KRISHI VIGYAN KENDRA KOZHIKODE

ANNUAL REPORT- 2020

(FOR THE PERIOD FROM 01 January, 2020 TO 31 December, 2020)

Krishi Vigyan Kendra
ICAR-Indian Institute of Spices Research,
Peruvannamuzhi P O, Kozhikode, Kerala Pin: 673528
Phone: 0496-2966041
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PART I - GENERALINFORMATION ABOUT THE KVK

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

KVK Address	Telephone		E mail	Web Address
	Office	Fax		
ICAR-Krishi Vigyan Kendra, ICAR- Indian Institute of Spices Research, Peruvannamuzhi (P.O), Kozhikode, Kerala Pin-673 528	0496-2966041	091-496-2966041	kvk.kozhikode@icar.gov.in kvkcalicut@gmail.com	www.kvkcalicut.gov.in

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

Address	Telephone		E mail	Web Address
	Office	Fax		
ICAR-Indian Institute of Spices Research, Post Bag No.1701, Marikunnu (P.O.) Kozhikode-673 012, Kerala.	0495-2731410	0091-495-2731187	director.spices@icar.gov.in	www.spices.res.in

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

Name	**Telephone / Contact**		
	Residence	**Mobile**	**Email**
P. Ratha Krishnan	-	8547544765	ratha.krishnan@icar.gov.in

1.4. Year of sanction: 1992

1.5. Staff position as on 31 December 2020

Sl. No.	Sanctioned post	Name of the incumbent	Designation	M/F	Discipline	Highest Qualification (for PC, SMS and Prog. Asstt.)	Pay Scale	Basic pay	Date of joining KVK	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1	Head/Senior Scientist	P Ratha Krishnan	Programme Coordinator	M	Forestry	Ph.D in Forestry	37400-67000 +10000	162300	19.08.15	Per.	OBC
2	Scientist/SMS	P.S. Manoj	Subject Matter Specialist	M	Horticulture	Ph.D in Horticulture	15600-39100 +7600	127653	30.05.94	Per.	OBC
3	Scientist/SMS	S. Shanmugavel	Subject Matter Specialist	M	Animal Husbandry	PG in Vet. Science	15600-39100 + 7600	151100	03.08.95	Per.	SC
4	Scientist/SMS	K.M. Prakash	Subject Matter Specialist	M	Agronomy	Ph.D in Agrl. Science	15600-39100 +7600	119300	10.12.96	Per.	Others
5	Scientist/SMS	A. Deepthi	Subject Matter Specialist	F	Home Science	PG in Home Science	15600-39100 + 6600	78500	08.03.10	Per.	SC
6	Scientist/SMS	B. Pradeep	Subject Matter Specialist	M	Fisheries	Ph.D in Fisheries	15600-39100 + 6600	78500	30.03.10	Per.	Others
7	Scientist/SMS	Aiswariya K.K.	Subject Matter Specialist	F	Plant Protection	Ph.D in Agrl. Science	15600-39100 + 6600	78500	26.04.10	Per.	OBC

8	Programme Assistant (Lab Tech.)	Vacant	Programme Assistant	-	-	-	-	-	-	-	-
9	Programme Assistant (Computer)	C.K. Jayakumar	Programme Assistant	M	-	P G in Computer Science	9300-34800+ 4600	44900	01.02.10	Per.	Others
10	Programme Assistant/ Farm Manager	Vacant	Programme Assistant	-	-	-	-	-	-	-	-
11	Assistant	Vacant	Accountant/ Superintendent (Assistant)	-	-	-	-	-	-	-	-
12	Jr. Stenographer	K. Faisal	Stenographer Gr.III	M	-	-	9300-34800 +4200	56900	01.04.02	Per.	OBC
13	Driver - 1	T.C. Prasad	Driver-cum-Mechanic	M	-	-	9300-34800 +4600	55200	17.05.93	Per.	Others
14	Driver – 2	Vacant	-	-	-	-	-	-	-	-	-
15	SS-1	Vacant									
16	SS-2	C. Ravindran	Skilled Supporting staff	M	-	-	4440-7440 +1400	35000	10.11.94	Per.	SC

1.6. Total land with KVK (in ha): 20.3 ha

S. No.	Item	Area (ha)
1	Under Buildings	0.65
2.	Under Demonstration Units	3.60
3.	Under Crops	0.20
4.	Plantation crops	3.25
5.	Under road, tree stands, newly developed vegetable cultivation area	4.80
6	Others including natural forest stand	7.80

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Lakhs Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1	Administrative Building	ICAR	4.12.98	552	46.44	-	-	-
2	Farmers Hostel	ICAR	4.12.98	466	39.44	-	-	-
3	Staff Quarters	-	-	-	-	-	-	-
4	Old KVK office building (Farm office)	ICAR	16.1.96	360 sq. ft.	1.83	-	-	-
5	Demonstration Units					-	-	-
	1. Old Animal Clinic	ICAR	16.1.96	358.31	1.00	-	-	-
	2.Poultry	ICAR	20.9.03	43.8	0.84	-	-	-
	3.Dairy	ICAR	25.10.06	39.32	1.83	-	-	-
	4.Vermiculture	ICAR	3.1.08	9.00	0.11	-	-	-
	5. Semi – permanent nursery shed	ICAR	30.3.2019	144	1.69			
	6. Semi- Permanent poultry shed	ICAR	31.3.2019	100	2.49			
6	Rainwater harvesting system	ICAR	21.09.2013	2000m^3	9.62	-	-	-
7	Nursery with shed and fencing	ICAR	16.1.96	500.0	0.50	-	-	-
8	Store room cum working shed	ICAR	31.3.2019	18 x 14 ft	2.49	-	-	-
9	Goatary	ICAR	31.3.09	64.0	2.78	-	-	-
10	Training shed	SHM	25.11.08	90.0	2.69	-	-	-
11	Temporary vehicle shelter	ICAR	18.6.04	35.0	0.48	-	-	-

12	Water tank	ICAR	2.2.99	10,000	0.22	-	-	-
13	Pond with pump, storage tank etc.	ICAR	31.3.08	15X13M	8.44	-	-	-
14.	Bore well	ICAR	2013	90 m depth	0.25		-	-
15.	Water tank	ICAR	02.02.1999	10000	0.22	-	-	-
16	Hatchery shed	ICAR	04.01.2014	680	2.00			
17.	Black pepper polyhouse nursery	ICAR	31.3.2015	200 m2	3.96	-	-	-
18.	Entrance with arch	ICAR	31.3.2017	4.5m height x 6m width	0.995	-	-	-
19	Home Science – Processing unit	ICAR	31-5-2018	8 X 5 m	4.8	-	-	-
20	Mushroom production unit	ICAR	31.3.2018	4 x 3.6 m	0.45	-	-	-
21	Store cum sale counter	ICAR	31.3.2019	6x5 m	2.50	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Motor cycle Suzuki	2009	49,980	37369	Good
Mini bus DCM Toyota	1995	5,22,670	207869	Not working-. Kept for condemnation
Mahindra Bolero Jeep	2017	669270	42201	Good
Power Tiller	2012	1,50,000	-	Not working.
Tractor – New Holland 3630 TX plus – 50-55 hp	2019	651786	189 hr	Good
Small Tractor with small trolley and cultivator	2019	510300	30.1 hr	Good
Power tiller – 12 hp	2019	158380	-	Good
Kamco power tiller	2019	164654	-	Good

C) Equipment & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
TV	1996	25800	Not working
VCP	1996	10850	Not working
Kettle	1996	1375	Good
Sewing machine (2 nos.)	1996	4800	“
1.5 HP pump	1997	8100	“
Grafting machine	1998	4950	Not working
Public address system	1999	30656	Working
Water cooler	1999	13000	Not working
Water purifier	1999	2745	Notworking
3.5 Hand compression sprayer	1999	1200	“
UPS (1 KVA)	2002	17250	Good
Refrigerator	2002	21308	“
7.5 KVA Generator	2003	56,950	Good
Computer with accessories	2003	61,175	Not working
Scanner	2003	13,400	“
Overhead projector	2004	32,095	“
Pressure cooker (22 l)	2004	3,047	Good
LCD Projector	2004	73,210	Not working
Electronic physical balance	2005	6160	Good
Chemical balance	2005	42162	“
PH meter	2005	14388	“
Video camera	2005	19,000	Not working
Oven	2005	15476	Good
Water distillation still	2005	41340	“
Digestion and distillation system	2005	1,30,802	“
Hot plate	2005	4,120	“
Spectrophotometer	2005	55,230	“

