wheat, Gram, cumin, mustard, Vegetable, Soyabean, flowers, live stock, fisheries	cotton, stem rot disease&whitegrub in Groundnut, Root rot in castor, Less area under horticulture crops, Blight in cumin, salinity, pink bollworm in cotton	- ICM in major crops of the district - Organic crop production - Introduction of new crop - Recycling of farm waste - Popularization of MIS - Motivation of fisheries cultivation - Soil Reclamation - Farm women empowerment - Farm mechanization
2	**Kalyanpur**	Gadhka, Patelka, Haripar, Juvanpur, Jampar			

2.8 Priority thrust areas

Sl. No	Crop/ Enterprise	Thrust area
1.	Cotton, groundnut, castor, cumin, coriander, wheat, vegetables, fruits, etc.	➢ Integrated Crop Management in major crops ➢ IPM & IDM in major field crops ➢ Whitegrub management in Groundnut ➢ Wireworm management in garlic & Onion ➢ Micro nutriet management in wheat
2.	Organic farming	Enhancement of organic farming through improved technologies
3.	Farm waste/ organic matter	Recycling of farm waste through composting, vermicompost, green manuring, etc.
4.	Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques
5.	Soil	Reclamation of saline & alkaline soils
6.	Farm Women	Farm women empowerment by training in value addition, handi crafts, and small scale enterprises
7.	Fisheries	Fish Farming
8.	Improved Implements	Popularization of the mechanized technological know how
9.	Plant protection	Pinkboll worm in cotton and white grub in groundnut,
10	Horticultural area	Enhancement of pomegranate, datepalm, draganfruit,
11.	Storage facility	Requirement of storage techniques and value addition in farm produce
12.	Water conservation & use of Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2018-19

OFT				FLD			
1				2			
Number of OFTs		Total no. of Trials		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
10	9	37	34	264	176.5	715	500

Training	Extension Programme

3				4			
Number of Courses		Number of Participants		Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
33	56	825	3041	358	1416	39632	47253

Seed Production (Qtl.)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
80	88.45	0	0

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
-	-	10000	33547

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	Proposed Intervention (OFT, FLD, Training, extension activity etc.)*
1	Groundnut	Whitegrub, Stemrot Nutrional deficiency	300000 ha.	Chandragadh, Khojaberaja, Lothiya,Nani Banugar, Suryapara, Gadhka, Patelka, Haripar, Juvanpur, Jampar	OFT, FLD and Training
2	Chilli	Thrips, Curling of leaves, nutritional deficiency	1500 ha	- " -	OFT, FLD and Training
3	Garlic	Puple blotch, wireworm, yellowing, tip burning	600 ha	- " -	OFT, FLD and Training
4	Sesame	Leaf webber, mite, blight, stem rot, root rot, yellowing	12000 ha.	- " -	OFT, FLD and Training
5	Wheat	Stem borer, Termite, nutritional deficiency,	58000 ha	- " -	OFT, FLD and Training
6	Vegetabe mittens (Okra, Brinjal)	Drudgery reduction, cut & wounds, skin hardness, blisters and abrasions,	2790 ha	- " -	OFT, FLD and Training
7	Animal Husbandry	Due to inadequate nutrients in the daily ration, the % fat in milk and productivity of the animal decreased hence, financial loss.	Majority farmers (350000)	- " -	OFT, FLD and Training
8	Fishereis	Direct stocking of Spawn, Mortality rate is higher during spawn to fingerling stage rearing and uncertain in production	In Majority reservoir	Nana Khadba Navi Pipar Navi Veraval	OFT
9	Fishereis	Stocking of single species, total production is reduce	In Majority reservoir	Nana Khadba Navi Pipar Navi Veraval	OFT
10	Cotton	Pink bollworm, redding & yellowing of leaves, sucking pests, weevil,	180440		FLD and Training

11	Brinjal	IPM, INM, variety	1755		FLD and Training
12	Okra	IPM, INM, variety	2790		FLD and Training
13	Chicory	ICM	50		FLD and Training
14	Cumin	IPM, IDM, INM, variety	4300		FLD and Training
15	Ajwain	IDM, Variety	5015		FLD and Training
16	Coriander	IDM, IPM, Variety	2300		FLD and Training
17	Pearl millet	Variety, IPM, IDM	3520		FLD and Training
18	Chick pea	IPM, Variety	31300		FLD and Training
19	Kitchen gardening	Nutritional balance	Majority farmers		FLD and Training
20	Seaweed	Nutrition supply	Majority farmers		FLD and Training
21	Fisheries	Inadequate use of natural resources	-	Rasulnagar	FLD and Training

* Support with problem-cause and interventions diagram

3.2. Technology Assessment and Refinement

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

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

A2. Abstract on the number of technologies refined 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										
Integrated Pest Management		1			1					2
Integrated Crop Management										

Integrated Disease Management					1					1
Small Scale Income Generation Enterprises										
Weed Management										
Resource Conservation Technology										
Farm Machineries										
Integrated Farming System										
Seed / Plant production										
Value addition										
Drudgery Reduction										
Storage Technique										
Mushroom cultivation										
Total	**1**	**2**			**2**					**5**

A.3. Abstract on the number of technologies to be assessed in respect of livestock / enterprises

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Vermi culture	Fisheries	TOTAL
Evaluation of Breeds								
Nutrition Management	1							1
Disease of Management								
Value Addition								
Production and Management							1	1
Feed and Fodder								
Small Scale income generating enterprises								
TOTAL	**1**						**1**	**2**

A.4. Abstract on the number of technologies to be refined in respect of livestock / enterprises

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

B. Achievements on technologies Assessed and Refined

B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	No. of farmers	Area in ha (Per trail covering all the Technological Options)
Integrated Nutrient Management					
Varietal Evaluation					
Integrated Pest Management	Sesame	Management of sesame leaf webber	3	3	1.8
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					

Weed Management					
Resource Conservation Technology					
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Post Harvest Technology / Value addition					
Drudgery Reduction	Okra	Assessment of mittens for vegetable harvesting	10	10	1.8
Storage Technique					
Others (Pl. specify)					
TOTAL			13	13	

B.2. Technologies Refined under various Crops

Thematic areas	Crop	Name of the technology refined	No. of trials	No. of farmers	Area in ha (Per trail covering all the Technological Options)
Integrated Nutrient Management	Groundnut	Effect of Bio fertilizer in Groundnut production	3	3	
	Wheat	Response of Bio fertilizer to wheat yield	3	3	
Varietal Evaluation					
Integrated Pest Management	Groundnut	Management of whitegrub in groundnut	3	3	
	Chilli	Management of thrips in chilli	3	3	
Integrated Crop Management					
Integrated Disease Management	Garlic	Management of purple blotch of garlic	3	3	
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology					
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Others (Pl. specify)					
Total			**15**	**15**	

B.3. Technologies assessed under Livestock and other enterprises

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease Management				

Evaluation of Breeds				
Feed and Fodder management				
Nutrition Management	Cattle	Role of bypass fat in rations of dairy animals	3	3
Production and Management	Fisheries	Pen cultures of Indian Major Carp(IMC) spawn to fry before stocking in village pond/ Reservoir	3	3
Others (Pl. specify)				
		Total	**6**	**6**

B.4. Technologies Refined under Livestock and other enterprises

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

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

OFT-1 Sesame (Assessment) (Plant Protection)

Title: Management of sesame leaf webber

1) Objective: To manage the leaf webber infestation in sesame

2) Problem definition: attack of leaf webber is increase

- Heavy infestation of leaf webber was found
- Improper cultivation practices
- Lack of knowledge about pest outbreaks and its management

Problem diagram :-

Improper cultivation practices	**Management of sesame leaf webber**	Irregular irrigation
Mono-cropping system		Lack irrigation facilities
No adoption of recommended practices		Lack of knowledge about pest outbreaks and its management
Crop failure due to water logging condition in rainy season		In judicious use of chemical pesticide
Farmer follows instruction given by the local pesticides retailer		Heavy incidence of pest and disease attack

3) Details of technologies selected for assessment/refinement

Category	**Source of technology**	**Technology detail**

Technology option 1	Farmer	T_1	Farmer practices	Injudicious use of insecticides. [use of chlorpyriphos, quinalphos, flubendiamide, imidacloprid, cypermethrin, lamdacyhalothrin after infestation of leaf webber at weekly interval without follow ETL]
Technology option 2	SAU	T_2	Reco. practices	Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride 50% S.P.@10g/10 Litre of water at the time of infestation.

4) Source of Technology: - Junagadh Agricultural University

5) Production System and thematic area: Crop grown as Integrated Crop Management system and all agronomical practices adopted commonly.

6) Thematic area: Integrated Pest Management

7) Performance of the Technology assessed / refined with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (q/ha), No. of leaf webber per 1 meter row length from each plot]			
			T_1		T_2	
			No. of leaf webber	Yield	No. of leaf webber	Yield
1	PipaliyaJagdishSavjibhai	Lothiya	8	6.42	2	7.9
2	Koradiya Dhanji Meghjibhai	KhojaBeraja	6	6.81	3	7.27
3	ParmarRanchhodBhikhabhai	Gadhka	6.3	6.5	2	8.1
Average			**6.77**	**6.58**	**2.33**	**7.76**

8) Final recommendation for micro level situation: Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride 50% S.P.@10g/10 Litre of water at the time of infestation having minimum pest population and highest yield withfarmers practices.

9) Constraints identified and feedback for research:

- It start within early stage of crops and till remain till the pod formation
- It cannot come in direct contact of pesticide due to webbing of leaves.
- Yield increase as compare to farmers' practices.

10) Process of farmer's participation and their reaction: Farmers have good response and they have support for OFT. Recommended practices having found lower incidence of leaf webber and highest yield.

11) **Results of On Farm Trial**

Crop/ enter-prise	Farm-ing situ-ation	Problem Diag-nosed	Title of OFT	No. of trials *	Technology Assessed	Parameters of assessment	Data on the parameter Q/ha	
1	2	3	4	5	6	7	8	
Sesam e	Rainfed	IPM	Management of sesame leaf webber	3	Cartap hydrochloride 50% S.P.@10g/10 Litre of water at the time of infestation	Yield (q/ha), No. of leaf webber per 1 meter row length from each plot	T_1	6.58
							T_2	7.76

Crop/ enterprise	**Results of assessment**	**Feedback from the farmer**	**Any refinement done**	**Justification for refinement**
1	9	10	11	12
Sesame	Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride	Farmers have good response and they have support for OFT.	Nil	It is necessary against outbreak of pest and heavy

	50% S.P.@10g/10 Litre of water at the time of infestation. having minimum pest population and highest yield with farmers practices.	Recommended practices having found**lower** incidence of **leaf webber** and highest yield.		infestation. Also resistance developed against conventional insecticide.

Crop/ enterprise	**Technology Assessed / Refined**		**Production kg/ha**	**Input costRs. /ha**	**Gross return Rs./ha (Rate 105.00/kg**	**Net Return (Profit) in Rs. / ha**	**BC Ratio**
1	13		14	15	16	17	18
Groundnut	T_1	Injudicious use of insecticides. [use of chlorpyriphos, quinalphos, flubendiamide, Imidacloprid, cypermethrin, lambdacyhalothrin after infestation of leaf webber at weekly interval without follow ETL]	658	25000	69090	44090	2.76
	T_2	Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride 50% S.P.@10g/10 Litre of water at the time of infestation.	776	22500	81480	58980	3.62

OFT-2 : Home Science:

1) Title :-Assessment of Mittens for vegetable harvesting

2) Problem definition :

1. Injury due to thorns of okra
2. Drudgery to rural women
3. Muscular skeletal problem of workers

3) Details of technologies for assessment/ refinement

Category	Source of technology	Technology details		
Technology option 1	Farmer	T_1	Farmer practices 1	No use any protective wear
Technology option 2	Farmer	T_2	Farmers practices 2	Use of hand care household rubber/surgical gloves
Technology option 3	SAU (MKV-Parbhani)	T_3	Reco. practices	Use of mittens (gloves made from denim, cotton and plastic material) for Okra harvesting

4) Source of Technology:- SAUs (MKV-Parbhani, Maharshtra)

5) Production system :

Farm women suffers different health hazards *viz.* cuts and wounds in hands, hardness of skin, blisters and abrasions, irritation etc. during okra fruit picking. In the present study, for reduction of the drudgery and pain, Farm women usually not used any protective wears; some farmers use rubber gloves; however the vegetable mittens is recommended practice for reduction of drudgery. Thus, farm women use the mittens in both hand during picking of okra.

6) Thematic area : Drudgery reduction

7) Raw data about the Performance of the Technology assessed / refined with performance indicators

Sr. No.	Name of the farm women	Name of the Village	Data on Performance indicator of the technology assessed/ refined	
			Efficiency of picking (kg/hour)	Efficiency Increase (%)

			T_1	T_2	T_3	T_1	T_2	T_3
1	Rinkuben Kailashbhai	Memana	7.5	8.3	8.5		10.67	13.33
2	Niraben Rupsang	Memana	7.3	8	8.2		9.59	12.33
3	Nilavben Kailashbhai	Memana	8	8.3	8.5		3.75	6.25
4	Bhartiben Dipakbhai Nakum	Harshadpur	8.2	8.7	9		6.10	9.76
5	Vijiben Keshubhai Nakum	Harshadpur	7.5	8.2	8.4		9.33	12.00
6	Hemaliben Rameshbhai Nakum	Harshadpur	8	8.4	8.6		5.00	7.50
7	Mitaben Anilbhai Ddabhi	Harshadpur	7.6	8	8.3		5.26	9.21
8	Savitaben Parshotambhai Chopada	Harshadpur	7.9	8.6	9		8.86	13.92
9	Rekhaben Prashantbhai Chopada	Harshadpur	8	8.8	9		10.00	12.50
10	Jiviben Narsang Dabhi	Harshadpur	7	7.7	8		10.00	14.29
	Average		**7.70**	**8.30**	**8.55**		**7.86**	**11.11**

Conti…

Sr. No.	Name of the farm women	Name of the Village	Data on Performance indicator of the technology assessed/ refined											
			Effect on skin											
			Irritation			**cuts and wounds in hands**			**hardness of skin**			**blisters and abrasions**		
			T_1	T_2	T_3	T_1	T_2	T_3	T_1	T_2	T_3	T_1	T_2	T_3
1	Rinkuben Kailashbhai	Memana	2	1	0	3	1	0	2	1	0	2	2	0
2	Niraben Rupsang	Memana	2	2	0	2	1	0	2	1	0	3	3	0
3	Nilavben Kailashbhai	Memana	3	2	1	3	2	0	3	1	0	3	2	0
4	Bhartiben Dipakbhai	Harshadpur	2	1	0	3	1	0	2	1	0	3	3	0
5	Vijiben Keshubhai	Harshadpur	3	2	0	2	1	0	3	1	0	2	2	0
6	Hemaliben Rameshbhai	Harshadpur	2	1	0	3	1	0	3	1	0	3	1	0
7	Mitaben Anilbhai	Harshadpur	3	2	1	3	2	1	3	2	0	3	3	1
8	Savitaben Parshotam	Harshadpur	2	1	0	2	1	0	2	1	0	2	2	0
9	Rekhaben Prashantbhai	Harshadpur	2	2	0	3	1	0	3	1	0	3	3	0
10	Jiviben Narsang Dabhi	Harshadpur	3	2	1	3	2	1	3	1	1	3	2	0
	Average		**2.4**	**1.6**	**0.3**	**2.7**	**1.3**	**0.2**	**2.6**	**1.1**	**0.1**	**2.7**	**2.3**	**0.1**

*Effect on skin for different hazardous effect according to grade (0= no, 1= slightly, 2= moderate, 3=heavy)

8) Final recommendation for micro level situation:

It was observed that the treatment 3 vegetable mittens technology is helpful for Effect on skin, Drudgery perceived, Efficiency of picking per hour. It was observed that helpful in reduction of physiological cost of work and body discomfort ratings and health hazards while harvesting manually. It increasing work output (11.11%) and reduction of drudgery involved in harvesting activity of okra.

9) Constraints identified and feedback for research :

- Long sleeves of mittens give protection to the skin of arms
- Provision of Sticking belt makes possible to adjust the mitten to any size of hand and arm
- Mittens are simple in design and easy for stitching. It made out of locally available material by local tailor. Mittens are useful for increasing speed of work. It reduces the musculo-skeletal problems of workers

10) Process of farmers participation and their reaction:

Farm women appreciate with this technology for future use. It is very useful for empowering the rural women and cost effective on large scale adoption.

11) Results of On Farm Trials

Crop/ enter-price	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter
1	2	3	4	5	6	7	8
Okra	Irrigated	Injury due to thorns of okra	Assessment of Mittens for vegetable harvesting	10	Use of mittens (gloves made from denim, cotton and plastic material) for Okra harvesting	1. Effect on skin 2. Efficiency of picking per hour	94 % protection 11.11% increasing

OFT – 3 Fish

1) Title:- Pen cultures of Indian Major Carp (IMC) (*Catlacatla*) from fry stage to fingerling stage before stocking in village Pond/Dam.

2) Problem definition: Due to mortality rate is higher, decrease and uncertain final production

3) Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	Direct stocking of spawn into village ponds/reservoir.
Technology option 2	CIFRI, ICAR Institutes	T_2	Reco. practices	First rare the fish seeds of Fry stage up to fingerlings stage in a pen system (Closer and controllable water logged area adjoining to pond/dams) and then release in to the main water bodies,

4) Source of Technology: - Central Inland Fisheries Research Institutes, Barrakpore, Calcutta.

5) Production system and thematic area:

- Fish were grown in natural water bodies without any additional treatments.

6) Thematic area: To increase the final production.

7) Performance of the Technology assessed / refined with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (Tone/ha), Growth (Avg. Body weight)] at time of harvesting.					
			T_1		T_2		T_2 compare to T_1	
			Growth (Avg. Body weight) (Kg.)	Total Yield (Tone/ha)	Growth (Avg. Body weight (Kg.)	Total Yield (Tone/ha)	Growth (Avg. Body weight	Total Yield (Tone/ha)
1	Siraj Umar Safiya	Luharsar (Gajansa Dam)	0.500	3.600	-	-	-	-
2	Al UnusMatsyaSahkari Group	NaviVeraval	0.480	3.264	-	-	-	-
3	SikandarSidikbhaiAadmani	KhadDhoraji	0.470	3.008	-	-	-	-
4	Mahammad Husain HabibmiyaSaiyad	Nana Khadba (Village pond)	-	-	0.580	4.582	-	-
5	SahedbhaiHasambhaiNakani	Nikava (Village pond)	-	-	0.670	5.561	-	-

6	AsarfmiyaHabibmiyaSaiyad	Sapada Dem	-	-	0.620	4.960	-	-
		Average	**0.478**	**3.291**	**0.638**	**5.034**	**0.16**	**1.743**

8) Final recommendation for micro level situation: The inland fish farmers should rare the fish seeds from spawn/fry to fingerling stage in pen system before stocking into the pond/reservoir instead of direct stocking.

9) Constraints identified and feedback for research: Natural orIdeal location for construction of pen is not available at every place (near the reservoir/Dam or Stocking site) hence sometime cost of preparing of Pen become costly.

10) Process of farmer's participation and their reaction: Educated and progressive farmers were selected for conducting the OFT at their pond/reservoir (On lease). Seeds and technical knowledge were provided to them at the site as well as by phone/media. After getting the result they are really happy and applied this technology in future and also give promise to spread this technique among the other fish farmers.

11) Results of On Farm Trials (Average of Three Years):

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter
1	2	3	4	5	6	7	8
FISH	Inland	Low Production	Pen cultures of Indian Major Carp (IMC) (*Catla catla*) from fry stage to fingerling stage before stocking in village Pond/Dam.	3	First rare the fish seeds from fry stage to fingerlings stage in a pen system (Closer and controllable water logged area adjoining to pond/dams) and then release in to the main water bodies.	Growth (Avg. Body weight in Kg.)	T1: 0.509
							T2: 0.570
						Total Yield (Tone/ha) at the time of harvesting	T1: 3.330
							T2: 4.483

Crop/ enterprise	Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement
1	9	10	11	12
FISH	In the assessed technology the seeds (fry stage) of *Catla catla*were reared up to fingerling stage in Pen Culture system and then release into the ponds/Dams. In such situation the mortality rate is decreased and more number of seeds can be stocked in ponds/Dams hence, increase up to 12% in growth (body weight) and 34.6 % in total yield, obtained higher net return (42.86% increase) and	Fish farmers are accept the technology. that this technology is benefited for fish farmers and ready to implement this technology in future. They also realize that care at the initial stage for only 2-3 month in pen system, farmers can earn more money per hector. At initial stage of growth, due to proper feed and care , healthy seeds become available for final stocking in	No	NA

	B:C ratio (1.32) as compared to farmers practices.	the pond and hence fast growth achieved.		

Crop/ enterprise	Technology Assessed /Refined	Production (Tone/ha)	Gross Return (Rs./ha)	Cost of cultivation Rs./ha	Net Return (Profit) in Rs./ha	B:C Ratio
1	13	14	15	16	17	18
FISH	T1 (Farmer's Practices)	3.330	133219	61632	71587	2.16
	T2 (Reco. Practices)	4.483	179256	76990	102267	2.32

OFT –4 :- Fish

1) **Title:-** Stocking of Freshwater prawn (*Macrobrachiumrosenbergii*) with IMC fingerlings in village pond/Reservoir
2) **Problem definition:** Natural resources cannot be fully utilized due to single spp. of fish was stocked in pond/reservoir by farmers hence, lower the production and finally financial loss.

3) Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	stocking a single species IMC into ponds
Technology option 2	CIFRI, ICAR Institutes	T_2	Reco. practices	stocking of *M. rosenbergii* with IMC fingerlings into ponds/reservoir

7) Performance of the Technology assessed / refined with performance indicators:

**** OFT could not perform due to insufficient water available in the ponds/reservoir at later stage because of insufficient rain during the late monsoon season**

OFT –5 Animal Husbandry (2017-18)

1. **Title:-** Role of Bypass fat in rations of dairy animals.
2. **Problem definition**: Due to inadequate nutrients in the daily ration, the % fat in milk and productivity of the animal decreased hence, financial loss.
3. Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	Normal dietary pattern ie. Green Fodder, Dry Fodder and concentrate
Technology option 2	ANRS, AAU, Anand	T_2	Reco. practices	Add 100g bypass fat as supplement with normal rations

4) Source of Technology: - Animal Nutrition Research Station, AAU, Anand.

5) Production system:

- Animals are treated with extra supplements having bypass fat

6) Thematic area: Increase in % fat as well as total production of milk and total income.

7) Performance of the Technology assessed with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [% Fat, Total Yield, and Net Income] of **initial 5 Months (153 days) of milking period.**					
			T_1			T_2		
			% Fat	Total Yield (Liter)	Net Income (Rs.)	% Fat	Total Yield	Net Income (Rs.)

1	Mohanbhai Aanandbhai Nakum	Gadhaka	4.1	1023	18350	5.1	1178	23805
2	Mansukh Bhikhabhai Khandhar	Gadhaka	4.0	847	10150	4.8	938	12405
3	Nathubhai Lirabhai Parmar	Gadhaka	4.0	1055	20250	4.9	1193	24855
		Average	**4.03**	**975**	**16250**	**4.93**	**1103**	**20355**

8) Final recommendation for micro level situation: Trial is going on

9) Constraints identified and feedback for research: Trial is going on

10) Process of farmer's participation and their reaction:

11) Results of On Farm Trials

Crop/ enter-price	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter
1	2	3	4	5	6	7	8
Animal Husbandry	Lactating	Low Fat Percentage in milking animals.	Role of Bypass fat in rations of dairy animals.	3	Add 100 g bypass fat as supplements in normal ration of the animals.	**1.** % Fat increased in milk.	0.9%
						2. Increase in total milk Yield in animals	128 Liter
						3. Increase in Total Income generated	Rs. 4105

Crop/ enterprise	Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement
1	9	10	11	12
Animal Husbandry	As compare to control data, treated animals with Bypass fat (100 g/Day with daily ration), the percentage of fat is slight increase (0.9%) as well as the total production of milk is also increase around 13% hence 25% increase in total net profit for farmers.	This product is quite good and may help to increase % fat of milk and productivity of animals.	NA	NA

Crop/ enterprise	Technology Assessed /Refined	Total Yield (Liter/5 Month)	Gross Return (Rs. /5 Month)	Cost of cultivation (Rs. /5 Month)	Net Return (Rs. /5 Month)	B:C Ratio
1	13	14	15	16	17	18
Animal Husbandry	T1 (Farmer's Practices)	975	48750	32500	16250	1.50
	T2 (Reco. Practices)	1103	55150	34795	20355	1.58

OFT –5 Animal Husbandry (2018-19)

1. **Title:-** Role of Bypass fat in rations of dairy animals.
2. **Problem definition**: Due to inadequate nutrients in the daily ration, the % fat in milk and productivity of the animal decreased hence, financial loss.

3. Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	Normal dietary pattern ie. Green Fodder, Dry Fodder and concentrate
Technology option 2	ANRS, AAU, Anand	T_2	Reco. practices	Add 100g bypass fat as supplement with normal rations.

4) Source of Technology: - Animal Nutrition Research Station, AAU, Anand.

5) Production system:

- Animals are treated with extra supplements having bypass fat

6) Thematic area: Increase in % fat as well as total production of milk and total income.

7) Performance of the Technology assessed with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [% Fat, Total Yield, and Net Income] of **initial 5 Months (153 days) of milking period.**					
			T_1			T_2		
			% Fat	Total Yield (Liter)	Net Income (Rs.)	% Fat	Total Yield	Net Income (Rs.)
1	Jaysukhbhai Harjibhai Rathod	Singach	5.00	845.60	9480	5.70	985.6	14185
2	Hirenbhai Damjibhai Rathod	Singach	5.11	827.40	9170	5.94	931.40	12075
3	Jaysukhbhai Savjibhai Rathod	Singach	5.14	877.80	11390	5.98	1002.40	15325
		Average	**5.08**	**850.27**	**10013**	**5.87**	**973.13**	**13862**

8) Final recommendation for micro level situation: OFT is interrupted and concluded.

9) Constraints identified and feedback for research: OFT is interrupted and concluded.

10) Process of farmer's participation and their reaction: This product is quite good and may help to increase % fat of milk and productivity of animals.

11) Results of On Farm Trials

Crop/ enter-price	Farming situation	Problem Diagnosed	Title of OFT	No. of trials	Technology Assessed	Parameters of assessment	Data on the parameter
1	2	3	4	5	6	7	8
Animal Husbandry	Lactating	Low Fat Percentage in milking animals.	Role of Bypass fat in rations of dairy animals.	3	Add 100 g bypass fat as supplements in normal ration of the animals.	% Fat increased in milk.	0.79%
						Increase in total milk Yield in animals	122.87 Liter
						Increase in Total Income generated	Rs. 3848

Crop/ enterprise	Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement

1	9	10	11	12
Animal Husbandry	As compare to control data, treated animals with Bypass fat (100 g/Day with daily ration), the percentage of fat is slight increase (0.79%) as well as the total production of milk is also increase around 14% hence 38% increase in total net profit for farmers.	This product is quite good and may help to increase % fat of milk and productivity of animals.	NA	NA

Crop/ enterprise	Technology Assessed /Refined	Total Yield (Liter/5 Month)	Gross Return (Rs. /5 Month)	Cost of cultivation (Rs. /5 Month)	Net Return (Rs. /5 Month)	B:C Ratio
1	13	14	15	16	17	18
Animal Husbandry	T1 (Farmer's Practices)	850.27	42513	32500	10013	1.31
	T2 (Reco. Practices)	973.13	48657	34795	13862	1.40

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

OFT – 7:- Chilli (Plant Protection)

1) Title:- Management of Thrips in Chilli.

Objective: To minimize the thrips incidence in chilli. To reduce injudicious use of chemical pesticide. To minimize residual effect of chemical

2) Problemdefinition : Incidence of Thrips is increase

- Heavy infestation of Thrips was found
- Lack of seed treatment and improper cultivation practices
- Lack of knowledge about pest outbreaks and its management
- In judicious use of chemical fertilizer

Problem diagram :-

Resurgence of thrips	**Management of thrips in chilli**	Multi season cropping system
Mono-cropping system		Lack of knowledge about pest outbreaks and its management
Lack of seed treatment		Lack of improper cultivation practices
In judicious use of pesticide		In judicious use of chemical fertilizer
Irregular irrigation		Improper use of FYM (without decomposition)

3) Details of technologies for assessment/refinement:

Category	**Source of technology**	**Technology details**		
Technology option 1	Farmer	T_1	Farmer practices	Injudicious use of insecticides. [use of chlorpyriphos, quinalphos, flubendiamide, imidacloprid, Fipronil, Thiamethoxam, cypermethrin, lamdacyhalothrin after infestation of thrips at weekly interval without follow ETL]
Technology option 2	Main vegetable	T_2	Reco. practices	Seed treatment with imidacloprid 70 WS (7.5 g/kg seed) and dipping of seedling before transplanting for

	research station, AAU, Anand			two hours in solution of imidacloprid 17.8 SL (10 ml/10 litre water) or Thiamethoxam 25 WG (10 g/10 litre water). Spraying of spinosad 45 SC (3 ml/10 litre water)
Technology option 3		T_3	Refined practices 1	Spray of *Beauveria bassiana* @ 5 g/lit of water at 15 days interval

4) Source of Technology: Junagadh Agricultural University

5) Production system: Irrigated, *Kharif* crop and all agronomical practices adopted commonly.

6) Thematic area: Management of thrips in chilli

7) Performance of the Technology assessed/refined with performance indicators:

Sr. No.	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (q/ha), No. of Thrips/3 Twig]					
			T_1		T_2		T_3	
			No. of Thrips	Yield	No. of Thrips	Yield	No. of Thrips	Yield
1	MungaraJentibhaiValjibhai	Dodhiya	31	75	21	88	15	96
2	Mungara Babubhai Jerambhai	Balambhadi	35	68	20	90	20	94
3	KhandaraMadhavjiJivabhai	Gadhka	33	76	16	92	13	98
Average			**33.00**	**73.00**	**19.00**	**90.00**	**16.00**	**96.00**

8) Final recommendation for micro level situation: Application of *Beauveria bassiana* @ 5 g/lit of water at 15 days interval as initiation of pest incidence having minimum pest population and highest yield with farmers practices.

9) Constraints identified and feedback for research:

- Time of application cannot identified for spraying
- High population of sucking pests, incidence of leaf curl
- Yield increase as compare to farmers' practices.
- Reduce the thrips as well as leaf curl incidence.

10) Process of farmer's participation and their reaction: Farmers have good response and they have support for OFT. Recommended practices having found incidence of thrips where it is repeated use. However, refinement 1 is very effective treatment for the management of thrips and highest yield.

11) Results of On Farm Trial

Crop/ enter-prise	Farm-ing situ-ation	ProblemDiag-nosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter Q/ha	
1	2	3	4	5	6	7	8	
Chilli	Irri-gated	IPM	Management of Thrips in Chilli	3	Use of balance fertilizers	No of thrips/3 twig and yield (q/ha)	T_1	73.00
							T_2	90.00
							T_3	96.00

Crop/ enterprise	**Results of assessment**	**Feedback from the farmer**	**Any refinement done**	**Justification for refinement**
1	9	10	11	12

Chilli	Application of *Bearuveria bassiana* @ 5 g/lit of water at 15 days intervals initiation of pest incidence having minimum pest population and highest yield with farmers practices.	Farmers have good response and they have support for OFT. Recommended practices having found incidence of thrips where it is repeated use. However, refinement 1 is very effective treatment for the management of thrips and highest yield.	Application of *Bearuveria bassiana* @ 5 g/lit of water at 15 days intervals initiation of pest incidence.	It is necessary against outbreak of pest and heavy infestation. Also resistance developed against conventional insecticide.

