

# **ACTION PLAN 2018-2019**

**DETAILS OF ACTION PLAN OF KVKs DURING 2018-19**(1<sup>st</sup> April 2018 to 31<sup>st</sup> March 2019)**1. GENERAL INFORMATION ABOUT THE KVK****1.1. Name and address of KVK with phone, fax and e-mail**

Address	Telephone		E mail	Website
	Office	FAX		
Krishi Vigyan Kendra, Junagadh Agricultural University, Nana-Kandhasar-363 520 Ta- Chotila <b>Dist: Surendranagar</b> (Gujarat)	02751- 294120		<a href="mailto:surendranagar.kvk@gmail.com">surendranagar.kvk@gmail.com</a>	-

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

Address	Telephone		E mail	Website
	Office	FAX		
Junagadh Agricultural University, Junagadh – 360 002	0285-2672080-90	0285-2672653	dee@jau.in	www.jau.in

1.2.b. Status of KVK website : Will be prepared

1.2.c. No. of Visitors (Hits) to your KVK website (as on today) : No

1.2.d Status of ICT lab at your KVK : Nil

**1.3. Name of the Programme Coordinator with phone & mobile no.**

Name	Telephone / Contact		
	Office	Mobile	Email
Dr. M. S. Chandawat	(02751) 294120	094275 08708	<a href="mailto:surendranagar.kvk@gmail.com">surendranagar.kvk@gmail.com</a>

1.4. Year of sanction: October, 2005

**1.5. Staff Position (as on 30 Dec. 2016)****1.6.**

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Grade Pay	Present basic (Rs.)	Date of joining	Permanent /Temporary	Category (SC/ST/OBC/ Others)	Mobile No.	Email id
1	Programme Coordinator	Dr. M. S. Chandawat	Sr. Scientist and Head	Extension Education	37400-67000 (15600-39100)	8000 for first three years	22320/-	31-3-2015	Permanent	Other	94275 08708	surendranagar.kvk@gmail.com
2	SMS	Mr. M. F. Borhaniya	Scientist	Plant Protection	15600-39100	6000	23510/-	18-09-2012	Permanent	Other	94282 97863	mfbhoraniya@gmail.com
3		Dr. B. C. Bochalya	Scientist	Extension Education	15600-39100	6000	22220/-	23-08-2006	Permanent	Other	94277 13771	-
4		Rohit P. Kalma	Scientist	Animal Science	15600-39100	6000	21600	07-12-2016	Permanent	ST	9586871273	<a href="mailto:kalmarohit@gmail.com">kalmarohit@gmail.com</a>
5		-	Scientist	Agronomy	15600-39100	6000	-	-	-	-	-	-
6		Mr. D.A.Patel	Scientist	Horticulture	15600-39100	6000	21600	20-02-2017	Permanent	ST	7600011793	pateldiptadp@gmail.com
7		-	Scientist	Home Scienc	15600-39100	6000	-	-	-	-	-	-
8	Programme Assistant	Mr. M. V. Pokar	Programme Assistant	Extension Education	13700 Fix	-	-	23-02-2012	Permanent	Other	94294 20468	mvpokar83@gmail.com

9		-	-	-	-	-	-	-	-	-	-
10	Computer Programmer	Mr. P. T. Patel	Computer Prog.	B.E. (Comp.)	9300-34800	4400/-	11750/-	30-12-2008	Permanent	ST	
11	Accountant/Superintendent	Mr. R.P. Vagadiya	O.S. cum Accountant		9300-34800	4400/-	11750/-	01-12-2011	Permanent	Other	
12	Stenographer	Mr. S.H. Shukla	Junior Steno		10000 fix	-	-	19-11-2013	Permanent	Other	shivamshukla1984@gmail.com
13	Driver	-	Tractor Driver		-	-	-	-	-	-	-
14		Mr. H. R. Gohil	Jeep Driver		5200-20200	2400/-	11870/-	01-08-2006	Permanent	Other	-
15	Supporting staff	Mr. A.M. Dhadvi	Peon		2550-3200	1400/-	7580/-	01-10-2015	Permanent	OBC	-
16		-	-	-	-	-	-	-	-	-	-

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

S. No.	Item	Area (ha)
1	Under Buildings	04.00
2.	Under Demonstration Units	16.00
3.	Under Crops	
4.	Horticulture	
5.	Pond	
6.	Others if any	0
	Total :-	20.00

## 1.7. Infrastructural Development:

## A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Completion Year	Complete Plinth area (Sq.m)	Expenditure (Rs.)	Incomplete Starting year	Incomplete Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	23/7/09	595	30,20,600	-	-	-
2.	Farmers Hostel			296	20,74,700	-	-	-
3.	Staff Quarters (6)			-	30,55,000	-	-	-
4.	Demonstration Units (2)			78	6,16,000	-	-	-
5.	Rat Proof godown			158	8,30,750	-	-	-
6.	Implement Shed			77	3,00,000	-	-	-
7.	Training Hall	RKVY	1/4/10	191	13,94,500	-	-	-
8.	Pilot Scale Processing Plant			198	15,72,000	-	-	-
	Godown/ store room			71	5,00,000	-	-	-
9.	Implement Shed			77	3,00,000	-	-	-

## B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep (Bolero)	2006-07	4,96,000	-	Working
Splendor Bike	2010-11	42,980	-	Working

## C) Equipments &amp; AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Computer	2006-07	49968	Working Cond.
Copier Machine	2006-07	49816	Working Cond.
Automatic Seed Drill	2006-07	31500	Working Cond.
Tractor mounted Sprayer (200ltr)	2007-08	43000	Working Cond.
Shredder	2007-08	43000	Working Cond.
Dibbler	2007-08	900	Working Cond.
Cotton stock puller	2007-08	1200	Working Cond.
Digital copier with network	2008-09	115300	Working Cond.
Rain gun	2007-08	19800	Working Cond.
LCD projector	2008-09	89985	Working Cond.
Rotavator	2008-09	96000	Working Cond.
Laptop	2008-09	47500	Working Cond.
Harrow cum cultivator (2)	2008-09	75000	Working Cond.
Groundnut Decorticator	2008-09	96530	Working Cond.
Mobile seed processing unit	2008-09	1685000	Working Cond.
Thresher	2008-09	114000	Working Cond.
Zero till drill	2008-09	66700	Working Cond.
Air assisted blower type sprayer	2008-09	98750	Working Cond.
Digital Camera	2008-09	23600	Working Cond.
Plasma TV	2008-09	73750	Working Cond.

Power Tiller	2010-11	1,15,000	Working Cond.
Mini Tractor (Mahindra)	2011-12	1,98,000	Working Cond.
Trinocular Microscope	2012-13	2,90,000	Working Cond.
B.O.D. Incubator	2012-13	1,14,000	Working Cond.
Laminar Air Flow	2012-13	1,99,000	Working Cond.
Batch top centrifuge	2012-13	46,524	Working Cond.
Electronic Balance	2012-13	19,905	Working Cond.
TDS meter	2012-13	6,333	Working Cond.
Temp & humidity indicator & controller	2012-13	33,071	Working Cond.
Digital Hot Air Oven	2012-13	46,333	Working Cond.
Deep Fridge	2012-13	47,571	Working Cond.
Computer -2	2012-13	72,618	Working Cond.
Vertical Autoclave	2012-13	27,900	Working Cond.