Shaker	2005	48,038	“
Conductivity meter	2005	14,960	“
Flame photometer	2005	37,026	“
Refrigerator	2005	16,890	“
Grinder	2005	1,950	“
Fax machine	2006	7,500	Not working
PABX	2006	31,985	Not working
Digital Camera	2007	10,580	“
DLP Projector	2007	54,563	Not working
Computer	2007	37,600	“
DTH System with accessories	2007	4,165	Not working
Iron Box	2007	830	Not working
UPS	2008	27060	“
Stabilizer	2008	10920	Good
Laser fax	2009	14378	Good
Printer	2009	5386	“
Digital camera	2009	14890	“
UPS	2009	6500	“
Weed Cutter	2010	34930	“
Chaff Cutter	2010	23800	“
Generator	2010	100000	Not working
Air conditioner 2 ton	2011	34000	Good
Stabilizer 5 KVA	2011	2900	“
Computer – 2 nos.	2012	65000	“
PABX system	2012	50000	“
Double distillation unit	2012	63250	“
Electronic balance	2012	6800	“
Horizontal autoclave	2012	278615	“
BOD Incubator	2012	62790	Not working
Motorized Sieve	2012	44737	“
Laminar air flow	2012	45070	Not working
Inkjet printer	2012	8,900	“
Water treatment plant	2013	59800	No tworking
3KVA UPS	2013	27000	Not working
laptop	2013	54530	Not working
Mridaparikshak	2016	89775	Good
Pulveriser	2016	40671	“
LED TV 43”	2017	48500	“
Desktop Computers (7 nos)	2017	194250	“
LCD Projector	2017	36000	“
Photostat Machine	2017	54500	“
All in one inkjet printer	2017	11800	“
Solar drier	2017	34000	“
Mridaparishak	2017	90300	“
Coconut climbing machine	2018	9400	,,
Straw chopper / Shredder	2019	120000	“
Shrub master cutter cum spreader	2019	34746	“
Shrub master	2019	26695	“
Power weeder	2019	64286	“
Multipurpose pulveriser with 10 HP motor	2019	169995	“
Rotavator	2019	120536	“
Disc plough	2019	80357	“
Cultivator	2019	44642	,,
Bund former	2019	35714	“
Plastic mulch laying machine (Mulcher)	2019	225000	“

Mini tractor trailer	2019	129464	“
Small Tractor with small trolley and cultivator	2019	510300	“
Mini oil mill	2019	24780	“
Conoweeder / wetland weeder	2019	34000	“
Post hole digger	2019	124500	,,
Solar water pump	2019	249600	“
Mini pulveriser	2019	49996	“
Sprayer	2019	5400	“
Pepper thresher	2019	23993	“
Coconut de-husker	2019	124992	“
Grinder	2019	7332	“
Touch screen display unit	2019	68962	“
Laminar air flow HLF	2019	69300	“

1.8. Details of SAC meeting conducted during 2020: Nil

Date	Number of Participants	Salient Recommendations	Action taken	Remarks, if any

Last SAC was conducted on 3rd February 2021.

Date	Number of Participants	Salient Recommendations	Action taken	Remarks, if any
3rd February 2021	35	Validation of bio-medicines of SMS (Animal Science) may be carried through Malabar Rural Development Foundation (MRDF), Kozhikode		
		Honey production impact may be carried with more data collection.		
		More collaborative programmes with Rural Self Employment Training Institutes (RSETI), Kozhikode may be carried especially on entrepreneurship programmes by SMS (Home Science)		
		Farm school on “Friends of coconut – technician” may be carried by KVK		
		Small tuber crops may be introduced in KVK DFI villages		
		Activities may be intensified at IISR MGMG village – Kattipara also by KVK		
		Jeevamirtha application in bush pepper for production enhancement may be observed		
		More soil and water conservation programmers may be carried in association with CWRDM		
		Model nursery facilities with accreditation, more seedling production may be carried by KVK		
		Wild animal scaring mechanism developed by a school student, Naduvannur may be validated for its large scale dissemination		
		More number of farmer groups and societies may be facilitated by KVK like the one at Naduvannur		
		Projects on entrepreneurship activities especially with mushroom production, ornamental fish culture, vale addition may be submitted for funding by NABARD		

		Visit to KVK Idukki may be carried by SMS (Plant Protection). Bio-control production at KVK may be enhanced after getting licence for production and following KVK, Idukki model		
		Production of chicks, value added products may be ensured by concern SMS for the benefit and income doubling of farmers		
		Cluster pulse introduction programmes may be carried by KVK to increase the area under pulse in Kozhikode district		
		Proposal on women entrepreneurship programmes may be submitted by SMS (Home Science) for funding by Canara Bank		
		Culture of brackish water fishes like milk fish, mullets and seabass may be promoted		
		ICAR- CIBA plankton Plus technology may be popularized		
		Development of fish growers software may be explored		
		Coconut pest and disease outbreak / problem reported recently in Baluserry block may be attended intensively		
		Production of medicinal plants for awareness and meeting seedling demand may be carried on priority		
		PKVY programmes and vermicompost making schemes may be implemented in Maruthonkara also		

PART II - DETAILS OF DISTRICT

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

S. No	Farming system/enterprise
1	Homestead based farming system with coconut as the main crop. Intercrops cultivated are spices, fruits, vegetables and other plantation crops. Most homesteads also have other enterprises like poultry and dairy in small scales. Many farmers also practice goat rearing, pisciculture, piggery etc. Coconut based value added products by individuals and societies is the major enterprise activity

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

S. No	Agro-climatic Zone	Characteristics
1	West coast Plains & Ghats Zone (12)	This region extends over the Malabar and Konkan coasts and the Sahyadris and is covered by laterite and coastal alluvials. This is a humid region with annual rainfall above 200 cm and average temperatures of 26°C-32°C in July and 19°C-28°C in January. Rice, coconut, oilseeds, sugarcane, millets, pulses and cotton are the main crops. The region is also famous for plantation crops and spices which are raised along the hill slopes of the Ghats.

S. No	Agro ecological situation	Characteristics
1.	Northern Mid lands V	Altitude: upto 500 m above (Low altitude zone-hot humid tropics, spread over the entire state) Rainfall: Poorly distributed rainfall; south west monsoon with July maximum and concentrated in 3-4 months. Northeast monsoon relatively weak (North of 11^0 N Latitude). Soil type: Laterite soil with well defined B horizon (Natural midlands) Topography: Valleys less extensive hills with moderate gradients and top with egg shaped hump, steep slopes.

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1	Laterite	All these soils are acidic with low water holding capacity and are poor in NPK and organic matter content. The laterite soil is generally suitable for most of the dry land crops. It is mainly cultivated with coconut, arecanut, banana, tapioca, pepper, vegetables, fruit crops etc. Liming is required for correcting soil acidity.	2,09,996

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

S. No	Crop	Area (ha)	Production (Metric tons)	Productivity (kg /ha)
1.	Paddy	2764	3960	1566
2.	Pulses	15	8	533
3.	Sugar crops	111	0	0
4.	Pepper	3666	635	173
5.	Ginger	78	292 (Cured)	3744
6.	Turmeric	353	1136 (Cured)	3218
7.	Cardamom	220	2 (Processed)	9
8.	Arecanut	9445	9468	1002
9.	Tamarind	702	1362	1941
10.	Vanila	4	-	-
11.	Cloves	48	3 (Dry)	63
12.	Nutmeg	777	394	506
13	Cinnamon	20	NA	NA
14.	Other spices	33	NA	NA
15.	Jack	9318	22 (Million nos)	2361
16	Mango	8218	42951	5226
17	Banana	1673	14032	8390
18	Plantain	3569	16546	4636
19	Pineapple	130	729	5605
20	Pappaya	2061	8186	3972
21.	Lemon (big)	18	NA	-
22.	Lemon small	37	NA	-
23.	Other fresh fruits	756	NA	-
24.	Cashew	1594	436 (Raw)	274
25	Tapioca	1566	46865	29923
26.	Elephant foot yam	271	NA	NA
27.	Colocasia	538	NA	NA
28.	Yam	34	NA	NA
29.	Sweet potato	11	168	15273
30.	Koorka	8	NA	NA
31	Nanakizhangu	7	NA	NA
32	Other tubers	75	NA	NA
33.	Drumstick	1619	622	384
34	Amaranthus	128	NA	NA
35	Bitter gourd	78	NA	NA
36	Snake gourd	26	NA	NA
37	Ladies finger	47	NA	NA
38	Brinjal	26	NA	NA
39	Green Chillies	128	128	1000
40	Bottle gourd	6	NA	NA
41	Little gourd	59	NA	NA
42	Ash gourd	60	NA	NA
43	Pumpkin	60	NA	NA

44	Cucumber	122	NA	NA
45	Payar (Achinga)	167	NA	NA
46	Cabbage	-	NA	NA
47	Tomato	7	NA	NA
48	Cauliflower	1	NA	NA
49	Other vegetables	31	NA	NA
50	Coconut	112305	815 (Million nos)	7221 (Nos/ha)
51	Rubber	21930	22950	1047
52	Cocoa	766	655	855
53	Fodder grass	69	NA	NA
54	Green manure crops	1374	NA	NA
55	Other crops and trees	3583	NA	NA
56	Teak	528	NA	NA
57	Medicinal plants	77	NA	NA