Crop/ enterprise	**Technology Assessed / Refined**		**Production kg/ha**	**Input costRs./ha**	**Gross returnRs./ha (Rate 60.00/kg**	**Net Return (Profit) in Rs. / ha**	**BC Ratio**
1	13		14	15	16	17	18
Chilli	T_1	Injudicious use of insecticides. [use of chlorpyriphos, quinalphos, flubendiamide, imidacloprid, Fipronil, Thiamethoxam, cypermethrin, lamdacyhalothrin after infestation of thrips at weekly interval without follow ETL]	7300	84000	438000	354000	5.21
	T_2	Seed treatment with imidacloprid 70 WS (7.5 g/kg seed) and dipping of seedling before transplanting for two hours in solution of imidacloprid 17.8 SL (10 ml/10 litre water) or thiamethoxam 25 WG (10 g/10 litre water). Spraying of spinosad 45 SC (3 ml/10 litre water)	9000	75000	540000	465000	7.20
	T_3	Spray of *Bearuveria bassiana* @ 5 g/lit of water at 15 days interval	9600	65700	576000	510300	8.77

<u>OFT – 8 :- Garlic (Refinement)</u> (Plant Protection)

1) Title:- Management of purple blotch of garlic

Objective: To minimize the infestation of purple blotch of garlic. To increase production. To reduce yield loss of garlic

2) Problem definition: Incidence of Thrips is increase

1. Heavy infestation of Thrips and purple blotch was found
2. Lack of seed treatment and improper cultivation practices

3. Lack of knowledge about pest, diseases outbreaks and its management
4. Injudicious use of nitrogenous fertilizer
5. Lack of fungicides use as preventive measure

Problem diagram :-

Improper cultivation practices	**Management of purple blotch of garlic**	Multi season cropping system
Mono-cropping system		Heavy infestation of purple blotch was found
Lack of seed treatment		Lack of knowledge about diseases outbreaks and its management
In judicious use of pesticide/fungicide		In judicious use of chemical fertilizer
Irregular irrigation		Improper use of FYM (without decomposition)

3) Details of technologies for assessment/refinement:

Category	**Source of technology**	**Technology details**		
Technology option 1	Farmer	T_1	Farmer practices	Injudicious use of fungicide (Spray insecticides at weekly interval), spray fungicide after initiation/heavy infestation of diseases.
Technology option 2	Director of Onion & Garlic Research Station, ICAR	T_2	Reco. practices	Foliar sprays of Mancozeb @0.25%, Tricyclazole @ 0.1% and Hexaconazole @0.01% at 30, 45 and 60 days respectively after transplanting helps in checking disease incidence.
Technology option 3		T_3	Refined practices 1	Application of *Trichoderma* @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method **+** Foliar sprays of Hexaconazole @ 0.01% and Tebuconazole @0.05% at 40 and 60 days respectively after transplanting helps in checking disease incidence**.**

4) Source of Technology: JAU, Junagadh and Director of Onion & Garlic Research Station, ICAR
5) Productionsystem: Irrigated, *Rabi* crop and all agronomical practices adopted commonly.
6) Thematic area: Integrated disease management
7) Performance of the Technology assessed/refined with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (q/ha), No. of infected plant/ 1 meter row length]					
			T_1		T_2		T_3	
			No. of infected plant	Yield	No. of infected plant	Yield	No. of infected plant	Yield
1	Sudani Hasmukhbhai Samjibhai	Dodhiya	23	41	12	54	10	57
2	Sabhaya Jentibhai Popatbhai	KhojaBeraja	19	43	14	52	10	64
3	Sabhaya Dharmesh Bhanjibhai	KhojaBeraja	24	39	16	53	13	59
Average			**22.00**	**41.00**	**14.00**	**53.00**	**11.00**	**60.00**

8) Finalrecommendationfor micro level situation: Application of *Trichoderma* @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method + Foliar sprays of Hexaconazole @ 0.01% and Tebuconazole @0.05% at 40 and 60 days respectively after transplanting helps in checking disease incidence and having minimum infestation of disease and highest yield with farmers practices.

9) Constraints identified and feedback for research:

- Time of application cannot identify for spraying
- Yield increase as compare to farmers' practices.
- Reduce the infestation of purple blotch disease.

10) Process of farmer's participation and their reaction: Farmers have good response and they have support for conducting OFT. Recommended practices having found less infestation of purple blotch disease where it is repeated use. However, refinement 1 is very effective treatment for the management of purple blotch and highest yield.

11) Results of On Farm Trials

Crop/ enter-prise	Farm-ing situ-ation	ProblemDiag-nosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter Q/ha	
1	2	3	4	5	6	7	8	
Garlic	Irri-gated	IDM	Management of purple blotch of garlic	3	Use of fungicides	No. of infected plant/ 1 meter row length and yield (q/ha)	T_1	41.00
							T_2	53.00
							T_3	60.00

Crop/ enterprise	**Results of assessment**	**Feedback from the farmer**	**Any refinement done**	**Justificationforrefinement**
1	9	10	11	12
Garlic	Application of *Trichoderma* @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method **+** Foliar sprays of Hexaconazole @ 0.01% and Tebuconazole @0.05% at 40 and 60 days respectively after transplanting helps in checking disease incidence**.**	Farmers have good response and they have support for OFT. Recommended practices having found less infestation of purple blotch where it is repeated use. However, refinement 1 is very effective treatment for the management of purple blotch and highest yield.	Application of *Trichoderma* @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method **+** Foliar sprays of Hexaconazole @ 0.01% and Tebuconazole @0.05% at 40 and 60 days respectively after transplanting.	It is necessary against heavy incidence of diseases. Also resistance developed against conventional fungicide.

Crop/ enterprise	**Technology Assessed / Refined**		**Production kg/ha**	**Input Cost Rs./ha**	**Gross return Rs./ha (Rate 25.00/kg**	**Net Return (Profit) in Rs. / ha**	**BC Ratio**
1	13		14	15	16	17	18
Garlic	T_1	Injudicious use of fungicide (Spray insecticides at weekly interval), spray fungicide after initiation/heavy infestation of diseases.	4100	86000	102500	16500	1.19

	T_2	Foliar sprays of Mancozeb @0.25%, Tricyclazole @ 0.1% and Hexaconazole @0.01% at 30, 45 and 60 days respectively after transplanting helps in checking disease incidence.	5300	78000	132500	54500	1.70
	T_3	Application of *Trichoderma* @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method **+** Foliar sprays of Hexaconazole @ 0.01% and Tebuconazole @0.05% at 40 and 60 days respectively after transplanting helps in checking disease incidence**.**	6000	68000	150000	82000	2.21

OFT :- 9 GROUNDNUT (INM)

1) Title:-Effect of Bio-fertilizers in groundnut production

2) Problem definition:

The productivity of groundnut, in India is low due to low consumption of fertilizers. The residual toxicities of chemical fertilizers posing problem of environmental pollution, depletion of essential nutrients due to indiscriminate use of inorganic fertilizers which has threat to the sustainability of crop production. For sustained groundnut production the modern farming demand integrated use of organic and inorganic fertilizers along with bio-fertilizers. Hence, an OFT was carried out to find out the suitable low cost input bio-fertilizer to enhance the groundnut productivity.

3) Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	Injudicious use of fertilizers 120-125 kg DAP(22.5 N- 57.5 P_2O_5 kg/ha).
Technology option 2	JAU	T_2	Reco. practices	Recommended dose of fertilizer (12.5N-25 P_2O_5-50K_2Okg/ha)
Technology option 3		T_3	Refined practices 1	75% RDF + Seed treatment of Rhizobium, PSB, KMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed

4) Source of Technology: - Junagadh Agricultural University

5) Production system:

- Crop grown as Integrated Crop Management system and all other agronomical practices adopted commonly.

6) Thematic area: To enhance the groundnut productivity.

7) Performance of the Technology assessed / refined with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (q/ha), from each plot]					
			T_1		T_2		T_3	
			Haulm yield (q/ha)	Pod Yield (q/ha)	Haulm yield (q/ha)	Pod Yield (q/ha)	Haulm yield (q/ha)	Pod Yield (q/ha)
1	Mungara Mohanbhai Jinabhai	Surypara	37	19.5	40	20.8	41.5	21.4
2	Mungara Mohanbhai Laxmanbhai	Surypara	39	22	41.6	23.4	43	24.1

3	Bhtiya Parbatbhai Hajabhai	Patelka	35	18.2	37	19.4	38	19.9
	Average		**37.00**	**19.90**	**39.53**	**21.20**	**40.83**	**21.80**

8) Final recommendation for micro level situation:

The results of the study revealed that the application of 75% RDF + seed treatment of Rhizobium, PSB, KMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed (T_3)produced higher pod yield (21.80 q/ha), haulm yield (40.83 q/ha), net return (Rs. 76446/ha) and BCR (2.56) than other treatments. T_3 reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the long term groundnut productivity.

9) Constraints identified and feedback for research:

- Lack of knowledge about bio-fertilizers & use of bio-fertilizers
- Lack of knowledge about fertilizers
- Use of higher dose of fertilizers

10) Process of farmer's participation and their reaction: Satisfactory

11) Results of On Farm Trials:

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter Q/ha		
1	2	3	4	5	6	7	8		
Groundnut	Irri-gated	INM	Effect of Bio-fertilizers in groundnut production	3	Use of balance fertilizers	Haulm yield (q/ha) and Pod yield (q/ha)		Haulm yield (q/ha)	Pod yield (q/ha)
							T_1	37.00	19.90
							T_2	39.53	21.20
							T_3	40.83	21.80

Crop/ enterprise	Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement
1	9	10	11	12
Groundnut	Higher yield was produced by treatment T_3[application of 75% RDF + seed treatment of Rhizobium, PSB, KMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed].It also reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the groundnut productivity.	Farmers have good response and they have support for OFT. T_3 produced higher yield and it is very effective for longer period.	Use of bio fertilizer	It is necessary for reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the groundnut productivity.

Crop/ enterprise	Technology Assessed / Refined		Production kg/ha		Gross return Rs./ha	Cost of cultivation Rs./ha	Net Return (Profit) in Rs. / ha	BC Ratio
			Haulm yield (Kg/ha)	Pod Yield (Kg/ha)				
1	13		14	15	16	17	18	19
Groundnut	T_1	Farmer practices	3700	1990	114300	48880	65420	2.34

	T_2	Reco. practices	3953	2120	121812	49248	72564	2.47
	T_3	Refined practices 1	4083	2180	125332	48886	76446	2.56

Selling Rate: Groundnut pod: 50 Rs per kg, Groundnut haulm: 4 Rs per kg

OFT:10 NUTRIENT MANAGEMENT(Wheat)

1) Title:-Response of Bio fertilizers to wheat yield

2) Problem definition:

Lower productivity and profitability in wheat cultivation due to imbalance application of nutrients. For sustained wheat production the modern farming demand integrated use of organic and inorganic fertilizers along with bio-fertilizers. Hence, an OFT was carried out to find out the suitable low cost input bio-fertilizer to enhance the wheat productivity.

3) Details of technologies selected for assessment/ refinement

Category	Source of technology	Technology detail		
Technology option 1	Farmer	T_1	Farmer practices	Application of only DAP & Urea in Different Doses (109 N – 57.5 P_2O_5) kg/ha
Technology option 2	JAU	T_2	Reco. practices	Recommended dose of fertilizer (120N-60 P_2O_5-60K_2O)kg/ha
Technology option 3		T_3	Refined practices 1	75% RDF + seed treatment of Azotobacter, PSB, PMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed

4) Source of Technology: - Junagadh Agricultural University

5) Production system and thematic area:

- Crop grown as Integrated Crop Management system and all other agronomical practices adopted commonly.

6) Thematic area: To enhance the wheat productivity.

7) Performance of the Technology assessed / refined with performance indicators:

Sr. No	Name of the farmer	Name of the Village	Data on the performance indicators of the technology assessed / refined [Yield (q/ha), from each plot]					
			T_1		T_2		T_3	
			Grain yield (q/ha)	Straw Yield (q/ha)	Grain yield (q/ha)	Straw Yield (q/ha)	Grain yield (q/ha)	Straw Yield (q/ha)
1	Dudhagara Riteshkumar Babubhai	Bajarangpur	46.25	66.25	50	70.63	51.25	72.5
2	Limbasiya Bharatkumar Dharamshibhai	Mota Garediya	44.38	65	46.88	67.5	47.5	68.75
3	Limbasiya Dhanshyambhai Raghavajibhai	Mota Garediya	47.5	68.75	49.38	71.25	50	70
	Average		**46.04**	**66.67**	**48.75**	**69.79**	**49.58**	**70.42**

8) Final recommendation for micro level situation:

The results of the study revealed that the application of 75% RDF + seed treatment of Azotobacter, PSB, PMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed (T_3) produced higher grain yield (49.58 q/ha), straw yield (70.42 q/ha), net return (Rs. 60920/ha) and BCR (2.49) than other treatments. T_3 reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the long term wheat productivity.

9) Constraints identified and feedback for research:

- Lack of knowledge about bio-fertilizers & use of bio-fertilizers
- Lack of knowledge about fertilizers
- Use of higher dose of fertilizers

10) Process of farmer's participation and their reaction: Satisfactory, Farmers have good response and they have support for OFT. T3 produced higher yield and it is very effective for longer period

11) Results of On Farm Trials:

Crop/ enterprise	Farming situation	Problem Diagnosed	Title of OFT	No. of trials*	Technology Assessed	Parameters of assessment	Data on the parameter Q/ha		
1	2	3	4	5	6	7	8		
Wheat	Irri-gated	INM	Response of Bio fertilizers to wheat yield	3	Use of balance fertilizers	Grain yield (q/ha) and Straw yield (q/ha)		Grain yield (q/ha)	Straw yield (q/ha)
							T_1	46.04	66.67
							T_2	48.75	69.79
							T_3	49.58	70.42

Crop/ enterprise	Results of assessment	Feedback from the farmer	Any refinement done	Justification for refinement
1	9	10	11	12
Wheat	Higher yield was produced by treatment T_3[application of 75% RDF + seed treatment of Azotobacter, PSB, PMB (Potash Mobilizing Bacteria) culture each at 25-30 ml/kg seed]. It also reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the wheat productivity.	Farmers have good response and they have support for OFT. T_3 produced higher yield and it is very effective for longer period.	Use of bio fertilizer	It is necessary for reduced use of chemical fertilizers and increases the use of low cost input bio-fertilizer to enhance the wheat productivity.

Crop/ enterprise	Technology Assessed / Refined		Production kg/ha		Gross return Rs./ha	Cost of cultivation Rs./ha	Net return (Profit) in Rs. / ha	BC Ratio
			Grain yield (Kg/ha)	Straw Yield (Kg/ha)				
1	13		14	15	16	17	18	19
Wheat	T_1	Farmer practices	4604	6667	94720	40108	54612	2.36
	T_2	Reco. practices	4875	6979	100175	41980	58195	2.39
	T_3	Refined practices 1	4958	7042	101796	40876	60920	2.49

Sale price: Wheat Grain: 18.4 Rs per kg, Wheat straw: 1.5 Rs per kg

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	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha

				the Extension system			
1	Groundnut Kharif-17-18	ICM	*Beauveria, Metarhiziumanisopliae, Trichoderma,* PSB, *Rhizobium,* Micro Nutrient	Field days, Field visit, Radio talk, On/Off Campus Training and TV Program, Exhibition and demonstration	128	1280	7680
2	Sesame Kharif-17-18	ICM	*Beauveria, Trichoderma,* PSB, *Azotobacter,* Micro Nutrient		32	69	384
3	Groundnut Sum-17-18	ICM	PSB, *Rhizobium, Trichoderma, Beauveria, Imidacloprid, Thiodicarb, Carbendazim+Mancozeb, Acetamiprid, Cypermethrin*		58	123	727
4	Sesame Sum-17-18	ICM	PSB, *Azotobacter, Trichoderma, Beauveria, Carbendazim+Mancozeb, Acetamiprid, Cypermethrin*		13	58	248
5	Brinjal Kharif-17-18	IPM	*Beauveria, PSB, Profenophos, Azotobacter*		5	28	65
6	Chilli Kharif-17-18	IPM	*Beauveria, PSB, Profenophos, Azotobacter*		6	32	87
7	Okra Kharif-17-18	Varietal(seed)	Variety GJO-3, GHOH-3 *Beauveria, PSB, Profenophos, Azotobacter*		8	54	162
8	Cumin Rabi 17-18	IPM/INM	PSB, *Azotobacter*, Beauveria, Trichoderma		36	356	2180
9	Coriander Rabi 17-18	IPM/INM	PSB, *Azotobacter*, Beauveria, Trichoderma		5	25	82
10	Ajwain Rabi 17-18	IPM/INM	PSB, *Azotobacter*, Beauveria, Trichoderma		3	17	30
11	Cumin(ATIC) Rabi 17-18	ICM	PSB, *Azotobacter*, Beauveria, Trichoderma		36	356	2180
12	Coriander (ATIC) Rabi 17-18	ICM	PSB, *Azotobacter*, Beauveria, Trichoderma		5	25	82
13	Wheat Rabi 17-18	INM/IPM	PSB, Micro nutrients G-4, *Azotobacter*, Zinc sulphate		35	680	4080
14	Pearl Millet	Variety	Seed (GHB-732), PSB, *Azotobacter*		6	13	42
15	Cotton Kharif-17-18	IPM	*Azotobacter, Beauveria, PSB, Imidacloprid*		142	1430	8530
16	Kitchen gardening	Kitchen gardening	Vegetable Seed		15	35	130
17	Solar cooker	Use renewable energy	Solar cooker		12	30	100

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.)

Sr. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Area (ha)		No. of farmers/ demonstration		
					Prop-osed	Actual	SC/ST	Others	Total
			Oilseeds						

1	Groundnut	ICM	Seed (GJG-22), *Metarhiziumanisopliae*, *Trichoderma*, *Rhizobium*, PSB	Kharif-18-19	20	20	2	48	50
2	Sesame	ICM	Seed (Guj.Till-4), *Beauveria*, *Trichoderma*, *Azotobacter*, PSB	Kharif-18-19	20	20	0	50	50
3	Groundnut (ATIC)	ICM	*Trichoderma*, PSB, *Azotobacter*, *Beauveria*	Kharif-18-19	40	40	1	99	100
			Pulses						
4	Pigeon pea	ICM	*Beauveria*, *Trichoderma*, *Rhizobium*, PSB	Kharif-18-19	10	10	0	25	25
5	Chickpea	IPM, Varietal	Seed GG-5, *Beauveria*, *Trichoderma*, *Rhizobium*, PSB	Rabi-18-19	20	20	0	50	50
			Horticultural						
6	Brinjal	IPM, Varietal	GJLB-4, *Azotobactor*, PSM, *Trichoderma*, *Azadirachtin*, Profenophos	Kharif-18-19	2	2	0	5	5
7	Chilli	IPM	*Azotobactor*, PSM, *Trichoderma*, Azadirachtin, Profenophos	Kharif-18-19	2	2	2	3	5
8	Okra	IPM, Varietal	Seed-GJO-3 , *Azotobactor*, PSM, Trichoderma, Azadirachtin, Profenophos	Kharif-18-19	2	2	0	5	5
			Spices Crops						
9	Cumin	IDM	*Trichoderma*	Rabi-18-19	04	04	0	10	10
10	Coriander (ATIC)	ICM	Trichoderma, PSB, *Azotobacter*, *Beauveria*	Rabi-18-19	10	10	0	25	25
11	Cumin (ATIC)	ICM	Trichoderma, PSB, *Azotobacter*, *Beauveria*	Rabi-18-19	20	20	0	50	50
			Cereals						
12	Pearl Millet	Variety	Seed (GHB-732)	Sum-18-19	04	04	0	10	10
			Others crops						
13	Cotton	IPM/INM	*Azotobactor*, PSM, *Trichoderma*, Azadirachtin, Profenophos	Kharif-18-19	8	8	0	20	20
14	Cotton (ATIC)	ICM	SNPV, PSB, *Azotobacter*, MDP, *Beauveria*	Kharif-18-19	40	10	0	25	25
15	Kitchen gardening		Vegetable Seed	Kharif-18-19	2	2	3	47	50
16	Solar cooker (ATIC)	Solar energy	Solar cooker	2018-19-19	-	-	0	0	5
17	Seaweed	Seaweed	Raft + sea weed material	2018-19	-	-	0	5	5
18	Plastic mulching		Plastic mulching	Sum-18-19	2.5	2.5	0	10	10

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Oilseeds											
Groundnut	Kharif-18-19	Rainfed	MB	L	M	H	Cotton, Chickpea, Wheat	1 Jul-15 Jul	15 to 30 Oct	370	15

Sesame	Kharif-18-19	Rainfed	MB	L	M	H	Cotton, Chickpea, Cumin, Wheat	1 Jul-15 Jul	1 to 15 Oct	370	15
Groundnut (ATIC)	Kharif-18-19	Irrigated	MB	L	M	H	Cotton, Groundnut	15 Feb-10 Mar	15 to 30 May	370	15
Pulses											
Pigeon pea	Kharif-18-19	Irrigated	MB	L	M	H	Wheat, Cumin	15-30 Aug	1-15 Jan	370	15
Chickpea	Rabi-18-19	Irrigated	MB	L	M	H	Groundnut	25-30 Octo	15-30 Feb	370	15
Horticultural											
Brinjal	Kharif-18-19	Irrigated	MB	L	M	H	Wheat, Chickpea	15July-15Aug.	1Nov-15Feb	370	15
Chilli	Kharif-18-19	Irrigated	MB	L	M	H	Cumin, Wheat	15July-15Aug.	15Oct-30Jan	370	15
Okra	Kharif-18-19	Irrigated	MB	L	M	H	G'nut, Coriander	20 Oct-15Nov	10-25 Feb	370	15
Spices											
Cumin	Rabi-18-19	Irrigated	MB	L	M	H	G'nut, Sesame	1 -15 Nov	1-15 Feb	370	15
Coriander (ATIC)	Rabi-18-19	Irrigated	MB	L	M	H	G'nut, Sesame	1 - 15 Nov	1-15 Feb	370	15
Cumin (ATIC)	Rabi-18-19	Irrigated	MB	L	M	H	G'nut, Sesame	15-30 Oct	1-15 Mar	370	15
Cereals											
Pearl Millet	Sum-18-19	Irrigated	MB	L	M	H	Wheat, Coriander	15-30 Feb	10-20 May	370	15
Other crops											
Cotton	Kharif-18-19	Irrigated	MB	L	M	H	Cotton, Wheat	15-30 Jun	15 dec-30 Jan	370	15

Technical Feedback on the demonstrated technologies

Sl. No.	Crop	Technology Demo.	feedback
	Oilseeds		
1	NMOOP-Groundnut Kharif	ICM	➢ Effective control White grub with *Metariazhum* ➢ Effective control of *Sclerotium* with *Trichoderma* ➢ Low cost and seed quality improve ➢ Use of bio-fertilizers reduced the quantity of chemical fertilizers
2	NMOOP-Sesame Kharif	ICM	➢ Effective control diseases and pests ➢ Less fertilizer requirements ➢ Also reduce the damage of leaf binder ➢ Reduce the cost of cultivation
3	Groundnut (ATIC)	ICM	➢ Effective control White grub with *Metariazhum* ➢ Effective control of *Sclerotium* with *Trichoderma* ➢ Also reduce the damage of pod borer ➢ Easy to apply
	Pluses		
4	Pigeon pea	ICM	➢ Bio pesticide and bio fertilizer are very effective ➢ Easy to use

			➢ Easley available and eco friendly ➢ It also reduce use of chemical pesticide/fertilizer in the era of organic farming
5	Chickpea	IPM, Varietal	➢ GJG-5 high yielding variety ➢ GG-5 is resistance to virus and wilt ➢ More no. of branches per plant ➢ It also reduce use of chemical pesticide/fertilizer in the era of organic farming
	Horticulture		
6	Brinjal	IPM/Varietal	➢ Use of bio-pesticide is eco friendly and do not harmful to useful insects ➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Lower incidence of whitefly as well as fruit and shoot borer
7	Chilli	IPM	➢ Curling of leaves were observed in very few plants ➢ Useful for management of thrips and higher yield ➢ Bio-fertilizer can reduce use of chemical fertilizers
8	Okra	Variety	➢ The Quality of Okra fruit was very good ➢ The colour and shining was attractive ➢ Less attack of pest ➢ Germination was poor
	Spices crop		
9	Cumin		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Due to Trichoderma the incidence of wilt were minimized
10	Coriander (ATIC)		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Due to Trichoderma the incidence of wilt were minimized
11	Cumin (ATIC)		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Cost of cultivation was reduced
	Cereals		
12	Pearl Millet	Variety	➢ Higher yield of grain and fodder ➢ Quality of fodder is good ➢ Good against drought spell ➢ Sweet taste of rotla
	Others		
13	Cotton	Bt.Cotton IPM/INM	➢ Biopesticide saves useful insects ➢ Beauveria is very effective against sucking and chewing pest ➢ Reduce cost of cultivation ➢ Use of Azotobactor and PSB reduced the quantity of chemical fertilizer
14	Cotton (ATIC)	Bt.Cotton IPM/INM	➢ Advance management for pest control is benefitted for less damage in plants for higher yield ➢ MDP Technology is very effectively but sum what laboring also. ➢ Beauveria is very effective against sucking and chewing pest ➢ Low cost chemical control for longer time

15	Solar cooker		➢ Use less fuel ➢ Reduce cooking time ➢ Completely smoke less ➢ Conserve trees ➢ Allow more dung to be used as fertilizer instead of fuel ➢ Provide work for local chulha makers
16	Kitchen gardening	Vegetables	➢ Fresh vegetable available at doorstep and at a time with minimum cost ➢ Regulatory daily nutritious diet. ➢ They produce organic vegetables because farm women are not applying any pesticides or agrochemicals in their backyard.

Farmers' reactions on specific technologies

Sl. No.	Crop	Technology Demo.	feedback
	Oilseeds		
1	NMOOP-Groundnut Kharif	ICM	➢ GJG-22 is high yielding variety ➢ Effective control White grub with *Metariazhum* ➢ Effective control of *Sclerotium* with *Trichoderma* ➢ Also reduce the damage of pod borer ➢ Easy to apply ➢ Low cost and seed quality improve ➢ Use of bio-fertilizers reduced the quantity of chemical fertilizers
2	NMOOP-Sesame Kharif	ICM	➢ GT-4 in high yielding and short duration variety ➢ Effective control diseases and pests ➢ Less fertilizer requirements ➢ Also reduce the damage of leaf binder ➢ Easy to apply and eco friendly ➢ Reduce the cost of cultivation
3	Groundnut (ATIC)	ICM	➢ Effective control White grub with *Metariazhum* ➢ Effective control of *Sclerotium* with *Trichoderma* ➢ Also reduce the damage of pod borer ➢ Easy to apply
	Pluses		
4	Pigeon pea	ICM	➢ Bio pesticide and bio fertilizer are very effective ➢ Easy to use ➢ Easley available and eco friendly ➢ It also reduce use of chemical pesticide/fertilizer in the era of organic farming
5	Chickpea	IPM, Varietal	➢ GJG-5 high yielding variety ➢ GG-5 is resistance to virus and wilt ➢ More no. of branches per plant ➢ Bio pesticide and bio fertilizer are very effective and Easy to use ➢ Easley available and eco friendly ➢ It also reduce use of chemical pesticide/fertilizer in the era of organic farming
	Horticulture		
6	Brinjal	IPM/Varietal	➢ Fruit size is long, quality and signing is good

			➢ Use of bio-pesticide is eco friendly and do not harmful to useful insects ➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Lower incidence of whitefly as well as fruit and shoot borer
7	Chilli	IPM	➢ Curling of leaves were observed in very few plants ➢ Useful for management of thrips and higher yield ➢ Bio-fertilizer can reduce use of chemical fertilizers
8	Okra	Variety	➢ The Quality of Okra fruit was very good ➢ The colour and shining was attractive ➢ Less attack of pest ➢ Germination was poor
	Spices crop		
9	Cumin		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Due to Trichoderma the incidence of wilt were minimized ➢ Cost of cultivation was reduced ➢ The products were easy to use
10	Coriander (ATIC)		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Due to Trichoderma the incidence of wilt were minimized ➢ Cost of cultivation was reduced ➢ The products were easy to use
11	Cumin (ATIC)		➢ Use of *Azotobacter* and PSB had reduced the quantity of chemical fertilizers ➢ Beauveria helped in control of thrips and also other pests ➢ Due to Trichoderma the incidence of wilt were minimized ➢ Cost of cultivation was reduced ➢ The products were easy to use
	Cereals		
12	Pearl Millet	Variety	➢ Higher yield of grain and fodder ➢ Quality of fodder is good ➢ Good against drought spell ➢ Sweet taste of rotla
	Others		
13	Cotton	Bt.Cotton IPM/INM	➢ Low cost chemical control for longer time ➢ It prove that prevention is better than cure for pest management ➢ Beauveria is very effective against sucking and chewing pest ➢ Biopesticide saves useful insects
14	Cotton (ATIC)	Bt.Cotton IPM/INM	➢ Advance management for pest control is benefitted for less damage in plants for higher yield ➢ MDP Technology is very effectively but sum what laboring also. ➢ Beauveria is very effective against sucking and chewing pest ➢ Low cost chemical control for longer time

15	Solar cooker		➢ Light weight &Easy to mobile ➢ Use less fuel ➢ Reduce fuel collection time ➢ Reduce cooking time ➢ Completely smoke less ➢ Conserve trees ➢ Allow more dung to be used as fertilizer instead of fuel ➢ Provide work for local chulha makers
16	Kitchen gardening	Vegetables	➢ Fresh vegetable available at doorstep and at a time with minimum cost ➢ Regulatory daily nutritious diet. ➢ They produce organic vegetables because farm women are not applying any pesticides or agrochemicals in their backyard. ➢ Utilized maximum backyard space and waste water. ➢ Income generated by selling extra vegetables grown in kitchen garden.

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	1	5.5.18	31	
		1	20.8.18	18	
		1	17.09.18	12	
		1	19.10.18	30	
		1	25.10.18	28	
		1	1.11.18	10	
		1	3.11.18	10	
		1	11.02.19	11	
		1	5.03.19	28	
2	Farmers training	2	25.07.18	50	
		1	13.08.18	25	
		1	18.08.18	26	
		1	29.08.18	50	
		1	17.09.18	13	
		1	20.10.18	38	
		1	25.10.18	32	
		1	30.10.18	25	
		1	01.12.18	31	
		1	17.12.18	30	
		1	16.2.18	21	
3	Media coverage	2			
4	Training for extension functionaries	1	16.07.18	76	

C. PERFORMANCE OF FRONTLINE DEMONSTRATIONS

Front line 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 (ATIC)	ICM	*Trichoderma*, PSB, *Azotobacter*, *Beauveria*	GG-20	100	40	60.0	21.25	30.14	26.29	14.84	24360	150688	126328	6.18	25805	105150	79345	4.07

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																			
Pearl Millet (Sum-18)	Varietal	Variety GHB-732	10	4	46.25	38.50	41.50	33.63	23.40			16350	61484	45134	3.76	15300	49841	34541	3.25
Vegetables																			
Brinjal (Kh-18)	IPM, Varieta	GJLB-4, *Azotobactor*, PSM, *Trichoderma*, *Azadirachtin*, Profenophos	5	2	575	487.50	536.25	496.25	8.06			128500	670313	541813	5.22	135000	620313	485313	4.59
Chilli (Kh-18)	IPM/IDM	*Azotobactor*, PSM, *Trichoderma*, Azadirachtin, Profenophos	5	2	156.25	143.75	148.75	129.25	15.09			72400	390469	318069	5.39	70400	316663	246263	4.50
Okra (Kh-18)	IPM, Varieta	Seed-GJO-3, *Azotobactor*, PSM, Trichoderma Azadirachtin, Profenophos	5	2	221.25	212.50	216.75	190.75	13.63			94000	541875	447875	5.76	98400	429188	330788	4.36
Spices & condiments																			
Cumin	IDM	*Trichoderma*	10	04	12.50	10.63	11.14	10.51	5.99			50700	171563	120863	3.38	51590	152431	100841	2.95
Coriander (ATIC)	ICM	Trichoderma, PSB, *Azotobacter*, *Beauveria*	25	10	14.25	9.5	16.60	14.84	11.86			35400	112050	76650	3.16	36800	96444	59644	2.62
Cumin (ATIC)	ICM	Trichoderma, PSB, *Azotobacter*, *Beauveria*	50	20	12.20	8.4	11.67	10.28	13.52			42000	163345	121345	3.89	43900	141281	97381	3.22
Commercial Crops																			
Cotton	IPM/INM	*Azotobactor*, PSM, *Trichoderma*, Azadirachtin, Profenophos	20	8	25.00	5.00	15.25	13.00	17.31			24050	83875	59825	3.48	25400	68250	42850	2.68
Cotton (ATIC)	ICM	SNPV, PSB, *Azotobacter*, MDP, *Beauveria*	25	10	29.5	12.5	19.30	16.20	19.14			24160	106150	81990	4.39	25500	85050	59550	3.33

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
Assessment	Solar cooker	4	Fuel consumption (per year)	Solar energy + 52 kg LPG	85 kg LPG
			Time saving,	50 to 55 %	0

* No of Family Members 5 calculated in one family

FLD on Other Enterprise: Kitchen Gardening

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units	Yield (Kg)		% change in yield	Other parameters		Economics of demonstration (Rs./unit)				Economics of check (Rs./unit)			
					Demonstration	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Kitchen gardening	Nutritional garden	*Vegetable seed*	50	50	581.36	499	29.48	-	-	4688	11627	6939	2.48	4520	8980	4460	1.99
Sea weed	Sea weed	Raft + sea weed material	5	5						Result Awaited							
Plastic mulching	Plastic mulching	Plastic mulching	5	5						Result Awaited							

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

D. PERFORMANCE OF CLUSTER FRONTLINE DEMONSTRATIONS (CFLD)

Front line 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	ICM	Seed (GJG-22), *Metarhiziumanisopliae*, *Trichoderma*, *Rhizobium*, PSB	GJG-22	50	20	25	10.6	17.8	15.5	14.84	45280	89000	43720	1.97	47630	77500	29870	1.63
Sesame	ICM	Seed (Guj.Till-4), *Beauveria*, *Trichoderma*, *Azotobacter*, PSB	Guj.Till-4	50	20	9.4	6.2	7.8	6.7	16.42	23900	93600	69700	3.92	24850	80400	55550	3.24

Front line demonstrations on Pulses 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										
Pigeon pea	ICM	*Beauveria*, *Trichoderma*, *Rhizobium*, PSB		25	10	17.75	10.63	12.69	10.9	16.37	29800	72016	42216	2.42	30925	61886	30961	2.0
Chickpea	IPM, Varietal	Seed GG-5, *Beauveria*, *Trichoderma*, *Rhizobium*, PSB	GG-5	50	20	31.25	22.5	26	21	23.81	41100	120120	79020	2.92	42600	97020	54420	2.28