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

Sl. No.	Date
14 <sup>th</sup> Scientific Advisory Committee (Next Year)	25-02-2019 proposed

## 2. DETAILS OF DISTRICT

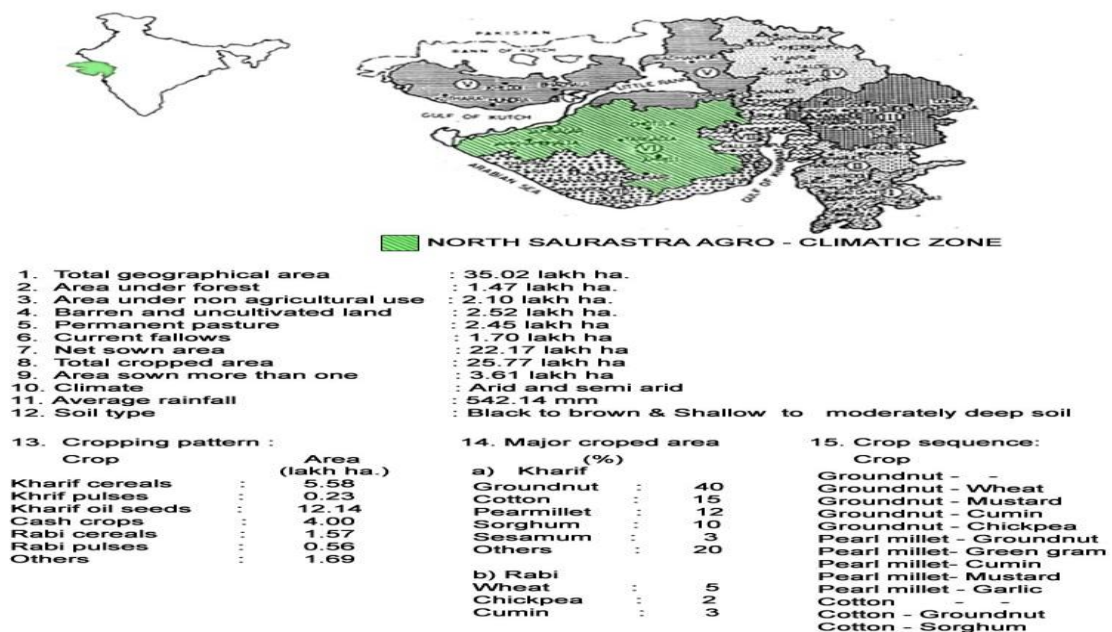
### 2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

S. No	Farming system/enterprise
1	<p>The district Surendranagar mainly falls in north Saurashtra agro-climatic zone. The district located in India at 22.0° to 23.45° North latitude and 69.45° to 72.15° East longitude. Surendranagar district is bounded in north by Gulf of Kutch and Mehasana district, in the south by Bhavnagar and part of Ahmedabad district, on the east by part of Ahmedabad and west by Rajkot district. The average annual rainfall is 400 mm. The average temperature of the district ranges with 41°C maximum to 11°C minimum. The soil is mostly medium black, shallow to moderately deep and calcareous in nature, therefore cotton is the major crop of the district. Some patches of saline soil found in Dasada and Lakhtar talukas, calcareous sandy soil found in some part of Chotila, Sayla &amp; Dhangdhra taluka and loamy soil is found in some part of Halvad and Dhangdhra taluka. The pH of the soil is alkaline and underground water is non saline in nature.</p> <p>The district covers 10.48 lakh ha geographical area out of which 6.90 lakh ha under cultivation, of which only 0.62 lakh ha is irrigated. Major area comes under rainfed farming. The main sources of irrigation are wells, tube wells, ponds and canals. The major crops of this region are cotton, sesame &amp; pearl millet and others are sorghum, wheat, chick pea, groundnut, mustard, cumin, green gram, black gram, onion, garlic and vegetables. The fruit orchard area is very less.</p>

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

Agro-climatic Zone	Characteristics

### PROFILE OF THE NORTH SAURASTRA AGRO - CLIMATIC ZONE VI - GUJARAT



## b) Topography

**Agro ecological situation****North Saurashtra Agro-climatic Zone-VI, Gujarat**

Eight agro-climatic zones have been identified in Gujarat. The North Saurashtra Agro climatic Zone-VI falls in Saurashtra region. The influence area of North Saurashtra Agro climatic Zone is spread among five districts of Saurashtra region viz., Amreli (9 talukas out of 11), Bhavnagar (6 talukas out of 13), Jamnagar (all the 10 talukas), Rajkot (11 talukas out of 14) and Surendranagar (7 talukas out of 10) covering 43 talukas in all. It is bounded in the north by the gulf of Kutch and parts of Rajkot as well as Surendranagar district, in the east by the Ahmadabad district and coastal part of Bhavnagar district, on the south by the Junagadh district and parts of Amreli as well as Rajkot district, to the west by Arabian sea. The farming situation of the district Surendranagar is rainfed.

**2.3 Soil Types**

Sr. No.	Soil type	Area
1	Medium black	Vadhvan & Muli
2	Saline & Alkaline soils	Dasada & Lakhatar
3	Shallow calcareous sandy soil	Dhanghdhra
4	Red Loamy soil	Dhanghdhra
5	Low land soils	Limbadi, Lakhatar
6	Calcareous Sandy soil	Chotila, Sayla

**1.4. Area, Production and Productivity of major crops cultivated in the district (2014-15)**

S. No	Crop	Area (ha)	Production (MT.)	Productivity (Qt./ha)
1	Cumin	86600	93528	1080
2	Funnel	12800	27520	2150
3	Cotton lint	251164	109001	733
4	Sesemum	22983	10819	467
5	Castor	77780	196829	2531
6	Groundnut	8465	22393	2645
7	Gram	172000	168200	978
8	Bajara	7043	6865	909
9	Wheat	30380	88206	2903

Source: District agriculture department.

**2.5. Weather data will be taken**

Month	Rainfall (mm)	Temperature 0 C		Relative Humidity (%)	
		Maximum	Minimum	Maximum	Minimum
-	-	-	-	-	-
<b>Total -</b>	-	-	-	-	-

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

Category	Population	Production	Productivity
<b>Cattle</b>			
<i>Crossbred</i>	201	54,61,197 lit	--
<i>Indigenous</i>	2,93,557		--
<b>Buffalo</b>	2,02,939		--
<b>Sheep</b>	1,00,589	--	--
<b>Goats</b>	1,79,648	--	--
<b>Pigs</b>	22,948	--	--
<i>Crossbred</i>	--	--	--
<i>Indigenous</i>	--	--	--
<b>Rabbits</b>	--	--	--
<b>Poultry</b>			
<b>Hens</b>	-	-	--

Desi	-	-	--
Category		Production (Q.)	Productivity
Fish (Reservoir)	--	--	--

\*Statistical report

## 2.7 Details of Operational area / Villages

Taluka	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
Chotila	Chotila	Lakhchokiya	Cotton, Bajra, Sesame, Pulses, Dairy Farming,	Uncertain and scattered rainfall, pink bollworm in cotton, Reddening in cotton, Wild animals, Lower milk production.	Dry farming technology Awareness for vaccination & artificial insemination of animals
		Bhimora	Cotton, Bajra, Groundnut, Sesame, Pulses Dairy Farming,	Uncertain and scattered rainfall, infestation of pink boll worm in cotton, sucking pest in vegetables, HS disease	Dry farming technology Awareness for vaccination & artificial insemination of animals
		Rajawad	Cotton, Cumin, Groundnut, Sesame, Pulses, Vegetables Dairy Farming,	Lack of irrigation facility, Uncertain and scattered rainfall, Lower milk production, HS disease	Dry farming technology, Awareness for vaccination & artificial insemination of animals
		Sanosara	Cotton, Bajra, Cumin, Wheat, Sesame, Dairy Farming,	Uncertain and scattered rainfall, Injudicious use of fertilizers & Pesticides, Black quarter disease	Adoption of organic farming, Bio-fertilizers & Vermi-compost Awareness for vaccination & artificial insemination of animals
Sayla	Sayla	Hadala	Cotton, Groundnut, Cumin, Wheat, Sesame, Dairy Farming	Lack of knowledge of modern dry land technologies, lack of Awareness for vaccination & artificial insemination of animals	Awareness for vaccination & artificial insemination of animals
		Chorvira	Cotton, Castor, G'nut, Wheat Dairy Farming,	Lack of knowledge of modern dry land technologies, FMD	Dry farming technologies, Awareness for vaccination & artificial insemination of animals
		Mangalkui	Cotton, Wheat, Cumin, Sesame, Bajra	Lack of knowledge of modern dry land technologies, Injudicious use of fertilizers & Pesticides	Dry farming technologies
		Dharadungari	Cotton, Bajra, Sesame, Wheat, Cumin, Dairy Farming,	Lack of knowledge about weed, pest and diseases & nutrient management HS disease, Trypanosomiasis disease	To motivate farmers to grow arid and semi arid horticultural crops. Awareness for vaccination & artificial insemination of animals
Chuda	Chuda	Karmad	Dairy Farming, Cotton, G'nut, Sesame, Wheat, Cumin, Bajra, Gram	Soil salinity, poor drainage system FMD, Lack of knowledge of modern dry land technologies, INM, IPM etc	Irrigated farming technology, Awareness for vaccination & artificial insemination of animals
		Ramdevgadh	Dairy Farming, Cotton, G'nut, Sesame, Wheat, Gram, Cumin, Bajra	Soil salinity, Awareness for vaccination & artificial insemination of animals	Irrigated farming technology, Awareness for vaccination & artificial insemination of animals
		Melapur	Dairy Farming, Cotton, G'nut, Sesame, Gram, Wheat, Cumin, Bajra	Soil salinity, low knowledge of scientific cultivation of crops ,HS disease, Injudicious use of fertilizers & Pesticides	Irrigated farming technology, Awareness for vaccination & artificial insemination of animals
		Chhatariyala	Dairy Farming, Cotton, G'nut, Sesame, Gram, Wheat, Cumin, Bajra	Soil salinity, poor water quality for irrigation, , low knowledge about INM, IPM , in crops,	Irrigated farming technology, Awareness for vaccination & artificial insemination of animals