* Source: Farm Information Bureau, Dept. of Agriculture, Govt. of Kerala, 2020. NA- Not available

2.5. Weather data

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
January-2020	0.00	34.33	21.51	76.575
February	0.00	35.79	21.15	70.495
March	0.00	37.08	23.72	72.705
April	75.8	36.25	24.18	72.85
May	511.4	34.51	24.82	81.125
June	942.6	31.01	23.48	88.795
July	902.4	30.58	23.46	90.785
August	945.4	29.8	23.51	90.995
September	933.0	30.5	23.56	89.965
October	275.2	32.19	23.71	80.265
November	80.4	34.21	22.53	80.66
December	99.0	33.75	21.91	83.43

* (Source: Experimental farm, IISR, Peruvannamuzhi)

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

Category	Population	Production	Productivity
Cattle			
Crossbred	100573	217ML	13 litre
Indigenous	62831	41.6ML	4 litre
Buffalo	1185	2.26ML	11 litre
Sheep			
Crossbred			
Indigenous			
Goats	51824	1036 tons	25 kg
Pigs			
Crossbred	2318	289.7 ton	125 kg
Indigenous			
Rabbits	5278	13.2 ton	2.5 kg
Poultry			
Hens	566103		
Desi	169831	11.88 M eggs.	70
Improved	396272	103 M Eggs	260
Ducks	12057	0.96 M eggs	80
Turkey and others	30925	278 tons kg	9 kg.

* Source: Department of Animal Husbandry, Kerala, 2003.

Category	Area	Production	Productivity
Fish	317.97 ha*	268.911 tonnes*	845.7 Kg/ha
Marine	71 Km*	**46000 tones#**	
Inland	3800 ha*	**5000 tones#**	
Prawn	-	-	-
Scampi	-	-	-
Shrimp	46.46 ha*	50.37 tonnes*	1 ton/ha*

*Success story of "Matsyakeralam" ,2009 of Fisheries Department.
#Economic Review 2017, State Planning Board, Thiruvananthapuram, Kerala, India

2.7 District profile maintained in the KVK has been **Updated** for 2020: **Yes** / No

2.8 Details of Operational area / Villages

Sl.No.	Taluk	Name of the block	Name of the village	How long the village is covered under operational area of the KVK (specify the years)	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Koyilandy	Balussery	Naduvannur Panchayat	3	Coconut, Banana, Pepper, Turmeric, Vegetables	Low production.	Introduction of new varieties. Integrated management practices
2	Koyilandy	Ballussery	Kottur	1	Paddy, Banana, Vegetables, tuber crops	Low production	Introduction of new varieties. Integrated management practices
3	Quilandy	Balussery	Naduvannur	4	Coconut, arecanut, spices like ginger, black pepper and turmeric, banana, vegetables, tubers and other horticultural crops	2. High cost of organic manures in organic ginger production 3. Unavailability of quality planting materials 4. Lack of knowledge about scientific cultivation practises	Improving production of spices, vegetables, tuber crops etc.
4	Kozhikode	Kozhikode	Kozhikode city	12	Coconut, vegetables, spices	Low productivity of black pepper and other horticultural crops	Improving production of spices
5	Quilandy	Balussery	Kottur	1	Coconut, arecanut, spices like ginger, black pepper and turmeric, banana, vegetables, tubers and other horticultural crops	Low production of vegetables	Improving production of spices, vegetables, tuber crops etc.
6	Vadakara	Kunnummal	Kavilumpara	5	Coconut, arecanut, spices like ginger, black pepper and turmeric, banana, vegetables, tubers and other horticultural crops	Less cultivation of subtropical fruits	Improving production of sub-tropical fruits
6	All taluks	All blocks	Different panchayaths	--	All horticultural crops	Unavailability of quality planting	Quality planting material production, Improving

						materials, lack of knowledge about scientific cultivation practices	production of horticultural crops
7	Koyilandy	Balussery	Naduvannur Ulliyeri	2	Fisheries: edible fish	Poor water quality in high density aquaculture system affecting growth of fishes	Dentrodigest for bioremediation of detritus in aquaculture (2019-20)
8	Koyilandy	Balussery	Naduvannur	1	Fisheries: ornamental fishes	Low income for farmers due to culturing of ordinary and non varietal guppies.	Backyard ornamental fish culture of guppy varieties (2019-20)
9	Koyilandy	Balussery Pandalauani	Atholi Ulliyeri KVK	3	Fisheries: edible fish	Poor production of fishes owing to high ammonia and low dissolved oxygen	High density fish farming using biofilters (2019-20)
10	Koyilandy	Balussery	Kottur Koorachundu	1	Freshwater aquaculture	Poor water quality in high density fish farming systems	Use of micronutrient formulations for diatom production and management of water quality
11	Koyilandy	Balussery	Kottur, Naduvannur , Panangad	1	Fisheries: ornamental fishes	Poor survival rate during rearing of fishes with formulated feed	Use of live feed for rearing fishes

2.8 Details of Benchmark Information collected from DFI villages

Sl.No.	Taluk	Name of the block	Name of the village	Name of the Head of Household	Annual Gross Income (Rs.)	Annual Expenditure (Rs.)	Annual Net Income (Rs.)
1	Koyilandy	Balussery	Naduvannur Panchayat	NA	150000	118000	32000
2	Koyilandy	Ballussery	Kottur	NA	213000	155400	57600

2.10 Priority thrust areas

S. No	**Thrust area**
1	Improving production of vegetables
2	Improving yield of tuber crops
3	Improving the production of spices
4	Quality seed, planting material production
5	Improving production of tuber crops, Introduction of new fruit plants
6	Integrated Pest and disease management
7	Breeding management dairy cows and goats
8	Freshwater aquaculture
9	Freshwater ornamental fish
10	Brackishwater aquaculture
11	Integrated fish farming
12	Nutritional adequacy
13	Nutrition security
14	Farm mechanization

15	Value addition
16	Production improvement and area expansion under paddy and green gram

PART III - TECHNICAL ACHIEVEMENTS (2020)

3.A. Target and Achievements of mandatory activities

OFT				FLD			
1				2			
OFTs (No.)		Farmers (No.)		FLDs (No.)		Farmers (No.)	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
5	4	20	18	10	9	100	95

Training				Extension Programmes			
3				4			
Courses (No.)		Participants (No.)		Programmes (No.)		Participants (No.)	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
75	76	5000	7092	2000	4786	8000	12199

Seed Production (Q)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
400	426	20000	29856

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
-	-	2000	4716
Fish Fingerlings – 1000	1440		

3.B1. Abstract of interventions undertaken

S. No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions										
				Title of OFT if any	Title of FLD if any	Number of Training (farmers)	Number of Training (Youths)	Number of Training (extension personnel)	Extension activities (No.)	Supply of seeds (Qtl.)	Supply of planting materials (No.)	Supply of livestock (No.)	Supply of bio products	
													No.	Kg
1	Improving production of vegetables (2020-21)	YLB	Low production of vegetables in the district especially during rainy season	OFT on Assessing the performance of Yard Long Bean varieties Githika, Arka Mangala and KAU Mithra		1			1	2.3 kg			No.	50 kgKg
2	Improving yield of tuber crops (2020-21)	Cassava *	High cost of potassic fertilizers, low to marginal content of soil exchangeable K in Kerala soils	Demonstration of a K use efficient variety of cassava viz. Sree Pavithra	-	-	-	-	-	-	-	-	-	-
3	Improving fruit production	Strawberry*	Less cultivation of subtropical fruits	OFT on Assessing the performanc	-	-	-	-	-	-	-	-	-	-

	(2020-21)			e of strawberry varieties viz. Sweet Charlie, Winter Dawn and Chandler in high altitude areas of Kozhikode district										
4	Improving yield of tuber crops (2019-20)	Cassava	High cost of potassic fertilizers, low to marginal content of soil exchangeable K in Kerala soils		FLD on Demonstration of a K use efficient variety of cassava viz. Sree Pavithra	1					325		No.	Kg 16
5	INM of spices (2019-20)	Ginger	High cost of organic manures	OFT on Assessment of performance of NPK capsules in organic ginger production		1								12.5 kg
6	Improving yield of spices (2019-20)	Turmeric	Limited number of short duration varieties with high cucrcumin content		Participatory seed production programme of a HYV of turmeric viz. IISR Pragati	1				1.5				30
7	Improving the production of spices (2018-19)	Black pepper	Low productivity of black pepper		Demonstration of cultivation of potted bush pepper in urban areas of Kozhikode	1	1				60			
8	Improving yield of tuber crops	Lesser Yam	Non availability of seed of HYV and poor yield of local types		Demonstration of High Yielding Variety of lesser yam viz.Sreelatha	1	1	1	2	3.5				
10	IPDM	Cowpea	Yield loss due to pests and diseases		Demonstration on IPDM in cowpea (2019-20)	2	65			Yard long bean (Geethika variety)-3 kg			Neemsoap-100 bottles	Trichocaps - 10 Pseudomonmas -5 kg