3.4 TRAINING PROGRAMME

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										

Weed Management				0			0	0	0	0
Resource Conservation Technologies				0			0	0	0	0
Cropping Systems				0			0	0	0	0
Crop Diversification				0			0	0	0	0
Integrated Farming				0			0	0	0	0
Micro Irrigation/irrigation				0			0	0	0	0
Seed production				0			0	0	0	0
Nursery managemeint				0			0	0	0	0
Integrated Crop Management	2	60	0	60	0	0	0	60	0	60
Soil & water conservation				0			0	0	0	0
Integrated nutrient management				0			0	0	0	0
Production of organic inputs				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**2**	**60**	**0**	**60**	**0**	**0**	**0**	60	0	**60**
II Horticulture										
a) Vegetable Crops										
Production of low value and high volume crops				0			0	0	0	0
Off-season vegetables				0			0	0	0	0
Nursery raising				0			0	0	0	0
Exotic vegetables				0			0	0	0	0
Export potential vegetables				0			0	0	0	0
Grading and standardization				0			0	0	0	0
Protective cultivation				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (a)	0	0	0	0	0	0	0	0	0	0
b) Fruits										
Training and Pruning				0			0	0	0	0
Layout and Management of Orchards				0			0	0	0	0
Cultivation of Fruit				0			0	0	0	0
Management of young plants/orchards				0			0	0	0	0
Rejuvenation of old orchards				0			0	0	0	0
Export potential fruits				0			0	0	0	0
Micro irrigation systems of orchards				0			0	0	0	0
Plant propagation techniques				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants										
Nursery Management				0			0	0	0	0
Management of potted plants				0			0	0	0	0
Export potential of ornamental plants				0			0	0	0	0
Propagation techniques of Ornamental Plants				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology				0			0	0	0	0

Processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology				0			0	0	0	0
Processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	1	66	2	68	6	0	6	72	2	74
Processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (f)	1	66	2	68	6	0	6	72	2	74
g) Medicinal and Aromatic Plants										
Nursery management				0			0	0	0	0
Production and management technology				0			0	0	0	0
Post harvest technology and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**1**	**66**	**2**	**68**	**6**	**0**	**6**	72	2	**74**
III Soil Health and Fertility Management										
Soil fertility management				0			0	0	0	0
Integrated water management				0			0	0	0	0
Integrated Nutrient Management				0			0	0	0	0
Production and use of organic inputs	1	29		29	1		1	30	0	30
Management of Problematic soils				0			0	0	0	0
Micro nutrient deficiency in crops				0			0	0	0	0
Nutrient Use Efficiency				0			0	0	0	0
Balance use of fertilizers				0			0	0	0	0
Soil and Water Testing				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**1**	**29**	**0**	**29**	**1**	**0**	**1**	30	0	**30**
IV Livestock Production and Management										
Dairy Management				0	0	0	0	0	0	0
Poultry Management				0			0	0	0	0
Piggery Management				0			0	0	0	0
Rabbit Management				0			0	0	0	0
Animal Nutrition Management	1	0	30	30	0	0	0	0	30	30
Disease Management				0			0	0	0	0
Feed & fodder technology				0			0	0	0	0
Production of quality animal products	1	24	9	33	1	0	1	25	9	34
Others (pl specify)				0			0	0	0	0
Total	**2**	**24**	**39**	**63**	**1**	**0**	**1**	25	39	**64**

V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening				0	0	0	0	0	0	0
Design and development of low/minimum cost diet				0			0	0	0	0
Designing and development for high nutrient efficiency diet				0			0	0	0	0
Minimization of nutrient loss in processing				0			0	0	0	0
Processing and cooking				0			0	0	0	0
Gender mainstreaming through SHGs				0			0	0	0	0
Storage loss minimization techniques	1	0	30	30	0	0	0	0	30	30
Value addition	2	0	62	62	0	7	7	0	69	69
Women empowerment	1	0	30	30	0	0	0	0	30	30
Location specific drudgery reduction technologies				0			0	0	0	0
Rural Crafts				0			0	0	0	0
Women and child care				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**4**	**0**	**122**	**122**	**0**	**7**	**7**	0	129	**129**
VI Agril. Engineering										
Farm Machinary and its maintenance				0			0	0	0	0
Installation and maintenance of micro irrigation systems				0			0	0	0	0
Use of Plastics in farming practices				0			0	0	0	0
Production of small tools and implements				0			0	0	0	0
Repair and maintenance of farm machinery and implements				0			0	0	0	0
Small scale processing and value addition				0			0	0	0	0
Post Harvest Technology				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**
VII Plant Protection										
Integrated Pest Management	1	25	0	25	0	0	0	25	0	25
Integrated Disease Management				0			0	0	0	0
Bio-control of pests and diseases	1	24	0	24	6	0	6	30	0	30
Production of bio control agents and bio pesticides	1	23	38	61	2	5	7	25	43	68
Others (pl specify)				0			0	0	0	0
Total	**3**	**72**	**38**	**110**	**8**	**5**	**13**	80	43	**123**
VIII Fisheries										
Integrated fish farming				0			0	0	0	0
Carp breeding and hatchery management				0			0	0	0	0
Carp fry and fingerling rearing				0			0	0	0	0

Composite fish culture				0			0	0	0	0
Hatchery management and culture of freshwater prawn				0			0	0	0	0
Breeding and culture of ornamental fishes				0			0	0	0	0
Portable plastic carp hatchery				0			0	0	0	0
Pen culture of fish and prawn				0			0	0	0	0
Shrimp farming				0			0	0	0	0
Edible oyster farming				0			0	0	0	0
Pearl culture				0			0	0	0	0
Fish processing and value addition	1	15	0	15	0	0	0	15	0	15
Others (pl specify)				0			0	0	0	0
Total	**1**	**15**	**0**	**15**	**0**	**0**	**0**	15	0	**15**
IX Production of Inputs at site										
Seed Production				0			0	0	0	0
Planting material production				0			0	0	0	0
Bio-agents production				0			0	0	0	0
Bio-pesticides production				0			0	0	0	0
Bio-fertilizer production				0			0	0	0	0
Vermi-compost production				0			0	0	0	0
Organic manures production				0			0	0	0	0
Production of fry and fingerlings				0			0	0	0	0
Production of Bee-colonies and wax sheets				0			0	0	0	0
Small tools and implements				0			0	0	0	0
Production of livestock feed and fodder				0			0	0	0	0
Production of Fish feed				0			0	0	0	0
Mushroom Production				0			0	0	0	0
Apiculture				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**
X Capacity Building and Group Dynamics										
Leadership development				0			0	0	0	0
Group dynamics				0			0	0	0	0
Formation and Management of SHGs				0			0	0	0	0
Mobilization of social capital				0			0	0	0	0
Entrepreneurial development of farmers/youths				0			0	0	0	0
WTO and IPR issues				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**
XI Agro-forestry										
Production technologies				0			0	0	0	0
Nursery management				0			0	0	0	0
Integrated Farming Systems				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**
GRAND TOTAL	**14**	**266**	**201**	**467**	**16**	**12**	**28**	282	213	**495**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	1	37	0	37	5	0	5	42	0	42
Resource Conservation Technologies				0			0	0	0	0
Cropping Systems				0			0	0	0	0
Crop Diversification				0			0	0	0	0
Integrated Farming	1	33	0	33	1	0	1	34	0	34
Micro Irrigation/irrigation	1	54	0	54	0	0	0	54	0	54
Seed production	1	23	0	23	2	0	2	25	0	25
Nursery management				0			0	0	0	0
Integrated Crop Management	3	200	0	200	2	0	2	202	0	202
Soil & water conservatioin				0			0	0	0	0
Integrated nutrient management				0			0	0	0	0
Production of organic inputs				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**7**	**347**	**0**	**347**	**10**	**0**	**10**	357	0	**357**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops				0			0	0	0	0
Off-season vegetables				0			0	0	0	0
Nursery raising				0			0	0	0	0
Exotic vegetables				0			0	0	0	0
Export potential vegetables				0			0	0	0	0
Grading and standardization				0			0	0	0	0
Protective cultivation				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (a)	0	0	0	0	0	0	0	0	0	0
b) Fruits										
Training and Pruning				0			0	0	0	0
Layout and Management of Orchards				0			0	0	0	0
Cultivation of Fruit				0			0	0	0	0
Management of young plants/orchards				0			0	0	0	0
Rejuvenation of old orchards				0			0	0	0	0
Export potential fruits				0			0	0	0	0

Micro irrigation systems of orchards				0	0	0	0	0	0	0
Plant propagation techniques				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants										
Nursery Management				0			0	0	0	0
Management of potted plants				0			0	0	0	0
Export potential of ornamental plants				0			0	0	0	0
Propagation techniques of Ornamental Plants				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology				0			0	0	0	0
Processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology				0			0	0	0	0
Processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology				0			0	0	0	0
Processing and value addition	1	0	36	36	0	7	7	0	43	43
Others (pl specify)				0			0	0	0	0
Total (f)	1	0	36	36	0	7	7	0	43	43
g) Medicinal and Aromatic Plants										
Nursery management				0			0	0	0	0
Production and management technology				0			0	0	0	0
Post harvest technology and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**1**	**0**	**36**	**36**	**0**	**7**	**7**	0	43	**43**
III Soil Health and Fertility Management										
Soil fertility management				0			0	0	0	0
Integrated water management				0			0	0	0	0

Integrated Nutrient Management	1	58	0	58	0	0	0	58	0	58
Production and use of organic inputs	2	155	0	155	6		6	161	0	161
Management of Problematic soils				0			0	0	0	0
Micro nutrient deficiency in crops				0			0	0	0	0
Nutrient Use Efficiency				0			0	0	0	0
Balance use of fertilizers				0			0	0	0	0
Soil and Water Testing				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**3**	**213**	**0**	**213**	**6**	**0**	**6**	219	0	**219**
IV Livestock Production and Management										
Dairy Management	1	22	3	25	0	0	0	22	3	25
Poultry Management				0			0	0	0	0
Piggery Management				0			0	0	0	0
Rabbit Management				0			0	0	0	0
Animal Nutrition Management				0			0	0	0	0
Disease Management				0			0	0	0	0
Feed & fodder technology				0			0	0	0	0
Production of quality animal products				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**1**	**22**	**3**	**25**	**0**	**0**	**0**	22	3	**25**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	0	35	35	0	0	0	0	35	35
Design and development of low/minimum cost diet				0			0	0	0	0
Designing and development for high nutrient efficiency diet				0			0	0	0	0
Minimization of nutrient loss in processing				0			0	0	0	0
Processing and cooking				0			0	0	0	0
Gender mainstreaming through SHGs				0			0	0	0	0
Storage loss minimization techniques				0			0	0	0	0
Value addition				0			0	0	0	0
Women empowerment	1	0	28	28	0	2	2	0	30	30
Location specific drudgery reduction technologies				0			0	0	0	0

Rural Crafts				0			0	0	0	0
Women and child care	1	0	22	22	0	1	1	0	23	23
Others (pl specify)				0			0	0	0	0
Total	**3**	**0**	**85**	**85**	**0**	**3**	**3**	0	88	**88**
VI Agril. Engineering										
Farm Machinary and its maintenance				0			0	0	0	0
Installation and maintenance of micro irrigation systems				0			0	0	0	0
Use of Plastics in farming practices				0			0	0	0	0
Production of small tools and implements				0			0	0	0	0
Repair and maintenance of farm machinery and implements	1	70	0	70	3	0	3	73	0	73
Small scale processing and value addition				0			0	0	0	0
Post Harvest Technology				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**1**	**70**	**0**	**70**	**3**	**0**	**3**	73	0	**73**
VII Plant Protection										
Integrated Pest Management	3	103	11	114	5	1	6	108	12	120
Integrated Disease Management	2	299	0	299	26	7	33	325	7	332
Bio-control of pests and diseases	2	178	62	240	32	14	46	210	76	286
Production of bio control agents and bio pesticides	1	21	0	21	0	0	0	21	0	21
Others (pl specify)				0			0	0	0	0
Total	**8**	**601**	**73**	**674**	**63**	**22**	**85**	664	95	**759**
VIII Fisheries										
Integrated fish farming				0			0	0	0	0
Carp breeding and hatchery management				0			0	0	0	0
Carp fry and fingerling rearing				0			0	0	0	0
Composite fish culture	2	1	1	2	33	27	60	34	28	62
Hatchery management and culture of freshwater prawn				0			0	0	0	0
Breeding and culture of ornamental fishes				0			0	0	0	0
Portable plastic carp hatchery				0			0	0	0	0
Pen culture of fish and prawn	1	0	0	0	0	26	26	0	26	26
Shrimp farming	1	52	0	52	0	0	0	52	0	52
Edible oyster farming				0			0	0	0	0

Pearl culture				0			0	0	0	0
Fish processing and value addition				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**4**	**53**	**1**	**54**	**33**	**53**	**86**	86	54	**140**
IX Production of Inputs at site										
Seed Production				0			0	0	0	0
Planting material production				0			0	0	0	0
Bio-agents production				0			0	0	0	0
Bio-pesticides production	1	118	0	118	3	0	3	121	0	121
Bio-fertilizer production				0			0	0	0	0
Vermi-compost production				0			0	0	0	0
Organic manures production				0			0	0	0	0
Production of fry and fingerlings				0			0	0	0	0
Production of Bee-colonies and wax sheets				0			0	0	0	0
Small tools and implements				0			0	0	0	0
Production of livestock feed and fodder				0			0	0	0	0
Production of Fish feed				0			0	0	0	0
Mushroom Production				0			0	0	0	0
Apiculture				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**1**	**118**	**0**	**118**	**3**	**0**	**3**	121	0	**121**
X Capacity Building and Group Dynamics										
Leadership development				0			0	0	0	0
Group dynamics				0			0	0	0	0
Formation and Management of SHGs				0			0	0	0	0
Mobilization of social capital				0			0	0	0	0
Entrepreneurial development of farmers/youths				0			0	0	0	0
WTO and IPR issues				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**
XI Agro-forestry										
Production technologies				0			0	0	0	0
Nursery management				0			0	0	0	0
Integrated Farming Systems				0			0	0	0	0
Others (pl specify)				0			0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	**0**

GRAND TOTAL	**29**	**1424**	**198**	**1622**	**118**	**85**	**203**	1542	283	**1825**

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	1	37	0	37	5	0	5	42	0	42
Resource Conservation Technologies	0	0	0	0	0	0	0	0	0	0
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	0	0	0	0	0	0	0	0	0	0
Integrated Farming	1	33	0	33	1	0	1	34	0	34
Micro Irrigation/irrigation	1	54	0	54	0	0	0	54	0	54
Seed production	1	23	0	23	2	0	2	25	0	25
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	5	260	0	260	2	0	2	262	0	262
Soil & water conservatioin	0	0	0	0	0	0	0	0	0	0
Integrated nutrient management	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**9**	**407**	**0**	**407**	**10**	**0**	**10**	**417**	**0**	**417**
II Horticulture	0	0	0	0	0	0	0	0	0	0
a) Vegetable Crops	0	0	0	0	0	0	0	0	0	0
Production of low value and high valume crops	0	0	0	0	0	0	0	0	0	0
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	0	0	0	0	0	0	0	0	0	0
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (a)	0	0	0	0	0	0	0	0	0	0
b) Fruits	0	0	0	0	0	0	0	0	0	0
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	0	0	0	0	0	0	0	0	0	0
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0

Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops	0	0	0	0	0	0	0	0	0	0
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops	0	0	0	0	0	0	0	0	0	0
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices	0	0	0	0	0	0	0	0	0	0
Production and Management technology	1	66	2	68	6	0	6	72	2	74
Processing and value addition	1	0	36	36	0	7	7	0	43	43
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (f)	2	66	38	104	6	7	13	72	45	117
g) Medicinal and Aromatic Plants	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	**2**	**66**	**38**	**104**	**6**	**7**	**13**	**72**	**45**	**117**
III Soil Health and Fertility Management	0	0	0	0	0	0	0	0	0	0
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	2	87	0	87	1	0	1	88	0	88
Production and use of organic inputs	2	155	0	155	6	0	6	161	0	161
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**4**	**242**	**0**	**242**	**7**	**0**	**7**	**249**	**0**	**249**
IV Livestock Production and Management	0	0	0	0	0	0	0	0	0	0
Dairy Management	1	22	3	25	0	0	0	22	3	25
Poultry Management	0	0	0	0	0	0	0	0	0	0
Piggery Management	0	0	0	0	0	0	0	0	0	0

Rabbit Management	0	0	0	0	0	0	0	0	0	0
Animal Nutrition Management	1	0	30	30	0	0	0	0	30	30
Disease Management	0	0	0	0	0	0	0	0	0	0
Feed & fodder technology	0	0	0	0	0	0	0	0	0	0
Production of quality animal products	1	24	9	33	1	0	1	25	9	34
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**3**	**46**	**42**	**88**	**1**	**0**	**1**	**47**	**42**	**89**
V Home Science/Women empowerment	0	0	0	0	0	0	0	0	0	0
Household food security by kitchen gardening and nutrition gardening	1	0	35	35	0	0	0	0	35	35
Design and development of low/minimum cost diet	0	0	0	0	0	0	0	0	0	0
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	0	0	0	0	0	0	0	0	0	0
Processing and cooking	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	1	0	30	30	0	0	0	0	30	30
Value addition	2	0	62	62	0	7	7	0	69	69
Women empowerment	2	0	58	58	0	2	2	0	60	60
Location specific drudgery reduction technologies	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	1	0	22	22	0	1	1	0	23	23
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**7**	**0**	**207**	**207**	**0**	**10**	**10**	**0**	**217**	**217**
VI Agril. Engineering	0	0	0	0	0	0	0	0	0	0
Farm Machinary and its maintenance	0	0	0	0	0	0	0	0	0	0
Installation and maintenance of micro irrigation systems	0	0	0	0	0	0	0	0	0	0
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	1	70	0	70	3	0	3	73	0	73
Small scale processing and value addition	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**1**	**70**	**0**	**70**	**3**	**0**	**3**	**73**	**0**	**73**
VII Plant Protection	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	4	128	11	139	5	1	6	133	12	145
Integrated Disease Management	2	299	0	299	26	7	33	325	7	332
Bio-control of pests and diseases	3	202	62	264	38	14	52	240	76	316
Production of bio control agents and bio pesticides	2	44	38	82	2	5	7	46	43	89

Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**11**	**673**	**111**	**784**	**71**	**27**	**98**	**744**	**138**	**882**
VIII Fisheries	0	0	0	0	0	0	0	0	0	0
Integrated fish farming	0	0	0	0	0	0	0	0	0	0
Carp breeding and hatchery management	0	0	0	0	0	0	0	0	0	0
Carp fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Composite fish culture	2	1	1	2	33	27	60	34	28	62
Hatchery management and culture of freshwater prawn	0	0	0	0	0	0	0	0	0	0
Breeding and culture of ornamental fishes	0	0	0	0	0	0	0	0	0	0
Portable plastic carp hatchery	0	0	0	0	0	0	0	0	0	0
Pen culture of fish and prawn	1	0	0	0	0	26	26	0	26	26
Shrimp farming	1	52	0	52	0	0	0	52	0	52
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	1	15	0	15	0	0	0	15	0	15
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**5**	**68**	**1**	**69**	**33**	**53**	**86**	**101**	**54**	**155**
IX Production of Inputs at site	0	0	0	0	0	0	0	0	0	0
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	1	118	0	118	3	0	3	121	0	121
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Bee-colonies and wax sheets	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Apiculture	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**1**	**118**	**0**	**118**	**3**	**0**	**3**	**121**	**0**	**121**
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0	0	0
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	0	0	0	0	0	0	0	0	0	0
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
XI Agro-forestry	0	0	0	0	0	0	0	0	0	0

Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRAND TOTAL	**43**	**1690**	**399**	**2089**	**134**	**97**	**231**	**1824**	**496**	**2320**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops				0			0	0	0	0
Training and pruning of orchards				0			0	0	0	0
Protected cultivation of vegetable crops				0			0	0	0	0
Commercial fruit production				0			0	0	0	0
Integrated farming				0			0	0	0	0
Seed production				0			0	0	0	0
Production of organic inputs				0			0	0	0	0
Planting material production				0			0	0	0	0
Vermi-culture				0			0	0	0	0
Mushroom Production				0			0	0	0	0
Bee-keeping				0			0	0	0	0
Sericulture				0			0	0	0	0
Repair and maintenance of farm machinery and implements				0			0	0	0	0
Value addition				0			0	0	0	0
Small scale processing				0			0	0	0	0
Post Harvest Technology				0			0	0	0	0
Tailoring and Stitching				0			0	0	0	0
Rural Crafts				0			0	0	0	0
Production of quality animal products				0			0	0	0	0
Dairying				0			0	0	0	0
Sheep and goat rearing				0			0	0	0	0
Quail farming				0			0	0	0	0
Piggery				0			0	0	0	0
Rabbit farming				0			0	0	0	0
Poultry production				0			0	0	0	0
Ornamental fisheries				0			0	0	0	0
Composite fish culture				0			0	0	0	0
Freshwater prawn culture				0			0	0	0	0
Shrimp farming				0			0	0	0	0
Pearl culture				0			0	0	0	0
Cold water fisheries				0			0	0	0	0
Fish harvest and processing technology				0			0	0	0	0
Fry and fingerling rearing				0			0	0	0	0
Any other (pl.specify)				0			0	0	0	0
TOTAL				**0**			**0**	**0**	**0**	**0**

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

Area of training	No. of	No. of Participants		
		General	SC/ST	Grand Total

	Courses	Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops				0			0	0	0	0
Training and pruning of orchards				0			0	0	0	0
Protected cultivation of vegetable crops				0			0	0	0	0
Commercial fruit production				0			0	0	0	0
Integrated farming				0			0	0	0	0
Seed production				0			0	0	0	0
Production of organic inputs				0			0	0	0	0
Planting material production				0			0	0	0	0
Vermi-culture				0			0	0	0	0
Mushroom Production				0			0	0	0	0
Bee-keeping				0			0	0	0	0
Sericulture				0			0	0	0	0
Repair and maintenance of farm machinery and implements				0			0	0	0	0
Value addition	1	0	32	32	0	0	0	0	32	32
Small scale processing				0			0	0	0	0
Post Harvest Technology				0			0	0	0	0
Tailoring and Stitching				0			0	0	0	0
Rural Crafts				0			0	0	0	0
Production of quality animal products				0			0	0	0	0
Dairying				0			0	0	0	0
Sheep and goat rearing				0			0	0	0	0
Quail farming				0			0	0	0	0
Piggery				0			0	0	0	0
Rabbit farming				0			0	0	0	0
Poultry production				0			0	0	0	0
Ornamental fisheries				0			0	0	0	0
Composite fish culture				0			0	0	0	0
Freshwater prawn culture				0			0	0	0	0
Shrimp farming				0			0	0	0	0
Pearl culture				0			0	0	0	0
Cold water fisheries				0			0	0	0	0
Fish harvest and processing technology				0			0	0	0	0
Fry and fingerling rearing				0			0	0	0	0
Any other (pl.specify)				0			0	0	0	0
TOTAL	**1**	**0**	**32**	**32**	**0**	**0**	**0**	**0**	**32**	**32**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	0	0	0	0	0	0	0	0	0	0
Training and pruning of orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation of vegetable crops	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Integrated farming	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Vermi-culture	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0

Bee-keeping	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Value addition	1	0	32	32	0	0	0	0	32	32
Small scale processing	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Tailoring and Stitching	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Dairying	0	0	0	0	0	0	0	0	0	0
Sheep and goat rearing	0	0	0	0	0	0	0	0	0	0
Quail farming	0	0	0	0	0	0	0	0	0	0
Piggery	0	0	0	0	0	0	0	0	0	0
Rabbit farming	0	0	0	0	0	0	0	0	0	0
Poultry production	0	0	0	0	0	0	0	0	0	0
Ornamental fisheries	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Freshwater prawn culture	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Cold water fisheries	0	0	0	0	0	0	0	0	0	0
Fish harvest and processing technology	0	0	0	0	0	0	0	0	0	0
Fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**1**	**0**	**32**	**32**	**0**	**0**	**0**	**0**	**32**	**32**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	34	3	37	7	0	7	41	3	44
ntegrated Pest Management	3	131	4	135	6	0	6	137	4	141
ntegrated Nutrient management	1	19	1	20			0	19	1	20
Rejuvenation of old orchards				0			0	0	0	0
Protected cultivation technology				0			0	0	0	0
Production and use of organic inputs	2	36		36	6		6	42	0	42
Care and maintenance of farm machinery and mplements				0			0	0	0	0
Gender mainstreaming through SHGs				0			0	0	0	0
Formation and Management of SHGs				0			0	0	0	0
Women and Child care				0			0	0	0	0
Low cost and nutrient efficient diet designing				0			0	0	0	0
Group Dynamics and farmers organization				0			0	0	0	0
nformation networking among farmers				0			0	0	0	0
Capacity building for ICT application				0			0	0	0	0
Management in farm animals				0			0	0	0	0
Livestock feed and fodder production				0			0	0	0	0
Household food security				0			0	0	0	0
Any other (pl.specify)				0			0	0	0	0

TOTAL	**7**	**220**	**8**	**228**	**19**	**0**	**19**	**239**	**8**	**247**

Training programmes for Extension Personnel 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
Productivity enhancement in field crops				0			0	0	0	0
Integrated Pest Management	4	415	0	415	0	0	0	415	0	415
Integrated Nutrient management				0			0	0	0	0
Rejuvenation of old orchards				0			0	0	0	0
Protected cultivation technology				0			0	0	0	0
Production and use of organic inputs	1	25	0	25	2	0	2	27	0	27
Care and maintenance of farm machinery and implements				0			0	0	0	0
Gender mainstreaming through SHGs				0			0	0	0	0
Formation and Management of SHGs				0			0	0	0	0
Women and Child care				0			0	0	0	0
Low cost and nutrient efficient diet designing				0			0	0	0	0
Group Dynamics and farmers organization				0			0	0	0	0
Information networking among farmers				0			0	0	0	0
Capacity building for ICT application				0			0	0	0	0
Management in farm animals				0			0	0	0	0
Livestock feed and fodder production				0			0	0	0	0
Household food security				0			0	0	0	0
Any other (pl.specify)				0			0	0	0	0
TOTAL	**5**	**440**	**0**	**440**	**2**	**0**	**2**	**442**	**0**	**442**

Training programmes for Extension Personnel 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
Productivity enhancement in field crops	1	34	3	37	7	0	7	41	3	44
Integrated Pest Management	7	546	4	550	6	0	6	552	4	556
Integrated Nutrient management	1	19	1	20	0	0	0	19	1	20
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	3	61	0	61	8	0	8	69	0	69
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0
Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	0	0	0	0	0	0	0	0	0	0
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0

Household food security	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**12**	**660**	**8**	**668**	**21**	**0**	**21**	**681**	**8**	**689**

Summary of Training Programme

On Campus

(A) Farmers & Farm Women	**No. of couses**	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	2	60	0	60	0	0	0	60
II Horticulture	1	66	2	68	6	0	6	74
III Soil Health and Fertility Management	1	29	0	29	1	0	1	30
IV Livestock Production and Management	2	24	39	63	1	0	1	64
V Home Science/Women empowerment	4	0	122	122	0	7	7	129
VI Agril. Engineering	0	0	0	0	0	0	0	0
VII Plant Protection	3	72	38	110	8	5	13	123
VIII Fisheries	1	15	0	15	0	0	0	15
IX Production of Inputs at site	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
Total (A)	**14**	**266**	**201**	**467**	**16**	**12**	**28**	**495**
(B) RURAL YOUTH	0	0	0	0	0	0	0	0
(C) Extension Personnel	7	220	8	228	19	0	19	247
Grand Total (A+B+C)	**21**	**486**	**209**	**695**	**35**	**12**	**47**	**742**

Off Campus

(A) Farmers & Farm Women	**No. of couses**	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	7	347	0	347	10	0	10	357
II Horticulture	1	0	36	36	0	7	7	43
III Soil Health and Fertility Management	3	213	0	213	6	0	6	219
IV Livestock Production and Management	1	22	3	25	0	0	0	25
V Home Science/Women empowerment	3	0	85	85	0	3	3	88
VI Agril. Engineering	1	70	0	70	3	0	3	73
VII Plant Protection	8	601	73	674	63	22	85	759
VIII Fisheries	4	53	1	54	33	53	86	140
IX Production of Inputs at site	1	118	0	118	3	0	3	121
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
Total (A)	**29**	**1424**	**198**	**1622**	**118**	**85**	**203**	**1825**
(B) RURAL YOUTH	1	0	32	32	0	0	0	32
(C) Extension Personnel	5	440	0	440	2	0	2	442

Grand Total (A+B+C)	**35**	**1864**	**230**	**2094**	**120**	**85**	**205**	**2299**

On + Off Campus

(A) Farmers & Farm Women	**No. of couses**	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	9	407	0	407	10	0	10	417
II Horticulture	2	66	38	104	6	7	13	117
III Soil Health and Fertility Management	4	242	0	242	7	0	7	249
IV Livestock Production and Management	3	46	42	88	1	0	1	89
V Home Science/Women empowerment	7	0	207	207	0	10	10	217
VI Agril. Engineering	1	70	0	70	3	0	3	73
VII Plant Protection	11	673	111	784	71	27	98	882
VIII Fisheries	5	68	1	69	33	53	86	155
IX Production of Inputs at site	1	118	0	118	3	0	3	121
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
Total (A)	**43**	**1690**	**399**	**2089**	**134**	**97**	**231**	**2320**
(B) RURAL YOUTH	1	0	32	32	0	0	0	32
(C) Extension Personnel	12	660	8	668	21	0	21	689
Grand Total (A+B+C)	**56**	**2350**	**439**	**2789**	**155**	**97**	**252**	**3041**

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	10	585	73	658	44	15	59	629	88	717
Commercial production of vegetables										
Production and value addition										
Fruit Plants										
Ornamental plants										
Spices crops	1	66	2	68	6	0	6	72	2	74
Soil health and fertility management	3	195	0	195	1	0	1	196	0	196
Production of Inputs at site	1	118	0	118	3	0	3	121	0	121
Methods of protective cultivation										
Others (pl. specify)										
Total	**15**	**964**	**75**	**1039**	**54**	**15**	**69**	**1018**	**90**	**1108**
Post-harvest technology and value addition										
Processing and value addition	2		79	79	0	9	9	0	88	88
Others (pl. specify)										
Total										
Farm machinery										
Farm machinery, tools and implements										
Others (pl. specify)										
Total	**2**	**0**	**79**	**79**	**0**	**9**	**9**	**0**	**88**	**88**

Livestock and fisheries										
Livestock production and management	1	0	30	30	0	0	0	0	30	30
Animal Nutrition Management	1	24	9	33	1	0	1	25	9	34
Animal Disease Management										
Fisheries Nutrition	1	52	0	52	0	0	0	52	0	52
Fisheries Management	4	16	1	17	33	53	86	49	54	103
Others (pl. specify)										
Total	**7**	**92**	**40**	**132**	**34**	**53**	**87**	**126**	**93**	**219**
Home Science										
Household nutritional security	1	0	30	30	0	0	0	0	30	30
Economic empowerment of women	2	0	58	58	0	2	2	0	60	60
Drudgery reduction of women										
Others (pl. specify)										
Total	**3**	**0**	**88**	**88**	**0**	**2**	**2**	**0**	**90**	**90**
Agricultural Extension										
Capacity Building and Group Dynamics										
Others (pl. specify)										
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**27**	**1056**	**282**	**1338**	**88**	**79**	**167**	**1144**	**361**	**1505**

Name of sponsoring agencies involved: ATMA, DAO, FTC, Agakhan trust, NGO, GGRC, ICDS, TCSRD, ANARDE foundation

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										
Commercial floriculture										
Commercial fruit production										
Commercial vegetable production										
Integrated crop management										
Organic farming										
Others (pl. specify)										
Total										
Post harvest technology and value addition										
Value addition	1	0	32	32	0	0	0	0	32	32
Others (pl. specify)										
Total	**1**	**0**	**32**	**32**	**0**	**0**	**0**	**0**	**32**	**32**
Livestock and fisheries										
Dairy farming										
Composite fish culture										
Sheep and goat rearing										
Piggery										
Poultry farming										
Others (pl. specify)										
Total										
Income generation activities										
Vermi composting										

Production of bio-agents, bio-pesticides,										
bio-fertilizers etc.										
Repair and maintenance of farm machinery										
and implements										
Rural Crafts										
Seed production										
Sericulture										
Mushroom cultivation										
Nursery, grafting etc.										
Tailoring, stitching, embroidery, dying etc.										
Agril. para-workers, para-vet training										
Others (pl. specify)										
Total										
Agricultural Extension										
Capacity building and group dynamics										
Others (pl. specify)										
Total										
Grand Total	**1**	**0**	**32**	**32**	**0**	**0**	**0**	**0**	**32**	**32**

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	0	20	0	0	0	20	0	20
Quality Seed grower	1	20	0	20	0	0	0	20	0	20
TOTAL	2	40	0	40	0	0	0	40	0	40

3.5 EXTENSION PROGRAMMES

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	787	3777	315	4092
Diagnostic visits	58	115	19	134
Field Day	13	292	6	298
Group discussions	37	716	21	737
Kisan Ghosthi	12	1124	35	1159
Film Show	112	7461	650	8111
Self -help groups	2	73	8	81
Kisan Mela	5	4904	117	5021
Exhibition	2	1930	44	1974
Scientists' visit to farmers field	90	628	66	694
Plant/animal health camps		0	0	0
Farm Science Club		0	0	0
Ex-trainees Sammelan	2	159	10	169
Farmers' seminar/workshop	6	1786	51	1837
Method Demonstrations	24	426	52	478
Celebration of important days	2	757	48	805