## 2.8 Priority thrust areas:

Crop/ Enterprise	Thrust area
Cotton, Sesamum, Groundnut, Bajara, Cumin	Dry farming technologies.
Animal Husbandry	Awareness for vaccination & artificial insemination of animals, Feed and fodder management, use of area specific mineral mixtures, Deworming in cattle and buffalo
Crop Management	Adoption of organic farming, Bio-fertilizers & Vermi-compost., promotion of micro irrigation in field crop as well as horticultural crops
Integrated Crop Management	Integrated weed management, IPM, INM and efficient water management.
Home Science	Farm women empowerment., income generation for farm women through IGA
Lemon, Ber	Motivate farmers to grow arid and semi arid horticultural crops.

Fisheries	Aqua culture & inland fisheries
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## 3. TECHNICAL PROGRAMME

## 3. A. Details of targeted mandatory activities by KVK

OFT (1)		FLD (2)	
Number of OFTs	Number of Farmers	Area (ha)	Number of Farmers
06	20	75	210

Training (3)		Extension Activities (4)	
Number of Courses	Number of Participants	Number of activities	Number of participants
44	1050	20	10000

Seed Production (Qtl.) (5)	Planting material (Nos.) (6)	Fish seed prod. (Nos) (7)	Soil Samples (8)
60	10000	-	500

## 3.2 Front Line Demonstrations

Sl. No.	Crop	Variety	Thematic area	Technology for demonstration	Critical inputs	Season and year	Area (ha)	No. of farmers	Parameters identified
1	Wheat	GW – 366/463	Varietal	Improve Variety	40.0 kg Seed	Rabi-2018-19	08	20	Yield
2	Cumin	GC-4	IDM	IDM	Mancozeb : 500 gm Carbendazim:250gm Hexaconazole:100ml	Rabi-2018-19	08	20	Yield, % plant damaged
3	Gram	GJG-3/6	Varietal	Improve Variety	25 kg Seed	Rabi-2018-19	04	10	Yield
4	Gram Under (NFSM)	GJG-3/6	ICM	Improve Variety	Variety GG-5/3: 25kg <i>Rhizobium</i> - 500ml PSB-500 ml, <i>Beauveria</i> -1 kg <i>Trichoderma</i> -2 kg Sticker 500 ml	Rabi-2018-19	20	50	Yield, B. C. Ratio
5	Sesame	Guj-Til-4/5		Improve Variety	1.0 kg Seed	Kharif-2018-19	04	10	Yield, B. C. Ratio
6	Groundnut	-	IDM	IDM	Mancozeb:500 gm Chlorothalonil:500 gm Carbendazim:250 gm	Kharif-2018-19	04	10	Yield, plant damaged
7	Groundnut	-	IPM	Bio-agent	Castor cake: 200 kg <i>Trichoderma</i> : 2.0 kg	Kharif-2018-19	02	05	Yield, plant damaged
8	Groundnut (NMOOP)	GJG-22/32	Variety	Improve Variety	Seed: GJG-22- 30 kg <i>Rhizobium</i> -500 ml <i>Trichoderma</i> -2 kg <i>Beauveria</i> -1 kg Neem oil-500 ml Sticker-500 lit	Kharif-2018-19	20	50	Yield,





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

Thematic areas	Cattle	Poultry	Sheep	Goat	Piggery	Wormi culture	Fisheries	TOTAL
Evaluation of Breeds	--	--	--	--	--	--	--	01
Nutrition Management	01-	--	--	--	--	--	--	--
Disease of Management	--	--	--	--	--	--	--	--
Value Addition	--	--	--	--	--	--	--	--
Production and Management	--	--	--	--	--	--	--	--
Feed and Fodder	--	--	--	--	--	--	--	--
Small Scale income generating enterprises	--	--	--	--	--	--	--	--
<b>TOTAL</b>	01	--	--	--	--	--	--	01

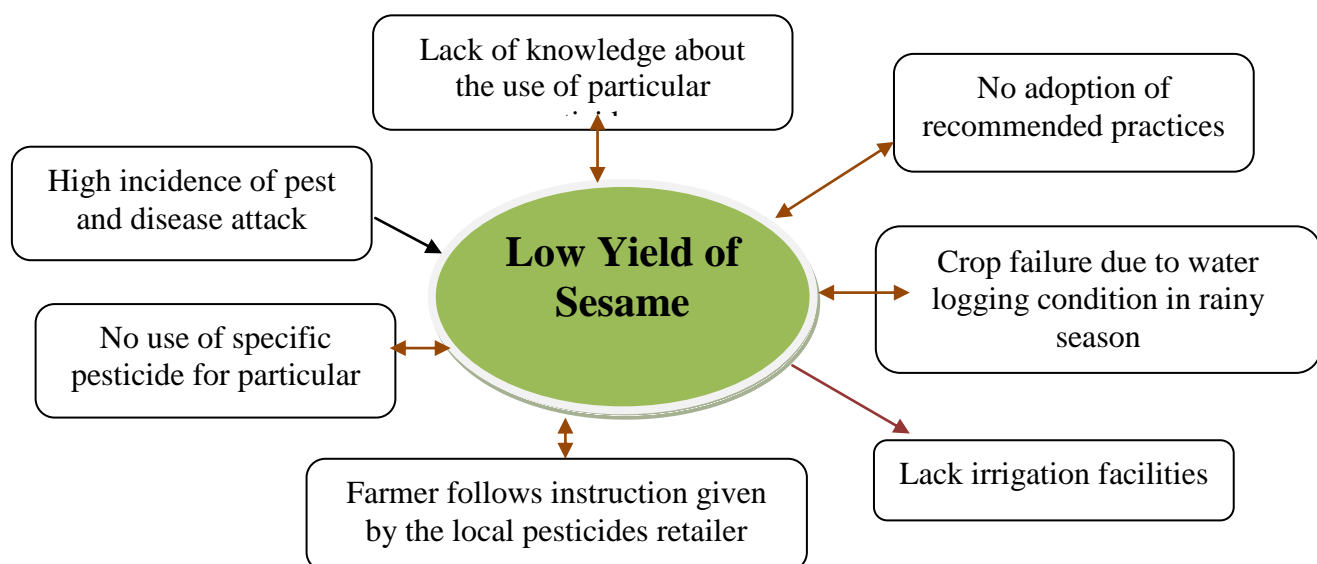
**A.4. Abstract on the number of technologies to be refined in respect of livestock / enterprises**

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	--	--	--	--	--	--	--	--
<b>TOTAL</b>	--	--	--	--	--	--	--	--

**3.1 On Farm Testing****\* OFT:1 Assessment of management of sesame leaf webber under rainfed condition**

- Title of OFT : Management of sesame leaf webber under rainfed condition**
- Agro Ecological Zone :** North Saurashtra Agroclimatic Zone- VI
- Production system :** Rainfed
- Problem Definition:**

Sesame (*Sesamum indicum*,L) is an oil seed crop grown mainly for its seeds that contain approximately 50% oil and 25% protein (Rheenen, 1973). Sesamum cultivation is being practiced in Surendranagar District in *Kharif* season. This is oilseed crop. Leaf webber cause 10-15 % yield loss in crop. Farmers got low yield due to 1. Lack of knowledge about the use of specific pesticide for effective management of leaf webber in sesame. 2. No adoption of recommended practices.