11	Mushroom production	Mushroom	Lack of awareness about the different oyster mushroom varieties and its nutritive value		Popularisation of different oyster mushroom varieties in Kozhikode district (2019-20)	2	62							Mushroom spawn -60 packets
12	Feeding and breeding management in dairy cattle	Dairy	low milk yield,low fat content in milk,poor conception,repeat breeding problem in dairy cattle	Probiotics supplementation on Lactation and conception in Milch cows		2						Conc.feed Mineral mixture probiotics		
13	Production and disease management in milch cows	Dairy	Non shedding of placenta,reduction in milk yield,mastitis,infertility,long inter calving interval,economic loss	Bio Medicines for shedding of placenta in cows		2	1							
14	Breeding and fertility management in goats	Goats	Intermittent estrus, irregular kidding, kid mortality, poor management practices, and economic loss to the farmers.		Estrus synchronization and Fixed Time breeding in goat	1						GnRh		
15	Feeding management	Dairy	Lack of availability of green grasses during summer,low milk yield,poor estrum,poor breeding efficiency		Demonstration of silage in drums	1						Drums Jaggary salt		
16	Fisheries : Aquaculture	Edible fish	Poor water quality in high density aquaculture system affecting growth of fishes		Dentrodigest for bioremediation of detritus in aquaculture									
17	Fisheries : Aquaculture	Ornamental fishes	Low income for farmers due to culturing of ordinary and non varietal guppies.		Backyard ornamental fish culture of guppy varieties		1					150 guppies		
18	Fisheries: Aquaculture	Edible fish	Poor production of fishes owing to high ammonia and low dissolved oxygen		High density fish farming using biofilters									
19	Freshwater aquaculture	Edible fish	Poor water quality in high density fish farming systems	Use of micronutrient formulation			1		1			50 tilapia 60 carp		

				s for diatom production and management of water quality										
20	Fisheries: Aquaculture	ornamental fishes	Poor survival rate during rearing of fishes with formulated feed		Use of live feed for rearing fishes		1							
21	Value addition	Mushroom	1. Rapid perishability 2. Irregular availability and high cost	-	Demonstration on value addition of Mushroom	5	3		2	22.5kg				
22	Value addition	Turmeric	1. .% of Curcumin content 2. Shelf life period		Production of improved quality turmeric powder of elite varieties	3								Trial under progresss
23	Nutritional security	Vegetables	1. Malnutrition 2. Lack of awareness about nutritious food. 3. Non utilization of resources-water, space and organic waste		Nutrigarden for year round nutrition security among farm families	5	25	2	2	25 packets (vegetable seeds) 100pakets (cool season vegetable seeds)	50			

3.B2. Details of technology used during reporting period

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Specify)
1	2	3	4	5	6	7	8
1	High yielding varieties of YLB 2020-21	KAU, Thrissur, ICAR-IIHR, Bangalore	YLB	1		1	
2	High Yielding Variety of turmeric IISR Pragati 2019-20	ICAR-IISR, Kozhikode	Turmeric		1	1	
3	K use efficient variety of cassava viz. Sree Pavithra 2019-20	ICAR- CTCRI, Thiruvananthapuram	Cassava		1	1	
4	Assessment of performance of NPK capsules in organic ginger production 2019-20	Encapsulation technology: ICAR- IISR, Kozhikode Bio agents: IARI & NCIM	Ginger		1		
5	Bush pepper cultivation in pots 2018-19	ICAR-IISR, Kozhikode	Black pepper		1	1	1 - Method demonstration
6	Demonstration of High Yielding Variety of lesser yam viz.Sreelatha	CTCRI,Trivandrum	Lesser Yam		1	3	Field day

7	Geethika variety, application of FYM, enriched with Trichocap dissolved water, *Pseudomonas fluorescens* seed treatment, foliar application at 30 and 45 DAP, soil drenching with Trichocap dissolved water at 45 DAP, use of entomopathogens and need based PP chemicals)	Source: KAU, ICAR-IISR (Encapsulation of *Trichoderma*)	Cowpea		1	2	-
	Cultivation of oyster mushroom varieties *Pleurotus florida, Hypsizygous ulmarius and Pleurotus eous*	Source: KAU,TNAU, IIHR	Mushroom		1	2	
8	Probiotics supplementation on Lactation and conception in Milch cows	Dr.PDKV(2011)	Dairy			2	
9	Bio Medicines for shedding of placenta in cows	ITK	Dairy				
10	Estrus synchronization and Fixed Time breeding in goat	KVASU	Goatary			1	
11	Demonstration of silage in drums	KVASU					
12	Dentrodigest for bioremediation of detritus in aquaculture (2019-20)	National Centre for Aquatic Animal Health CUSAT, Cochin	Edible fish		2		
13	Backyard ornamental fish culture of guppy varieties (2019-20)	CIFE Mumbai	Ornamental fishes		3	1	
14	High density fish farming using biofilters (2019-20)	CIFE Mumbai	Edible fish		3		
15	Use of micronutrient formulations for diatom production and management of water quality	Chinese academy of fisheries science Wuhan China. 2017 & SRM university Chennai	Fresh water fishes	3		1	1 Field day
16	Use of live feed for rearing fishes	Kerala University of Fisheries and Ocean Studies (KUFOS), Cochin			5	1	
17	Demonstration of fortified mushroom soup powder	KAU	Mushroom		1	5	2(demonstration)
18	Production of improved quality turmeric powder of elite varieties	IISR	Turmeric		1		3(demonstrations)
19	Nutrigarden –for year round nutrition security among farm families	KAU	Vegetables		1	5	2(Demonstration)

3.B2 contd..

No. of farmers covered															
OFT				**FLD**				**Training**				**Others (Specify)**			
General		**SC/ST**		**General**		**SC/ST**		**General**		**SC/ST**		**General**		**SC/ST**	
M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
9	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
4	**1**	-	-	-	-	-	-		**6**	-	-	-	-	-	-
-	-	-	-	-	**5**	-	-	**5**	**9**	-	-	-	-	-	-
-	-	-	-	**3**	**1**	-	**1**	**3**	**15**	**2**	**2**	-	-	-	-
-	-	-	-	**1**	**4**	-	-	**3**	**15**	**2**	**2**	-	-	-	-
-	-	-	-	**7**	**13**	-	-	**11**	**12**	-	-	**8**	-	-	-
	5	-	-	-	-	-	-	-	**5**	-	-	-	-	-	-

-	-	-	-	**4**	**6**	-	-	**15**	**10**	**1**	**1**	**10**	**9**	**3**	**2**
-	-	-	-	**1**	**4**	-	-	**20**	**35**	**4**	**6**	-	-	-	-
-	-	-	-	**2**	**3**	-	-	**32**	**28**	**2**	**0**	-	-	-	-
4	**1**	-	-	-	-	-	-	**24**	**18**	**4**	**2**	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				5	**3**			**11**	**3**	**2**		**2**			
-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-		1		2	11	8	1	1	-	-	-	-
-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-
2	1	-	-	-	-	-	-	30	18	-	-	-	-	-	-
-	-	-	-	3	2	-	-	23	6	-	-	-	-	-	-
-	-	-	-	-	**5**	-	-	-	**5**	-	-	-	-	-	-
-	-	-	-	-	**5**	-	-	-	**5**	-	-	-	-	-	-
-	-	-	-	-	-	-	**25**	-	-	-	**25**	-	-	-	-

PART IV - On Farm Trial (2020)

4.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					1					1
Integrated Pest Management										
Integrated Crop Management										
Integrated Disease Management										
Small Scale Income Generation Enterprises										
Weed Management										
Resource Conservation Technology										
Farm Machineries										
Integrated Farming System										
Seed / Plant production										
Value addition										
Drudgery Reduction										
Storage Technique										
Cropping Systems										
Farm Mechanization										
Mushroom cultivation										
others										
Total					1					1

4.A2. Abstract on the number of technologies refined in respect of crops: Nil

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Integrated Nutrient Management										
Varietal Evaluation										
Integrated Pest Management										
Integrated Crop Management										
Integrated Disease Management										

Small Scale Income Generation Enterprises										
Weed Management										
Resource Conservation Technology										
Farm Machineries										
Integrated Farming System										
Seed / Plant production										
Value addition										
Drudgery Reduction										
Storage Technique										
Cropping Systems										
Farm Mechanization										
Mushroom cultivation										
Others										
Total										

4.A3. Abstract on the number of technologies assessed in respect of livestock: Nil