Special day celebration	4	319	35	354
Exposure visits	3	87	3	90
Lecture delivered	183	16600	913	17513
Implement/Crop Demonstration	24	1199	70	1269
Night meeting	2	126	6	132
Farmer shibir/Crop shibir	2	208	4	212
Collobrative training	6	253	13	266
Others (pl. specify)	40	1322	505	1827
Total	**1416**	**44262**	**2991**	**47253**

Details of other extension programmes

Particulars	**Number**
Electronic Media (CD./DVD)	
Extension Literature distributed	10863
News paper coverage	11
Popular articles	3
Radio Talks	0
TV Talks	1
Animal health amps (Number of animals treated)	0
Advisory through Mobile	5826
Publication	4
Total	**16708**

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)	Expected Value(Rs)	Expected Number of farmers
Oilseeds	Groundnut	GJG-9 (Breeder)		48	744000	
	Sesame	GT-4 (Breeder)		6.5	151450	
	Sesame	GT-4		13.5	202500	272
Pulses	Green gram	GM-4		15.45	123600	165
Others	Sun hemp	Lokal		5	30000	18
Total				**88.45**	**1251550**	**455**

Production of planting materials by the KVKs

Crop	Name of the crop	Name of the variety	Name of the hybrid	Number	Value (Rs.)	Number of farmers
Commercial						
Vegetable seedlings						
Total						

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity		Value (Rs.)	No. of Farmers
		No.	kg		
Bio Fertilizers	*Azotobactor*	232		2320	40
	Rhizobium	492		4920	78
	PSB	483		4830	115
Bio-pesticide	*Beauveria Bassiana*		11000	165000	858

	Metarizium		200	3000	36
Bio-fungicide	*Trichoderma*		21140	211400	513
Bio Agents					
Others	Pheromone trap				
	Lure				
Total		**1207**	**32340**	**391470**	**1640**

N.B. *Product was produced by JAU University and selling by KVK the amount is only given for revenue generation

Table: Production of livestock materials

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

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

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

Date of start : January -2016

Periodicity : Quarterly

1. April to June, 2018
2. July to Sept., 2018
3. Oct. to Dec. 2018
4. Jan to Mar, 2019

Number of copies distributed : e-news letter

B. Literature developed/published

Item	Title	Authors name	Number of copies
Research papers	Study on different insecticide application methods against white	Patel TM, Baraiya KP, and Chudasama KA	

	grub, H. *consanguinea. International Journal of Chemical Studies 2018;6(3):2880-2883*		
Research papers	Impact of iron supplementation towards hemoglobin levels on teenage girls in Jamnagar district. International Journal of Agriculture Science 10(12), 6489-6491	Baraiya AK, Baraiya KP, and Lakhani SH	
Research papers	Residual Toxicity of Insecticides against Thrips, *Scirtothrips dorsalis*Infesting Chilli under Laboratory Condition. Research Journal of Agricultural Sciences 2019;10(1):151-154	BP Godhani, KP Baraiya and T Anandmurthy	
Research papers	Population Dynamics of Thrips, *S. Dorsalis* On Chilli Grown With Different Mulching Methods Research Journal of Agricultural Sciences 2019;10(3):486-489	BP Godhani, KP Baraiya and T Anandmurthy	
Abstract	Constraints faced by farmers to adopt new agricultural technology in KVK adopted village Souvenir "National Seminar on Extension Strategies for Doubling the farmer's income for livelihood security"	Dr. P. S. Gorfad, Dr. J. N. Thaker, Dr. K. P. Baraiya and Dr. A. M. Parakhia	
Abstract	Impact of Krishi Vigyan Kendra in operational villages Souvenir "National Seminar on Extension Strategies for Doubling the farmer's income for livelihood security"	Dr. P. S. Gorfad, Dr. J. N. Thaker, Dr. K. P. Baraiya and Dr. A. M. Parakhia	
Technical reports	Annual Progress Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	7
	15th AGRESCO Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	49
	29th ZREAC Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	54
	30thZREAC Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	54
	15th SAC Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	35
	Annual Report of ATIC(2018-19)	Dr. J. N. Thakar, Dr. K. P. Baraiya	1
	NMOOP & NFSM FLD result report	Dr. S. H. Lakhani, Dr. K. P. Baraiya	1
	Monthly Report	Smt. A. K. Baraiya, Dr. K. P. Baraiya	1
	Quarterly Reports	Smt. A. K. Baraiya, Dr. K. P. Baraiya	1
Popular articles	Jiruma molo ane thrips nu sankalit niyanrtan. Krushi Vigyan, 44(09):33(2018)	Gadhiya VC, Lakhani SH, Baraiya K P, Baraiya AK	
	Success story-Beet ni sajiv kheti. Krushi Vigyan, 44(10):29 (Nov-2018)	Gadhiya VC, Lakhani SH, Baraiya K P, Baraiya AK	

	Pak Sanrakshan na sadhnoma kothasuj dvara shodh. Krushi Vigyan,44(12):27-18(2019)	Gadhiya VC, Baraiya KP	

C. Details of Electronic Media Produced

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

D. Success Story/CASE STUDIES

5.1 Case study/ Success story

PROFILE OF FARM INNOVATORS
Thematic Area: Organic Cultivation

"Organic & High-tech Vegetable cultivation"

Dr. K. P. Baraiya, Smt. A. K. Baraiya & Shri S. H. Lakhani

Personal Profile			Organic & High-tech vegetable Cultivation
Name of farmer	:	Parmar Laljibhai Dosabhai	**Shri Parmar Laljibhai Parmar** is enthusiastic farmers of village Siddhpur of Jam Khambhalia block of Devbhumi Dwarka district. Siddhpur village in interior village. It is also very less rainfall area having hardly 350 to 400 mm rainfalls. Groundwater is also scar in this area. Laljibhai and his family completely dependent on farming. He has no any side income from any business. He engaged with farming by birth. They grow some common farming practices *viz.,* Groundnut, sorghum, pearl millet and other fodder crops. From starting he used more pesticide and Chemical fertilizer due to that increase cost of cultivation and reduce net profit.
Contact No.	:	9428570337	
Address	:	At.- Siddhpur, Ta.- Jam Khambhalia, Dist.- Devbhumi Dwarka	
Age	:	48 Years	
Education	:	4 Std pass	
Land holding	:	1.31 ha	**Practical Utility of the Innovation/ Mode etc.**
Crops grown	:	Vegetable, groundnut, wheat,	**Shri Parmar Laljibhai Dosabhai** is innovative farmer. During 2005 he comes in contact scientist of Agriculture University by the means of Krishi Mahotshav. He encourages for animal keeping was must for farming and purchase one cow. He follow the Mansukhbhai Suvagiya innovator for Jalkranti & Gir Cow. He comes in contact with scientists of KVK, JAU, Jamnagar, then after he regularly visit KVK and attends trainings, farmer and scientist interface, exposure visit, and other programme organized by KVK. In 2007 Laljibhai linkage with ATMA project through KVK, JAU, Jamnagar. He was interested in organic farming, vegetable cultivation and started under guidance of KVK.
Livestock	:	60 - Gir Cow	
Business	:	Farming	
Special recognition	:	Innovative and Progressive farmer	

He was also purchased one cows for organic farming. He has totally cultivation under organic system, in which he use homemade products for compost, cow urine, *jivamrut*, *agnihotra* mantra and done every day morning and evening *agnihotra* in his harm.

He also use university bio-products *viz*., *Trichoderma*, *Beauveria*, *Azatobactor*, PSB, *Rhizobium*, NPV, MDP Technology, Pheromone trap, Fruit fly trap. He also usages all these technology including yellow sticky trap, light trap decomposed FYM, vermi-compost and bio pesticide in their regular farming.

He started Kamdhenu Gaushala at Gadhka with 15 Gir cow and now a days he has 60 cows. He started Ghee sales by Rs. 700 per kg and now a days it increase Rs. 1100 per kg Ghee. Thus his demand is increases day by day. He also started to produce organic groundnut and wheat. He value added to both the produce and sales wheat @ Rs. 700 per 20 kg. From groundnut extract oil by small scale oil mill and pack him self which sales @ 2800 per 15 kg groundnut oil.

He adopt micro irrigation system for whole farm since last 5 years. He has also started ***Mandap Paddhati*** for vegetable (viz., Bottle gourd, ridge gourd, sponge gourd, bitter gourd)cultivation. He also grow mix cropping with this technology and Brinjal, chili, cabbage, beat, carrot, coriander, fenugreek, pulses inter cropping, garlic, onion cultivation by organically. Most of production marketing himself from his farm and sales through on telephonic contact of end users. These vegetables and all the products have been value addition and supply at metro cities Rajkot,

Jamnagar, Ahmedabad, Surat etc. Which earn very high. Environmental benefits like He does not use any type of chemical for protection as well as crop production. Finally he become sound in economic condition

Many farmers of Devbhumi dwarka districts and surround districts were visited "Laljibhai farm and take information about the organic vegetable cultivation and they started on their own farm.

More number of farmers have been visited Laljibhai farm for planning and cultivation of organic at own farm. Laljibhai have proven for organic farming as a best cultivation as well as low cost farming with high value. He got many awards for his struggle for organic farming.

He has newly started to cultivation of Passion fruit, dragon fruit. He also started potato grow above ground which have higher price for Jain people.

Economics of organic vegetable cultivation with Mandap paddhati

Year	Production (Kg/ha)	Gross Income (Rs/ha)	Production cost (Rs/ha)	Net income (Rs/ha)	Remarks
First Year (2017-18)	31250	612500	337500	275000	Cost of mandap preparation, labour cost, seed etc
Second Year (2018-19)	32500	631250	31250	600000	Labour cost and maintenance cost, seed etc.

Action Photographs

Preparation of organic inputs by using different plants & by products of cow shed

Mandap paddhati cultivation above and on ground (Double layer crops)

Organic ghee with attractive packing

Organic Wheat cultivation

Value addition in ghee & Agri Produces.

Organic groundnut cultivation with usage of MIS system

Gopan through natural grazing of cow	Jivamrut use by drip irrigation in Mandap system cultivation

5.2 Case study/ Success story

PROFILE OF FARM INNOVATORS
Thematic Area: Value Addition

"Value addition in Agriculture Produce"

Smt. A. K. Baraiya & Dr. K. P. Baraiya

Personal Profile			
Name of farmer	:	Vadodariya Pravinaben Jerambhai	**Smt. Pravinaben Jerambhai Vadodariya** is very enthusiastic, hard worker, 12th pass and animal owner of Kalyanpur village of Jamjodhpur taluka, Jamnagar District. Kalyanpur is very small village with interior roads having undulating topography. She has 1.10 ha land with less irrigation facilities according to rainfall. It is also very less rainfall area having hardly 300 to 350 mm rainfalls. Groundwater is also scar in this area. The possibility of crops in negligible in this area due to undulating topography. There is also major problem of wild animal's viz., blue bull, deer and pig. Her family is completely dependent on farming; her spouse is also working together, having no any side income. She engaged farming since last 24 years.
Contact No.	:	6353012817	
Address	:	At.- Kalyanpur, Ta.- Jam Jodhpur, Dist.- Jamnagar	
Age	:	45 Years	
Education	:	12 Std pass	
Land holding	:	1.10 ha	**Practical Utility of the Innovation/ Mode etc.**
Crops grown	:	Groundnut, fodder, coriander, chickpea	**Smt. Pravinaben Jerambhai Vadodariya** is innovative farmwomen. She started farming since last 24 years with common farming practices,but lack ofsufficient farming facility, they suffer for struggling in life. Ultimately, she comes in contact of "Centre for Environment Education (CEE)", Kalavad. They have to promote some group of ladies for development and earn by self-help group. According to these, under leadership of Pravinaben, they prepare the self-help group named "Radhe Krishna Paryavaran Mahila Vikash Mandal. Every month, each group members saved Rs. 100 ingroup bank account. This group work in different ways as per the guideline by CEE, Kalavad Aarohoan project. Once, they have visit to KVK, JAU, Jamnagar for training on "Value addition of agricultural produce". She encourage for preparation different value added items from agriculture products. Smt. Pravinaben Jerambhai Vadodariyastarted to prepare different products *viz*., tomato catchup, aonla syrup, aonla candy, pachak amla, amla powder, Alsi Mukhvas, Ajwain-Dill Seed (suva) mukhvas, Sesame mukhvas, syrup, jam from different fruits. They packed in attractive manner and sold by the logo of Radhe Krishna Mahila Vikash Mandal, Kalyanpur. They frequently visit KVK, JAU, Jamnagar and also participate different programmes organized by KVK. They also participated in Krishi Mela at different location for marketing of their products. They also connected with KVK scientist for different innovations in value addition and homemade items preparation. She earned income of Rs. 3000 to 4000 per month by this activity in first year. She also earn Rs. 5000 to 6000 from milk sales. Organic matter produce herself for own farming and reduce cost of
Livestock	:	2- buffalo	
Business	:	Farming	
Special recognition	:	Innovative and Progressive farmer	

			cultivation. She work aggressively and will be reach at top, which can fulfil expenditure of her family.

Action Photographs

	
Training at KVK, JAU, Jamnagar for Value addition in agricultural Produce	Participation in Krishi Mela for selling of products

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

1. Innovative methodology:

- Farmers to farmer dissemination
- Distributed printed leafletto farmers
- Farm School on farmer's field
- Kishan advisory through mobile SMS
- Film show
- Cluster frontline demonstration

2. Innovative technology transfer:

- Use of FYM to minimize the chemical fertilizer in cotton
- Use of Trichoderma against stem rot disease of groundnut
- Use of *Metarhizium* against white grub in groundnut
- Use of *Beauveria* against all pest of all crops.
- Use of bio-fertilizers *viz*. PSB, Rhizobium, Azatobactor etc
- Use of pheromone trap for mass trapping as well as monitoring
- Tractor mounted sprayer
- Introduction of new variety i.e.GG-3, GG-5 of Chickpea, GJG-22 of Groundnut, GW-463 of wheat
- Use of trap crop, pheromone trap etc. as a IPM component
- Cotton stalk shredder for recycling of farm waste

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1.	Chilly	Use castor as a trap crop	For controlling thrips and jassids
2	Crop husbandry	Crop rotation and mixed cropping	Control weed, and diseases management
3	"	Mixing of ash with pulse/millet grains	While storing to protect from pest

4	"	Vegetable seeds placed inside cowdung	Use for next year
5	Fertility Management	Application of ash	To improve soil fertility
6	"	Sheep and goat penning	To improve soil fertility
7	"	Jivamrut	To improve soil fertility and reduce chemical fertilizers
	Crop husbandry	Panchgavya	For management of pests and diseases of crops
	Crop husbandry	Sheep and goat grazing	For pinkboll worm management
7	Harvesting	Harvest pulse crop in the morning hours	To reduce shattering
8	Organic farming	Jivamrut, Panchgavya, Cow based farming	Reduce the cost of cultivation as well as without chemical organic farming.

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

a) Group discussion with the farmers
b) Field visits
c) Group meeting
d) Identifying general trends in the area
e) PRA survey

Rural Youth

a) Filling up research based questionnaires
b) Identification of leader and role of rural youth in agriculture (Socio-metric method)
c) Field visit for practical experience
d) General discussion about district agriculture issues

In-service personnel

a) Knowledgetest (Interview schedule)
b) Interaction with the personnel
c) Functional areas of personnel

5.2 Indicate the methodology for identifying OFTs/FLDs

For OFT :

- PRA
- Problem identified from Matrix
- Field level observations
- Farmer group discussions
- Assessment of technology
- Others if any

For FLD :

1. New variety/technology
2. Poor yield at farmers level
3. Existing cropping system :- Coriander
4. Technology – adoption gap
5. Others if any

5.3 Field activities

i. Name of villages identified/adopted with block name (from which year) -
ii. No. of farm families selected per village :
iii. No. of survey/PRA conducted :

iv. No. of technologies taken to the adopted villages
v. Name of the technologies found suitable by the farmers of the adopted villages:

vi. Impact (production, income, employment, area/technological– horizontal/vertical)
vii. Constraints if any in the continued application of these improved technologies

5.4 . No. and Name of villages adopted for Doubling Farmers Income. Indicate whether benchmark survey of the villages are done or not.

Name of KVK/ District	Name of Villages Adopted
JAMNGAR	Lothiya
	Khoja Beraja
	Chandragadh
	Nani Banugar
	Gadhka

6. LINKAGES

A. Functional linkage with different organizations

Sr.	Name of organization	Nature of linkage
A	**Statecorporation and state deptt.**	
1	District AgriculturalOfficer, Deptt. of Agriculture, District Panchayat, Jamnagar	➢ Joint diagnostic teamvisit at farmers field ➢ Organizing collaborative trainingto farmers ➢ For collaborative off campus training ➢ For collaborative training and demonstrationProgramme ➢ Collaborative on campustrainingprogramme ➢ For providing hostelfacilitiesto participants and organizing collaborative MahilaKrishiMela
2	Deputy Director of Horticulture, Jamnagar	
3	Deputy Director of Agriculture (Training), Farmer Training Centre, Jamnagar	
4	Deputy Director of Agriculture (Extension), Jamnagar	
5	Asstt. Director of Fisheries, Jamnagar	
6	Project Director, ATMA, Jamnagar	
7	Project Director, DWDU, Jamnagar	
8	NABARD Bank	
9	Range Forest Officer, Jamnagar	
B	**Private Corporation**	
1	Territory Manager, GSFC, Jamnagar	➢ Imparttraining on Agril. aspects ➢ Collaborative on/off campustrainingprogramme ➢ Sponsortrainingprogramme
2	Territory Manager, GNFC, Jamnagar	
3	Territory Manager, IFFCO, Jamnagar	
4	Reliance Industries, Dept. of Green Belt, Jamnagar	
	Syngenta Company	
	GGRC	
C	**NGOs**	
1	Umiya Mataji Mandir Trust, At.- Sidsar, Ta.-Jamjodhpur, Dist.-Jamnagar	➢ Imparttraining on Agril. aspects ➢ Collaborative on/off campus training programme
2	Tata Chemical Societyfor Rural Development Foundation, At. Mithapur, Ta.-Dwarka, Dist.-Jamnagar	
3	Agakhan Rural Development Trust	
4	ANARDE foundation trust	

5	Mahindra Tractor, Jamnagar	
6	BAIF, Singach	

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.)
Establishment of Agricultural Technology Information Centre (ATIC)	2018-19	State Govt.	1890000/-
Pre Rabi Campaign (B.H. 2704-37)	2018-19	ICAR	80000/-
Cluster Frontline demonstration of Oilseeds under NMOOP (B.H.:- 2704-51)	2018-19	ICAR	340000/-
Cluster Frontline demonstration of pulses under NSFM (B.H.:- 2704-50)	2018-19	ICAR	382500/-
Skill Training programme (B.H. 2704-56)	2018-19	Central Government	330400/-
District Agromet Unit (DAMUs) (B.H. 2704-59	2018-19	Central Government	480000/-
Making of Compost Unit Swachchh Bharat Mission (B.H. 2704-60)	2018-19	ICAR	22500/-

C. Details of linkage with ATMA

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

S. No.	Programme	Nature of linkage	Remarks
1	District Level Training	Impart Training on Agricultural Aspects	Celeberate Technology week Arrangement of KrishiMela
2.	Block level training	Lecture delivered	
3.	Village level training		

If yes, role of KVK in preparation of SREP of the 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**	AGB, AMC and other meeting	21	5	
02	**Research projects**	-	-	-	-
03	**Training programmes**	On/ Off Campus training programme	9	11	
04	**Demonstrations**	Method Demonstration	14	8	
05	**Extension Programmes**				
	Kisan Mela		5	0	
	Technology Week		0	1	

	Exposure visit		0	0	
	Exhibition		1	1	
	Soil health camps		0	0	
	Animal Health Campaigns		0	0	
	Others (Pl. specify)	Day Celebration	2	1	
		Lecture Dilivered	48	10	
06	**Publications**				
	Video Films				
	Books				
	Extension Literature				
	Pamphlets				
	Others (Pl. specify)				
07	**Other Activities** (Pl.specify)				
	Watershed approach				
	Integrated Farm Development				
	Agri-preneurs development				

D. Give details of programmes implemented under National Horticultural Mission

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

E. Nature of linkage with National Fisheries Development Board

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

F. Details of linkage with RKVY

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

7. Convergence with other agencies and departments:

Period	Activity details	Place of activity	Officers present
12.04.18	SAC meeting with line Department	KVK, Jamnagar	35
23.04.18	Kishan Kalyan Karyashala meeting	DDO chamber, Jamnagar	23
23.04.18	Kishan Kalyan Karyashala meeting	DDO chamber, Jamnagar	23

24.05.18	AGB meeting ATMA Jamnagar	DDO chamber, Devbhumi dwarka	18
31.05.18	AGB meeting ATMA Devbhumi dwarka	DDO chamber, Devbhumi dwarka	16
31.05.18	AMC meeting of Devbhumi Dwarka	DDO chamber, Devbhumi dwarka	11
02.05.18	Kishan Kalyan Karyshala	Devbhumi Dwarka	14
02.05.18	Kisan Mela/Exhibition	Devbhumi Dwarka	16
22.06.18	Extension Functionaries Training	KVK Jamnagar	44
29.06.18	Inland fish farming related meeting	DDO chamber, Jamnagar	9
13.07.18	Seminar of Date palm Production technology	KVK, Jamnagar	12
16.07.18	Extension Functionaries Training	KVK, Jamnagar	78
24.07.18	Extension Functionaries Training on organic farming	KVK, Jamnagar	22
4-5.07.18	Extension Functionaries Training	Dwarka District	27
19.07.18	NFSM Meeting	DDO chamber, Jamnagar	17
19.07.18	National Mission on Sustainable Agriculture	DDO chamber, Jamnagar	17
21-22.08.18	Extension Functionaries Training	FTC, Jamnagar	20
17.09.18	NFSM, NMOOP Farmers award Meeting	Jam Khambhalia	6
27.09.18	ZEARC Meeting	DFRS, Rajkot	42
22.10.18	AGB meeting of Devbhumi Dwarka	DDO chamber, Devbhumi dwarka	14
23.10.18	AGB meeting of Jamnagar District	DDO chamber, Jamnagar	21
12.12.18	DLMC meeting of Devbhumi Dwarka under PMFBY 2018-19	Collector Office, Jam Khambhalia	12
20.03.19	15th Joint AGRESCO Meeting	JAU, Junagadh	136
25.03.19	SAC meeting with line Department	KVK, Jamnagar	30

8. Innovator Farmer's Meet

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

9. Farmers Field School (FFS)

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

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

- Demonstrated new variety
- Introduction of newer crop by KVK through different FLD as well as OFT
- Information of any crop diversification get from KVK
- Frequently visit to farmers
- Telephonic information is available 24 hours through scientist mobile
- Farmers reduce cost of production by using *Beauveria bassiana* and other bio-products

- Farmers understood the use of sulphur in oilseed crops specially in mustard through front line demonstrations in different villages
- Farmers understand the need of soil and water conservation and its future consequences in the area.
- Positive response coming from farmers about use of *Trichoderma* as seed treatment and soil application in cumin and groundnut
- Farmers are realizing the need of micronutrients and their deficiency in the different soils of the area
- Farmers are realizing the importance of seed treatment for pest and disease management
- Positive feedback coming from farmers side about the use of Pseudomonas in coriander for disease management
- Farmers getting satisfactory results from seed treatment for pest and disease control in different crops

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

Director (ATARI), DEE, Comptroller of University :

- Grant for the contingency for handling diferentprogrammes is in sufficient
- Limit of food provision during training and other cost should be increase along with stipend and transportation fascility (Approximately Rs. 500 to 1000 per head per training required)
- Timely release of grant for successful and perfect conducting of FLD and OFT
- Required new vehicle for field visit and other extension programme. It is also required minimum two vehicle in KVK due to work load and it is among farmers field
- Contingency grant is in sufficient (It should be minimum 30 lakhs per KVK)
- Provide grant for farm protection wall and other infrastructure fascilities

Soil & Water Conservation:

- Farmers are facing the problem of malfunctioning of micro irrigation systems with poor quality irrigation water.
- Problem of soil salinity/ alkalinity is increasing day by day due to inherent salinity of soils and application of poor quality water.
- More research is required for magnetic water softener and effects of softened water on soil after continuous use.

Horticulture:

- Need to be developed nematode & wilt resistant root-stock in pomegranate
- Fertigation schedule should be developed in Datepalm
- Need to be developed value addition methods for Datepalm

Plant Protection:

- Need to be developed more insect and disease resistant varieties under different crops
- Farmers need freshly prepared bio-agents like *Beauveria, Metarhizium,Trichoderma, Pseudomonas, Paecillomyces* etc.
- Need to be effective control measures for mealybug control in cotton.
- More emphasis should be given on fruit fly management in different orchards
- Research scientists should focus on discovering best management techniques for mealybug
- Also focus on para-wilt management practices in cotton

- Need to be discover new molecules of nematicides for nematode management
- Should be focus on insecticide resistance management
- Ease availability of bio-pesticides to farmers

Agronomy:

- Need to be developed salinity resistant varieties of crops like groundnut and castor
- Need to be developed high yielding/ salinity tolerant varieties of pulse crops
- Need to be farming with cow based agriculture development for doubling the farmers income

11. Technology Week celebration during 2018-19 - YES

Period of observing Technology Week: From 20 August to 24 August, 2018
Total number of farmers visited : 645
Total number of agencies involved : 3
Number of demonstrations visited by the farmers within KVK campus: 5
Other Details

Types of Activities	No. of Activities	Numaber of Participants	Related crop/livestock technology
Gosthies	5	645	• 1st day: Concept of Organic Farming. • 2nd day: IPM for kharif crop with special emphasis on pink bollworm and mealy bug. • 3rdday:Importance of Micro irrigation system in agri. • 4th day: Integrated nutrient management. • 5th day : Ideal animal husbandry • 6thday : IPM for kharif crop with special emphasis on white grub.
Lectures organized	30	645	1. IPM & IDM in Groundnut 2. ICT importance in Agriculture 3. More milk produce in scientific way 4. Value addition in farm products 5. IPM in Cotton 6. Importance of Organic farming 7. Reduce rate of crop cultivation in through Integrated Pest and disease control. 8. Importance of micro irrigation system 9. Diesis management in Animal 10. Importance of Kitchen gardening 11. Pink bollworm management in Cotton 12. Importance of micronutrients in agriculture 13. Integrated Pest and disease of major crops 14. Emphasizes on adverse effect of climate change in agriculture 15. Importance of soil and water analysis 16. Mechanization in modern Agriculture 17. Irrigation management in agricultural crop
Exhibition	1	386	Farm implements were put for exhibition cum demonstration purpose
Film show	15	645	Film Show of different technologies were presented
Fair	1	645	1. NADAP Composting unit 2. Net House/Poly house 3. Solar submersible pump (Renewable energy)

			4. Vermi compost unit 5. Fisheries unit 6. Agro forestry unit 7. Orchard of chiku, custard apple, guava, pomegranate and aonla 8. Drip and sprinkler system in farm 9. Crop cafeteria of major crop of the district 10. Seed production unit 11. Nursery Unit 12. Improved Implements viz. Laser land leveler, Tractor operated sprayer, tractor operated spray gun, rotavator, groundnut digger, tractor operated reaper for sorghum, groundnut exposure, mini-tractor, Mould plough, automatic seed cum fertilizer drill, etc.
Farm Visit	5	645	During farm visit farmers were demonstrate reaper demonstration for sorghum cutting. and also other different implements were demonstrated
Diagnostic Practicals	25	54	
Supplyof Literature (No.)	13	2050	Different subject literature distributed
Supply of Seed (q)			
Supply of Planting materials (No.)	-	-	
Bio Product supply (Kg)	6122	229	
Bio Fertilizers (q)			
Supply of fingerlings			
Supply of Livestock specimen (No.)	-	-	
Total number of farmers visited the technology week		645	

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

A. Introduction of alternate crops/varieties

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

* Note :- It was normal distribution of rainfall therefore, there was no any issues

B. Major area coverage under alternate crops/varieties

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

C. Farmers-scientists interaction on livestock management

State	Livestock components	Number of interactions	No.of participants
Total			

D. Animal health camps organized

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

E. Seed distribution in drought hit states

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

F. Large scale adoption of resource conservation technologies

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

G. Awareness campaign

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

13. IMPACT

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

IMPACT OF KRISHI VIGYAN KENDRA, JAU, JAMNAGAR IN OPERATIONAL VILLAGES

Krishi Vigyan Kendra has been proved to be one of the best option for improvement of knowledge, attitude and skill level in farming community of rural India through Trainings, On Farm Trials (OFT), Front Line Demonstrations(FLD) and other extension activities. Krishi Vigyan Kendra is the innovative scientific training institutes which have been established throughout the country with the mandates to impart need based and skill oriented trainings to practicing farmers, in-service field level extension workers and to those who wish to go for self-employment. The basic objective of Krishi Vigyan Kendra is focused on demonstrating the recent technology at the farmer's field and imparting skill oriented vocational trainings to the farmers. The Krishi Vigyan Kendra at Jamnagar was established in 2003-04, the main aim of establishing the Krishi Vigyan Kendra was to bring about improvement in production and economy of the farmers. In order to achieve this objective, the Krishi Vigyan Kendra

Jamnagar carries out a number of training programmes and various other activities on crop production and allied fields. The specific objective of the present paper was to assess the impact of KVK activities in Jamnagar districts.

METHODOLOGY

The present investigation was undertaken in operational villages of Jamnagar district of Gujarat state. The district consists of total 10 blocks, out of which Jamjodhpur, Dhrol and Jodiya were selected for different extension activities carried out by Krishi Vigyan Kendra, Junagadh Agricultural University, Jamnagar. Three irrigated and three rain fed villages selected from each block. Thus, total eighteen villages were adopted as operational area of Krishi Vigyan Kendra for the period of 2015 -16 to 2017-18. These eighteen villages were considered as the study sample for this investigation. For selection of respondents, 10 respondents were selected randomly from each adopted village. Thus, total number of respondents was 180. For the collection of data a simple structured schedule developed by Chandra (1991) was used with some modifications. The data collected from each respondent by personal interview method.

Table: 1. Village-wise numbers of respondents selected for the study and farming situation

Sr. No.	Village	Taluka	Farming situation	Total no. of selected farmers
1	Mulila	Kalavad	Irrigated	10
2	Chhatar	Kalavad	Irrigated	10
3	Chelabedi	Kalavad	Irrigated	10
4	Sanosara	Kalavad	Rainfed	10
5	Golaniya	Kalavad	Rainfed	10
6	Laxmipur (Dudhala)	Kalavad	Irrigated	10
7	Bhangor	Lalpur	Irrigated	10
8	Memana	Lalpur	Irrigated	10
9	Dharampur	Lalpur	Irrigated	10
10	Govana	Lalpur	Rainfed	10
11	Pipartoda	Lalpur	Rainfed	10
12	Babarjar	Lalpur	Rainfed	10
13	Morjar	Bhanvad	Irrigated	10
14	Sahidevaliya	Bhanvad	Irrigated	10
15	Dudhala	Bhanvad	Irrigated	10
16	Rojivada	Bhanvad	Rainfed	10
17	Vanavad	Bhanvad	Rainfed	10
18	Fatepur	Bhanvad	Rainfed	10
			Total	**180**

Impact of extension indicator

In a view to ascertain impact of different extension activities in adopted villages, questionnaire was prepared to measure the different extension indicators. It was structured to know the experience of farmers before and after five years' experience. The percentage worked out and percent increase should be the growth of the farmers after the KVK activities in adopted villages. The data are presented in table:-3.

Table: 3 Distribution of the respondents according to its extension intervention (N = 180)

Sr. No.	Extension indicator	Impact of Krishi Vigyan Kendra				Difference	Rank
		Before		After			
		Frequency	Percent	Frequency	Percent		
1	Knowledge about technology and package of practices	105	58.33	155	86.11	27.78	**IV**
2	Extent of awareness	75	41.67	167	92.78	51.11	**III**
3	Change in attitude	57	31.67	154	85.56	53.89	**II**

4	Improvement in work performance / skill	77	42.78	113	62.78	20.00	**V**
5	Extent of spread of technology	62	34.44	169	93.89	59.44	**I**
6	Increase in SHGs / FIGs	69	38.33	100	55.53	17.22	**VI**
7	Formation / establishment of cooperative	68	37.78	75	41.67	3.89	**VII**

The perusal of data presented in table 3 revealed that more than 50.00 per cent difference was noticed in case of spread of technology (59.44 %) which was followed by change in attitude (53.89 %) and extent of awareness (51.11 %) respectively.

In case of other extension indicators, the difference observed was less than 50.00 per cent are gain in knowledge about technology and package of practices, improvement in work performance/skill and increase in SHGs /CIGs with 27.78, 20.00 and 17.22 per cent respectively. The least difference was observed in case of formation and establishment of cooperative (3.89 %).

From above discussion, it could be concluded that the spread of technology (ranked first), change in attitude (ranked second), extent of awareness (ranked third), gain in knowledge (ranked fourth) and improvement in work performance/skill (ranked fifth).

Impact of technological indicator

To find out the technological impact, the following 13 technologies were tested, amongst three i.e. introduction of new verities, increase in yield /production and increase in area were tested in four major crops of our district which is cotton, groundnut, castor and wheat.