**Problem Cause Diagram**

<b>Objective</b>	<b>To minimize the incidence of leaf webber in sesame</b>
<b>Reason for low yield of sesamum</b>	1. Lack of knowledge about the use of particular pesticides. 2. No adoption of recommended practices. 3. Farmers follows instruction given by the local pesticides retailer
<b>Technical Intervention</b>	Management of leaf webber in sesame
<b>Treatments</b>	1. Farmers practice (Use of conventional insecticides after infestation) 2. Recommended practices Application of the insecticide will be start at pest infestation occurred. Cartap hydrochloride 50% S.P. @ 10ml/10 Litre of water at the time of infestation.
<b>Cost</b>	2580/-
<b>Area</b>	1.2 ha
<b>No. of replication</b>	03
<b>Source of technology</b>	Dry Farming Research Station, JAU, Targhadia

**Technical Indicator:**

1. Yield (qui/ha)
2. No. of leaf webber/Plant

**Economic Indicator:**

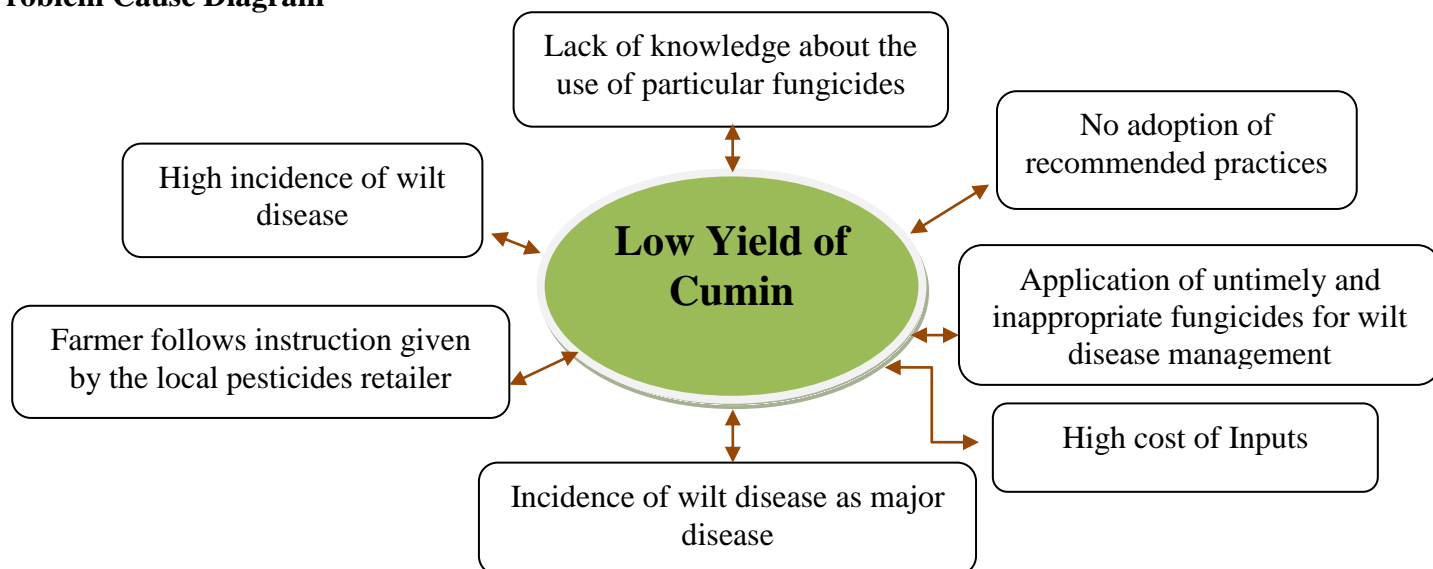
1. Cost of Production (Rs/ha)
2. Gross return: (Rs/ha)
3. Net return: (Rs/ha)
4. B:C Ratio

**OFT: 2 Management of wilt in cumin**

1. **Title of OFT: Management of wilt in cumin**
2. **Agro Ecological Zone** : North Saurashtra Agro-Climatic Zone- VI
3. **Production system** : Irrigated
4. **Problem Definition:**

Gujarat, which was the biggest producer of spices in the country, has slipped to third rank. Now, Andhra Pradesh tops in spice production with Rajasthan ranked second. Spice output, including that of coriander and cumin seeds, has dropped by 20% in Gujarat. In 2015-16 a disease had hit production of cumin and coriander in the state. Productivity of cumin crop first rank in India as well as in the world. Now a day productivity reduced and quality point of view suffering due to incidence of diseases and pest. Farmers are practicing excess use fungicides without followed recommended dose as prescribed by concerned scientist. Therefore cost of cultivation inevitably increase and some time, crop get failure due to inappropriate and excessive use of fungicides. Application of recommended dose for the control of wilt disease in the cumin crop is being undertaken for OFT. This OFT traces the transformation in the cumin production through recommended technology in the Surendranagar district.

### Problem Cause Diagram



<b>Objective</b>	<b>To minimize the incidence of wilt disease in cumin</b>
<b>Reason for low yield of Cumin</b>	1. No adoption of recommended practices. 2. Farmers follows instruction given by the local pesticides retailer 3. Lack of knowledge about the required of specific fungicides.
<b>Technical Intervention</b>	Management of sucking pests in cotton
<b>Treatments</b>	1. Farmers practice (Use of mancozeb, copper oxychloride and sulphur etc fungicides after infestation) 2. Recommended practices Application of the Trichoderma harzianum ( $2 \times 10^6$ cfu/gm) @ 5.0 kg mixed in 1000kg of FYM/ha at the time of sowing.
<b>Cost</b>	210/-
<b>Area</b>	1.2 ha
<b>No. of replication</b>	03
<b>Source of technology</b>	Department of Plant Pathology, CoA, JAU, Junagadh

#### Technical Indicator:

1. Yield (qui/ha)
2. Per cent Disease Incidence

#### Economic Indicator:

5. Cost of Production (Rs/ha)
6. Gross return: (Rs/ha)
7. Net return: (Rs/ha)
8. B:C Ratio

#### OFT: 3 Assessment of high density planting in Cotton.

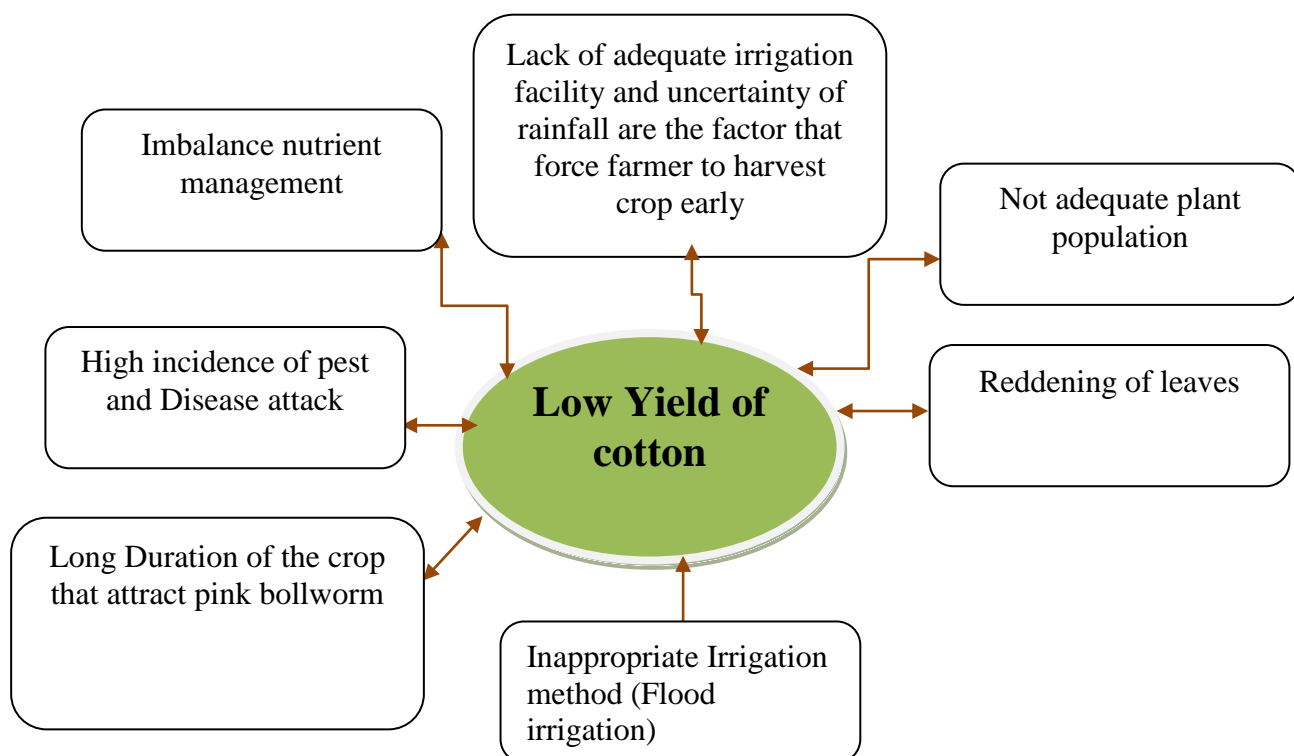
1. **Title of OFT: Assessment of high density planting in Cotton**
2. **Agro Ecological Zone** : North Saurashtra Agroclimatic Zone- VI
3. **Production system** : Irrigated