Thematic areas	Cattle	Poultry	Piggery	Rabbit	Fisheries	TOTAL
Evaluation of Breeds						
Nutrition Management						
Disease of Management						
Value Addition	1					
Production and Management	1					
Feed and Fodder						
Small Scale income generating enterprises						
Dairy						
Others (Pl. specify)						
TOTAL	2					

4.A4. Abstract on the number of technologies refined in respect of livestock: Nil

Thematic areas	Cattle	Poultry	Piggery	Rabbit	Fisheries	TOTAL
Evaluation of Breeds						
Nutrition Management						
Disease of Management						
Value Addition						
Production and Management						
Feed and Fodder						
Small Scale income generating enterprises						
Dairy						
Others (Pl. specify)						
TOTAL						

4.B. Achievements on technologies Assessed and Refined

4.B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technologies	No. of trials	Number of farmers / locations	Area in ha (Per trial covering all Technological Options in a farm)
Integrated Nutrient Management					

Varietal Evaluation	YLB	HYV of Arka Mangala, Githika and KAU Mithra	1	5	0.20
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management	Ginger	NPK capsules in organic ginger production	1	5	0.50
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			2	10	0.70

4.B.2. Technologies **Refined** under various Crops: Nil

Thematic areas	Crop	Name of the technologies	No. of trials	Number of farmers/locations	Area in ha (Per trial covering all Technological Options in a farm)
Integrated Nutrient Management					
Varietal Evaluation					
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology					

Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Mushroom cultivation					
Total					

4.B.3. Technologies assessed under Livestock

Thematic areas	Name of the livestock	Name of the technologies	No. of trials	No. of farmers/locations
Evaluation of breeds				
Nutrition management				
Disease management	Dairy	Bio Medicines for shedding of placenta in cows	5	5
Value addition				
Production and management	Fisheries: Freshwater fishes Carps and Tilapia	Use of micronutrient formulations for diatom production and management of water quality	3	3
	Dairy	Probiotics supplementation on Lactation and conception in Milch cows	15	5
Feed and fodder				
Small scale income generating enterprises				
Total			23	13

4.B.4. Technologies Refined under Livestock and other enterprises

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

4.B.5. T**echnologies assessed under various enterprises by KVKs**

Sl.	**Thematic areas**	**Name of the enterprise**	**Name of technology(s)**	**No. of trials**	**No. of locations**
1	Drudgery reduction				
2	Entrepreneurship Development				
3	Health and nutrition				
4	Processing and value addition				
5	Energy conservation				
6	Small-scale income generation				
7	Storage techniques				
8	Household food security				
9	Organic farming				
10	Agroforestry management				
11	Mechanization				
12	Resource conservation technology				
13	Value Addition				
14	Others				

4.B.6.T**echnologies assessed under various enterprises for women empowerment**

	Thematic areas	**Name of enterprise**	**Name of technology(s)**	**No. of trials**	**No. of locations**
1	Drudgery Reduction				
2	Entrepreneurship Development				
3	Health and Nutrition				
4	Value Addition				
5	Women Empowerment				
6	Others(Home science)				

4.C1.Results of Technologies Assessed

Crop/ enterprise	**Farming situation**	**Problem definition**	**Title of OFT**	**No. of trials**	**Technology Assessed**	**Source of technology**	**Yield**	**Unit of yield**	**Observations other than yield**	**Gross Return Rs./ unit**	**Net Return Rs./ unit**	**BC Ratio (Gross income/ Gross**

												Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
YLB (2020-21)	Irrigated	Low production of vegetables in the district especially during rainy season	OFT on Assessing the performance of Yard Long Bean varieties Githika, Arka Mangala and KAU Mithra	5	T.O.1 (Farmers practice) Cultivation of local types like Kurutholapayar, Manjeri local etc.		Harvesting not completed..					
					T.O.2: Cultivation of a HYV of YLB viz. Githika as per PoP	KAU Thrissur						
					T.O.3: Cultivation of a HYV of YLB viz. Arka Mangala as per PoP	ICAR-IIHR, Bangalore						
					T.O.4: Cultivation of a HYV of YLB viz. KAU Mithra as per PoP (KAU)	KAU Thrissur						
Ginger (2019-20)	Rainfed	High cost of organic manures	Assessment of performance of NPK capsules in organic ginger production	1	T.O.1 (Farmers practice): Unbalanced manuring		Harvesting not completed					
					T.O.2: Organic package for ginger – Organic manures, soil solarization, seed treatment with biocapsules, micro nutrient spray, use of biocontrol agent like Trichoderma, Pseudomonas, Pochonia, neem based bio pesticides etc.	ICAR-IISR. Kozhikode						
					T.O.3: Use of NPK capsules- NPK capsule + 75% of recommended organic manures	Encapsulation technology: ICAR-IISR, Kozhikode Bio agents: IARI & NCIM						
Dairy	Homestead based livestock rearing	low milk yield,low fat content in milk,poor conception,repeat breeding problem in dairy cattle	Probiotics supplementation on Lactation and conception in Milch cows	5	T.O.1 (Farmers practice)Feeding Concentrate along with normal feeding of green grasses.		Average milk yield/cow/month(lit)= 741.5 Average Fat%=2.87 Oestrus Response (%)=60(3/5) Conception (%)=66.6(2/3) Average income/cow/month(Rs)=4893.9 Average expenditure/cow/month(Rs)=1304.16	741.5 2.87 60(3/5) 66.6(2/3) 4893.9		4894	3590	3.7

							Net income(Rs)=3589.74	1304.16 3589.74				
				5	T.O.2 Feeding Concentrate@ 400Gms/lit milk yield along with mineral mixture @30 Gms/cow/day with normal feeding of green grasses.	KVASU	Average milk yield/cow/month(lit)= 1183.5 Average Fat%=3.79 Oestrus Response (%)=80(4/5) Conception (%)=75(3/4) Average income/cow/month(Rs)=8757.9 Average expenditure/cow/month(Rs)=2282.96 Net income(Rs)=6474.94	1183.5 3.79 80(4/5) 75(3/4) 8757.9 2282.96 6474.94		8758	6475	3.8
				5	T.O.3 Feeding concentrate along with Multistrain Probiotics@20Gms/cow/day along with normal feeding of green grasses	Dr.PDKV(2011)	Average milk yield/cow/month(lit)= 1227.1 Average Fat%=3.84 Oestrus Response (%)=100(5/5) Conception (%)=80(4/5) Average income/cow/month(Rs)=9816.8 Average expenditure/cow/month(Rs)=2459.70 Net income(Rs)=7357.1	1227.1 3.87 1009 5/5) 80(4/5) 9816.8 2459.70 7357.1		9817	7357	3.9
Dairy	Homestead based livestock rearing	Problem:Non shedding of placenta,reduction in milk yield,mastitis,infertility,long inter calving interval,economic loss	Bio Medicines for shedding of placenta in cows	25	T.O:1.Oral administration of lukewarm mixture containing Bran(Rice/Wheat),Jaggary ,Extract of Ginger and salt immediately after parturition	ITK	progress					
					T.O:2.Oral administration of mixture containing Kalihari(Gloriosasuperba) ,Vasaka(Adhatodavasica), Shigru(Moringapterygosperma) andBambusa vulgaris(Bamboo leaves) immediately after parturition.	ITK	progress					
					T.O:2.Oral administration of mixture containing Kalihari(Gloriosasuperba) ,Vasaka(Adhatodavasica), Shigru(Moringapterygosperma) andBambusa vulgaris(Bamboo leaves)	KVASU	progress					

					immediately after parturition.							
Fresh water aquaculture	Increasing stocking density without strategies for water quality management	Poor water quality in high density fish farming systems	Use of micronutrient formulations for diatom production and management of water quality	3	T.O.1 (Farmers practice) Nil							
					T.O.2 Application of liquid formulation (nualgi) for production of diatom	Chinese academy of fisheries science Wuhan China			Preliminary observation shows better growth of fish with the micronutrient application especially for the liquid formulation			
					T.O.3 Application of powder formulation (Diatomix) for production of diatom	SRM university Chennai						

4. C2. Feedback on technologies assessed

Name of technology assessed	Useful characters as well as constraints of technology	Socio-economic as well as administrative constraints for its adoption
HYVs of YRB	Initial observations indicate that yield is more in KAU Mithra followed by Arka Mangala and Githika. Average pod length is highest for KAU Mithra (68.5 cm) followed by Arka Mangala (64.2 cm) and Githika (52.6 cm)	Damage by parrots was a major problem resulting in about 20 – 25 per cent yield loss in all the plots irrespective of location. Trial is continuing. Limited availability of KAU Mithra seeds
NPK capsules in ginger	Preliminary observations indicate that plants of TO3 are more healthy compared other two technological options. But soft rot disease was observed in all the technological options though slightly less in TO3.	---
Use of micronutrient formulations for diatom production and management of water quality	Trial under progress	-
1. Feeding Concentrate along with normal feeding of green grasses.	Easy to adopt Low cost Farm woman can easily adopt the technology Helps for early shed down of placenta Increased Milk yield	Since it is a indigenous technology no harmful effects observed More of horizontal transmission