Table: -4. Distribution of farmers according to his technological indicator

Sr. No.	Technological indicator	Impact of Krishi Vigyan Kendra				Diffe-rence	Rank
		Before		After			
		Frequency	Percent	Frequency	Percent		
1	**Introduction of new verities**	**112**	**62.22**	**155**	**86.17**	**23.95**	**II**
(1)	Cotton	133	73.89	157	87.22	13.33	
(2)	Groundnut	139	77.22	160	88.89	11.67	
(3)	Castor	123	68.33	154	85.56	17.22	
(4)	Wheat	161	89.44	174	96.67	7.22	
(5)	Cumin	125	69.44	162	90.00	20.56	
(6)	Gram	107	59.44	159	88.33	28.89	
(7)	Til	115	63.89	148	82.22	18.33	
(8)	Coriander	11	6.11	133	73.89	67.78	
(9)	Pearl Millet	94	52.22	149	82.78	30.56	
2	**Increase in yield / productivity**	**120**	**66.61**	**143**	**79.57**	**12.96**	**VI**
(1)	Cotton	164	91.11	113	62.78	-28.33	
(2)	Groundnut	139	77.22	178	98.89	21.67	
(3)	Castor	122	67.78	147	81.67	13.89	
(4)	Wheat	145	80.56	165	91.67	11.11	
(5)	Cumin	129	71.67	161	89.44	17.78	
(6)	Gram	114	63.33	149	82.78	19.44	
(7)	Til	104	57.78	130	72.22	14.44	
(8)	Coriander	47	26.11	102	56.67	30.56	
(9)	Pearl Millet	115	63.89	144	80.00	16.11	
3	**Increase in area**	**109**	**60.68**	**128**	**71.05**	**10.37**	**VII**
(1)	Cotton	167	92.78	103	57.22	-35.56	
(2)	Groundnut	102	56.67	169	93.89	37.22	
(3)	Castor	98	54.44	103	57.22	2.78	

(4)	Wheat	135	75.00	155	86.11	11.11	
(5)	Cumin	121	67.22	135	75.00	7.78	
(6)	Gram	116	64.44	128	71.11	6.67	
(7)	Til	98	54.44	111	61.67	7.22	
(8)	Coriander	31	17.22	122	67.78	50.56	
(9)	Pearl Millet	115	63.89	125	69.44	5.56	
4	**Increase in production**	**15**	**12.50**	**85**	**70.83**	**58.33**	**I**
(1)	Cotton	165	91.67	115	63.89	-27.78	
(2)	Groundnut	133	73.89	168	93.33	19.44	
(3)	Castor	117	65.00	138	76.67	11.67	
(4)	Wheat	137	76.11	165	91.67	15.56	
(5)	Cumin	123	68.33	158	87.78	19.44	
(6)	Gram	97	53.89	119	66.11	12.22	
(7)	Til	101	56.11	127	70.56	14.44	
(8)	Coriander	97	53.89	135	75.00	21.11	
(9)	Pearl Millet	112	62.22	133	73.89	11.67	
5	**Extent of adoption**	107	59.44	149	82.78	23.33	III
6	**Increase in income**	130	72.22	159	88.33	16.11	V
7	**Generation of employment**	122	67.78	139	77.22	9.44	VIII
8	**Expansion of an enterprise**	89	49.44	96	53.33	3.89	IX
9	**Introduction of new enterprise**	75	41.67	79	43.89	2.22	X
10	**Improvement in market facility of farm produce**	75	41.67	78	43.33	1.67	XI
11	**Creation of infrastructure**	103	57.22	134	74.44	17.22	IV
12	**Opening of farm school**	78	43.33	81	45.00	1.67	XI
13	**Decrease in yield gaps**	91	50.56	120	66.67	16.11	V

It is concluded from above table: 4 that the highest difference (58.33 %) was observed in increase of production followed by introduction of new varieties (23.95 %), adoption rate (23.33 %), creation of infrastructure (17.22 %), increase in income and decrease in gap (16.11 per cent), increase in yield (12.96 %) and increase in area (10.37 %) respectively.

Least difference observed in case of Improvement in market facility of farm produce and Opening of farm school (1.67 per cent of each) and Introduction of new enterprise (2.22 per cent).

From above discussion it can be concluded that increase in production (ranked first), introduction of new varieties (ranked second), adoption rate (ranked third), creation of infrastructure (ranked fourth) and increase in income and decrease in gap (ranked fifth).

The reason for increase in production and introduction of new varieties is due to constant and concrete efforts of KVK scientists to the farmers and vise versa. Farmers could solved their problems of plant protection and crop production by direct contact of the specialist of KVK either by phone or person. Introduction of new varieties ranked second position because of Front Line Demonstrations conducted by KVK at farmer's fields and trainings.

Conclusion:-

Krishi Vigyan Kendra has been playing pivotal role for the allover improvement of farming community. To concentrate its efforts 18 villages were adopted for different activities for the period of 2015-16 to 2017-18. Due to constant and concrete efforts of KVK scientists, like organizing On and Off campus trainings, Front Line demonstrations (FLDs), field days, sharing of technology through cell phones, distribution of literature, celebration of technology weeks, soil health day, agricultural fairs, exposure visits, etc. had provided scientific know-how to farmers which led them to adopt new technology and finally to a better life.

After completion of three years in adopted villages the major outcomes are :

The yield of coriander and groundnut was increased by 30.56 and 21.67 percent. A remarkable change was noticed in use of drip and sprinkler irrigation system. Use of overdose of DAP and urea was minimized and farmers started to use more bio agents especially *Trichoderma* and *Beauveria* to control pest and diseases which resulted in decrease of cost of cultivation with conservation of environment. The efforts of KVK scientists succeeded in arousing awareness, change in attitude, introduction of new varieties, extent of adoption which increased the crop production and finally the income of the farmer.

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

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

14. Kisan Mobile Advisory Services

Month	No. of SMS sent	No. of farmers to which SMS was sent	No. of feedback / query on SMS sent
April 2018			
May			
June			
July	3	466	
August	2	298180	
September			
October			
November			
December			
January 2019			
February			
March			
	5	**298646**	

Name of KVK	Message Type	Type of Messages						
		Crop	Lives tock	Weat her	Marke-ting	Aware-ness	Other enterprise	Total
Jamnagar	Text only	2					3	5
	Voice only							
	Voice & Text both							
	Total Messages	**2**					**3**	**5**
	Total farmers Benefitted	**298180**					**466**	**298646**

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	Horticulture Unit	2012-13	3.5 Ha	Sapota	Fruit	3.19		7975	
				Custard apple	Fruit	2.33		6990	

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	
Pulses									
Green Gram	22.07.18		1.8	GM-4	seed	1585	45000	140650	
Oilseeds									
Groundnut	27.06.18		4	GJG-9	Seed(Breeder) Haulm	5825 8700	320000	769000 34800	
Sesame	21.07.18		1.5	GT-4	Seed(Breeder)	700	75000	153450	
Sesame	21.07.18		1.5	GT-4	Seed	1420	75000	207400	
Fibers									
Fodder									
Sorghum	1.09.18		0.15	Local	Dry fodder Green fodder	900 1440	25000		
Others (specify)									
Sun hemp	28.07.18		2	Local	seed	500			

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	-	-	-	-	-

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

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Cow	Gir	Milk	837 lit	-	26784	
			FYM	9 ton		3600	

E. Utilization of hostel facilities

Accommodation available (No. of beds): 2

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
April 2018	0	0	0
May 2018	3	4	0
June 2018	3	2	0
July 2018	54	12	0
August 2018	39	7	0

September 2018	33	8	0
October 2018	28	4	0
November 2018	0	0	0
December 2018	4	1	0
January 2019	31	1	0
February 2019	152	16	0
March 2019	51	2	0

F. Database management

S. No	Database target	Database created

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 Demonstrations	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)		

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						
With KVK	State Bank of India	Khodiyar Colony, Jamnagar	SBIN0012211	Training Organizer	10319002389	361002098	12211

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

S. No.	Head	R.E 2018-19	Opening Balance as on 01.04.2018	Fund received during 2018-19	Expenditure during 2018-19
1	2	3	4	6	7
Grants for creation of Capital Assets (CAPITAL)					
1	**Works**	0	0	0	0

	A. Land	0	0	0	0
	B. Building	0	0	0	0
	i. Office building	0	0	0	0
	ii. Residential building	0	0	0	0
	iii. Minor works	0	0	0	0
2	**Equipments**	0	0	0	0
3	**Information Technology**	0	0	0	0
4	**Library Books and Journals**	0	0	0	0
5	**Vehicles & Vessels**	0	0	0	0
6	**Livestock**	0	0	0	0
7	**Furniture & Fixtures**	0	0	0	0
8	**Others**	0	0	0	0
	Total-CAPITAL (1+2+3+4+5+6+7+8)	**0**	**0**	**0**	**0**
Grants in Aid - Salaries (REVENUE)					
9	**Establishment Expenses**				
	A. Salaries	8500000	748106	8500000	7504319
	Total-SALARIES (9)	**8500000**	**748106**	**8500000**	**7504319**
Grants in Aid - General (REVENUE)					
10	**Pension & Other Retirement Benefits**	0	0	0	0
11	**Travelling Allowance**	100000	0	100000	71737
12	**Research & Operational Exp.**				
	A. Research Expenses	300000	75000	300000	376098
	B. Operational Expenses	300000	56171	300000	387338
	Total - Res. & Operational Exp.	**600000**	**131171**	**600000**	**763436**
13	**Administrative Expenses**				
	A. Infrastructure	100000	0	100000	86503
	B. Communication	30000	0	30000	32753
	C. Repairs & Maintenance				
	i. Equipments, Vehicles & Others	90000	0	90000	63983
	ii. Office building	0	0	0	0
	iii. Residential building		0		0
	iv. Minor Works	0	0	0	0
	D. Other	80000	0	80000	83417
	Total - Administrative Expenses	**300000**	**0**	**300000**	**266656**
14	**Miscellaneous Expenses**				
	A. HRD				0
Total Grants in Aid – General (10+11+12+13+14)		**1000000**	**131171**	**1000000**	**1101829**
Grand Total (Capital + Salaries+ General)		**9500000**	**879277**	**9500000**	**8606148**

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	4423807	2635135	2197362	4861580
April 2017 to March 2018	4861580	4171833	3457716	5557697
April 2018 to March 2019	**5557697**	**4536508**	**4130702**	**5963463**

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

Sr. No.	Period	Name of Officer	Title	Venue or Place	Sponsoring Agency	Duration (days)
1	26.04.17 to 27.04.17	Dr. P. S. Gorfad	National Seminar on "Strategies for Doubling the Farmers income for Livelihood Security" organized by SEEG	AAU, Anand	SEEG	2
2	5-05-18 to 7-5-18	Dr. K. P. Baraiya	Annual Zonal workshop of KVK (Maharashtra & Gujarat)	MPKV, Rahuri, Maharashtra	ICAR	3
3	14.05.18 to 16.05.18	Ms. A. K. Baraiya	International workshop On Nutritional Sensitive Agriculture and Nutrition Literacy	Bhopal, Madhya Pradesh	Govt. of MP & ICAR-ATARI, Jabalpur	3
4	5.09.18 to 25.09.18	Mr. S. H. Lakhani	Recent Advances and Innovations in Modern Organic Agriculture	MPUAT, Udaipur	ICAR	21
5	25.09.18 to 27.09.18	Dr. K. P. Baraiya	Training of Trainers Program under Skill Development Training Program	EEI, Anand	ASCI	3
6	25.09.18 to 27.09.18	Mr. S. H. Lakhani	Training of Trainers Program under Skill Development Training Program"	EEI, Anand	ASCI	3
7	24.10.18	Mr. S. H. Lakhani	Basic Photographic Workshop	AGRISNET Studio, Junagadh	DEE, JAU, Junagadh	1
8	26.10.18	Mr. S. H. Lakhani	One Day Agromet and Media Workshop- 2018	GIDM, Gandhinagar	IMD, Ahmedabad	1
9	7.12.18 to 9.12.18	Mr. S. H. Lakhani	Review Workshop-cum-Training on CFLDs on Oilseeds and Pulses'	KVK, Lokbharti-Sanosara(Bhavnagar)	ICAR-ATARI, Zone-VIII, Pune	3
10	18.02.19	Dr. K. P. Baraiya	State level seminar on "Gau Aadharit Sajeev Kheti"	Gujarat Vidyapeeth, Ahmedabad	GAAS	1
11	18.02.19	Mr. S. H. Lakhani	State level seminar on "Gau Aadharit Sajeev Kheti"	Gujarat Vidyapeeth, Ahmedabad	GAAS	1
12	18.02.19	Smt. A. K. Baraiya	State level seminar on "Gau Aadharit Sajeev Kheti"	Gujarat Vidyapeeth, Ahmedabad	GAAS	1
13	1-2.03.18	Dr. K. P. Baraiya	Annual Action Plan Workshop of KVKs of Gujarat	NAU, Navsari	ICAR-ATARI, Zone-VIII, Pune	2

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

18.1 ESTABLISHMENT OF AGRICULTURAL TECHNOLOGY INFORMATION CENTRE (ATIC) (YEAR-2018-19).

1.	Name of the Scheme	:	Establishment of Agricultural Technology Information Centre (ATIC) B.H. 12572-03
2.	Location of the scheme	:	Krishi Vigyan Kendra, JAU, Jamnagar
3.	Officer-in charge of the scheme	:	Senior Scientist & Head, KVK, JAU, Jamnagar
4.	Objectives	:	➢ Single window system for technology dissemination.

			➢ Formulation of FIGs as a process of innovativeness in technology dissemination. ➢ Feedback from users to the research centre
5.	Justification of the scheme	:	➢ The JAU has generated a large number of technologies in different disciplines of agriculture and all allied subjects. ➢ Location specific technology and assessment technologies and demonstration of the technological models is planned.

A. Details of ATIC:

Sr. No.	Name of ATIC	Name of host institute	Name of ATIC manager	Telephone No.			E-mail address
				Office	Fax	Mobile	
1.	KVK, Jamnagar	Junagadh Agricultural University, Junagadh	Senior Scientist & Head	(0288) 2710165	(0288) 2710165	+919427980032	kvkjamnagar@gmail.com

B. Details of farmers visit:

Sr. No.	Name of ATIC	Purpose of visit	No. of farmers visited
1.	KVK, Jamnagar	For agricultural information	570
2.	KVK, Jamnagar	Technology Products	2624

C. Facilities in ATIC (Operational):

Sr. No.	Particulars	No. of ATIC
1.	Reception counter	No
2.	Exhibition/technology measures	Yes
3.	Touch screen kiosk	Nil
4.	Cafeteria	Yes
5.	Sales counter	Yes
6.	Farmers feedback register	Yes
7.	Others	Nil

A. Technologies Information Provided

A. 1. Details technology information, category of information:

Name of ATIC	Information Category	No. of farmers benefitted	Variety	Pest Management	Disease management	Agro tech.	SWT	PHT	AH
KVK, Jamnagar	1. Kisan call centre/ phone calls	149090	0	0	149090	Nil	Nil	Nil	Nil
		976	297	164	88	34	94	4	295
	2. Video shows	Nil	Nil	Nil	Nil	Nil	Nil	Nil	30
	3. Letters received	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	4. Letter replied	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	5. Training to famers/ technocrats/ students	313	Nil	123	39	62	36	nil	53
	6. Others	188	36	76	49	1	1	Nil	25

A. 2. Publication (Print & Electronic media):

Sr. No.	Name of ATIC	Particular	No. sold/distributed	Revenue generate	No. of farmers benefitted
1.	KVK, JAU, Jamnagar	Books/Booklet	235	Nil	235
2.		Tech. bulletin	Nil	Nil	Nil
3.		Tech. inventory	Nil	Nil	Nil

4.		CDs	Nil	Nil	Nil
5.		DVDs	Nil	Nil	Nil
6.		Leaflet	1270	Nil	1270
7.		Folders	2364	Nil	2364
8.		Video films	Nil	Nil	Nil
9.		Audio CDs	Nil	Nil	Nil
10.		Others (Poster)	215	Nil	215

B. Technology products provided:

Sr. No.	Particular	Quantity	Unit of quantity	Value in Rs.	No. of farmers benefitted
1.	**Seeds**				
(i)	Groundnut (GG-22)	10.7	Quintal	741300	Product sold to various JAU farms/KVK sowing /Demo purpose
(ii)	Wheat	110.80	Quintal	258815	92
(iii)	Coriander	4.00	Quintal	46080	25
(iv)	Chickpea	22.50	Quintal	112000	22
(v)	Green Gram (GM-4)	15.81	Quintal	136620	174
(vi)	Sesame (G.Til-4)	13.06	Quintal	195900	254
2.	**Planting materials**		-		
3.	**Live stock**	-	-	-	-
4.	**Poultry birds**	-	-	-	-
5.	**Bio Product**		**Quintal**	-	-
	1. *Beauveria bessianaa*	56.92	Quintal	853800	618
	2. *Trichoderma*	174.61	Quintal	1222330	890
	3. PSB	584	No.	35040	292
	4. Rhizobium	471	No.	28260	213
	5. Azatobactor	367	No.	22020	142
6.	**Others**				
	1 Metarhizium	0.57	Quintal	8550	18
	2. SNPV	12.5	Liter	5000	25
	3. MDP	25	No.	12500	25
	4. Milk	837.2	liter	26791	40

C. Technology services provided:

Name of ATIC	Particulars	No. of farmers benefitted
KVK, Jamnagar	Soil and Water testing	200
	Plant diagnosis	22
	Services to line department	-
	Others (Group Meeting, Field Visit, Field Day)	476

D. FLD conducted:

Sr. No.	Month	Crop/Inputs	Season	Variety	No. of Farmers/ Demonstration		
					Others	SC/ST	Total
1.	April-18 to March-19	1. **Groundnut :-**Trichoderma, Rhizobium, PSM, Beauveria	*Kharif*	G-20	100	0	100
2.		2. **Cotton :-**Beauveria, PSM, Azotobactor, SNPV,MDP	*Kharif*	BT	25	0	25

3.		*3.* **Cumin :-**PSB, *Azotobacter*, *Beauveria, Trichoderma*	*Rabi*	GC-4	47	3	50
4.		**4. Coriander :-**PSB, *Azotobacter, Beauveria, Trichoderma*	*Rabi*	GC-2	41	9	50
				Total	**200**	**0**	**200**

E. Short term training courses:

Sr. No.	Month	Title of the Training	No. of Beneficiaries			No. of SC/ST Beneficiaries		
			M	F	Total	M	F	Total
1.	April-18 to Februar y -19	1. Management of pink bollworm in cotton& management of white grub in groundnut and other kharif crops	25	0	25	1	0	1
2.		2. Management of white grub in groundnut and other kharif crops	24	0	24	0	0	0
3.		3. Enhancing farmer's income through income generation activity	0	37	37	0	6	6
4.		4. Women and child care	0	22	22	0	1	1
5.		5. Management of pink worm in cotton and other Kharif crops	25	0	25	0	0	0
6.		6. Integrated Nutrient Management in Rabi crops	30	0	30	0	0	0
7.		7. Soil Health Management and IPM in Rabi crops	58	12	70	2	0	2
8.		8. Practical and Theoretical experience on the functioning of KVK	16	0	16	3	0	3
9.		9. Income generation activity for rural women	0	28	28	0	2	2
10.		10. Use and Importance of Bio fertilizer, Bio pesticides and Bio fungicides in agriculture	21	0	21	0	0	0
		Total	**199**	**99**	**298**	**6**	**9**	**15**

F. Extension Activity:

Sr. No.	Name of Activity	No. of Activity	No. of Participant		
			M	F	T
1	Group meeting, Kishan goshthi	9	173	63	236
2	Field visit/Field Day	28	158	62	240
3	Night meeting etc.	801	-	-	801
4	Literature	33	33	0	33

18.2. OTHER PROGRAMME CELEBRATED

Mahila Krushi Divas 6th August, 2018

KVK, DAO, ATMA, and Horticulture Department, Jamnagar Jointly celebrated "Mahila Krushi Divas" on 6th August. 2018 at KVK, JAU, Jamnagar. In this Programme**126** farm women of Jamnagar District were participated. The inaugural session was chaired by Shri Prashasti Parik,(IAS), District Development Officer, Jamnagar; Dr. K. P. Baraiya, Senior Scientist & Head, KVK, JAU, Jamnagar; Shri. H. C. Usadadiya, DAO; Shri. N. A. Kalavadiya, PD(ATMA); Dr. B. D. Patel Dy. Dir .AH.; C. O. Lashkari, Dy.Dir.Hort., and other scientist of KVK remained present and delivered lecture. Empowerment of women by value addition in agriculture produce, Mechanized farming, High tech farming, Drudgery reduction Technology, Animal Husbandry, Varmi compost, Organic farming, Kitchen gardening etc were topic of hot discussion in this programme.

Mahila Kisan Divas 15th October, 2018

Krishi Vigyan Kendra, JAU, Jamnagar and ATMA Jamnagar jointly organized Mahila Kisan Divas on 15th October, 2018 at KVK, JAU, Jamnagar. In this programme arranged lectures on Kitchen Gardening, Value addition, Income generation activity, Organic farming, Drudgery reduction Technology and IPM in vegetable crops. 148 farm women were actively participated in this programme. Dr. A. R. Pathak, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh, Prasasthi Parik, District Development Officer, District Panchayat, Jamnagar, Dr. P. V. Patel, Director of Extension Education, Junagadh Agricultural University, Junagadh remain present in this programme. We arranged Quiz competition related to Farm, animal husbandry and women related question. We also arranged debates on Animal keeping and Group discussion on role of women in agriculture. Farm women visited to demonstration unit, Museum and KVK field.

KisanKalyan Divas 2nd May, 2018

Kisan Kalyan Diwas organized in Jamnagar and Devbhumi Dwarka district on 2.05.18. Team of Scientists KVK, JAU, Jamnagar were participated and delivered lectures in KisanKalyanDiwas at Jamkhambhaliya, Dwarka, Kalyanpur and Dhorl block. 1380, 570, 507 and 490 farmers participated respectively. Shri Chiman Bhai Sapriya, Ex. Agri. Minister (Govt. of Gujarat), Shri. Meghjibhai Kanjariya, Ex. MLA, Dr. K. P. Baraiya, Senior Scientist & Head, KVK, JAU, Jamnagr and all other local leaders and officers were remaining present at JamKhambhaliya. Shri. Pabubha Manek, MLA-Dwarka and Dr. P. S. Gorfad, Scientist, KVK, JAU, Jamnagar remain present at Dwarka. Shri. S. H. Lakhani, Scientist, KVK, JAU, Jamnagar remain present at JamKalyanur, Shri. Meghjibhai Chavda, Ex. MLA and Dr. J. N. Thaker, Scientist, KVK, JAU, Jamnagar remain present at Dhrol for Kisan Kalyan Divas.

Special training on "Scientific Farming, Value addition and Export opportunity of seed spices crops"

KVK, Jamnagar and Vegetable Research Station, JAU, Junagadh jointly organized training programme on **"Scientific Farming, Value addition and Export opportunity of seed spices crops"** on 29th October, 2018 at KVK, JAU, Jamnagar. In this Programme 74 spices crop growers of Jamnagar district were participated. Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh have been guided for the arrangement of the whole programme. The inaugural session was chaired by Dr. A. R. Pathak, Hon'ble Vice chancellor, Junagadh Agricultural University, Junagadh. Dr. V. P. Chovatiya, Director of Research, JAU, Junagadh; Dr. J. H. Vachhani, Research Scientist(Garlic-Onion), JAU, Junagadh; Dr. D. L. Kadvani, Research Scientist(Pearl Millet), JAU, Jamnagar; Dr. K. P. Baraiya, Senior Scientist and Head, KVK, JAU, Jamnagar and other scientist from Vegetable research station as well as KVK remained present and delivered valuable lecture. The discussion focused on IPM-IDM, seed production, economics and market inelegancy, value addition and export opportunities for seed spice crop. The training compendium were prepared and distributed to all farmers.

Farmer's Seminar on "Date Palm"

Scientist from KVK Jamnagar were first time recorded and identified the fruit fly in date palm from the Jamnagar district. They have aware farmers about fruit fly management with low cost technology and reduce dangerous of fruit fly from date palm.

KVK, Jamnagar, NIPHM, Hyderabad and Horticulture department, Jamnagar jointly organized "Farmer Seminar for special Date palm growers on July 13, 2018 at KVK, Jamnagar. This programme were chaired by Dr. A. R. Pathak, Hon'ble, Vice Chancellor, Junagadh Agricultural University, Junagadh, Director of Extension Education(Dr. A. M. Parakhiya), Director of Research (Dr. V. P. Chovatiya), Research Scientist Dr. M. D. Khanpara, Assistant Director of NIPHM Dr. Moriodos, Senior Scientist & Head of KVK Dr. K. P. Baraiya, Deputy Director of Horticulture Shri C. O. Lashkari, District Agriculture Officer Shri H. C. Usdadiya, Project Director (AtMA) shri N. A. Kalavadia were remain present. The Programme was well organized by team of scientists of KVK, JAU, Jamnagar as well as officers from Department of Horticulture, Jamnagar.

Competition among quality dates producer were arranged and ranked them. They are also awarded by shield and certificate. Total 130 Date palm producer farmers through whole Saurashtra were participated this seminar.

Farmers-scientist interaction were very interesting for the above seminar. In this programme Solution and discussion of farmer's questions regarding IPM and INM in Date palm, Practical Demonstration on preparation of low cost MU pheromone trap for control the fruit fly. value addition, organic farming etc. topics cover in this programme.

Parthenium Awareness Week (16 to 22 August)

KVK, Jamnagar organized awareness programme under the *Parthenium* awareness week. In this programme 100 Female farmers are participated and to create awareness about skin diseases caused by *parthenium*, its remedy and removal of *parthenium* and kept surrounding area free from *Parthenium*. Particle demonstration were also done at KVK, farm.

Swachh Bharat Pakhwada (16th Dec to 31st Dec, 2018)

Krishi Vigyan Kendra, Jamnagar celebrated Swachh Bharat Pakhwada during 16th December to 31st December, 2018. During this celebration on 17th December, 2018**Cleanliness drive including cleaning of offices, corridors and premises** near **Training hall and surrounding area and** 25 officers of KVK and ATMA were joined this cleaning activity. On 18th December, 2018 Cleaning of offices and surrounding area, 7 staff members participated for this activity. Awareness programme about cleanliness and stock taking of waste management & utilization of organic wastes, polythene free status etc. to 38 farmers and farm women were organized at Jodia on 20th December, 2018. 74 farmers were participated at Jam Kalyanpur talukas place level seminar was arranged on 21st December, 2018 Awareness about recycling of waste water, water harvesting for agriculture & horticulture. Field visits for awareness organic farming and composting of kitchen and farm waste were organized at **Khoja Beraja and Dodhiya village of Jamnagar talukas on 22nd December, 2018**

Exposure Visit

KVK, JAU, Jamnagar were arrange Exposure Visit of farm women on 22nd October, 2018 at College of Veterinary Science and Animal Husbandary, Junagadh Agricultural University, Junagadh. 7 farm women were visited and Exhibition were arranged and seminar was inaugurated by Shri Parshotam Rupala, State Union Minister of Agriculture, Gov. of India; Dr. A. R. Pathak, Vice Chancellor, JAU, Junagadh; Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh; Dr. V. P. Chovatiya, Director of Research, JAU, Junagadh were remain present on that occasion.

Swachhta Hi Sewa(SHS) campaign (15th Sept. to 2nd Oct, 2018)

Krishi Vigyan Kendra, Jamnagar celebrated Swachhta Hi Sewa campaign during 15th September to 2nd October, 2018. As a part of this campaign 7 staff members joined on dated 24.09.18 and cleaned KVK office premises, staff Quarters and different units by removing plastics, paper wastes and also weeded out parthenium. On Dated 28.09.18, 12 staff members joined this campaign and cleaned farm area and surrounding demonstration unit. The all collected waste garbage material fill in the NADAP composting. During this celebration 9 staff members along with 19 students from college of Agriculture, JAU, Junagadh were participated on 1.10.18 for Cleaned farmers hostel and surround area. On 2nd October, 2018 45 farm women from different villages of Jamnagar District were joined this programme and they were aware about this campaign and Swachhta pakhvada.

World Soil Health Day (5th December, 2018)

On 5th December, 2018 Krishi Vigyan Kendra, JAU, Jamnagar celebrated World Soil Health Day in collaboration with State Agricultural Department and ATMA Project Jamnagar at Training hall, KVK, Jamnagar. Programme was inaugurated by Dr. L. K. Kadvani, Research Scientist (Pearl Millet), Pearl

millet Research Station JAU, Jamnagar, Dr. K. P. Baraiya, Senior Scientist & Head, KVK, JAU, Jamnagar, Mr. C. O. Laskari, DAO, Jamnagar. During this programme a number of activities like Farmer-Scientist Interactions, Exhibitions on soil health management, soil sampling and soil testing demonstrations, plant nutrient deficiency diagnostics and advisories for balanced nutrition of crops, field visits and distribution of soil health cards were organized on the occasion. Total 119 farmers from KVK jurisdiction were present for this programme.

18.3 DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Soil	190	190	16	59700
Water	10	10	8	500
Plant	138	122	86	0
Manure				
Others (pl.specify)				
Total	**338**	**322**	**110**	**60200**

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	43	1824	496	2320
Rural youths	1	0	32	32
Extension functionaries	12	681	8	689
Sponsored Training	27	1144	361	1505
Vocational Training	1	0	32	32
Grand Total	**56**	**2505**	**536**	**3041**

2. Frontline demonstrations

Enterprise	Area(ha)	No. of Farmers	Units/Animals
Oilseeds	80	200	
Pulses	30	75	
Cereals	4	10	
Vegetables	6	15	
Other crops	34	85	
Hybrid crops	18	45	
Total	**172**	**430**	
Livestock & Fisheries	0	0	
Other enterprises	4.5	70	
Total	**4.5**	**70**	
Grand Total	**176.5**	**500**	

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	1	3	3
Livestock	2	9	9
Various enterprises	1	10	10
Total	**4**	**22**	**22**
Technology Refined			
Crops	5	15	15
Livestock			
Various enterprises			
Total	**5**	**15**	**15**
Grand Total	**9**	**34**	**34**

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	1416	47253
Other extension activities	16708	-
Total	18124	47253

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Lives tock	Weat her	Marke-ting	Aware-ness	Other enterprise	Total
Jamna gar	Text only	2					3	5
	Voice only							
	Voice & Text both							
	Total Messages	**2**					**3**	**5**
	Total farmers Benefitted	**298180**					**466**	**298646**

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	88.45	744000
Planting material (No.)	0	0
Bio-Products (kg)	33547	391470
Livestock Production (No.)	1	
Fishery production (No.)		

7. Soil, water & plant Analysis

Samples	No. of Samples	No. of Beneficiaries	Amount realized (Rs.)
Soil	190	190	59700
Water	10	10	500
Plant	138	122	0
Total	**338**	**322**	**60200**

8. HRD and Publications

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

ANNEXURE –I

PROCEEDING OF THE 15th SCIENTIFIC ADVISORY COMMITTEE MEETING OF KRISHI VIGYAN KENDRA, JAU, JAMNAGAR HELD ON 25th March, 2019

The Fifteenth Scientific Advisory Committee meeting of Krishi Vigyan Kendra, JAU, Jamnagar was held at Training Hall, Krishi Vigyan Kendra, JAU, Khapat (Porbandar) on 25th March, 2019.

The following members were remaining present in the meeting.