Surendranagar district ranks first in total cotton production of the state (22 %), followed by Rajkot (16.6 %), Bhavnagar (15.8 %) respectively. Thus cotton is very important crop of the district for sustainability point of view.

Since last two to three years, infestation of pink bollworm in cotton, uncertainty of rainfall and scattered rain and changing climatic condition, now farmers are forced to harvest crop as against they assumed for 180 to 240 days period. Ultimately this resulted in low production due to inadequate plant population and less no. of bolls per plant and per unit area.

The manipulation of plant density and crop geometry is a time tested agronomic technique for achieving high crop yield. Several leading cotton producing countries like USA, Australia, Brazil, Uzbekistan and China have developed suitable plant types to accumulate plant densities varying from 1 lakh to 2.5 lakh plants/ha with using narrow and ultra narrow row spacing. This OFT traces the transformation in the cotton production in the district.

### Problem Cause Diagram



<b>Objective</b>	<b>To observe the yield of cotton in High density plantation.</b>
<b>Reason</b>	1. Low yield of cotton. 2. Less optimum plant population per unit area.
<b>Technical Intervention</b>	Management of spacing between row & between plant.
<b>Treatments</b>	1. Farmer practice : Sowing of cotton at spacing 120 x 45 cm and 150 x 45 cm (14814 to 18,518 plants / ha) 2. Intervention: Sowing of cotton at spacing 60 x 30 cm. (55,555 plants / ha) 3. Intervention: Sowing of cotton at spacing 100 x 30 cm. (33300 plants / ha)
<b>Area</b>	1.2 ha
<b>No. of farmers</b>	03
<b>Cost</b>	Rs 3300

### Observation:

#### Technical Indicator:

1. Yield (qtl/ha)
2. Lint production/boll (gm)
3. No. of Bolls / Plant

#### Economic Indicator:

1. Cost of Production (Rs/ha)
2. Gross return: (Rs/ha)
3. Net return: (Rs/ha)
4. B:C Ratio

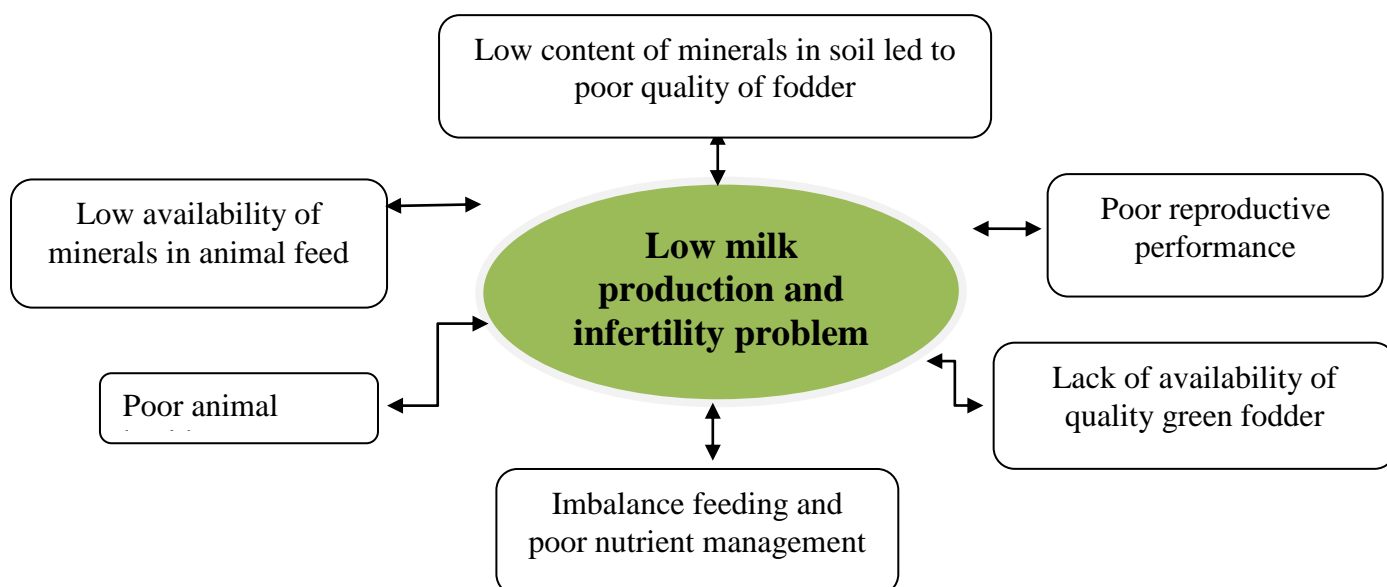
**OFT: 4 Assessment of effect of mineral mixture and by pass protein supplement in increasing milk production in buffaloes:**

1. **Title of OFT:** Effect of mineral mixture and by pass protein supplement in increasing milk production in buffaloes
2. **Agro Ecological Zone :** North Saurashtra Agroclimatic Zone- VI
3. **Production system :** Irrigated

Low availability of required minerals in animal feed causes productive and reproductive problems in animals. Infertility in dairy buffalo is one of the problems in the region. It causes loss in milk production. By supplementation of mineral mixture, deficiency of these minerals can be fulfilled. Mineral mixture is beneficial to improve milk production, fat percentage and reproductive parameters in animals which enhance overall returns to the dairy farmers.

<b>Objective</b>	<b>To increase milk yield and regularity of heat</b>
<b>Problem statement</b>	1. Low milk production due to improper nutrient management of milch animals 2. Infertility and reproductive problems in animals.
<b>Reason</b>	Low milk production and infertility problem in dairy buffaloes
<b>Technical Intervention</b>	Enhancement of milk production with improvement in reproductive efficiency
<b>Treatments</b>	<b>T<sub>1</sub>:</b> Farmer practice (No use of mineral mixture and by pass protein) <b>T<sub>2</sub>:</b> Mineral mixture + By pass protein supplement for 60 days
<b>Cost of OFT</b>	Approximate Rs/- 15000
<b>Parameter</b>	2. Milk yield (lit/lac) 3. No. of insemination for conception and heat regularity.
<b>No. of farmers</b>	05
<b>No. of Animals</b>	10
<b>Source of technology</b>	AAU, Anand