	Avoids indigestion	
2.Feeding Concentrate@ 400Gms/lit milk yield along with mineral mixture @30 Gms/cow/day with normal feeding of green grasses.	Easy to administer Increased milk and fat per cent Early estrum Enhanced conception Reduced intercalving interval	Increased income Farm woman can easily adopt the technology
3.Feeding concentrate along with Multistrain Probiotics@20Gms/cow/day along with normal feeding of green grasses	Increased milk and fat in milk Early onset of estrum and better conception Control hoof eruption Low cost technology	Increased farm income

4.C3. Details of Successfully completed / concluded technology assessment (support with necessary summary of data and photographs)

OFT-1

1. Title of Technology Assessed: Use of micronutrient formulations for diatom production and management of water quality

2. Performance of the Technology on specific indicators: Trial under progress

3.Specific Feedback from farmers

4.Specific Feedback from Extension personnel and other stakeholders

5. Feedback to Research System based on results and feedback received

6. Feedback on usefulness and constraints of technology

OFT-2

1. Title of Technology Assessed : Probiotics supplementation on Lactation and conception in Milch cows

2. Performance of the Technology on specific indicators

- Thrust area: Feeding and breeding management in dairy cattle
- Problem : low milk yield,low fat content in milk,poor conception,repeat breeding problem in dairy cattle
- Number of farmers:5
- No of animals :15
- Parameters:1.Estrus response 2.conception rate 3.Milk yield 4.fat per cent
- Technological options
- T.O.1:Feeding Concentrate along with normal feeding of green grasses.
- T.O.2: Feeding Concentrate@ 400Gms/lit milk yield along with mineral mixture @30 Gms/cow/day with normal feeding of green grasses.
- T.O.3:Feeding concentrate along with Multistrain Probiotics@20Gms/cow/day along with normal feeding of green grasses

Parameters	Technology Options			
	T1	T2	T3	Remarks
Average milk yield/cow/month(lit)	741.5	1183.5	1227.1	
Average Fat%	2.87	3.79	3.84	
Oestrus Response (%)	60(3/5)	80(4/5)	100(5/5)	
Conception (%)	66.6(2/3)	75(3/4)	80(4/5)	
Average income/cow/month(Rs)	4893.9	8757.9	9816.8	
Average expenditure/cow/month(Rs)	1304.16	2282.96	2459.70	

Net income(Rs)	3589.74	6474.94	7357.1	
B:C ratio	3.7	3.8	3.9	

3. Specific Feedback from farmers

Easy to adopt
Farm woman can easily adopt the technology
Helps for early shed down of placenta
Avoids indigestion'
Easy to administer
Increased milk and fat per cent
Early estrum
Enhanced conception
Reduced intercalving interval
Control hoof eruption
Low cost technology

4. Specific Feedback from Extension personnel and other stakeholders:

Low cost technology

Skilled person is not required

Farm woman can easily adopt

Helps to increase income

5. Feedback to Research System based on results and feedback received

6. Feedback on usefulness and constraints of technology

4.D1. Results of Technologies Refined

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Refined	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
					T.O.1 (Farmers practice)							
					T.O.2							
					T.O.3							

4. D2. Feedback on technologies refined

Name of technology refined	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**

4.D.2. Details of Technologies refined:

1. Title of Technology Refined
2. Performance of the Technology on specific indicators
3. Specific Feedback from farmers
4. Specific Feedback from Extension personnel and other stakeholders
5. Feedback to Research System based on results/feedback received
6. Feedback on usefulness and constraints of technology

PART V - FRONTLINE DEMONSTRATIONS (2020)

5.A. Summary of FLDs implemented

Sl. No.	Category	Farming Situation	Season	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Area (ha)		Farmers (No.)		Farmers (No.)	
									Proposed	Actual	SC/ST	Others	Small/ Marginal	Others
	Oilseeds													
	Pulses	Pure crop	Summer	Cowpea	Geethika	-	IPDM	Geethika variety, application of FYM, enriched with Trichocap dissolved water, *Pseudomonas fluorescens* seed treatment, foliar application at 30 and 45 DAP, soil drenching with Trichocap dissolved water at 45 DAP, use of entomopathogens and need based PP chemicals. Source: KAU, ICAR-IISR (Encapsulation of *Trichoderma*)	0.5	0.5	-	5	5	-
	Cereals													
	Millets													
	Vegetables													
	Flowers													
	Ornamental													
	Fruit													
	Spices and condiments (2019-20)	Rainfed	Kharif	Turmeric	IISR Pragati		Improving yield of spices	Demonstration of a HYV of turmeric viz. IISR Pragati	0.25	0.25	-	5	5	-
	Spices and condiments (2019-20)	Irrigated	Perennial	Black pepper	Sreekara		Improving yield of spices	Demonstration of cultivation of potted bush pepper in urban areas of Kozhikode	60 pots	60 pots	-	20	20	
	Tubers (2019-20)	Rainfed	Kharif	Cassava	Sree Pavithra		Improving yield of tuber crops	Demonstration of a K use efficient variety of cassava viz. Sree Pavithra	0.20	0.20	1	4	5	
	Others (Tubercrop)	Rainfed	Kharif	Lesser Yam	Sreelatha	-	Improving yield of tuber crops	Demonstration of High Yielding Variety of Lesser Yam viz.Sreelatha	0.2 ha	0.2 ha	-	10	10	-
	Commercial													
	Medicinal and aromatic													
	Fodder													
	Plantation													
	Fibre													

	Dairy	Homestead based livestock farming	all	Milch cow	Crossbred cattle	-	Feeding management	Demonstration of silage in drums	10	10				
	Poultry													
	Rabbitry													
	Piggery													
	Sheep and goat	Homestead based livestock farming	All	Goatary	Malabari	-	Breeding management	Estrus synchronization and Fixed Time breeding in goat	50 goats	50		8	5	3
	Duckery													
	Common carps	Modified extensive	Throughout the year	Freshwater Fish	Nile Tilapia-	GIFT	Aquaculture	Dentrodigest for bioremediation of detritus in aquaculture (2019-20)	2 Nos	2			2	
		Semi Intensive	Throughout the year	Freshwater Fish	Nile Tilapia-	GIFT	Aquaculture	High density fish farming using biofilters. (2019-20)	3	3			3	
	Ornamental fishes	Modified extensive	Throughout the year	Freshwater Fish	Guppy	Tuxedo whire, Platinum red, Moscow blue	Aquaculture	Backyard ornamental fish culture of guppy varieties (2019-20)	3	3	1	2		
		Modified extensive	Throughout the year	Freshwater Fish	Angel, Guppy	Platinum, Marble angel	Aquaculture	Use of live feed for rearing fishes (Demonstration under progress)					5	
	Mussels													
	Oyster mushroom	Household production	-	Mushroom	*Pleurotus florida, Hypsizygous ulmarius and Pleurotus eous*	-	Nutritional security through mushroom production	Popularisation of different oyster mushroom varieties in Kozhikode district	-	-	-	5	5	-
	Button mushroom													
	Vermicompost													
	Sericulture													
	Apiculture													
	Implements													
	Others (specify)													

5.A. 1. Soil fertility status of FLDs plots, if analysed

Sl. No.	Category	Farming Situation	Season and Year	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Season and year	Status of soil			Previous crop grown
										N	P	K	
	Oilseeds												
	Pulses												
	Cereals												
	Millets												
	Vegetables												
	Flowers												
	Ornamental												
	Fruit												

	Spices and condiments												
	Commercial												
	Medicinal and aromatic												
	Fodder												
	Plantation												
	Fibre												
	Tuber	Rainfed	Kharif 2020	Lesser Yam	Sreelatha selection	-	Improving yield of tuber crops	Demonstration of HYV of Lesser Yam viz.Sreelatha	Kharif 2020	L	H	M	cucurbits