Sr. No.	Name & Designation	Position
1	Vice Chancellor, Junagadh Agricultural University, Junagadh.	Chairman
2	Director of Extension Education, Junagadh Agricultural University, Junagadh	Member
3	Director of Research, Junagadh Agricultural University, Junagadh	Member
4	Associate Director of Research, Main Dry Farming Research Station, Junagadh Agricultural University, Targhadia (Rajkot).	Member
5	Research Scientist (Millet), Main Millet Research Station, Junagadh Agricultural University, Jamnagar- 361 006.	Member
6	Dy. Director of Animal Husbandry, Dept. of Veterinary & Animal Husbandry, District Panchayat, Jamnagar	Member
7	Dr. Kapil Parmar, Veterinary Officer, District Panchayat, Porbandar	Member
8	Dy. Director of Agriculture (Extension), Porbandar	Member
9	Dy. Director of Agriculture, Farmers Training Centre, Porbandar	Member
10	Project Director, Agricultural Technology Management Agency (ATMA), Porbandar	Member
11	District Manager, State Bank of India, Lead Bank, Porbandar	Member
12	Research Officer, Fisheries Research Station, Okha	Member
13	Senior Scientist & Head, Krishi Vigyan Kendra, Junagadh Agricultural University, Pipaliya, Ta. Dhoraji, Dist. Rajkot	Member
14	Senior Scientist & Head, Krishi Vigyan Kendra, Junagadh Agricultural University, Khapt (Porbandar)	Member
15	Progressive farmer (Horticulture) : Shri Jentibhai Parsana, At. Haripar Ta.:- Lalpur, Dist. Jamnagar.	Member
16	Progressive farmer (Organic) : Shri Vitthalbhai Lakhabhai Sanghani, At. Nani Bhalsan, Ta.:- Kalavad, Dist. Jamnagar.	Member
17	Progressive farmer (Organic) : Shri Altafbhai Bodubhai Sama , At. Dhichada, Ta.:- Jamnagar, Dist. Jamnagar.	Member
18	Progressive farmer (Animal Husbandry) : Shri. Pravinbhai Devchandbhai Dodhiya, At. Dhichada, Ta.:- Jamnagar, Dist. Jamnagar.	Member
19	Progressive farmer (G): Shri Subhasbhai , At.- Lothiya, Ta.:-Jamnagar, Dist. Jamnagar.	Member

20	Senior Scientist & Head, Krishi Vigyan Kendra, Junagadh Agricultural University, Jamnagar	Member Secretary
21	Smt. Anjanaben K. Baraiya, Scientist (Home Science), KVK, JAU, Jamnagar	Member
22	Shri S. H. Lakhani, Scientist (Crop Production), KVK, JAU, Jamnagar	Member
23	Dr. J.N. Thaker, Scientist (Fisheries), KVK, JAU, Jamnagar	Member
24	Smt. Diptiben S. Thaker, Scientist (Home Science), KVK, JAU, Porbandar	Invitee
25	Shri H. A. Patel, Scientist (Animal Husbandry), KVK, JAU, Porbandar	Invitee
26	Shri V. M. Savaliya, Scientist (Horticulture), KVK, JAU, Porbandar	Invitee
27	Dr. P.S. Gorfad, Asso. Professor (Extension Education), COA, JAU, Porbandar	Invitee
28	Progressive farmer (G): Shri Kishorbhai Laljibhai Pedhadiya, At:- Sumari, Ta. & Dist.- Jamnagar., Via:- Dhutarpur	Invitee
29	Progressive farmer (G): Shri Babubhai Alabhai Karmur, At:- Jashapar, Ta. Bhanvad, Dist.- Devbhumi Dwarka	Invitee
30	Progressive Farm women (G): Shri Keshaval Hetalben C. Dist.- Porbandar	Invitee
31	Progressive Farm women : Putiben Keshubhai Modhvadiya Dist. Porbandar	Invitee
32	Progressive farmer :- Godhaniya Mulubhai B. At. Advana, Ta. & Dist. Porbandar	Invitee
33	Progressive Farm women : Teraiya Minaximben Dayabhai Dist. Porbandar	Invitee
34	Progressive Farm women : Teraiya Jalpapben Dayabhai, Dist. Porbandar	Invitee
35	Progressive Farm women : Karavadara Shital Maldebhai At. Ramgadh Dist. Porbandar	Invitee

Dr. P. S. Gorfad, Associate Professor (Extension Education), College of Agriculture, JAU, Porbandar welcomed the dignitaries and all the members of both the Scientific Advisory Committee and highlighted the brief achievements of the Centre.

Dr. A. R. Pathak, Hon'ble Vice-Chancellor and Chairman of Scientific Advisory Committee chaired the meeting and grant permission to proceed the meeting.

Invocation song of Junagadh Agricultural University, were played as a prayer by all members. Dignitaries on dias were welcomed by presenting flower. After garlanding the guests and dignitaries on the dias, and inaugurating the meeting by lightening a lamp.

Dr. K. P. Baraiya, Senior Scientist & Head, Krishi Vigyan Kendra, JAU, Jamnagar presented action taken report of the minutes of 14th SAC meeting, progress report (April- 2018 to March-2019) and Action Plan (April 2019 to March- 2020) in brief. Dr. K. P. Baraiya, Senior Scientist & Head, Krishi Vigyan Kendra, JAU, Jamnagar presented progress report (2018-19) and Action Plan (2019-20) for discipline of Plant Protection. Smt. A. K. Baraiya, Scientist (Home Science), presented progress report & Action Plan for discipline of home science & Horticulture. Dr. J. N. Thaker, Scientist (Fisheries), presented progress report & Action Plan for discipline of fisheries and animal science & ATIC Scheme. Shri S. H. Lakhani, Scientist (Crop production), presented progress report & Action Plan for discipline of crop production, Agri.

Engineering and Soil Health Fertility Management, NMOOP & NFSM. The annual report and action plan both were approved by the members with suggestions.

Suggestions made by committee members during presentation :

1.	Dr. A. R. Pathak, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh & Chairman of the SAC suggested following points. ➢ Arrange FLD on latest variety of pearl millet. ➢ Arrange training on micro irrigation system. ➢ Analyze maximum soil and water sample at KVK Soil Testing Laboratory.
2.	Dr. V. P. Chovatiya, Director of Research, JAU, Junagadh pointed out ➢ Arrange training on processing of dragon fruit and pearl millet. ➢ Arrange training on horticultural crops cultivation. ➢ Informed farmers in advance about weather and technical suggestion on precaution measures through SMS
3.	Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh advice that ➢ Presentation of SAC should be in English and vocal language should be in Gujarati
4.	Shri Vitthalbhai Sanghani progressive farmers of Jamnagar suggested for increase organic farming and advice about dangerousness effect of chemical on human being.

Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh appreciated work done by all scientist and presentation. Successful became with collaborative work. He emphasis on maximum publication, newspaper coverage and popular article.

Dr. V. P. Chovatia, Director of Research, Junagadh Agricultural University, Junagadh guided for analyze the front line demonstration. Increase market inelegancy through value addition in farm produce instead of direct selling. Farmers should introduce new crop with long duration strategies.

After above suggestions from the house Dr. A. R. Pathak, Hon'ble Vice Chancellor, Junagadh Agricultural University, Junagadh, delivered the chairmen's remarks. He emphasized on soil analysis base recommendation used for reduction of cost and doubling the farmer's income. He also pointed out for marketing through group and sahkari mandal by processed and value added product. He noted that bio-products have been very helpful to farmes in minimizing the cost production in organic era. He also suggested to give integrated crop management technology through all the products produced by the University. At last he appreciated for overall work done by KVK.

The meeting ended with the vote of thanks by Dr. K. P. Baraiya, Senior Scientist & Head, Krishi Vigyan Kendra, JAU, Jamnagar.

Member Secretary, SAC &
Senior Scientist & Head
KVK, JAU, Jamnagar

Director of Extension Education,
Junagadh Agricultural University
Junagadh

Note: Proceeding for approval please.

Chairman, SAC
KVK, JAU, Jamnagar &
Vice Chancellor
Junagadh Agricultural University, Junagadh

ANNEXURE –II

RESEARCH RESULT OF TECHNICAL PROGRAMME

Technical Programme :- 1

Title :- KNOWLEDGE OF FARMER ABOUT INTEGRATED MANAGEMENT OF PINK BOLLWORM IN COTTON

Principle investigator

1. Dr. K. P. Baraiya, Senior Scientist & Head, KrishiVigyan Kendra, JAU, Jamnagar

Co-investigator

1. Dr. V. C. Gadhiya, Scientists (Plant Protection), KVK, JAU, Jamnagar
2. Smt. A. K. Baraiya Scientist (Home Science), KVK, JAU, Jamnagar
3. Shri. S.H. Lakhani, Scientists (Agronomy), KVK, JAU, Jamnagar
4. Dr. A. M. Parakhia, Director of Extension Education, JAU, Junagadh
5. Dr. P. S. Gorfad, Scientists (Extension), KVK, JAU, Jamnagar

INTRODUCTION :-

India is a unique among the cotton growing countries of the world are grown commercially under diversified ecosystem. Cotton is an important fiber as well as oilseed crop. Cotton crop occupies enviable place amongst commercial crops of our country. With nearly 9.3 million hectares, India ranks first in the world in area and third in production with 13.28 million bales, and an average productivity 243 kg/ha (Singhal, 1999). About 6 million farmers cultivate cotton and about 40-50 million people are directly or indirectly employed by the cotton industry accounts for around 59% share of the raw material consumption of the Indian textile industry.

Further, Gujarat stands second in respect of area (1.479 million hectares) and first in respect of production (2.758 million bales) in India with productivity of 317 kg/ha (Singhal, 1999).

Several factors responsible for low yield. The plants suffer from the ravages of insect pests and production both in terms of quantity and quality are jeopardized. Among 162 species of insects and mites that associate with cotton (from seedling to harvest of the crop) in India, pink bollworm (*Pectinophoragossypiella* (Sauders)) became a very serious threat to crop production. Since last three year pink bollworm is became headache for farmers. Present investigation carried out during 2018 for determination knowledge of farmer about integrated management practices of pink bollworm in cotton.

OBJECTIVES:-

1. To study the socio-economic character of the selected cotton growers
2. To access the source of information by cotton growers
3. To know the knowledge level of cotton growers on pink bollworm management and constrains faced by them.
4. To seek suggestion from cotton growers to overcome such constraints.

METHODOLOGY :-

KrishiVigyan Kendra, Junagadh Agricultural University, Jamnagar working in Jamnagar and DevbhumiDwarka district. The study was under taken by the KVK in all 10 blocks, out of 10 Block six (Jamnagar, Jodia, Dhrol, Kalawad, Lalpur and Jamjodhpur) from Jamnagar and four (Jam Khambhalia, Jam Kalyanpur, Dwarka and Bhanvad) from DevbhumiDwarka district were selected. Randomly two villages were selected from each block. Ten cotton growers from each villages were selected for the present study. Total 200 farmers were selected by proportionate random sample method. In light of the objectives, the interview schedule was prepared and respondents were interviewed at their home and field. The data collected by personal interview method were processed, tabulated, classified and analyzed in light of objectives.

RESULTS AND DISCUSSION:-

The present study was conducted on 200 cotton growers of Jamnagar and DevbhumiDwarka districts to evaluate for knowledge of farmers about integrated management of pink bollworm in cotton. The data to statistical analysis and results are presented as per the objectives of study as below.

1. Socio-demographic characteristics

Table 1. Socio-demographic characters of cotton growers (n=200)

Sr. No.	Particulars	Frequency	Per cent	Mean ± S.D.
1	**Age group**			
	Young (18 to 25 Years)	29	14.50	30.85 ± 5.795
	Middle Age (26 to 35 Years)	114	57.00	
	Old Age (Above 35 Years)	57	28.50	
2	**Educational status**			
	Post Graduate	12	6.00	
	Graduate	17	8.50	
	Higher secondary	85	42.50	
	Secondry	58	29.00	
	Primari	23	11.50	
	Illiterate	5	2.50	
3	**Size of land holding (Total)**			
	Marginal (<1 ha)	8	4.00	4.44 ± 5.43
	Small (1.1 to 2 ha)	35	17.50	
	Medium (2.1 to 4 ha)	66	33.00	
	Big (>4 ha)	91	45.50	
4	**Family Type**			
	Nuclear	143	71.50	
	Joint	57	28.50	
5	**Family Income**			
	Up to Rs. 25000	17	8.50	
	Rs. 25000 to Rs. 50000	12	6.00	
	Rs. 50001 to Rs. 100000	114	57.00	
	Above Rs. 100000	57	28.50	
6	**Milch Animal Possession**			
	Cow	63	31.50	
	Buffalo	140	70.00	
	Others	0	0.00	
	Both (Cow + Buffalo)	105	52.5	
	Without animal	46	23	
7	**Occupation**			
	Agriculture	78	39.00	
	Agriculture & Animal Husbandry	108	54.00	
	Agriculture labour	12	6.00	
	Labour	2	1.00	
8	**Residence**			
	Pakka House	114	57.00	
	Kachcha House	29	14.50	
	Mix (Half Pakka + Half Kachcha)	57	28.50	
9	**Extension Participation**			
	Low extension participation (Below 0.48)	30	15	3.105±2.62
	Medium extension participation (0.48 to 5.73)	126	63	
	High extension participation (Above 5.73)	44	22	
10	**Social Participation**			

	Low Social participation (Below 0.68)	30	15	3.35±2.65
	Medium Social participation (0.68 to 5.99)	122	61	
	High Social participation (Above 5.99)	48	24	

Note : Figures in parenthesis indicates frequencies in number of participants

The results disclosed in Table 1 indicate that more than half (57 %) of farmers were from middle age group, followed by 28.5 per cent from old age and remaining 14.50 per cent of them were in young age group. The data indicated that 42.50 per cent of the farmers were educated up to higher secondary level, whereas 29 and 11.5 per cent of the farmers were educate up to secondary and primary level. However, very few were illiterate (2.5%) and very low were post graduate (6%) and graduate (8.5%).

According to land holding 45.5 per cent of the farmers were big farmers. However, the farmers were medium, small and marginal having 33, 17.50 and 4 per cent, respectively. In this era of nuclear family, farming business were done on cooperative basis of their cousins and siblings. Though, joint farmer's family type were found 28.50 per cent whereas only 71.50.50 per cent were farming in nuclear type. The same way 57 per cent farmers of them were in annual income between Rs.50000 to 100000, followed by 28.5 per cent (above Rs.100000), 8.5 per cent (below Rs.25000) and 6 per cent (Rs.25000 to 50000). Majority of the farmers (70 %) were kept buffalo, 31.50 per cent farmers kept cow, 52.5per cent having cow and buffalo and only 23 per cent farmers having no any animal keeping. According to occupation along with 54 per cent farmers having both agriculture and animal husbandry to gather, 39 per cent farmers have alone farming business. The category of residence 57 per cent of the farmers having pakka house, 28.50 per cent have mix (half pakka + half Kachcha) house and 14.50 per cent have kachcha house.

According to participation of above half of farmers (63%) of them were medium extension participation, 22 per cent were high extension participation and very few (15%) of them were low extension participation. Same way, in social participation, 61 per cent of them were medium, 24 per cent were high and 15 per cent were low participation.

2. Mass media exposure

The majority of farmers were using tools of mass media. The following table 2 show the results about the use of mass media means for communication for the management of pink bollworm management.

Table 2 Mass media exposure (n=200)

Sr. No.	Mass Media Exposure	Regularly (3)	Frequently (2)	Once in a week (1)	Not at all (0)	Wt. Mean	Rank
1	Radio	3	19	60	118	26.75	VI
2	Television	6	31	71	92	37.75	IV
3	News paper	2	22	65	111	28.75	V
4	Printed literature	26	63	66	45	67.5	II
5	Agril. Exhibition	0	18	47	135	20.75	VIII
6	Demonstration	2	35	85	78	40.25	III
7	University level (KVK)	34	95	49	22	85.25	I
8	Kisan call centre	7	11	50	132	23.25	VII
9	Any other	0	4	40	156	12	IX

It can be concluded from table 2,KrishiVigyan Kendra or University level information for cotton cultivation practices on pink boll worm management were rank first (85.25%), followed by second printed literature (67.5%), third demonstration (40.25%), fourth television (37.75%), fifth newspaper coverage (28.75%), sixth radio (26.75%), seventh kishan call Centre (23.25%), eighth agricultural exhibition (20.75%) and lastly any other means (12%).

3. Use of information sources:

Majority farmers having different source of information according to their requirement for pink boll worm management in proper way studied in table e were presented below

Table 3 Information Source

(n=200)

Sources of information	Wt. Mean	Per cent	Rank
A. Formal sources			
1. Village level worker Agril. Extension officer	46.00	23.00	IV
2. SMS/Sub-divisional officer	10.00	5.00	XII
3. Service of co-operative society	17.33	8.67	X
4. Agricultural University	86.67	43.33	II
5. Agricultural Research Stations/KVK	106.67	53.33	I
B. Informal sources			
6. Neighbors	37.33	18.67	VI
7. Fertilizer Depot.	45.67	22.83	V
8. Progressive farmers	22.67	11.33	VIII
9. Local leader	16.67	8.33	XI
10. Seed/pesticide dealer	61.67	30.83	III
11. Demonstrations	21.67	10.83	IX
12. Self-experience/experimentation	35.00	17.50	VII

Pink boll worm management proper guideline were taken from KrishiVigya Kendra or Agricultural Research Station and it come on first rank of information provide to farmers (53.33%) followed by Agricultural University (43.33%) Rank II. However, seed/pesticide dealer (30.83%) stand on third rank, village level worker/Agricultural Extension officer (23.00%) stand on fourth position. The subsequent information source decrease chronologically were fertilizer depot (22.83%), Neighbors (18.67%), Self-Experience/experimentation (17.50%), progressive farmers (11.33%), demonstration (10.83%), Service of cooperative society (8.67%), local leader (8.33%) and lastly SMS/Sub divisional officers (5.00%).

4. Knowledge of farmer about integrated management of pink bollworm in cotton

The respondents were asked to show their opinion for the following listed area of information of pink boll warm management.

Table 4. Knowledge of farmer about integrated management of pink bollworm in cotton(n=200)

Sr. No.	Areas of Information	Frequ-ency	Perce-ntage	Rank
1	Identification of Pink Bollworm	39	19.5	XXIII
2	Life cycle of Pink Bollworm	17	8.5	XXVIII
3	Nature of damage of Pink Bollworm	21	10.5	XXVI
4	Control measures for Pink Bollworm			
	(1) Cultural Practices			
	(i) Deep ploughing	12	6	XXIV
	(ii) Timely sowing	72	36	XVIII
	(iii) Using refugia crop	84	42	XIV
	(iv) Removal of weeds/Wild okra weed	107	53.5	VIII
	(v) Cotton stalk should be burned after picking	136	68	II
	(vi) Collection of infested flowers, bolls and destroyed it	119	59.5	VI
	(vii) Grazing sheep & goat after harvest the crop	145	72.5	I
	(viii) Selection of early mature variety/Short duration variety	90	45	XI
	(ix) Avoiding ratooning of crop	31	15.5	XXV
	(x) Following dense cropping system	20	10	XXVII
	(xi) Using drip irrigation system	76	38	XVII
	(2) Mechanical measures			

	(i) Use of pheromone trap @ 5/ha for monitoring of pink bollworm	109	54.5	VII
	(ii) Use of pheromone trap @ 40 /ha for mass trapping of male adult of pink bollworm at the time of August month/initiation of flowering	97	48.5	X
	(iii) Use of light trap	122	61	V
	(3) Biological measures			
	(i) Release of *trichogramma* @ 1.5 lacs/ha five times at weekly interval	34	17	XXIV
	(ii) Release of *crysoperla* larvae @ 10000/ha two times at weekly interval when 8 to 9 male moth catch/trap	68	34	XIX
	(iii) Spraying of *Beauveria bassiana* @ 60-80 g/10 lit. of water at the time of egg laying of pink bollworm	131	65.5	III
	(4) Chemical measures			
	(i) Spraying of quinalphos 25 EC 20 ml/10 lit of water OR	42	21	XXII
	(ii) Spraying of profenophos 50 EC 10 ml/10 lit of water OR	66	33	XX
	(iii) Spraying of thiodicarb 75 WP 10 gm/10 lit of water OR	90	45	XII
	(iv) Spraying of carbaryl 50 WP 40 gm/10 lit of water OR	46	23	XXI
	(v) Spraying of fenvalrate 20 EC 10 ml/10 lit of water OR	82	41	XV
	(vi) Spraying of deltamethrin 1 EC + trizophos 35 EC 20 ml/10 lit of water OR	100	50	IX
	(vii) Spraying of beta cyfluthrin 2.5 SC 10 ml/10 lit of water OR	80	40	XVI
	(viii) Spraying of spinosad 45 SC 3 ml/10 lit of water OR	124	62	IV
	(ix) Spraying of chlorantraniliprole 20 SC 3 ml/10 lit of water	86	43	XIII

The respondents were scheduled interviewed and asked to opine their views about the management of pink boll worm in cotton. The area of information were on the management, identification, life cycle of pink boll worm. The date presented in table 5 concluded that Cultural management practice with grazing sheep and goat after harvest the crops were stand first rank (72.5%) as knowledge of the farmers. It was followed by Cotton stalk should be burned after picking (68%) Rank-II, Spraying of Beauveria bassiana @ 60-80 g/10 lit. of water at the time of egg laying of pink bollworm(65.5%)Rank-III, Spraying of spinosad 45 SC 3 ml/10 lit of water OR (62%) Rank-IV, Use of light trap (61%) Rank-V, Collection of infested flowers, bolls and destroyed it (59.5%) Rank-VI, Use of pheromone trap @ 5/ha for monitoring of pink bollworm (54.5%) Rank-VII, Removal of weeds/Wild okra weed (53.5%) Rank-VIII, Spraying of deltamethrin 1 EC + trizophos 35 EC 20 ml/10 lit of water OR (50%) Rank-IX, Use of pheromone trap @ 40 /ha for mass trapping of male adult of pink bollworm at the time of August month/initiation of flowering (48.5%) Rank-X, Selection of early mature variety/Short duration variety (45%) Rank-XI, Spraying of thiodicarb 75 WP 10 gm/10 lit of water OR (45%) Rank-XII, Spraying of chlorantraniliprole 20 SC 3 ml/10 lit of water (43%) Rank-XIII, Using refugee crop (42%) Rank-XIV, Spraying of fenvalrate20 EC 10 ml/10 lit of water OR (41%) Rank-XV, Spraying of beta cyfluthrin 2.5 SC 10 ml/10 lit of water OR (40%) Rank-XVI, Using drip irrigation system (38%) Rank-XVII, Timely sowing (36%) Rank-XVIII, Release of crysoperla larvae @ 10000/ha two times at weekly interval when 8 to 9 male moth catch/trap (34%) Rank-XIX, Spraying of profenophos50 EC 10 ml/10 lit of water OR (33%) Rank-XX, Spraying of carbaryl 50 WP 40 gm/10 lit of water OR (23%) Rank-XXI, Spraying of quinalphos 25 EC 20 ml/10 lit of water OR(21%)Rank-XXII, Release of trichogramma @ 1.5 lacs/ha five times at weekly interval (17%) Rank-XXIV, Identification of Pink Bollworm (19.5%) Rank-XXIII, Avoiding ratooning of crop (15.5%)

Rank-XXV, Nature of damage of Pink Bollworm (10.5%) Rank-XXVI, Following dense cropping system (10%) Rank-XXVII, Life cycle of Pink Bollworm (8.5%) Rank-XXVIII, and Deep ploughing (6%) Rank-XXIX.

5. Constraints faced by cotton growersfor pink boll worm

The respondents were asked to show the problem or constraints for management of pink boll worm in cotton cultivation. On the basis of frequency and percentage were ranked and asigne as for interepratation.

Table 5. Constraints faced by cotton growers (n=200)

Sr. No.	Constraints	Frequency	Percentage	Rank
A.	**Technical**			
1	Lack of information regarding pink bollworm identification	39	19.5	XIV
2	Lack of crop specific scientific recommendations	113	56.5	IX
3	Heavy attack of pink bollworm	173	86.5	III
4	Difficult to control of pink bollworm	121	60.5	VIII
B.	**Institutional**			
1	No Govt. subsidies for control of pink bollworm	124	62	VI
2	Lack of awareness	54	27	XIII
3	Lack of technical guidance	86	43	XI
4	Less exposure of training	82	41	XII
C.	**Economic**			
1	Require high investment to control of pink bollworm	156	78	IV
2	High labour requirement	142	71	V
3	High cost of pesticide	192	96	I
D.	**Situational**			
1	Small holding	122	61	VII
2	Fragmented holding	181	90.5	II
3	Inadequate transport facility	90	45	X

The respondents mentioned some problem in management of pink boll worm in cotton cultivation. The problems suggested by majority of cotton farmers were : High cost of pesticide 96per cent (Rank-I), Fragmented holding 90.5 per cent (Rank-II), Heavy attack of pink bollworm 86.5 per cent (Rank-III), Require high investment to control of pink bollworm 78 per cent (Rank-IV), High labour requirement 71 per cent (Rank-V), No Govt. subsidies for control of pink bollworm 62 per cent (Rank-VI), Small holding 61 per cent (Rank-VII), Difficult to control of pink bollworm 60.5 per cent (Rank-VIII), Lack of crop specific scientific recommendations 56.5 per cent (Rank-IX), Inadequate transport facility 45 per cent (Rank-X), Lack of technical guidance 43 per cent (Rank-XI), Less exposure of training 41 per cent (Rank-XII), Lack of awareness 27 per cent (Rank-XIII) and Lack of information regarding pink bollworm identification 19.5 per cent (Rank-XIV).

6.Suggestions from cotton growersto overcome the constraints faced by them in adoption of better integrated management of pink bollworm

The respondents were asked to give suggestion to overcome the constraints and minimize the problem of pink boll worm in cotton cultivation.

Table 6. Suggestions from cotton growersto overcome the constraints faced by them (n=200)

Sr. No.	Suggestions	Frequency	Percentage	Rank
1.	Grow short duration and pink boll worm resistant variety	80	40	XI
2.	Require crop rotation with non-host crop	27	13.5	XV
3.	Use of bio-logical control measure for pink bollworm management	98	49	VI

4.	Use mass media and mass campaign for awareness at proper indication and time bound service provide	116	58	V
5.	Avoid ratoon cropping	58	29	XIV
6.	Recycling of plant stalks with the help of waste decomposers	86	43	IX
7.	Avoid direct rotavator for recycling of cotton stalk	68	34	XII
8.	Required genetic resistant variety for the pink bollworm	164	82	I
9.	Refuge (20% non Bt seeds) should be planted along with Bt cotton, if provided in separate packet.	26	13	XVI
10.	Install pheromone 5 /ha and light trap 5/ha	124	62	II
11.	Use off mating disruption paste (MDP) Technology for reduce pest incidance	60	30	XIII
12.	Inspect the crop at squaring and flowering stage for presence of PBW larvae within flowers.	119	59.5	IV
13.	Chemical control measures should be initiated when pink bollworm crossed Economic Threshold Level (ETL)	82	41	X
14.	Destroy residual stalks and partially opened bolls	93	46.5	VIII
15.	Collect and destroy fallen squares, flowers and bolls in the field	95	47.5	VII
16.	Install light traps and pheromone traps near ginneries, market yards for mass trapping of adults.	120	60	III

For the management of pink boll worm different suggestion were given by different faremrs and it were ranked as per :-Required genetic resistant variety for the pink bollworm 82per cent (Rank-I), Install pheromone 5 /ha and light trap 5/ha 62per cent (Rank-II), Install light traps and pheromone traps near ginneries, market yards for mass trapping of adults. 60per cent (Rank-III), Inspect the crop at squaring and flowering stage for presence of PBW larvae within flowers. 59.5per cent (Rank-IV), Use mass media and mass campaign for awareness at proper indication and time bound service provide 58per cent (Rank-V), Use of bio-logical control measure for pink bollworm management 49per cent (Rank-VI), Collect and destroy fallen squares, flowers and bolls in the field 47.5per cent (Rank-VII), Destroy residual stalks and partially opened bolls 46.5per cent (Rank-VIII), Recycling of plant stalks with the help of waste decomposers 43per cent (Rank-IX), Chemical control measures should be initiated when pink bollworm crossed Economic Threshold Level (ETL) 41per cent (Rank-X), Grow short duration and pink boll worm resistant variety 40per cent (Rank-XI), Avoid direct rotavator for recycling of cotton stalk 34per cent (Rank-XII), Use off mating disruption paste (MDP) Technology for reduce pest incidance 30per cent (Rank-XIII), Avoid ratoon cropping 29per cent (Rank-XIV), Require crop rotation with non-host crop 13.5per cent (Rank-XVI), Refuge (20% non Bt seeds) should be planted along with Bt cotton, if provided in separate packet. 13per cent (Rank-XVI).

CONCLUSION

It can be concluded that the cotton growers were medium in extension as well as social participation. They usage KrishiVigyan Kendra as a knowledge hub for the source of information as well as mass media exposure. The knowledge level of farmers were very poor in identification of pink boll worm and its life cycle. For the management of pink bollworm sheep and goat grazing after harvest were most important according to the farmers knowledge. They also know different cultural, mechanical, biological and chemical measures for the management of pink boll worm in cotton.

Heavy attack of pink boll worm, small holding and high cost of pesticides were major constraints of the cotton growers. To overcome the constraints faced by farmers were development of genetic variety, use of pheromone and light trap in mass at farmers field as well as ginneries, market yards for mass trapping of adults of pink boll worm.

TECHNICAL PROGRAMME 2

Title : ADOPTION OF RECOMMENDED PRACTICES OF POMEGRANATE GROWERS IN JAMNAGAR DISTRICT

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INTRODUCTION :

The pomegranate (*Punica grantum L.)* is a native fruit from Iran and the Himalayas in Northern India. It was cultivated and naturalized over the whole Mediterranean region since ancient times. The pomegranate belongs to the Punicaceae family. The leaves of the tree are oblong, narrow and have a glossy texture. Pomegranate trees are drought tolerant and may be grown in dry areas as well. The tree is susceptible to root decay from fungal diseases in wetter regions. They are also tolerant to moderate frost and can survive in a temperature of about 10°C. It is widely cultivated throughout India, South East Asia, The East Indies and Tropical Africa. Pomegranate is a high value crop and its entire tree is of great economic importance. The calorific value of the pomegranate fruit is 65 Joule/Kg. Its juice is easily digestible and contains about 15 per cent of invert sugar. It is a rich source of Sodium and also contains a good amount of Riboflavin, Thiamin, Niacin, Vitamin C, Calcium and Phosphorous. Protein and fat contents are negligible (Mahal, 2007). All parts of pomegranate tree have great therapeutic value and are used in leather and dying industry. Apart from its demand for fresh fruits and juice, the processed products like wine and candy are also gaining importance in world trade.

India is the second largest producer of fruits in the world and is the leader in producing of fruits like mango, banana, pomegranate, sapota, acid lime and aonla.

In India total area under pomegranate cultivation during 2016-2017 was 208.73 (000 ha) with 2442.39 (000) tones production and 11.70 tones / ha productivity. Major pomegranate growing states in India are Maharashtra having 136.75 (000) ha area under pomegranate crop stood first rank followed by Karnataka with 28.09 (000) ha area under crop and Gujarat rank 3rd in pomegranate cultivation with 18.54 (000) ha area under pomegranate crop (Anon., 2017).

Only few commercial varieties are regularly cultivated in India viz. Ganesh, Bhagwa, Ruby, Aarakta, Mridula and Jalore Seedless. 'Super Bhagwa' variety emerged only later. With the rapidly changing socio-economic scenario imposed by climate change, water scarcity, small land holding, etc. this crop is getting popular and thriving well due to its wider adaptability not only in Deccan plateau but also in 'Tarai regions' of northern hills and in the dry regions of North-East as it provides unmatchable return on investment from unit area of land.

Gujarat state is first in the production of date palm, second in production of banana, papaya and lime. Productivity of banana, pomegranate and sapota of Gujarat state is second highest in the country. Total area under fruit crops in the state is 401.073 (000 ha) with production of 8505.272 (000) MT in which pomegranate contributes to 18.538('000) ha area and 278.104 (000) MT of production.

In Saurashtra region Jamnagar is the leading district in pomegranate cultivation. Area under cultivation of pomegranate in Jamnagar is 410 ha with production of 5929 MT (Anon., 2017).

Despite the considerable advances in pomegranate production technology and various strategy extended to increase fruit production per unit area, the gap between know- how and their actual application in the field is still quite large. The pomegranate is a major fruit crop contributes good income to the farmers of Saurashtra region.

Pomegranate is being planting in all blocks of Jamnagar district. Pomegranate is one of the major horticultural crop in Jamnagar district. Major problems in pomegranate are climate change, price, pest and diseases. Farmers did not get good prices for their product. So in last two years pomegranate grower eradicating their pomegranate orchards and started growing other agricultural crops.

Therefore, the present study was conducted to know Adoption of recommended practices of pomegranate growers in Jamnagar district with the following specific objectives.

OBJECTIVES:

1. To study the profile characteristics of the selected pomegranate growers
2. To study level of adoption of respondents about recommended pomegranate production technology
3. To find out the constraints faced by pomegranate grower in management practices of pomegranate.
4. To seek suggestion from pomegranate growers to overcome such constraints.

METHODOLOGY:

The present study was conducted in jurisdiction of Krishi Vigyan Kendra, Junagadh Agricultural University, Jamnagar of Gujarat state. *Ex-post facto* research design was followed for carrying out the study. For drawing the sample for the study, purposive simple random sampling technique was used. Jamnagar district consist of total six talukas, out of six talukas four talukas were selected namely Jamnagar, Kalavad, Lalpur and Dhrol having maximum area of pomegranate orchard. From each selected taluka Five villages were selected purposively having more area under pomegranate plantation. Total twenty villages were selected randomly and five pomegranate growers from each village were selected as respondents. Thus, total 100 pomegranate growers from twenty villages were considered as population for this study.

Table 1:Village-wise numbers of respondents selected for the study

Sr. No.	Taluka	Selected villages	No. of farmers selected for the study	Sr. No.	Taluka	Selected villages	No. of farmers selected for the study
1.	Jamnagar	Theba	5	3.	Lalpur	Haripar	5
		Dhudasiya	5			Badhla	5
		Beraja	5			Arablus	5
		Nana Thavariya	5			Pipartoda	5
		Pasaya	5			Vadpanchasara	5
2.	Kalavad	Nana Vadala	5	4.	Dhrol	Latipur	5
		Pithadiya	5			Chhalla	5
		MotaVadala	5			Mota Vagudad	5
		Navagam	5			Nana Vagudad	5
		MotiBhagedi	5			MotaItala	5

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

FINDINGS:

(1) Profile characteristics of the respondents

The data presented in Table 2.1 indicated that majority (64 per cent) of the respondents were in the middle age group followed by 19 and 17 per cent of respondents belonged to old and young age group respectively. While in case of education that is presented in Table 2.2,majority 48 per cent of the respondents were educated up to primary level whereas, 23 per cent of the respondents were educated up to secondary level followed by15, 8 and 6 per cent of the respondents were educated up to higher secondary, graduate and illiterate.