**Problem Cause Diagram**

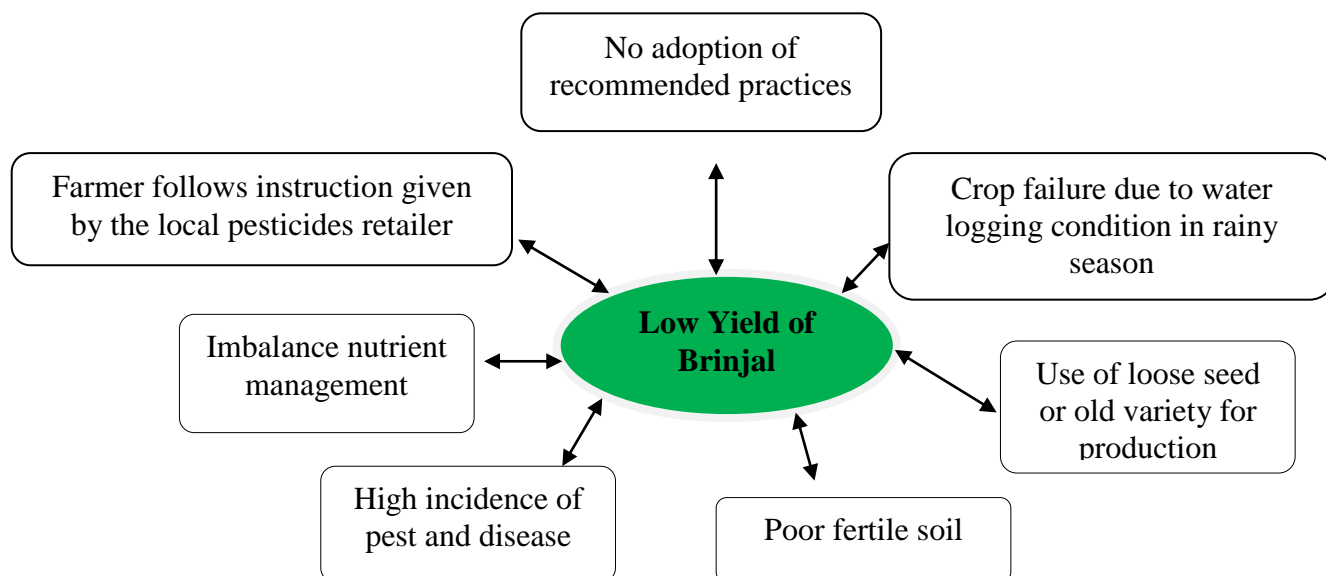


**OFT 5:-** Varietal assessment of Brinjal GJHB-4 in Surendranagar district

1. **Title of OFT:** Varietal assessment of Brinjal GJHB-4 in Surendranagar district
2. **Agro Ecological Zone:-** North Saurashtra Agroclimatic Zone-VI
3. **Production system:-**

Brinjal or eggplant (*Solanum melongena* L.) is an important solanaceous crop of sub-tropics and tropics. In India, it is one of the most common, popular and principal vegetable crops grown throughout the country except higher altitudes. It is a versatile crop adapted to different agro-climatic regions and can be grown throughout the year. It is a perennial but grown commercially as an annual crop. Brinjal cultivation in India is estimated to cover about 8.14% vegetable area with a contribution of 9% to total vegetable production. The crop is largely grown in small plots or as inter crop both for cash and domestic consumption by farmers all over India. The major brinjal producing states are West Bengal, Orissa, Gujarat, and Maharashtra. The state has a great potential for brinjal production for domestic and exports markets but the yield of this crop is relatively low especially in rainy season due to lack of improved varieties as well as resistance to insect-pest and disease of economic importance and suitability to changing climatic conditions.

Brinjal variety GJHB-4 found suitable for cultivation in North Saurashtra Region of Gujarat. This variety resistance to jassid and fruit borer were less compared to local checks.



Objective	To increase yield of Brinjal
<b>Reason for low yield of Cumin</b>	1. No adoption of recommended varieties. 2. Farmers follows instruction given by the local agro input retailer 3. Lack of knowledge about the specific variety.
<b>Technical Intervention</b>	Introduction new variety of brinjal
<b>Treatments</b>	1. Variety: Local 2. Variety: GJBH-4
<b>Excepted cost</b>	1500
<b>Area</b>	0.25 ha
<b>No. of replication</b>	04
<b>Source of Information</b>	Vegetable Research Station ., JAU, Junagadh, 2015

- **Technical Indicator:-**

1. Yield (qui/ha)

- **Economic Indicator:-**

1. Cost of production (Rs/ha)
2. Gross return (Rs/ha)
3. Net return (Rs/ha)
4. B:C ratio (Rs/ha)

**OFT 6:-** Assessment of use of probiotic in buffaloes of Surendranagar district

**1. Title of OFT:** Assessment of use of probiotic in buffaloes of Surendranagar district

**2. Agro Ecological Zone:-** North Saurashtra Agroclimatic Zone-VI

**3. Production system:-**

The efficiency of ruminants to utilize such a wide variety of feeds is due to highly diversified rumen microbial ecosystem. The rumen harbours a dense and complex microbial population responsible for 60-70 % of total digestion. Improper mixing and proportion of cereals, legumes and concentrate in animal feed leads to imbalance microbial activity and result in to low digestibility which leads to decrease milk production. Modern animal production requires the use of safe and effective feed additives as rumen manipulators to increase animal productivity. The use of probiotics culture in ruminants has been appreciated for the improvement in feed intake and nutrient utilization. Probiotics enhances body weight gains and increased milk production in livestock.

Objective	To increase milk yield with reduction of mortality in buffaloes
Reason	Low milk production and high mortality in dairy buffaloes
Technical Intervention	Enhancement of milk production and reduce mortality
Treatments	T <sub>1</sub> : Farmer practice (No probiotic ) T <sub>2</sub> : Probiotic supplement @50 gm/animal/day for 90 days
No of animals	5
Cost of OFT	Approximately Rs. 15000/-
Parameter	Milk yield and mortality
Source	SAU, Gujarat