5.B. Results of FLDs

5.B.1. Crops

Crop	Name of the technology demonstrated	Variety	Hybrid	Farming situation	No. of Demo.	Area (ha)	Yield (q/ha)				% Increase	Economics of demonstration (Rs./ha)			Economics of demonstration (Rs./ha)		
							Demo			Check		Gross Return	Net Return	BCR	Gross Return	Net Return	BCR
							H	L	A								
Oilseeds																	
Pulses	Demonstration on IPDM in cowpea	Geethika	-	Pure crop	5	0.5 ha	213.75	195.50	205.04	149.37	27.15	1230270	809520	2.92	896220	497320	2.24
Cereals																	
Millets																	
Vegetables																	
Flowers																	
Ornamental																	
Fruit																	
Spices and condiments (2019-20)	Demonstration of a HYV of turmeric viz. IISR Pragati	IISR Pragati		Rainfed	5	0.25	200	133.35	149.27	124.24	11.96	583510	192694	1.49	455665	89508	1.24
Spices and condiments (2019-20)	Demonstration of cultivation of potted bush pepper in urban areas of Kozhikode	Sreekara		Irrigated	20	60 pots	Demonstration continuing.										
Tubers (2019-20)	Demonstration of a K use efficient variety of cassava viz. Sree Pavithra	Sree Pavitha		Rainfed	5	0.25	324.5	296.0	312.0	264.0	18.18	624000	436048	3.32	528000	349300	2.96
Tuber (2020-21)	Demonstration of HYV of Lesser Yam Sreelatha	Sreelatha	-	Rainfed	10	0.2ha	205	158.10	175	157.50	11	455000	222640	1.96	409600	187240	1.84
Commercial																	
Fibre crops like cotton																	
Medicinal and aromatic																	
Fodder																	
Plantation																	
Fibre																	
Others (pl.specify)																	

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST
H – Highest Yield, L – Lowest Yield A – Average Yield

Data on additional parameters other than yield (viz., reduction of percentage in weed/pest/diseases etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	**Demo**	**Check**
1.IISR Pragati – Pest and disease incidence (%)	0.8	1.2
2. Sree Pavithra a) Duration (days)	286	87
b) Pest and disease incidence (%)	5.9	8.5

Data on other parameters in relation to technology demonstrated – Lesser yam		
Parameter with unit	**Demo**	**Check**

Duration	225 days	235 days
Average Length of vine	3.8m	3.5m

Data on other parameters in relation to technology demonstrated		
Parameter with unit	**Demo**	**Check**
Pest attack (%)in cowpea	4.8	13.6
Disease attack (%)in cowpea	6.4	24.6

5. B2. Feedback on technologies demonstrated

Name of technology demonstrated	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**
HYV of turmeric viz. IISR Pragati	Short duration variety with high curcumin content Constraint – drying percentage is comparatively low	No proper marketing channels for the produce
HYV of cassava viz. Sree Pavithra	K use efficient variety in cassava which can reduce the use of K fertilizers by 50 % The variety has good tuber yield of 25-50 t /ha . Good cooking quality with very low cyanogen (15-25 ppm), hence no bitterness for tubers. Constraint – planting materials not available locally, low price of fresh produce	No constraint. Widely adopted by the farmers and planting materials have good demand.
Bush pepper technology	Production throughout the year, short stature, no support required, yield as early as six months, can be cultivated in urban aresa where land is a constraint Constraint – Regular irrigation is required	--

Name of technology demonstrated	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**
Demonstration of HYV of Lesser yam viz.Sreelatha	Average weight and size of tuber was more(weight-180g, length-12.25cm and girth-10cm) compared to small round tubers for check(weight 146g, length-8.5cm and girth 8.3cm). Sreelatha variety is with shorter duration(10 days less maturity period) compared to local.The variety has better cooking quality and taste.Farmers realized an yield of 1-1.25 kg per plant with higher yield , size of tuber, cooking quality and taste.	Wild boar damage is a common constraint for cultivation of tubers like lesser yam. In shaded areas the performance of the crop was poor. Majorityt of the farmers posses only shaded homestead for cultivation.It can be promoted in open areas available on lease. Since the stored tubers has less quality, quick marketing is needed.Scarcity of seedmaterial is a limiting factor for larger area coverage in the district.

Name of technology demonstrated	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**
Geethika variety, application of FYM, enriched with Trichocap dissolved water, *Pseudomonas fluorescens* seed treatment, foliar application at 30 and 45 DAP, soil drenching with Trichocap dissolved water at 45 DAP, use of entomopathogens and need based PP chemicals.	The farmers were convinced about the efficacy of bio control agents. Also the Geethika variety was superior and highly acceptable to the farmers due to its fleshy and long pods	The use of plant protection chemicals were completely avoided in demo plot, though its need based use were proposed for demonstration, due to the high effician cy of bio agents.

5.B.3. Livestock and related enterprises

Type of livestock	**Name of the technology demonstrated**	**Breed**	**No. of Demo**	**No. of Units**	**Name of the parameter with unit**	**Yield (kg/animal)**				**% Increase**	***Economics of demonstration Rs./unit)**			***Economics of check (Rs./unit)**		
						Demo			**Check if any**		**Gross Return**	**Net Return**	**** BCR**	**Gross Return**	**Net Return**	**** BCR**
						H	L	A								
Dairy																
Poultry																
Rabbitry																
Pigerry																
Sheep and goat	Estrus synchronization and Fixed Time breeding in goat	Malabari	50	50	Estrus response Conception rate		-	-	-	-	-	-	-	-	-	-
Duckery																
Others (pl.specify)																

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

** BCR= GROSS RETURN/GROSS COST

Data on additional parameters other than yield (viz., reduction of percentage diseases, increase in conceiving rate, inter-calving period etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	**Demo**	**Check if any**
Estrus response(%)	94(47/50)	60(6/10)
Conception %	61.70(29/47)	33.33(2/6)

5. B4. Feedback on livestock technologies demonstrated

Name of livestock technology demonstrated	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**
Estrus synchronization and Fixed Time breeding in goat	Technology is useful not only to synchronize estrum but also synchronise ovulation Useful for broiler goat rearing No need to wait whether the animal is coming to estrum or not Fixed time breeding Better conception Better breeding efficiency	To improve rural ecnomy Suitable for farm woman Farm woman can manage 10 goats at a time without extra labour

5.B.5. Fisheries

Type of Breed	Name of the technology demonstrated	Breed	No. of Demo	Units/ Area (m^2)	Name of the parameter with unit	Yield (q/ha)				% Increase	*Economics of demonstration (Rs./unit)			*Economics of check (Rs./unit)		
						Demo			Check if any		Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR
						H	L	A								
Common carps																
1	Dentrodigest for bioremediation of detritus in aquaculture (2019-20)	Nile Tilapia	2	416	Yield Survival (%) Ammonia (ppm)	118.7 83	71.53 83	95.11 83	60.55 81	48.8	119.85	118	2.02	73.62	72.49	1.98
2	High density fish farming using biofilters. (2019-20)	Tilapia	3	17	Yield Survival (%) Ammonia (ppm)	1018 85 1	826 82.6 1	919 83.8 1	-	-	1902	747	1.66	-	-	-
Mussels																

Ornamental fishes	Backyard ornamental fish culture of guppy varieties (2019-20)	Guppy varieties	3	5	Fish production in Nos Survival (%)	66 92.	18 68	45 80	-	-	448	293	2.87	-	-	-
	Use of live feed for rearing fishes (Demonstration under progress)	Angel, guppy	5	120	Fish production in Nos Survival											
Others (pl.specify)																

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST
H-High L-Low, A-Average

Data on additional parameters other than yield (viz., reduction of percentage diseases, effective use of land etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	**Demo**	**Check if any**
TAN	1 ppm	2ppm
Nitrite	0.25 ppm	0.25ppm

5. B6. Feedback on fisheries technologies demonstrated

Name of fisheries technology demonstrated	**Useful characters as well as constraints of technology**	**Socio-economic as well as administrative constraints for its adoption**
Dentrodigest for bioremediation of detritus in aquaculture (2019-20)	Better water quality and yield was obtained on using dentrodigest. The avg. size of fish 250 g in 7 – 8 months with BCR of 1.32. The water quality parameters were in the range Ammonia: 0 to 1ppm nitrite 0 and nitrate :0 pH: 7-7.6.	No
High density fish farming using biofilters. (2019-20)	This technology could increase the fish production from 1 Kg / m^3 to 9.2 Kg/ m^3. The water quality parameters were ammonia up 1 ppm, NO_2 0.25ppm, NO_3 1 ppm, pH 6.5-7 with the use of biofilters. The BCR was 1.66	No
Backyard ornamental fish culture of guppy varieties (2019-20)	The technology provided additional income of Rs.350 to Rs.1260 per month to women who were new to ornamental fish culture with this part time farming activity giving a BCR of 2.9	No
Use of live feed for rearing fishes (Demonstration under progress)	Demonstration under progress, better growth rate for fish fed with live feed is being noticed	No

5.B.7. Other enterprises

Enterprise	**Name of the technology demonstrated**	**Variety/ species**	**No. of Demo**	**Units / Area {m^2}**	**Name of the parameter with unit**	**Yield**				**% Increase**	***Economics of demonstration (Rs./unit) or (Rs./m2)**			***Economics of check (Rs./unit) or (Rs./m2)**		
						Demo			Check if any		Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR
						H	L	A								