It is observed from Table 2.3, about the experience as a pomegranate grower, indicated that 53 per cent of the respondents had medium experience whereas, 39 and 8 percent respondents had low and high experience as a pomegranate grower. The data in Table 2.4 revealed that about 54 per cent of respondents had medium land holding, followed by 23 percent, 16 percent and 7 percent had large size, small size and marginal size of land holding. The data in Table 2.5 showed that 42 percent had high annual income followed by 27 percent farmer had very high annual income. The respondent belonged to medium

annual income category was 16 percent. Whereas 9 and 6 percent respondents were low and very low annual income respectively.

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

Sr. No	Characteristics	Frequency	Percentage
1	**Age**		
	Young age (Up to 35 Years)	17	17
	Middle age (36to 55 Years)	64	64
	Old age (above 55 Years)	19	19
	Total	100	100
2	**Level of Education**		
	Illiterate	6	6
	Primary (1 to 7th std.)	48	48
	Secondary (8to 10th Std.)	23	23
	Higher Secondary (11th to 12th std.)	15	15
	Graduate (above 12th std.)	8	8
	Total	100	100
3	**Experience as a pomegranate grower**		
	Low experience as a pomegranate grower (up to 5 years)	39	39
	Medium experience as a pomegranate grower (6 to 10 years)	53	53
	Higher experience as a pomegranate grower (above 10 years)	8	8
	Total	100	100
4	**Size of land holding**		
	Marginal (up to 1 ha)	7	7
	Small (1.01 to 2 ha)	16	16
	Medium (2.01 to 4 ha)	54	54
	Large (Above 4 ha)	23	23
	Total	100	100
5	**Annual income**		
	Very low annual income (Up to Rs. 50,000)	6	6
	Low annual income (Rs. 50,001 to 1,00,0000)	9	9
	Medium annual income (Rs. 1,00,001 to 1,50,000)	16	16
	High annual income (Rs. 1,50,001 to 2,00,000)	42	42
	Very high annual income (above Rs. 2,00,000)	27	27
	Total	100	100
6	**Mass media exposure**		
	Low mass media exposure(up to 10.19)	16	16
	Medium mass media exposure (10.19 to 20.61)	59	59
	High mass media exposure (above 20.61)	25	25
	Total	100	100
7	**Social Participation**		
	Low social participation (up to 0.98)	21	21
	Medium social participation (0.98 to3.12)	62	62
	High social participation (above 3.12)	17	17
	Total	100	100
8	**Extension Participation**		
	Low extension participation (Up to 4.14)	14	14
	Medium extension participation (4.14 to 19.52)	67	67
	High extension participation (above 19.52)	19	19
	Total	100	100

The result in Table 2.6 showed that more than half (59 percent) of the respondent had medium level of mass media exposure, whereas 25 and 16 per cent of them had high and low level of mass media exposure, respectively. The data regarding social participation in table 2.7 indicated that 64 per cent of the respondents had medium social participation followed by 21 and 17 per cent respondent had low and high social participation, respectively. The data in Table 2.8 revealed that majority (67 per cent) of the respondents had medium extension participation followed by 19 and 14 per cent respondents had high and low extension participation, respectively.

(2) Level of Adoption of recommended pomegranate production technology

Table 3 : Distribution of pomegranate growers according to overall adoption of recommended pomegranate production technology (N=100)

Sr. No.	Category	Frequency	Percentage
1	Low level adoption (up to 44 score)	20	20
2	Medium level of adoption (44.01 to 85 score)	66	66
3	High level of adoption (above 85 score)	14	14
	Total	100	100

Majority (66 per cent) of the respondents had medium level of adoption about the recommended practices of pomegranate production whereas, 20 per cent and 14 per cent had low and high level of adoption, respectively.

Table 4: Distribution of pomegranate growers according to their adoption of major pomegranate production practices (N=100)

Sr. No.	Practices	Total Score	Mean Score	Rank
1	Preparatory Tillage	245	2.45	II
2	Sowing Method	255	2.55	I
3	Fertilizer management	224	2.24	IV
4	Plant Protection	175	1.75	VI
5	Training and Pruning	230	2.30	III
6	Harvesting and Grading	195	1.95	V

In general, It is observed from the table no. 4 that majority of farmers were adopting sowing method properly with first rank followed by preparatory tillage (second rank) and training and pruning (third rank) respectively. While in case of plant protection, harvesting and grafting and fertilizer management practices in pomegranate crops were ranked sixth, fifth, and fourth position respectively.

(3) Practice wise adoption of the respondents about recommended practices of pomegranate production

It was observed that the level of adoption was found high (more than 70 per cent) in practices like, improved variety (rank I), land preparation (rank II), selection of bahar (rank III), harvesting (rank IV), training and pruning of tree (rank V), Time of planting (rank VI), FYM and nutrient management (rank VII), weed management (rank VIII) and spacing (rank IX).

The moderate level of adoption (more than 50 per cent) was noticed in practices like, management of bahar (rank X), filling of pit (rank XI), insect management(rank XII)and size of pit(rank XIII).

The low level of adoption (less than 50 per cent) was found in practices like irrigation management (rank XIV), disease management (rank XV), preparation of seedling (rank XVI) and type of grafting (rank XVII).

Table 5: Practice wise adoption of the respondents about recommended practices of pomegranate production (N=100)

Sr. No.	Name of Practices	Frequency	Percentage	Rank
1	Land preparation	95	95	II
2	Size of pit	53	53	XIII
3	Filling of pit	59	59	XI
4	Spacing	72	72	IX
5	Type of grafting	6	6	XVII
6	Preparation of seedling	9	9	XVI
7	Time of planting	78	78	VI
8	Improved variety	100	100	I
9	FYM and Nutrient management	77	77	VII
10	Selection of bahar	91	91	III
11	Management of bahar	62	62	X
12	Training and Pruning of tree	84	84	V
13	Weed management	73	73	VIII
14	Irrigation management	48	48	XIV
15	Disease management	46	46	XV
16	Insect management	56	56	XII
17	Harvesting	87	87	IV

(4) Constraints faced by pomegranate grower in management practices of pomegranate

The constraints were kept open ended. The responses were recorded in the schedule itself. on the basis of frequency and percentages ranks were assigned.

Table: 6.Constraints faced by pomegranate growers in management practices of pomegranate (N=100)

Sr. No.	Constraints	Frequency	Percentage	Rank
1	Non remunerative price	96	96	I
2	High cost of inputs (fertilizer, insecticides, pesticides, herbicides etc)	71	71	II
3	Lack of skilled labour	65	65	III
4	High wages of labour	59	59	IV
5	Lack of knowledge about recommended pomegranate production practices	52	52	V
6	More commission charged by commission agent	48	48	VI
7	Lack of grading and storage facility	32	32	VII
8	Scarcity of irrigation water	21	21	VIII
9	Pomegranate fruits damaged by birds	16	16	IX

The data presented in table 6, revealed that majority of the farmers expressed constraints in adoption of recommended practices were: Non remunerative price (Rank I), High cost of inputs (fertilizer, insecticides, pesticides, herbicides etc) (Rank II), Lack of skilled labour (Rank III), High wages of labour (Rank IV), Lack of knowledge about recommended pomegranate production practices(Rank V), More

commission charged by commission agent (Rank VI), Lack of grading and storage facility (Rank VII), Scarcity of irrigation water (Rank VIII), Pomegranate fruits damaged by birds (Rank IX).

(5) Suggestions to overcome the constrains.

The respondents were asked to give suggestion to overcome the constraints and increasing adoption of recommended pomegranate production practices.

Table 7: Suggestions to overcome the constrains faced in adoption recommended practices of pomegranate production (N=100)

Sr. No.	Suggestions	Frequency	Percentage	Rank
1	Remunerative minimum prices should be fixed by the government	73	73	I
2	Training should be given to the pomegranate growers so they can perform management operation easily	61	61	II
3	There should be an association of fruit growing farmers, so that they can meet labour and input demand	57	57	III
4	Required quantity of fertilizers and Micro nutrients should be made available in time at subsidized rate	48	48	IV
5	Adequate irrigation facility should be made available for fruit growers	35	35	V
6	Effective control measures of pest and disease should be evolved	26	26	VI
7	The methods to control damage by birds should be developed	12	12	VII

The pomegranate growers had given some suggestions to increasing adoption of recommended pomegranate production practices. A rank was assign to each suggestion and presented in Table no. 7 revealed that majority of the pomegranate grower suggested that remunerative minimum prices should be fixed by the government (Rank I), training should be given to the pomegranate growers so they can perform management operation easily (Rank II), there should be an association of fruit growing farmers, so that they can meet labour and input demand (Rank III), Required quantity of fertilizers and Micro nutrients should be made available in time at subsidized rate (Rank IV), Adequate irrigation facility should be made available for fruit growers (Rank V), Effective control measures of pest and disease should be evolved (Rank VI) and the methods to control damage by birds should be developed (Rank VII).

CONCLUSION

The profile characteristics of the pomegranate growers shows that majority of respondents found to middle age, primary & secondary level of education, medium experience as a pomegranate grower, medium size of land holding, high annual income, medium mass media exposure, medium social participation and medium extension participation.

Majority of the pomegranate growers (66.00 per cent) were medium adopters of the pomegranate cultivation practices. Whereas, 20.0 per cent were low and 14.0 per cent were high adopters of the pomegranate cultivation practices.

The cent percent of the farmers adopted the improved variety of pomegranate with first rank. While the practices, land preparation, selection of bahar, and harvesting were ranked 2nd, 3rd and 4th respectively.

The low level of adoption (less than 50 per cent) was found in practices like irrigation management (rank XIV), disease management (rank XV), preparation of seedling (rank XVI) and type of grafting (rank XVII) respectively.

The most important constraint for adoption of pomegranate production technology were non remunerative price (Rank I), high cost of inputs (fertilizer, insecticides, pesticides, herbicides etc) (Rank II), and lack of skilled labour (Rank III).

The most important suggestion offered by pomegranate farmers were; remunerative minimum prices should be fixed by the government (Rank I), training should be given to the pomegranate growers so they can perform management operation easily (Rank II) and there should be an association of fruit growing farmers, so that they can meet labour and input demand (Rank III).

Technical Programme :-3

Title :KNOWLEDGE LEVEL OF RURAL WOMEN REGARDING WEANING FOOD FOR INFANT IN JAMNAGAR DISTRICT.

Principle investigator

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INTRODUCTION :

In India, infants are breastfed during the first six months provided the mother can produce enough breast milk to satisfy the hunger needs of the baby. The growth rate of breastfed infants is quite satisfactory during this period. Many types of research have proved that breastfeeding alone is enough during the early stages of an infant for growth and health.

After six months of age, the nutrients and energy requirement of infants cannot be met only by the feeding breast milk. The mother's milk does not meet the calorie and protein requirements of the increasing growth spurt, also the quantity of the milk produced by the lactating mother starts to diminish. Breast milk is a poor source of Vitamin C & D. The iron stored in the liver of the infant lasts only until the 5th or the 6th month. So it becomes imperative to start supplementary feeding to maintain the rate of growth of the infant, beyond six months. The weaning foods or supplementary foods help the infants to be well nourished, be healthy and also improve their immunity.

Weaning – Weaning is the process of introducing supplementary food to an infant who has been exclusively breastfed till that time and goes on till the infant is off the mother's milk. Weaning is considered an important part of a child's growth from a nutritional angle. After introducing supplementary foods for nourishing the infant, the number of latching sessions to the mother's milk need to be gradually reduced.

Weaning can be a dangerous time for babies. In many places babies of weaning age do not grow well. They often fall ill and get more infections, especially diarrhea, than at any other time. Babies who are malnourished may get worse during the weaning period, and babies may become malnourished for the first time during weaning. Poor feeding and illness stop many children of weaning age growing well. This shows up on the growth chart as poor weight gain, or in more serious cases, as weight loss.

Foods should be prepared and given in a safe manner, meaning that measures are taken to minimize the risk of contamination with pathogens. And they should be given in a way that is *appropriate*, meaning that foods are of appropriate texture for the age of the child and applying responsive feeding following the principles of psycho-social care.

OBJECTIVES

1. To study the personal and social variable of respondents
2. To study the knowledge of rural women regarding feeding practices in infant
3. To know the knowledge of rural women regarding weaning food.
4. To assess need of training need of women about weaning food for infant.

METHODOLOGY

The present study was conducted from Jamnagar and DevbhumiDwarka Districts. Purposively all ten talukas were selected for the study purpose, three village were randomly selected from each talukas and five farm women from each village randomly selected for study purpose. Total 150 farm women were selected by proportionate random sample method. In light of the objectives, the interview schedule was prepared and respondents were interviewed at their home and field. The data collected by personal interview method were processed, tabulated, classified and analyzed in light of objectives.

District Name	Taluka Name	Village Name	No. of Respondent
Jamnagar	Jodiya	Kunad, Keshiya, Hadiyana	15
	Dhrol	Nathuvadala, Mavapar, Majoth	15

	Lalpur	Arablus, Rampar, Babarzar	15
	Kalavad	Kalavad, MotiVavdi, Dhundhoraji	15
	Jamjodhpur	Mandasan, Kalyanpur, Sadodar	15
	Jamnagar	Khijdiya, Dodhiya, Khojaberaja	15
Devbhumidwarka	Khambhalia	Khambhalia, Shaktinagar, Dharampur	15
	Kalyanpur	Ran, Nandana, Patelka	15
	Bhanvad	Rupamora, Vanavad, Jampar	15
	Dwarka	Dwarka, Makanpur, Tupni	15
Total	**10**	**30**	**150**

RESULTS AND DISCUSSION

In the present study results emerged out from the analysis of the data of the present investigation. The data have been organized and by taking into account the objectives of the study. All the pertinent information has been categorized and reported under the following major sections.

1. Background information of the respondents

The socio economic characteristics were studied by interview method and depicted in table 1.

Table 1: Personal Characteristics of respondents Rural Women (n=150)

Sr. No.	Personal Characteristics	Frequency	Percentage
1	**Age**		
	a) 18 – 35 years	72	48
	b) 36 – 50 years	69	46
	c) 50 above	9	6
2	**Marital Status**		
	a) Married	150	100
3	**Family structure**		
(i)	Family Type		
	a) Nuclear	44	29.33
	b) Joint	106	70.67
(ii)	Family Size		
	a) Small(upto 4)	58	33.67
	b) Medium (5-8)	72	48
	c) Large (above 8)	20	13.33
4	**Education**		
	a) Illiterate	13	8.67
	b) Primary(upto VII Std.)	30	20
	c) Secondary School(VIII to X Std.)	46	30.67
	d) Higher Secondary (XI &XII Std.)	36	24
	e) Graduate	24	16
	f) Post graduate	1	0.67
5	**Occupation**		
	a) Farming	63	42
	b) Farming + Animal Husbandry	56	37.33
	c) Farm Labour	12	8
	d) Service	7	4.67
	e) Farming + Service(others)	12	8
6	**No of animals**		
	a) No animal	50	33.33

	b)	Up to 1 animals	38	25.33
	c)	2 to 5 animals	62	41.33
	d)	Above 5 animals	0	0
7	**Annual income**			
	a)	Low annual income (up to Rs.50000/-)	33	22
	b)	Medium annual income (Rs. 50000 to Rs.100000/-)	98	65.33
	c)	High annual income (Above Rs. 100000/-)	19	12.67

Table 1 revealed that the respondent were young age group (18 to 35 years) 48 per cent, middle age group (36 to 50 years) were 46 per cent, however, old age group (above 50 years) were very low (6%). According to marital status all the respondents were 100 per cent married. Looking to the family structure, 70.67 per cent lived in joint family, followed by 29.33 per cent were lived in nuclear family. Similar way, size of the family also medium size (5 to 8 members) were 48 per cent, followed by small (less than 4 member) 33.67 per cent and large size family (more than 8 members) 13.33 per cent.

According to family occupation the majority of farm women were engaged agriculture field (42 per cent), whereas 37.33 per cent were engaged with agriculture + animal husbandry, 8 per cent with farm labor as well as farming + service and only 4.67 per cent were engaged with service occupation. Along with the occupation number of animal keeping groups no body have more than 5 animals, 41.33 per cent farm women having 2 to 4 animals, 25.33 per cent farm women having only one animals and 33.33 per cent farm women having no animals.

According to annual income majority groups 65.33 per cent having medium annual income (Rs. 50000 to 100000), and it was followed by Low annual income (up to Rs.50000/-) 22 per cent and High annual income (Above Rs. 100000/-) 12.67 per cent.

2. Use of Mass media for increasing the knowledge

How frequently do you use the following mass media for Nutrition requirement and supplementary food for infant?

Table 2 : Use of Mass media usages (n=150)

Sr. No.	Mass Media Exposure	Regularly	Frequently	Not at all	Wt. Mean	Rank
1	Radio	2	37	111	0.27	VII
2	Television	87	52	11	1.51	I
3	News paper	46	66	38	1.05	III
4	Printed literature	22	79	49	0.82	IV
5	Mobile	67	57	26	1.27	II
6	Visit to Aganvadi	6	89	55	0.67	V
7	Any other Programme organized in village	12	45	93	0.46	VI

It can be concluded from table 2, television was proved the most favorite of each and every women. It stand on first rank for media usage with 1.51 weightage mean. The another media usages chronologically, mobile stand second rank (1.27), newspaper stand third rank (1.05), printed literature stand fourth rank (0.82), visit to anganvadi stand fifth rank (0.67), other programme organized in village were stand sixth rank (0.46) and radio stand last rank (0.27) for mass media usage by farm women. These finding can be prove that very few respondents were usage of radio.

3. Knowledge of rural women regarding weaning food for infant

In India nearly 75% of the population lives in rural areas. These rural women especially belonging to agricultural families are mostly engaged in agriculture activities with household responsibilities like cooking, cleaning, care of family members especially children and adults.

Knowledge is most important component of behavior and it plays major role in the convert and overt behavior of human being. Once knowledge is acquired, it produces change in one's opinion/thinking which would lead to further changes in attitude of the individual. Knowledge as a

function or stages in the innovation-decision process was recognized. This exemplifies the importance of knowledge in innovation-decision process.

Table 3 : Distribution of the respondents regarding their knowledge about weaning food for infant (n=150)

Sr. No.	Infant food practices	No.	Percentage
1	Know about colostrum	74	49.33
2	Know about supplementary food	70	46.67
3	Know about required nutrient of infant	79	52.67
4	Know about Mother milk is complete food for infant	132	88.00
5	Best period for breast feeding		
	A) Birth to 1 year	10	6.67
	B) Birth to 1.5 Year	49	32.67
	C) Birth to 2 Year	72	48.00
	D) Birth to 2.5 Year	19	12.67
6	Time to start weaning food (Liquid food)with breast feeding		
	A) After 5 month	25	16.67
	B) After 6 month	99	66.00
	C) After 7 month	26	17.33
7	Time to start Semi Solid food Like Kheer, Rab,Fruit pulp etc..		
	A) After 6 month	37	24.67
	B) After 7 month	61	40.67
	C) After 8 month	52	34.67
8	Time to start solid food Like roti, Parotha, or regular daily meal		
	A) After 8 month	26	17.33
	B) After 9 month	60	40.00
	C) After 10 month	64	42.67
9	Preference of food for 6 to 12 months infant		
	A) Boiled rice/Pulses	32	21.33
	B) Rab	17	11.33
	C) Kheer	15	10.00
	D) Khichdi-Dahi	48	32.00
	E) Fruit pulp/Juice	42	28.00
	F) Boiled vegetables	24	16.00
10	Are you prefer ready to mix food for your infant	36	24.00
11	Which ready to mix baby food given your infant		
	A) Cerelac	26	17.33
	B) Babyvita	4	2.67
	C) Farex	7	4.67
	D) Amway	1	0.67
	E) Others	0	0
12	Readymix food given to infant periodicity		
(i)	6 to 8 Month baby		
	2 time	85	56.67
	3time	53	35.33
	4 time	12	8
(ii)	9 to 11 Month baby		
	2 time	74	49.33
	3time	68	45.33

	4 time	8	5.33
(iii)	12 to 24 month baby		
	1 time	112	74.67
	2 time	26	17.33
	3 time	12	8
13	Ready to mix powder made at home	19	12.67
14	Know about Ready to mix powder made at home	24	16

In the area of Jamnagar district, nearly half of the farm women know about colostrum (49.33%). As it contains anti bodies to protect the new born against disease and they all planned to breast feed their babies. Regarding supplementary food 46.67 per cent farm women were know. More than half of the respondents were know about required nutrient of infant 52.67 per cent. The highest knowledge about mother milk is complete food for infant were known by 88 per cent of mother women.

Knowledge about breast feeding period have different information. 48 per cent of them having known about best period for breast feeding is birth to 2 year. And it was followed by birth to 1.5 year (32.67%), birth to 2.5 year (12.67%) and birth to 1 year (6.67%). Thus, these farm women having lacking in the proper knowledge about best period for feeding.

It also important to change infant from breast feeding to weaning food for proper growth of infant. In the initiation the present study respondents were know time to start weaning food (liquid food) with breast feeding majority of farm women have response to after 6 moth of birth (66.00%). In the same, 17.33 per cent respondents were respond at 7 month and 16.67 per cent respondents were respond for 5 month after birth. On another hand, 40.67 per cent farm women were noted time to start semi solid food like kheer, rab, fruit pulp etc after 7 month. Which, followed by 34.67 per cent were after 8 month and 24.67 per cent were after 6 month. The time to start solid food like roti, parotha or regular daily meal should start after 10 month (42.67%), and it was followed by 9 month (40.00%) and 8 month (17.33) after birth.

Preference of food for 6 to 12 months infantwere respond first rank to khichadi-dahi (32.00%), fruit pulp/juice stand on next best food (28%), followed by boiled rice/pulses (21.33%), boiled vegetables (16%), rab (11.33%) and kheer (10%).

According to prefer ready mix food for infant were only 24 per cent having positive response. There were also clear that ready mix food for infant were very less mother are ready. Among them cerelac stand first (17.33%), farex (4.67), babyvita (2.67%) and amway (0.67%) chronologically reduced.

The knowledge for Readymix food given to infant periodicity on age of 6 to 8 month baby were maximum 56.67 per cent for 2 time, followed by 35.33 per cent for 3 time and only 8 per cent for 4 time. On the age of 9 to 11 month baby, about half of the respondent (49.33 per cent were give 2 time, which was followed by 45.33 per cent were give 3 time and 5.33 per cent were give 4 time. Same way at the age of 12 to 24 month baby 74.67 per cent having 1 time food, however, 17.33 per cent were 2 time and 8 per cent were 3 time ready to provide mix food.

Among the farm women only 12.67 per cent were ready to mix powder made to home by own. It also found that only 16 per cent were know about ready to mix powder made at home.

CONCLUSION

This can be concluded from the study that rural women had good knowledge regarding importance of breast feeding practices. They were aware about supplementary feeding, time to start liquid and solid food for infant. It also clear that ready mix food available in market, its usages and periodicity for food given during day at different age level. Very few farm women were know about preparation of ready mix powder mate at home.

ANNUAL ACTION PLAN
(April-2019 to March- 2020)

KRISHI VIGYAN KENDRA
JUNAGADH AGRICULTURAL UNIVERSITY, JAMNAGAR

1. Details of Operational area/ Villages (2018-19 to 2020-21)

Sl No	Taluka	Name of the village	Major crops & enterprises	Major problem identified	Identified thrust area
1	**Jamnagar**	Chandragadh, Khojaberaja, Lothiya, NaniBanugar, Suryapara	Cotton, groundnut, sesamum, castor, greengram, wheat, Gram, cumin, mustard, Vegetable, Soyabean, flowers, live stock, fisheries	Heavy infestation of sucking pest in cotton, stem rot disease&whitegrub in Groundnut, Root rot in castor, Less area under horticulture crops, Blight in cumin, salinity, pink bollworm in cotton	- ICM in major crops of the district - Organic crop production - Introudction of new crop - Recycling of farm waste - Populirization of MIS - Motivation of fishries cultivation - Soil Reclamation - Farm women empowerment - Farm mechanization
2	**Kalyanpur**	Gadhka, Patelka, Haripar, Juvanpur, Jampar			

2. Priority thrust areas

Sl. No	Crop/ Enterprise	Thrustarea
1.	Cotton, groundnut, castor, cumin, coriander, wheat, vegetables, fruits, etc.	➢ Integrated Crop Management in major crops ➢ IPM & IDM in major field crops ➢ Whitegrub management in Groundnut ➢ Wireworm management in garlic & Onion ➢ Micronutriet management in wheat
2.	Organic farming	Enhancement of organic farming through improved technologies
3.	Farm waste/ organic matter	Recycling of farm waste through composting, vermicompost, green manuring, etc.
4.	Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques
5.	Soil	Reclamation of saline & alkaline soils
6.	Farm Women	Farm women empowerment by training in value addition, handi crafts, and small scale enterprises
7.	Fisheries	Fish Farming
8.	Improved Implements	Popularization of the mechanized technological know how
9.	Plant protection	Pinkboll worm in cotton and white grub in groundnut,
10	Horticultural area	Enhancement of pomegranate, datepalm, draganfruit,
11.	Storage facility	Requirement of storage techniques and value addition in farm produce
12.	Water conservation & use of Micro irrigation	Efficient use of water by micro irrigation system, water harvesting structure, and water conservation techniques

3. TECHNICAL PROGRAMME

3.1. Details of targeted mandatory activities by KVK

OFT		FLD	
(1)		(2)	
Number of OFTs	Number of Farmers	Area (ha)	Number of Farmers
7	22	166	478

Training		Extension Activities	
(3)		(4)	
Number of Courses	Number of Participants	Number of activities	Number of participants
47	1225	358	39632

Seed Production (Qtl.)	Planting material (Nos.)	Fish seed prod. (Nos)	Soil Samples
(5)	(6)	(7)	(8)
264	500	500	550

3.2. Details of On Farm Trial / Technology Assessment during 2019-20

3. On Farm Trial (OFT)

S. No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions Title of OFT if any
1	PLP	Sesame	attack of leaf Webber is increase	Management of sesame leaf Webber
2	FIS	Fresh water prawn & IMC	Use of Maximum natural resources	Stocking of Freshwater prawn (*Macrobrachium rosenbergii*) with IMC (*Catla catla*) fingerlings in village pond/Dam.
3	CP	Sesame	Low yield, Threat to the sustainability of crop production, High cost of production Shortage of irrigation water	Assessment of the performance of high yielding Sesame varieties in summer irrigated condition for Jamnagar District
4	CP	Groundnut	Low yield, Threat to the sustainability of crop production, High cost of production, Lack of well distributed rainfall & low rainfall	Assessment of suitable high yielding Groundnut Variety in kharif season for Jamnagar District
5	WOE	Solar cooker	drudgery of farm women, To reduce time and fuel consumption	Comparison of solar cooker with traditional cooking system
6	PLP	Chilli	Minimize the incidence of thrips in chilli.	Management of thrips in chilli.
7	PLP	Garlic	To Minimize the infestation of purple blotch of garlic	Management of purple blotch of garlic

OFT-1 Sesame (Assessment)

Title: Management of sesame leaf webber
Objective: To manage the leaf webber infestation in sesame
Problem definition: attack of leaf webber is increase

- Heavy infestation of leaf webber was found
- Improper cultivation practices
- Lack of knowledge about pest outbreaks and its management

Problem diagram :-

Improper cultivation practices	**Management of sesame leaf webber**	Irregular irrigation
Mono-cropping system		Lack irrigation facilities
No adoption of recommended practices		Lack of knowledge about pest outbreaks and its management
Crop failure due to water logging condition in rainy season		In judicious use of chemical pesticide
Farmer follows instruction given by the local pesticides retailer		Heavy incidence of pest and disease attack

Treatments:

1. Injudicious use of insecticides. (Spray insecticides at weekly interval) **(Farmers practices).**
2. Recommended practices Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride 50% S.P. @ 10 g/10 Litre of water at the time of infestation.**(Recommendation)**

No. of Replication: 3 (Farmers)

Source of Technology :- Junagadh Agricultural University, Junagadh

Observations:

1. Record no. of larvae per plant/1 meter row length.
2. Yield data.

OFT: 2 (Assessment)

Title: Stocking of Freshwater prawn (*Macrobrachium rosenbergii*) with IMC fingerlings in village pond/Reservoir

Objectives: 1. To reduce the farming cost by using use maximum natural resources (Food, water body etc.)

2. To increase total yield and Income.

Experimental Animal: IMC fingerlings (*Catlacatla*) and *M. rosenbergii*

Problem diagram :-

Over stocking of seeds	**Stocking of Freshwater prawn (*Macrobrachium rosenbergii*) with IMC fingerlings in village pond/Reservoir**	Minimum usage of natural resources
Single Species stocking		Total production decrease
Lack of knowledge		Low income

Treatment: 1. **Farmer's practices**:- stocking a single species *Catlacatla* into ponds/reservoir.

2. **Assessment:-** stocking of *M. rosenbergii* with *Catlacatla* fingerlings into ponds/reservoir

No of Replications: 3 farmers

Source of Technology:-Central Inland Fisheries Research Institute, Barrakpore, Calcutta.

Thematic area : Production and management

Observations:

1. Average body weight of IMC and Prawn at the time of harvesting
2. Total production of fish and prawn (in KG.) at the time of harvesting from village pond/reservoir
3. Total Net income

OFT :-3 Sesame

Title : Assessment of the performance of high yielding Sesame varieties in summer irrigated condition for Jamnagar District

Objective : To find out suitable high yielding sesame variety for summer irrigated condition

Problem definition:

1. Low yield.
2. Threat to the sustainability of crop production

3. High cost of production
4. Shortage of irrigation water

Problem diagram :-

Improper cultivation practices	**Assessment of the performance of high yielding Sesame varieties in summer irrigated condition for Jamnagar District**	Multi season cropping system
Low yielding variety		Irregular irrigation/ irregular rainfall
Lack of knowledge about balance use of nutritional recommendation		Lack of knowledge about pest outbreaks and its management
High Wind velocity		In judicious use of chemical fertilizer

Treatments :

1. T_1 :- G. Til 2 (Farmers Practices)
2. T_2 :- G. Til 3
3. T_3 :-G. Til 5

No. of Replication :- 3 (Farmers)
Source of Technology: - Junagadh Agricultural University, Junagadh
Thematic area: Varietal evaluation
Observations :-

Yield (Kg/ha), Plant Height (cm),
Capsule per plant, 1000 seed weight (g),
Maturity days, Economics

OFT: 4 Groundnut

1. Title : Assessment of suitable high yielding Groundnut Variety in kharif season for Jamnagar District
2. Objective:: To find out suitable high yielding groundnut variety for kharif season
Problem definition:

1. Low yield.
2. Threat to the sustainability of crop production
3. High cost of production
4. Lack of well distributed rainfall & low rainfall

Problem diagram :-

Improper cultivation practices	**Assessment of suitable high yielding Groundnut Variety in kharif season for Jamnagar District**	Multi season cropping system
Low yielding variety		Mono-cropping system
Irregular rainfall		Lack of knowledge about nutrient management
Heavy incidence of pest and disease attack		In judicious use of chemical fertilizer
In judicious use of pesticide		Heavy infestation of white grub was found

Treatments:

1. T_1 :- GG-20(Farmers Practices)
2. T_2 :- GJG-22
3. T_3 :- GjG-32

No. of Replication :- 3 (Farmers)
Source of Technology: - Junagadh Agricultural University, Junagadh
Thematic area: Varietal evaluation
Observation:

Pod & Haulm yield (kg/ha),
Plant Height (cm) at harvest time,
No. of branches per plant ,
No. of pods per plant ,
100 pods weight (g),

100 kernel weight (g),
Economics

OFT-5 Solar cooker

Title :- Comparison of solar cooker with traditional cooking system

Items:- (1. Murbba 2. sweet potato 3. sweet corn 4. Salted -Roasted groundnut)

Objective:-

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

Treatment: - Item no. 1

1. Preparation by traditional method
2. preparation by sunlight heat
3. preparation by solar cooker

Treatment: - Item no. 2-4

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

No. of Replications: - 4

Source of Technology :- Department of renewable energy

Observations:-

1. Time consumption
2. Fuel consumption
3. Movement
4. Organo laptic test
    a. Colour
    b. Texture,
    c. Test
    d. Overall acceptance
5. Self life

OFT-6

Title: Management of thrips in chilli.

Objective: To minimize the thrips incidence in chilli. To reduce injudicious use of chemical pesticide. To minimize residual effect of chemical

Problem definition:

1. Heavy infestation of Thrips was found
2. Lack of seed treatment and improper cultivation practices
3. Lack of knowledge about pest outbreaks and its management
4. Injudicious use of nitrogenous fertilizer

Problem diagram :-

Resurgence of thrips	**Management of thrips in chilli**	Multi season cropping system
Mono-cropping system		Lack of knowledge about pest outbreaks and its management
Lack of seed treatment		Lack of improper cultivation practices
In judicious use of pesticide		In judicious use of chemical fertilizer
Irregular irrigation		Improper use of FYM (without decomposition)

Treatments:

1. **Farmer's Practices**:-Injudicious use of insecticides. [use of chlorpyriphos, quinalphos, flubendiamide, imidacloprid, Fipronil, Thiamethoxam, cypermethrin, lamdacyhalothrin after infestation of thrips at weekly interval without follow ETL]
2. **Recommendation** :-Seed treatment with imidacloprid 70 WS (7.5 g/kg seed) and dipping of seedling before transplanting for two hours in solution of imidacloprid 17.8 SL (10 ml/10 litre water) or thiamethoxam 25 WG (10 g/10 litre water). Spraying of spinosad 45 SC (3 ml/10 litre water)
3. **Refinement:-** Spray of *Bearuveria bassiana* @ 5 g/lit of water at 15 days interval

No. of Replication: 3 (Farmers)
Source of Technology: - Junagadh Agricultural University
Thematic area: IPM
Observations:

1. Record thrips population from five randomly selected plants from each plot at 7 days after spray
2. Record yield at every picking.