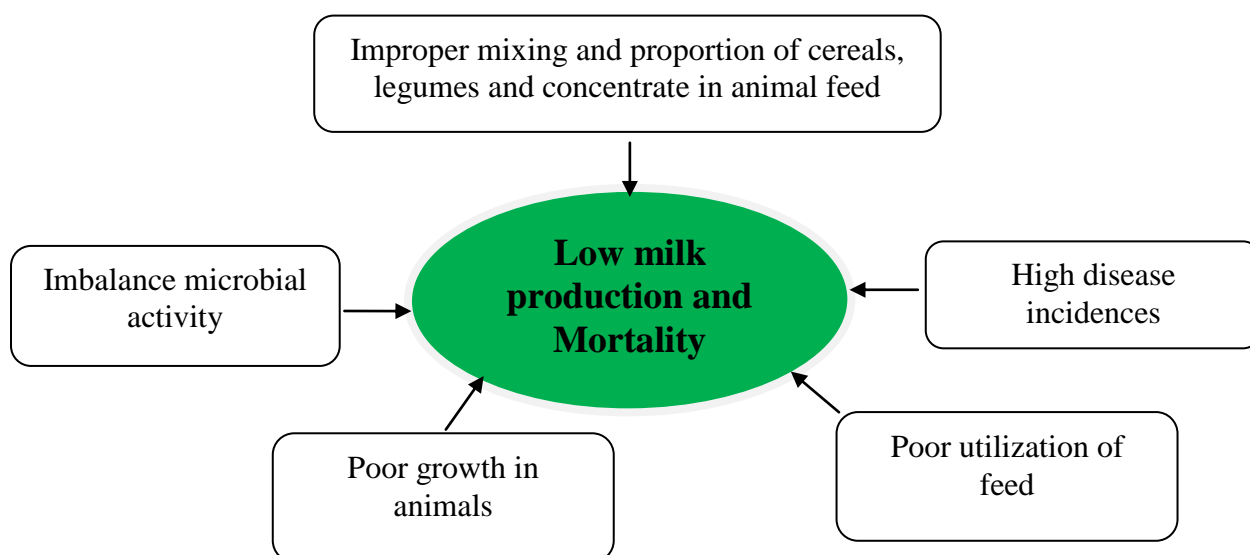
- **Technical Indicator:-**

1. Milk Yield (lit/Day)
2. Mortality

- **Economic Indicator:-**

1. Cost of production (Rs/Animal)
2. Gross return (Rs/Animal)
3. Net return (Rs/Animal)
4. B:C ratio (Rs/Animal)

**Problem Cause Diagram:**



**OFT- 7: Assessment of response of Bio fertilizers to wheat crop yield**

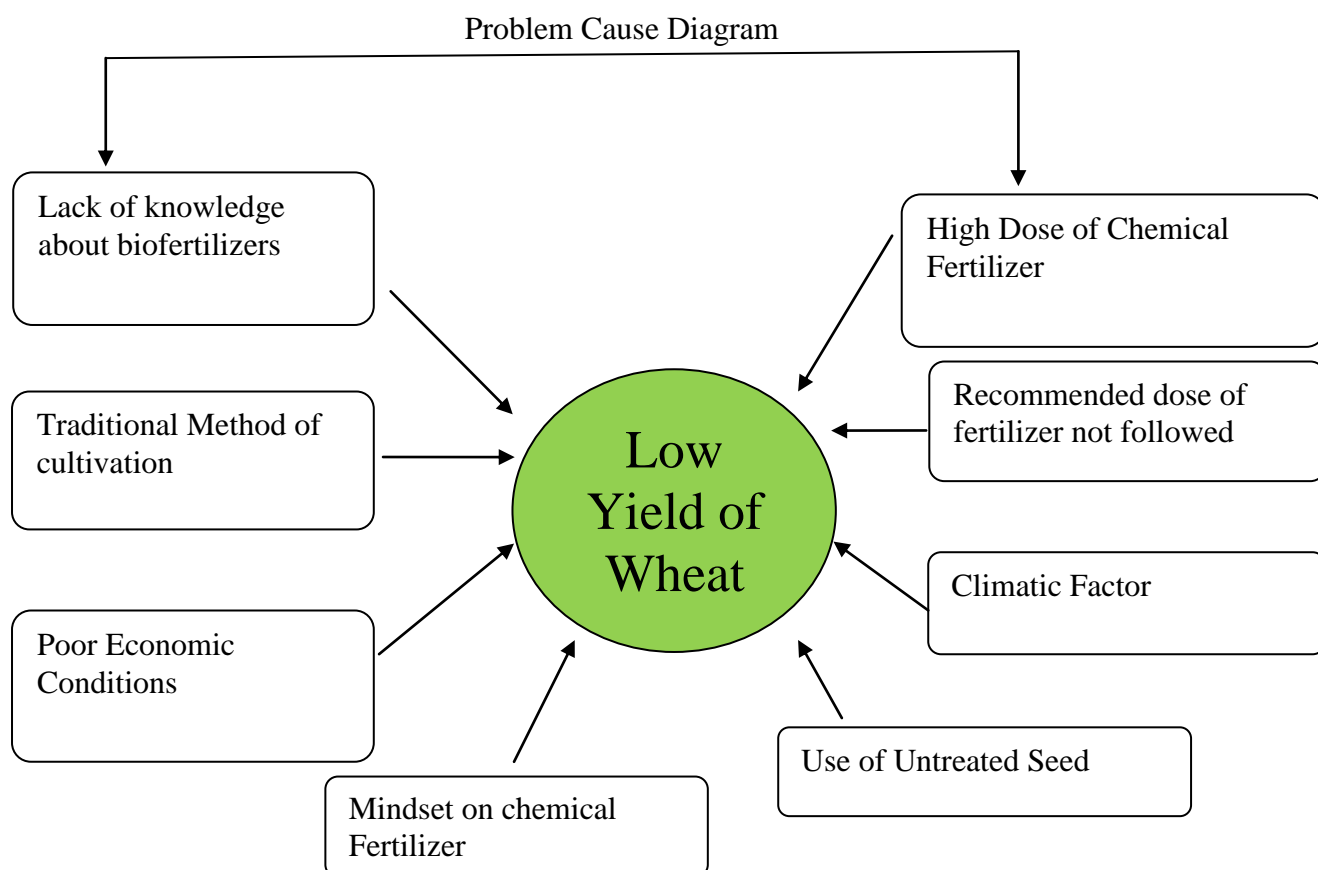
**1. Title of OFT: - Assessment of Response of Bio fertilizers to wheat yield**

**2. Introduction: -**

In Rabi season the area of wheat cultivation in Surendranagar district is higher after cumin crops as compare to other crops. Due to cannel facilities increased in this area the area under wheat crop also increased. But the continuous use of chemical fertilizer in this crops the productivity is stagnate day by day and cost of cultivation increased. High uses of chemical fertilizer in crops the soil fertility also reduced. In this situation the KVK decide to increase uses of bio-fertilizers to reduce cost of cultivation and increase soil fertility as well as quality and quantity of wheat yield.

**3. Problem definition: Stagnant yield**

**4. Problem cause diagram:**





**5. Intervening point :** Response of Bio fertilizers to wheat yield

**6. Crop :** Wheat

**7. Season/Year :** Rabi 2018-19.

**8. Plot size: -** 1.2 ha

**9. No. of Replication:** 3 (Farmer)

**10. Cost:** Rs. 360 /-

**11. Source of technology:** JunagadhAgriculturalUniversity, Junagadh

**12. Treatments:**

1. Farmer's practice: - Application of only DAP & Urea in different doses

2. Recommended practice: - 120-60-0 NPK kg/ha

3. Intervention: - Application of Azatobacter & PSB culture (250g/10kg) + 75% of RDF

**13. Observations:** Technical Indicator: 1. Yield (qtl./ha)

Economic Indicator:

1. Cost of Production (Rs/ha)

2. Gross return: (Rs/ha)

3. Net return: (Rs/ha)

4. B: C Ratio

**3.3 Training Programme**

**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	
<b>Crop Production</b>										
21/04/18	PF	Improved cultivation practices for groundnut and cotton Crops	4	23	0	23	2	0	2	25
23/07/18	PF	Irrigation methods in cotton crop	4	23	0	23	2	0	2	25
11/09/18	PF	Organic farming in field cotton and sesamum and its market management	4	23	0	23	2	0	2	25
10/01/19	PF	Improved cultivation practices for Summer groundnut and Sesame	4	23	0	23	2	0	2	25
<b>Horticulture</b>										
11/05/18	PF	Improved cultivation practices for okra and brinjal crops	4	23	0	23	2	0	2	25
30/07/18	PF	Good agricultural practices brinjal, chilly and tomato	4	23	0	23	2	0	2	25
<b>Livestock Production</b>										
11/06/18	FW	Care and management of milch animals	4	0	23	23	0	2	2	25
05/07/18	PF	Fodder production technology of sorghum and fodder bajara	4	23	0	23	2	0	2	25
01/10/18	PF/FW	Clean milk production technology	4	23	0	23	2	0	2	25
05/02/19	PF	Good animal health management practices	4	23	0	23	2	0	2	25
<b>Home Science</b>										
-	FW	Value addition in fruits and vegetables	4	0	23	23	0	2	2	25
-	FW	Income generation through Sewing	4	0	23	23	0	2	2	25

		and embroidery								
<b>Plan Protection</b>										
18/05/18	FW	IPM in cotton and groundnut crop	4	0	23	23	0	2	2	25
04/08/18	PF	Biological & Chemical Control measures for pest and disease of Cotton & Sesamum	4	23	0	23	2	0	2	25
20/10/18	PF	Management of pest and disease in Cumin	4	23	0	23	2	0	2	25
<b>Agril. Extension</b>										
23/05/18	PF	Use of ICT in agriculture	4	23	0	23	2	0	2	25

## ii) Farmers & Farm women (Off Campus)

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	
<b>Crop Production</b>										
21/05/18	PF	Crop Production technology in green gram and gum guar	4	23	0	23	2	0	2	25
07/06/18	PF	Integrated Nutrient Management in Cotton	4	23	0	23	2	0	2	25
03/09/18	PF	Improved cultivation practices for Cumin & Fennel	4	23	0	23	2	0	2	25
28/09/18	PF	Micro irrigation system in cotton crop	4	23	0	23	2	0	2	25
04/10/18	PF	Integrated weed management in cumin and chickpea crops	4	23	0	23	2	0	2	25
09/01/19	PF	Efficient water management in summer ground nut and sesamum crops	4	23	0	23	2	0	2	25
<b>Horticulture</b>										
16/07/18	PF	Improved cultivation practices of tomato , brinjal & capsicum	4	23	0	23	2	0	2	25
01/08/18	FW	Raising of Seedlings of Vegetable crops and nursery management	4	0	23	23	0	2	2	25
21/01/19	PF	Protected Cultivation	4	23	0	23	2	0	2	25
11/02/19	PF	Micro irrigation system and fertigation in fruit and vegetable crops	4	23	0	23	2	0	2	25
<b>Live Stock Production.</b>										
02/05/18	PF	Feeding management of new born calves and milch animals	4	23	0	23	2	0	2	25
16/06/18	PF	Awareness about control of Mastitis, FMD, HS and BQ in animal	4	23	0	23	2	0	2	25
02/07/18	PF	Infertility management in cow & buffalo	4	23	0	23	2	0	2	25
12/09/18	PF	Clean milk production management	4	23	0	23	2	0	2	25
15/10/18	FW	Fodder crop production technologies for Lucerne and sorghum	4	0	23	23	0	2	2	25
16/02/19	PF	Health management in cattle and use of traditional treatments	4	23	0	23	2	0	2	25
<b>Home Science</b>										
-	FW	Value addition in Aonla & Preparation of different bakery items	4	0	23	23	0	2	2	25
<b>Plant Protection</b>										
08/05/18	PF	IPM in Cotton & Sesame	4	23	0	23	2	0	2	25
22/06/18	PF	Importance & uses of bio agents & bio pesticides	4	23	0	23	2	0	2	25
11/07/18	PF	Management of pink boll worm in cotton	4	23	0	23	2	0	2	25
07/12/18	PF	IPM in chickpea, cumin crops	4	23	0	23	2	0	2	25
<b>Agril. Extension</b>										
02/01/19	PF	Organic farming practices and certification process for organic farming	4	23	0	23	2	0	2	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	
	Home Science	Hand stitching and embroidery for income generation	December	21	20	0	20	2	0	2	22

## iii) Training programme for extension functionaries

Clientele	Title of the training programme	Duration in days	No. of participants			Number of SC/ST			G. Total
			M	F	T	M	F	T	
<b>On Campus</b>									
Ext Workers	Protected cultivation	1	18	0	18	1	1	2	20
Ext Workers	Pre-seasonal training on Kharif crops	1	18	0	18	1	1	2	20
Ext Workers	Pre-seasonal training on Rabi crops	1	20	0	20	0	0	0	20
Ext Workers	Preventive measure and first aid treatment of important disease in dairy animals	1	20	0	20	0	0	0	20
Ext. Workers	Control of Pink bollworm and sucking pest in cotton crop	1	20	0	20	0	0	0	20

## iv) 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	10	250	0	250	0	0	0	250	0	250
Kisan Mela	1	2500	0	2500	12	0	12	2512	0	2515
Kisan Ghosthi	10	300	0	300	0	0	0	300	0	300
Exhibition	2	2000	0	2000	10	0	10	2010	0	2010
Film Show	30	650	0	650	0	0	0	650	0	650
Newspaper coverage	6	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	10	0	0	0	0	0	0	0	0	0
Extension Literature	10	0	0	0	0	0	0	0	0	0
<b>Advisory Services</b>	25	20	0	20	4	0	4	24	0	24
Scientific visit to farmers field	25	70	0	70	0	0	0	70	0	70
Farmers visit to KVK	150	3000	0	3000	0	0	0	3000	0	3000
Diagnostic visits	10	10	0	10	0	0	0	10	0	10
Soil health Camp	1	250	0	250	0	0	0	250	0	250
Animal Health Camp	3	100	0	100	0	0	0	100	0	100
Soil test campaigns	1	250	0	250	0	0	0	250	0	250
Mahila Mandals Conveners meetings	1	0	50	50	0	0	0	0	50	50
Celebration of important days	4	1400	200	1600	0	0	0	1400	200	1600

(specify)										
Krishi Mohostva	2	15000	500	15500	30	10	40	15030	510	15540
Pre Kharif workshop	1	50	10	60	0	0	0	50	10	60
Pre Rabi workshop	1	50	10	60	0	0	0	50	10	60
Any Other (Specify)	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>305</b>	<b>25900</b>	<b>770</b>	<b>26670</b>	<b>56</b>	<b>10</b>	<b>66</b>	<b>25956</b>	<b>780</b>	<b>26739</b>

**Training Programmes: Quarter Wise Summary**

Sr. No.	SUBJECT	ON CAMPUS					OFF CAMPUS					G.T.
		I	II	III	IV	T	I	II	III	IV	T	
1.	Crop Production	1	1	1	1	4	2	2	1	1	6	10
2.	Pl. Protection	1	1	0	1	3	2	1	1	0	4	07
3.	Agril. Extension	1	0	0	0	1	0	0	0	1	1	02
4.	Animal Science	1	1	1	1	4	2	1	1	2	6	10
5.	Horticulture	1	1	0	0	2	0	2	0	2	4	06
6.	Home Science	0	1	0	1	2	0	0	1	0	1	03
	<b>Total</b>	<b>05</b>	<b>05</b>	<b>02</b>	<b>04</b>	<b>16</b>	<b>06</b>	<b>06</b>	<b>04</b>	<b>06</b>	<b>22</b>	<b>38</b>

**Summary of Training Programmes**

Sr. No.	Subject	On campus	Off campus	Total
1	Training for F, FW & RY			
1.	Crop Production	4	6	10
2.	Pl. Protection	3	4	07
3.	Agril. Extension	1	1	02
4.	Animal Science	4	6	10
5.	Horticulture	2	4	06
6.	Home Science	2	1	03
	<b>Total A</b>	<b>16</b>	<b>22</b>	<b>38</b>
2	Vocational training	01	00	01
3	In-service Training	03	02	05
4	Collaborative / Sponsored	05	05	10
	<b>GRAND TOTAL</b>	<b>25</b>	<b>29</b>	<b>54</b>

**3.4 STAFF POSITION (31-03-2018)**

Sr No.	Post	Name of Employee	POST			Remark
			Sanctioned	Filled	Vacant	
1.	Sr. Scientist & Head	Dr. M S Chandawat	1	1	0	
	Scientist					
2.	Agronomy	Vacant	1	0	1	—
3.	Plant Protection	Mr.MF.Bhoraniya	1	1	0	—
4.	Extension Edu.	Vacant	1	1	0	—
5.	Animal Science	Dr. R.P. Kalma	1	1	0	
6.	Horticulture	Mr. Dipt Patel	1	1	0	—
7.	Home Science	Vacant	1	0	1	-
8.	Prog. Assistant	Mr. M. V. Pokar	1	1	0	-
9.	Farm Manager	Vacant	1	0	1	-

10.	Computer Programmer	Mr.P.T.Patel	1	1	0	Working (Pool) at Junagadh
11.	OS.cumAccountant	Mr. R.P. Vagadiya	1	1	0	
12.	Junior Steno	Mr.S.H. Shukal	1	1	0	—
13.	Tractor Driver	Vacant	1	0	1	—
14.	Jeep Driver	Mr.H.R.Gohil	1	1	0	—
15.	Peon	Mr.A. M. Dhadvi	1	1	0	—
16.	Peon	—	—	—	--	—

**3.5 Budget to be required 2018-19**

S N	Items/Head	Grant to be required
	A -RECURRING CONTIGENCY	
1	Pay & Allowances	110,00,000.00
2	Traveling Allowances	3,50,000.00
3	Contingencies	20,00,000.00
a.	Stationary, Telephone, Postage and other expenditure on office running	4,00,000.00 4,00,000.00
b.	POL, repair of vehicles, tractor and equipments	
c.	Meals/refreshments of trainees	12,00,000.00
d.	Training materials	
e.	Frontline demonstration except oilseeds and pulses	
f.	On farm testing	
g.	Training of extension functionaries	
h.	Maintenance of building	
	TOTAL-A	1,33,50,000.00
	B- NON RECURRING CONTIGENCY	1,35,00,000.00
	GRAND TOTAL	2,68,50,000.00

**Planning of Soil Samples Testing for year 2018-2019**

Sr. No.	Name of village	No. of Soil Sample to be tested	Sr. No.	Name of village	No. of Soil Sample to be tested
	KVK Villages (Intensive Work)			ATIC Scheme & MGMG Villages	
1	Karmad	20			
2	Bhimora	30	1	Sanghani	30
3	Lakhchokiya	50	2	Magrikheda	30
4	Hadala	20	3	Nana Kandhasar	30
5	Chorvira	20	4	Doliya	30
6	Dharadingari	30	5	Sapar	30
7	Mangalkui	20	6	Ratanpar	30
	Total A	190	7	Dhedhuki	30
			8	Lakhana	30
			9	Bijaliya	30
			10	gadadh	30
				<b>Total B</b>	<b>300</b>
<b>Grand total (A+B)</b>			<b>490</b>		