OFT-7 Garlic
Title: Management of purple blotch of garlic.
Objective: To minimize the infestation of purple blotch of garlic. To increase production. To reduce yield loss of garlic
Problem definition: Incidence of Thrips is increase

6. Heavy infestation of Thrips and purple blotch was found
7. Lack of seed treatment and improper cultivation practices
8. Lack of knowledge about pest, diseases outbreaks and its management
9. Injudicious use of nitrogenous fertilizer
10. Lack of fungicides use as preventive measure

Problem diagram :-

Improper cultivation practices	**Management of purple blotch of garlic**	Multi season cropping system
Mono-cropping system		Heavy infestation of purple blotch was found
Lack of seed treatment		Lack of knowledge about diseases outbreaks and its management
In judicious use of pesticide/fungicide		In judicious use of chemical fertilizer
Irregular irrigation		Improper use of FYM (without decomposition)

Treatments:

1. **Farmer's Practices** :-Injudicious use of fungicide (Spray insecticides at weekly interval), spray fungicide after initiation/heavy infestation of diseases.
2. **Recommendation** :-Foliar sprays of Mancozeb @0.25%, Tricyclazole @ 0.1% and Hexaconazole @0.1% at 30, 45 and 60 days respectively after transplanting helps in checking disease incidence. **(Junagadh Agricultural University; Director of Onion & Garlic Research Station, ICAR)**
3. **Refinement:-** Application of Trichoderma @ 5 kg/ha along with FYM @ 1 tonne/ha by broadcasting method **+** Foliar sprays of Hexaconazole @ 0.1% and Tebuconazole @0.1% at 40 and 60 days respectively after transplanting helps in checking disease incidence**.**

No. of Replication: 3 (Farmers)
Source of Technology: - Junagadh Agricultural University; Director of Onion & Garlic Research Station, ICAR
Thematic area: IDM
Observations:

1. Record no. of infected plant per 1 meter row length
2. Yield data

3.3 FRONTLINE DEMONSTRATIONS

A. Details of FLDs to be organized –

Sr. No.	Name of Crop/ Enterprise	Name of Variety Enterprises	Thematic area	Technology demonstrated	Critical Inputs	Season and year	Area (ha.)	No. of farmers /Demo.	Parameters identified
1	Cotton	Bt. Cotton	IPM/INM	Insecticide, Bio pesticide	Azadirechtin, Profenophos.,MDP,SNPV *Beauveria bassiana*	Kh-19	10	25	Pest population, yield
2	Chicory		ICM	Bio pesticide Bio fertilizer	*Beauveria bassiana* Azotobacter, PSB	Kh-19	2	5	Yield
3	Wheat	GW-463	Varietal	Variety	seed	Rabi-19	4	10	Yield
4	Cumin	GC-4	IPM/IDM	Bio pesticide Bio fertilizer	Trichoderma, *Beauveria bassiana* Azotobacter, PSB	Rabi-19	4	10	Yield, % Plant damage
5	Ajwain	Gujarat Ajwain-2	IPM/IDM	Bio pesticide Bio fertilizer	Trichoderma, *Beauveria bassiana* Azotobacter, PSB	Rabi-19	4	10	Yield, % Plant damage
6	Coriander	GC-2	IPM/IDM	Bio pesticide Bio fertilizer	Trichoderma, *Beauveria bassiana* Azotobacter, PSB	Rabi-19	8	20	Yield
7	Pearl Millet	GHB-732	Varietal	Variety	Seed (GHB-732) 1.5 kg	Sum-19-20	4	10	Yield
Other Scheme									
11	**NFSM**-Chickpea	GG-5	Improved Variety with ICM	Improved Variety, Bio pesticide, Bio fungicide, Bio fertilizer	Seed(GG-5), Beauveria bassiana, Trichoderma, PSB, Rhizobium	Rabi-19-20	20	50	Yield, % pod damage
12	**NMOOP** - Groundnut	GJG-22/ GJG 9	Improved Variety	Improved Variety	Seed (GJG-22/GJG-9) Beauveria bassian, Trichoderma, PSB, Azotobacter and Micro nutrient	KH-19	30	75	Yield, % pod damage
13	**NMOOP** - Sesame	GTil -3/5	Improved Variety with ICM	Improved Variety, with ICM	Seed(GTil-3/5), Beauveria bassian, Trichoderma, Pendimethalin, PSB, Azotobacter and Micro nutrient	Sum-19-20	20	50	Yield, % pod damage
14	**ATIC** Cotton	BT cotton	ICM	Bio pesticide Bio fertilizer	Beauveriabassiana, SNPV, MDP, PSB and Azatobector	Kh-19	20	50	Yield
15	**ATIC** G'Nut	GG-20	ICM	Bio pesticide Bio fertilizer	Beauveria bassiana, PSB and Rhizobium, Trichoderma	Kh-19	20	50	Yield

16	**ATIC** Cumin	GC-4	ICM	Bio pesticide Bio fertilizer	Beauveria bassiana, PSB, Azotobector Trichoderma	Rabi-19	10	25	Yield
17	**ATIC** Coriander	GC-2	ICM	Bio pesticide Bio fertilizer	PSB, Azotobector, Beauveria bassiana, Trichoderma	Rabi-19	10	25	Yield
					Total		**166**	**415**	

Sponsored Demonstration

Crop	Area (ha)	No. of farmers
-	-	-

C. Details of FLD on Enterprises

a. Farm Implements

Name of the implement	Crop	Season and year	No. of farmers	Area (ha)	Critical inputs	Performance parameters / indicators

b. Livestock Enterprises

Enterprise	Breed	No. of farmers	No. of animals, poultry birds/ha. etc.	Critical inputs	Performance parameters / indicators
Animial Husbandry	Gir	3	3	Bypass Fat	% of Fat increase Total Production increase

c. FLD on Other enterprises

Enterprise	Name of the technology demonstrated	No. of farmers	No. of units	Critical inputs	Performance parameters / indicators
Kitchen gardening	Nutritional gardening	50	50	Vegetable seeds	Yield
Okra Mittens	Vegetable mitten	5	5	Vegetable mitten	Picking efficiency, effect on skin,
Apron	Cotton picking apron	5	5	Apron	Picking efficiency

3.4 TRAINING (INCLUDING THE SPONSORED AND FLD TRAINING PROGRAMMES

ON Campus

(A) Farmers & Farm Women	No. of couses	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	3	69	2	71	4	0	4	75
II Horticulture	0	0	0	0	0	0	0	0
III Soil Health and Fertility Management	1	18	5	23	1	1	2	25
IV Livestock Production and Management	2	25	20	45	5	10	15	60
V Home Science/Women empowerment	3	0	66	66	0	9	9	75
VI Agril. Engineering	1	25	0	25	0	0	0	25
VII Plant Protection	3	72	0	72	3	0	3	75
VIII Fisheries	2	30	0	30	0	30	30	60
IX Production of Inputs at site	1	23	0	23	2	0	2	25

X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
XII Others (Pl. Specify)	0	0	0	0	0	0	0	0
Total (A)	**16**	**262**	**93**	**355**	**15**	**50**	**65**	**420**
(B) RURAL YOUTH	2	36	0	36	14	0	14	50
(C) Extension Personnel	2	40	0	40	10	0	10	50
Grand Total (A+B+C)	**20**	**338**	**93**	**431**	**39**	**50**	**89**	**520**

Off Campus

(A) Farmers & Farm Women	**No. of couses**	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	3	64	11	75	3	2	5	80
II Horticulture	1	0	25	25	0	0	0	25
III Soil Health and Fertility Management	4	89	21	110	5	0	5	115
IV Livestock Production and Management	3	70	0	70	15	0	15	85
V Home Science/Women empowerment	5	0	108	108	0	17	17	125
VI Agril. Engineering	0	0	0	0	0	0	0	0
VII Plant Protection	6	130	0	130	20	0	20	150
VIII Fisheries	3	50	0	50	18	7	25	75
IX Production of Inputs at site	1	22	0	22	3	0	3	25
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
XII Others (Pl. Specify)	0	0	0	0	0	0	0	0
Total (A)	**26**	**425**	**165**	**590**	**64**	**26**	**90**	**680**
(B) RURAL YOUTH	1	0	19	19	0	6	6	25
(C) Extension Personnel	0	0	0	0	0	0	0	0
Grand Total (A+B+C)	**27**	**425**	**184**	**609**	**64**	**32**	**96**	**705**

Consolidated (On + Off Campus)

(A) Farmers & Farm Women	**No. of couses**	No. of participant						
		others			SC/ST			Grand Total
		Male	Female	Total	Male	Female	Total	
I Crop Production	6	133	13	146	7	2	9	155
II Horticulture	1	0	25	25	0	0	0	25
III Soil Health and Fertility Management	5	107	26	133	6	1	7	140
IV Livestock Production and Management	5	95	20	115	20	10	30	145
V Home Science/Women empowerment	8	0	174	174	0	26	26	200
VI Agril. Engineering	1	25	0	25	0	0	0	25
VII Plant Protection	9	202	0	202	23	0	23	225
VIII Fisheries	5	80	0	80	18	37	55	135
IX Production of Inputs at site	2	45	0	45	5	0	5	50
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0
XII Others (Pl. Specify)	0	0	0	0	0	0	0	0
Total (A)	**42**	**687**	**258**	**945**	**79**	**76**	**155**	**1100**
(B) RURAL YOUTH	3	36	19	55	14	6	20	75
(C) Extension Personnel	2	40	0	40	10	0	10	50
Grand Total (A+B+C)	**47**	**763**	**277**	**1040**	**103**	**82**	**185**	**1225**

Details of training programmes attached in **Annexure -I**

3.5. Extension Activities (including activities of FLD programmes)

Nature of Extension Activity	No. of activities	Farmers			Extension Officials			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	12	210	35	245	65	50	115	275	85	360
KisanMela	1	1200	250	1450	200	50	250	1400	300	1700
KisanGhosthi	10	300	125	425	200	100	300	500	225	725
Exhibition	5	4000	1000	5000	2000	800	2800	6000	1800	7800
Film Show	50	1500	400	1900	900	300	1200	2400	700	3100
Method demonstration	2	20	10	30	10	50	60	30	60	90
Farmers Seminar	5	250	40	290	80	10	90	330	50	380
Workshop	1	200	100	300	100	80	180	300	180	480
Group meetings	12	120	30	150	50	30	80	170	60	230
Lectures delivered as resource persons	55	8000	1500	9500	3000	1000	4000	11000	2500	13500
Newspaper coverage	5	0	0	0	0	0	0	0	0	0
Radio talks	1	0	0	0	0	0	0	0	0	0
TV talks	1	0	0	0	0	0	0	0	0	0
Popular articles	3	0	20	20	0	20	20	0	40	40
Extension Literature	7	2500	200	2700	1200	100	1300	3700	300	4000
Advisory Services	10	100	10	110	50	10	60	150	20	170
Scientific visit to farmers field	50	200	20	220	60	5	65	260	25	285
Farmers visit to KVK	80	300	20	320	40	10	50	340	30	370
Diagnostic visits	32	30	5	35	5	2	7	35	7	42
Exposure visits	2	30	0	30	10	0	10	40	0	40
Ex-trainees Sammelan	3	20	5	25	4	1	5	24	6	30
Soil health Camp	3	100	20	120	30	20	50	130	40	170
Animal Health Camp	3	50	10	60	20	5	25	70	15	85
Agri mobile clinic	30	3000	100	3100	1000	100	1100	4000	200	4200
Soil test campaigns	2	110	10	120	40	10	50	150	20	170
Farm Science Club Conveners meet	3	100	10	110	40	10	50	140	20	160
Self Help Group Conveners meetings	3	40	20	60	20	20	40	60	40	100
Mahila Mandals Conveners meetings	6	10	50	60	10	40	50	20	90	110
Celebration of important days (specify)	3	150	40	190	60	30	90	210	70	280
Krishi Mohostva	5	0	20	20	0	20	20	0	40	40
Krishi Rath	3	40	0	40	20	0	20	60	0	60
Pre Kharif workshop	3	80	0	80	30	0	30	110	0	110
Pre Rabi workshop	7	250	40	290	100	30	130	350	70	420

PPVFRA workshop	1	20	10	30	10	5	15	30	15	45
Any Other (Specify)	5	220	20	240	90	10	100	310	30	340
Total	**424**	**23150**	**4120**	**27270**	**9444**	**2918**	**12362**	**32594**	**7038**	**39632**

3.6 Target for Production and supply of Technological products

SEED MATERIALS

Sl. No.	Crop	Variety	Quantity (qtl.)
CEREALS	Wheat	GW-496	150
OILSEEDS	Groundnut	GJG-9	96
	Sesame	G.Til.-3	12
PULSES	Green gram	GM-4	6
VEGETABLES			
OTHERS (Specify)			

PLANTING MATERIALS

Sl. No.	Crop	Variety	Quantity (Nos.)
FRUITS			
SPICES			
VEGETABLES	Brinjal	GJLB-3,4	500
FOREST SPECIES			
ORNAMENTAL CROPS			
		Total	**500**

Bio-products

Sl. No.	Product Name	Species	Quantity	
			No	(kg)
BIO PESTICIDES				
1	Beauveria			5000
2	Trichoderma			5000
3	PSB		200	
4	Azotobactor		200	
5	Rhizobium		200	
6	Pheromone trap			
7	NPV			

LIVESTOCK

Sl. No.	Type	Breed	Quantity	
			(Nos)	Unit
Cattle				
GOAT				
SHEEP				
POULTRY				
Pig farming				
FISHERIES	Advance Fingerlings	IMC	500	

4. Targets of samples for analysis:

Details	No. of Samples	No. of Farmers	No. of Villages	Amount to be realized
Soil Samples	500	500	15	

Water	50	50	12	
Plant				
Total	**550**	**550**	**27**	

5. ACTION PLAN OF INFRASTRUCTURE IN KVK

A. Action plan of demonstration units (other than instructional farm)

Sl. No.	Demo Unit	Year of establishment	Area (ha)	Details of production (expected)			Expected Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	
1	Crop Cafeteria	Every year	0.5	-	-	-	100000	-	
2	Vermicompost	2008	0.1	-	-	-	50000	70000	
3	Animal unit	2007	-	Gir	-	-	50000	61200	
4	Fisheries	2008	0.06	IMC	120	Kg.	1000	3600	

B. Action plan of instructional farm (Crops) including seed production

Name of the crop	Area (ha)	Details of production (expected)			Expected Amount (Rs.)		Remarks
		Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals							
Wheat	3	GW-496	Truthful	150	180000	300000	
Pulses							
Green gram	1	GM-4	Truthful	6	28000	54000	
Oilseeds							
Groundnut	8	GJG-9	Breeder	96	380000	1200000	
Sesame	2	G.Til.-3	Breeder	12	50000	180000	
Fibers							
Spices & Plantation crops							
Floriculture							
Fruits							
Vegetables							
Others (specify)							

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

Sl. No.	Name of the Product	Qty (expected)	Expected Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1	Nil	-	-	-	As per the requirement

D. Action plan of instructional farm (livestock and fisheries production)

Sl. No	Name of the animal / bird / aquatics	Details of production (expected)			Expected Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	
1	Cow	Gir	Milk	1600 lit	40000	51200	
			FYM	3 ton		10000	

Annexure - I

TRAINING PROGRAMMES

i) Farmers & Farm women (On Campus)

Date	Clientele	Title of the training programme	Duration in days	Number of participants			Number of SC/ST			G. Total
				M	F	T	M	F	T	
Crop Production										
Quarter-1st	PF	Doubling Farmers income through scientific production technology of major kharif crops	4	24	0	24	1	0	1	25
Quarter-1st	PF	Groundnut seed production Technology for doubling farmers income	2	21	2	23	2	0	2	25
Quarter–3rd	PF	Organic Farming: A Step towards doubling farmers income	4	24	0	24	1	0	1	25
Livestock prod.										
Quarter-1st	PF	Feed and Fodder Management in Animal Husbandry	3	25	0	25	5	0	5	30
Quarter-2nd	PF	Additional income generation through Animal Husbandry by higher milk production by improving Breed and Nutrition & Feed Management	4	0	20	20	0	10	10	30
Agril. Engg.										
Quarter-2nd	PF	Water management through micro irrigation system in kharif crops doubling the farmers income	2	25	0	25	0	0	0	25
Home Sc.										
Quarter-1st	PF	Income generation activities for empowerment of rural Women for doubling the farmers income	1	0	22	22	0	3	3	25
Quarter-2nd	PF	Value addition in fruits, vegetables and agriculture produce for doubling the farmers income	4	0	25	25	0	0	0	25
Quarter–3rd	PF	Importance of nutrition in daily diet and techniques of Minimization of nutrition loss in processing	1	0	19	19	0	6	6	25
Plan prot.										
Quarter-1st	PF	IPM in vegetable and summer crops for doubling the farmers income	2	22	0	22	3	0	3	25
Quarter-2nd	PF	Bio-control of pest & Diseases for doubling the farmers income	2	25	0	25	0	0	0	25
Quarter–3rd	PF	IPM and IDM in rabi crops for doubling the farmers income	3	25	0	25	0	0	0	25
Fisheries										
Quarter-2nd	PF	Doubling the income in brackish water Aquaculture-Shrimp Farming: Culture, Feed Management, Diseases and its prevention.	5	30	0	30	0	0	0	30
Quarter –3rd	PF	Natural resources for additional income generation in fisheries sector-Sea Weeds: types, importance, culture techniques and various uses.	5	0	0	0	0	30	30	30
Production of Inputs at site										
Quarter-4th	PF	Vermi-compost production for doubling the farmers income	1	23	0	23	2	0	2	25
Soil Health										
Quarter-2nd	PF	Importance of major and micro nutrient in crops production for doubling the farmers income	1	18	5	23	1	1	2	25

ii) Farmers & Farm women (Off Campus)

Date	Clientele	Title of the training programme	Duration in days	Number of participants			Number of SC/ST			G. Total
				M	F	T	M	F	T	
Crop Production										
Quarter-2nd	PF	Integrated Weed Management in Oilseed crops for doubling the farmers income	1	21	3	24	1	0	1	25
Quarter-3rd	PF	Pre-seasonal training on rabi crops (Chickpea, Cumin, Wheat)for doubling the farmers income	1	23	2	25	0	0	0	25
Quarter-3rd	PF	Techniques of weed Management in Pulse crop for doubling the farmers income	1	20	6	26	2	2	4	30
Horticulture										
Quarter-1st	PF	Processing and value addition in spices crops for doubling the farmers income	1	0	25	25	0	0	0	25
Livestock prod.										
Quarter-1st	PF	Common diseases and its remedies in cattle.	1	25	0	25	0	0	0	25
Quarter-2nd	PF	Importance of Nutrients and Feed Management in Animal Husbandry to increase milk production and diseases control.	1	20	0	20	10	0	10	30
Quarter-3rd	PF	Importance of selection, housing, feed, breeding and health of animals for more profits in dairy industries	4	25	0	25	5	0	5	30
Home Sc.										
Quarter-1st	PF	House hold food security by kitchen gardening and nutrition gardening for doubling the farmers income	1	0	19	19	0	6	6	25
Quarter-2nd	PF	Location specific drudgery reduction technology for doubling the farmers income	1	0	19	19	0	6	6	25
Quarter-3rd	PF	Income generation activities for empowerment of rural Women through rural crafts for doubling the farmers income	4	0	20	20	0	5	5	25
Quarter-4th	PF	food processing and value addition in fruit, vegetable, and other agricultural produce for doubling the farmers income	1	0	25	25	0	0	0	25
Quarter-4th	PF	Women and Child Care	1	0	25	25	0	0	0	25
Plan prot.										
Quarter-1st	PF	Management of pink bollworm in cotton for doubling the farmers income	1	20	0	20	5	0	5	25
Quarter-2nd	PF	Management of pink bollworm in cotton & management of white grub in groundnut and other kharif crops	1	20	0	20	5	0	5	25
Quarter-2nd	PF	Management of diseases in *kharif* crops	1	25	0	25	0	0	0	25
Quarter-3rd	PF	Integrated Disease and pest management in cumin and gram for doubling the farmers income	1	20	0	20	5	0	5	25
Quarter-3rd	PF	IPM in vegetable crops: onion & garlic	1	25	0	25	0	0	0	25

Quarter-4th	PF	Store grain pests and its management for enhance the losss and double the income	1	25	0	25	0	0	0	25
Fisheries										
Quarter-1st	PF	Importance of composite/mix culture of IMC with exotic carp/Fresh water prawn spp.	1	25	0	25	0	0	0	25
Quarter-3rd	PF	Pearl production: A source of additional income generation from inland fisheries	3	0	0	0	18	7	25	25
Quarter-4th	PF	Doubling the income in inland fisheries sector by stocking, rearing and selling the fish seeds.	1	25	0	25	0	0	0	25
Production of Inputs at site										
Quarter-4th	PF	Seed production technology of summer sesame for doubling the farmers income	1	22	0	22	3	0	3	25
Soil Health										
Quarter-1st	PF	Awareness about soil health card (SHC)	1	20	8	28	2	0	2	30
Quarter-1st	PF	Use of bio-fertilizers and recycling of farm waste through composting for doubling the farmers income	1	28	0	28	2	0	2	30
Quarter-2nd	PF	Integrated Nutrient Management in Groundnut for doubling the farmers income	1	22	7	29	1	0	1	30
Quarter-3rd	PF	Integrated Nutrient Management in rabi crops for doubling the farmers income	1	19	6	25	0	0	0	25

ii) Vocational training programmes for Rural Youth

Crop / Enterprise	Identified Thrust Area	Training title*	Month	Duration (days)	No. of Participants			SC/ST participants			G.Total
					M	F	T	M	F	T	
Plant Protection	Bio-Pesticide	Production of Bio Pesticides at Small scale level	May	4	0	0	0	0	25	25	25
Fruit and Vegetable	Value addition	Value addition in fruits, vegetables and agriculture produce for doubling farmers income	Octo	4	0	19	19	0	6	6	25
Integrated Farming	Integrated Farming	Integrated Farming System	Jan	4	16	0	16	9	0	9	25

iii) Training programme for extension functionaries

Date	Clientele	Title of the training programme	Duration in days	No. of participants			Number of SC/ST			G. Total
				M	F	T	M	F	T	
On Campus										
	EF	Pre-seasonal training on *kharif* crops (Pigeon pea, Green gram, Groundnut, Cotton)	2	20	0	20	5	0	5	25
	EF	Crop production technology in Cumin, Gram, Wheat, Onion, Garlic	2	20	0	20	5	0	5	25

Quarter and discipline wise summary of training programme :

Discipline	Subject Code	On-Campus					Off-Campus					GT
		Quarter					Quarter					
		I	II	III	IV	Total	I	II	III	IV	Total	
(A) Farmers & Farm Women, Rural Youth												
I Crop Production	CP	2	0	1	0	**3**		1	2		**3**	**6**
II Horticulture	HO					**0**	1				**1**	**1**
III Soil Health and Fertility Management	SFM		1			**1**	2	1	1		**4**	**5**
IV Livestock Production and Management	LPM	1	1			**2**	1	1	1		**3**	**5**
V Home Science/Women empowerment	WOE	1	1	1		**3**	1	1	1	2	**5**	**8**
VI Agril. Engineering	AEG		1			**1**					**0**	**1**
VII Plant Protection	PLP	1	1	1		**3**	1	2	2	1	**6**	**9**
VIII Fisheries	FIS		1	1		**2**	1	0	1	1	**3**	**5**
IX Production of Inputs at site	PI				1	**1**				1	**1**	**2**
X Capacity Building and Group Dynamics	CBD					**0**					**0**	**0**
(B) Extension Functionaries	EF	1		1		**2**					**0**	**2**
(C) Rural youth	RY	1			1	**2**			1		**1**	**3**
Total		**7**	**6**	**5**	**2**	**20**	**7**	**6**	**9**	**5**	**27**	**47**

iv) Sponsored programme

Discipline	Sponsoring agency	Clientele	Title of the training programme	No. of course	No. of participants			Number of SC/ST			G. Total
					M	F	T	M	F	T	
a) Sponsored training progdramme											
AEG	ATMA	PF	Importance of MIS	2	80	0	80	20	0	20	100
PLP	ATMA	PF	Kharif crop protection and production technology	3	100	40	140	10	10	20	160
SFM, AEG	AGAKHAN	PF	INM and MIS in rabi crops	2	50	50	100	5	5	10	110
PLP	DAO	PF	Integrated pest and diseases management in cumin	1	60	0	60	0	0	0	60
PLP	ATMA	PF	IPM & IDM in groundnut, cotton crops	1	55	0	55	5	0	5	60
PLP	DAO	PF	IPM, IDM, INM in groundnut and cotton	1	55	0	55	5	0	5	60
PLP	ATMA	PF	IPM & IDM in kharif crop	1	55	0	55	5	0	5	60
PLP	Dy.D.Hort.	PF	IPM, IDM, INM in Horticultural Crops	1	55	0	55	5	0	5	60
PLP	ATMA	PF	IPM, IDM, INM in Horticultural Crops	1	55	0	55	5	0	5	60
PLP	DWDU	PF	IPM & IDM in kharif crop	1	55	0	55	5	0	5	60
PLP, CP	ATMA	PF	Seed Production technology and IPM in these crops	1	55	0	55	5	0	5	60
PLP	ATMA	PF	Storage Techniques and IPM in summer crops	1	0	55	55	0	5	5	60
			Total	16	675	145	820	70	20	90	910
b) Sponsored research programme											
			Total								
c) Any special programmes											
SFM	ATMA	PF	World Soil health day	1	50	50	100	10	10	20	120
WOE	ATMA	PF	Mahila Krushi Divas	1	0	100	100	0	20	20	120
			Total	2	50	150	200	10	30	40	240

Annexure-II

New Technical Project Proposal 1 (Plant Protection)

1	Title	:	**Knowledge of eco-friendly organic farming practices followed in crop by the farmers of Jamnagar District**
2	Background information	:	Organic farming follows the principle of circular causation and has emerged in response to questions on health, environment and sustainability issues. It assesses the status, opportunities and sequestration potentials of in India. It identifies constraints that impede adoption of especially for small farm holders who constitute over 70% of farming community in India. Although India occupies second position in terms of number of certified organic farms (44,926), it is 13th in terms of area under of representing only 0.3 % of total agricultural lands. This scenario appears poor compared to many other countries. Farmer‟s apprehension towards in India is rooted in non-availability of sufficient organic supplements, bio fertilizers and local market for organic produce and poor access to guidelines, certification and input costs. An integrated effort is needed from government and non government agencies to encourage farmers to adopt of as a solution to climate change, health and sustainability issue. India’s organic food market has potential to grow more than 25 per cent annually to touch $1.36 billian by 2020. (Joshi, 2017). Organic farming system is not new in our country and is being followed from ancient time. It is a dynamic interaction between the soil, the plants, the ecosystem and the environment which primarily aimed at cultivating land and raising crops in such a way as to keep the soil alive and in good health by use of organic waste i.e. crop, animal and farm waste and other biological material along with beneficial microbes. Gujarat has remained a pioneer state in adopting organic farming. There are more than dozen groups and networks across the state working voluntarily for promotion, training and marketing of organic produce. But still there is a huge gap in efforts being made by govt and adoption of observe and do effort to document the practices followed by farmers who adopted organic farming in the region. Looking to this, the study was empirically carried out with following specific objectives
3	Objective	:	➢ To study the socio-economic profile of farmers. ➢ To assess the adoption level of farmers about organic farming practices ➢ To study knowledge of farmers for organic farming practices.
4	Principal Investigator	:	Dr. K. P. Baraiya, Senior Scientist & Head, KVK, JAU, Jamnagar
	Co-investigator		Smt. A. K. Baraiya, Scientist (Home Science), KVK, JAU, Jamnagar Shri S. H. Lakhani, Scientist (Agronomy), KVK, JAU, Jamnagar Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh
5	Location	:-	Jamnagar and Devbhumi Dwarka District
6	Year of Commencement	:	2019-20
7.	Experimental Detail/ Methodology	:	The present research study will conducted in jurisdiction of Krishi Vigyan Kendra, Junagadh Agricultural University, Jamnagar. Four talukas will selected purposively where organic farming is being practiced for conduction the present investigation. Three villages will further selected purposively from each selected taluka; where organic farming is being practiced and village wise organic farmers list will prepared. Ten farmers will selected randomly for the study purpose. Thus, overall 120 farmers will selected study purpose and an interview schedule was developed as preferred by farmer time period and data were collected by personal interview method. The data collected by personal interview method were processed, tabulated, classified and analyzed in light of objectives.

New Technical Project Proposal 2 (Home Science)

1	Title	:	**Knowledge of human nutritional practices among the farm women of Jamnagar District**
2	Background information	:	Health is a precious asset for everyone. It is an essential requirement of all irrespective age, caste, creed, race, religion and economic standard. There is a significant relationship between housing conditions and health. An adequate and safe water supply, disposal of excreta and solid wastes drainage of surface water, facilities for personal and domestic hygiene and sanitary food preparation, control of indoor air pollution, safe handling of things and suitable precautions where the home serves as a work place. Moreover, the health problems are rampant in rural areas, not merely because of lack of medical facilities but because of general poverty, lack of balanced and nutritious diet to large proportion of rural population and moreover lack of knowledge with regard to health and hygiene. Good nutrition is a firm foundation for human happiness, and sound health and skilled performance. It constitutes the most important readily improved environmental influence of health. Even, today 25 percent of our Indian populations are trapped in the viscous circle of poverty, malnutrition and diseases which reduce their work performance nullify al efforts under taken for their development and finally impede over nation's progress. Even though, there are many schemes, programmes, medical services to serve the people, there is a great bulk of illness in our country. The common factors which contribute are personal ignorance, poverty, isolation, lack of resources and lack of knowledge. The overall objective of the study is to bring the awareness to improve the nutrition status. The study provides the information on the knowledge of the nutritional practices of the farm women. It would also give the information on the suggestions to improve the health and nutrition status among the rural livelihood.
3	Objective	:	➢ To know the social variables of farm women ➢ To study knowledge of farm women on selected nutritional practices
4	Principal Investigator	:	Smt. A. K. Baraiya, Scientist (Home Science), KVK, JAU, Jamnagar
	Co-investigator		Dr. K. P. Baraiya, Senior Scientist & Head, KVK, JAU, Jamnagar Shri S. H. Lakhani, Scientist (Agronomy), KVK, JAU, Jamnagar Dr. P. V. Patel, Director of Extension Education, JAU, Junagadh
5	Location	:-	Jamnagar District
6	Year of Commencement	:	2019-20
7.	Experimental Detail/ Methodology	:	The study area of this research programme will be all six blocks viz., Jamnagar, Jodia, Dhrol, Kalavad, Lalpur & Jamjodhpur of Jamnagar District. From each taluka three villages and from selected villages four women will be selected randomly for the study. Thus, total of 120 women will constitute the sample size for this study. For collection of data personal interview technique will be use. Data will be collected with the help of structured interview schedule. Frequencies, percentage and mean percent score will be used for analysing the data statistically.

Annexure - III

Budget - Details of budget utilization (2018-19) up to 31 January 2019

S. No.	Particulars	Sanctioned	Released	Expenditure
13.1	**Recurring Contingencies**			
13.1.1	**Pay & Allowances**	9500000	7200000	6850659
13.1.2	**Traveling allowances**	200000	50000	46923
13.1.3	**Contingencies**	1050000	850000	1030092
13.1	**Total Recurring**	10750000	8100000	7927674
13.2	**Non-Recurring Contingencies**			
13.2.1	**Works**	0	0	0
13.2.2	**Equipment's including SWTL & Furniture**		0	0
13.2.3	**Vehicle** (Four wheeler/Two wheeler, please specify)	1600000	0	0
24.2.4	**Library**	0	0	0
13.2	**Total Non-Recurring**	**1600000**	**0**	**0**
13.3	**REVOLVING FUND**	0	0	0
13.4	**GRAND TOTAL (A+B+C)**	**12350000**	**8100000**	**7927674**

Details of Budget Estimate (2019-20) based on proposed action plan

S. No.	Particulars	BE 2019-20 proposed (Rs.)
14.1	**Recurring Contingencies**	
14.1.1	**Pay & Allowances**	**10800000**
14.1.2	**Traveling allowances**	**200000**
14.1.3	**Contingencies**	**2800000**
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	500000
B	POL, repair of vehicles, tractor and equipments	300000
C	Meals/refreshment for trainees (ceiling up to Rs.40/day/trainee be maintained)	400000
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	100000
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	500000
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	200000
G	Training of extension functionaries	300000
H	Maintenance of buildings	400000
I	Establishment of Soil, Plant & Water Testing Laboratory	80000
J	Library	20000
14.1	**TOTAL Recurring Contingencies**	**16600000**
14.2	**Non-Recurring Contingencies**	
14.2.1	**Works**	55800000
14.2.2	**Equipments including SWTL & Furniture**	
14.2.3	**Vehicle** (Four wheeler/Two wheeler, please specify)	2000000
14.2.4	**Library** (Purchase of assets like books & journals)	50000
14.2	**TOTAL Non-Recurring Contingencies**	**57850000**
14.3	**REVOLVING FUND**	0
14.4	**GRAND TOTAL**	**74450000**