Oyster mushroom	Popularisation of different oyster mushroom varieties in Kozhikode district Popularisation of different oyster mushroom varieties in Kozhikode district Popularisation of different oyster mushroom varieties in Kozhikode district	*Pleurotus florida,*	5	40	Days for first harvest : 23 Duration (days):49 No. of harvests :3 Consumer preference : Soft, tasty, takes less time to cook	914	784	856	-	-	13365	9765	3.71	-	-	-
		Hypsizygous ulmarius	5	40	Days for first harvest: 28 Duration (days) :53 No. of harvests :3 Consumer preference : More tasty, coarse textured, more fleshy, takes more time to cook compared to Pf.	802	738	770.4	-	-	12022	8422.72	3.33	-	-	-
		Pleurotus eous	5	40	Days for first harvest :17 Duration (days) :40 No. of harvests :3 Consumer preference : Hard, takes more time to cook compared to Pf and Hu, less tastier than H.u	636	578	608	-	-	9485.7	5885.76	2.63	-	-	-

Oyster mushroom	Preparation of fortified mushroom soup powder (20-21)	Oyster	5	1unit	1. Shelf life 2. Acceptability 3. BC ratio						The programme is in progress					
Button mushroom																
Vermicompost																
Sericulture																
Apiculture																
Others (pl.specify)																
Turmeric	Production of improved quality turmeric powder of elite varieties	IISR Varieties	-	-	-	-	-	-	-	-	210	64	1.4	100	130	1.3
Nutri garden	Nutritional security	Vegetables	25	25cent	-	-	-	24.77	16.95	60	403	261	1.3	160	760	0.17

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST
H-High L-Low, A-Average

Data on additional parameters other than yield (viz., additional income realized, employment generation, quantum of farm resources recycled etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Local
1. % of Curcumin content 2. Shelf life period	The curcumin content is higher in boiling method of curing process of turmeric	When the curing time is more, so the turmeric gets darker when it dried. Therefore the turmeric powder is very low in colour
1. Total production of vegetables (kg) 2. Daily utilization of fruits and vegetables in family diet (kg) 3. Amount saved over the period (Rs)	4-5 kg pesticides free vegetables are harvested in minimum of 5 cents per week 280gm of vegetables are consumed per day 78%of the cost of purchasing vegetables has been converted as savings.	The intake of fruits and vegetables are much below due to poor purchasing ability

5. B8. Feedback on enterprises demonstrated

Name of enterprise demonstrated	Useful characters as well as constraints of technology	Socio-economic as well as administrative constraints for its adoption
	• All households established nutrition garden on minimum of 5 cents and about 4-5 kg pesticides free vegetables are harvested per week for household use . • 78%of the cost of purchasing vegetables has now been converted as savings.	

5.B.9. Farm implements and machinery: Nil

Name of the implement	Cost of the implement in Rs.	Name of the technology demonstrated	No. of Demo	Area covered under demo in ha	Name of the operation with unit	Labour requirement in Mandays		% save	Savings in labour (Rs./ha)	*Economics of demonstration (Rs./ha)			*Economics of check (Rs./ha)		
						Demo	Check			Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

Data on additional parameters other than labour saved (viz., reduction in drudgery, time etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	**Demo**	**Local**

5. B10. Feedback on farm implements demonstrated

Name of farm implement demonstrated	Useful characters as well as constraints of technology	Socio-economic as well as administrative constraints for its adoption

5.B.6.Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Number of participants	Remarks
1	Field days	1	29	During harvest of
2	Farmers Training	1	25	Field level training regarding landpreparation and planting
3	Media coverage	1		
4	Training for extension functionaries	1	25	As online programme under ATMA
5	Others (Please specify)			

PART VI – DEMONSTRATIONS ON CROP HYBRIDS (2020)

Demonstration details on crop hybrids

Type of Breed	Name of the technology demonstrated	Name of the hybrid	No. of Demo	Area (ha)	Yield (q/ha)				% Increase	*Economics of demonstration (Rs./ha)			*Economics of check (Rs./ha)		
					Demo			Check		Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR
					H	L	A								
Cereals															
Bajra															
Maize															
Paddy															
Sorghum															
Wheat															
Others (pl.specify)															
Total															
Oilseeds															
Castor															
Mustard															
Safflower															
Sesame															
Sunflower															
Groundnut															
Soybean															
Others (pl.specify)															
Total															
Pulses															
Greengram															
Blackgram															
Bengalgram															

Redgram															
Others (pl.specify)															
Total															
Vegetable crops															
Bottle gourd															
Capsicum															
Others (pl.specify)															
Total															
Cucumber															
Tomato															
Brinjal															
Okra															
Onion															
Potato															
Field bean															
Others (pl.specify)															
Total															
Commercial crops															
Sugarcane															
Coconut															
Others (pl.specify)															
Total															
Fodder crops															
Maize (Fodder)															
Sorghum (Fodder)															
Others (pl.specify)															
Total															

H-High L-Low, A-Average

*Please ensure that the name of the hybrid is correct pertaining to the crop specified

Feedback on crop hybrids demonstrated

Name of crop hybrid demonstrated	Useful characters as well as constraints of technology	Socio-economic as well as administrative constraints for its adoption

PART VII. TRAINING (2020)

7.A.. Training of Farmers and Farm Women 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
Crop Production										
Integrated farming **(Online)**	1	20	13	33	0	0	0	20	13	33
Horticulture										
a) Vegetable Crops										
Nursery Management	2	23	18	31	0	3	3	23	24	44
Nutrition garden	1	6	0	6	0	0	0	6	0	6
Vegetable cultivation **(Online)**	6	-	-	-	-	-	-	-	-	973

b) Fruits	-	-	-	-	-	-	-	-	-	-
c) Ornamental Plants	-	-	-	-	-	-	-	-	-	
d) Plantation crops										
Production and Management technology	2	-	-	-	-	-	-	-	-	124
e) Tuber crops										
f) Spices										
Production and Management technology **(Online**)	6	-	-	-	-	-	-	-	-	892
Plant propagation techniques	1	3	17	20	0	13	13	3	30	33
Plant propagation techniques **(Online)**	1	-	-	-	-	-	-	-	-	685
Bush pepper cultivation **(Online)**	2	-	-	-	-	-	-	-	-	361
g) Medicinal and Aromatic Plants	-	-	-	-	-	-	-	-	-	-
Soil Health and Fertility Management	-	-	-	-	-	-	-	-	-	-
Livestock Production and Management										
Sheep/Goat	1	11	3	14	2	0	2	13	3	16
Home Science/Women empowerment										
Designing and development for high nutrient efficiency diet	1	0	23	23	0	11	11	0	34	34
Designing and development for high nutrient efficiency diet **(Online)**	1	-	-	-	-	-	-	-	-	14
Manures from kitchen waste **(Online)**	1	-	-	-	-	-	-	-	-	26
Agril. Engineering										
Plant Protection										
Pest and disease management in spices and vegetables **(Online)**	5	-	-	-	-	-	-	-	-	498
Organic vegetable cultivation **(Online)**	2	-	-	-	-	-	-	-	-	306
Pest and disease management in tuber crops **(Online)**	1	-	-	-	-	-	-	-	-	78
Fisheries										
Production of Inputs at site										
Bio-fertilizer production **(Online**)	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**63**
Mushroom production	**2**	**66**	**52**	**108**	**2**	**8**	**10**	**68**	**60**	**128**
Mushroom production (**Online)**	**7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**624**
CapacityBuilding and Group Dynamics										
Agro-forestry										
Integrated Farming Systems **(Online)**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**150**
TOTAL	**46**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5088**

7.B Training of Farmers and Farm Women 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**
Crop Production										
Integrated farming	1	30	2	32	4	2	6	34	4	38
Horticulture										
a) Vegetable Crops										
b) Fruits										

c) Ornamental Plants										
d) Plantation crops										
e) Tuber crops										
Production and Management technology	1	8	2	10	0	0	0	8	2	10
f) Spices										
Production and Management technology	1	3	3	6	0	0	0	3	3	6
g) Medicinal and Aromatic Plants										
Soil Health and Fertility Management										
Soil fertility management	1	12	6	18	0	0	0	12	6	18
Livestock Production and Management										
Dairy Management	1	29	18	47	11	12	23	40	30	70
Animal Disease Management	1	24	12	36	4	8	12	28	20	48
Home Science/Women empowerment										
Agril. Engineering										
Plant Protection										
Fisheries										
Production of Inputs at site										
CapacityBuilding and Group Dynamics										
Agro-forestry										
TOTAL	**6**	**106**	**43**	**149**	**19**	**22**	**41**	**125**	**65**	**190**

7.C.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**
Spices cultivation**(Online)**	1	-	-	-	-	-	-	-	-	140
Production of organic inputs/ pesticides**(Online)**	1	10	12	22	0	0	0	10	12	22
Plant propagation techniques	1	18	23	41	0	0	0	18	23	41
Mushroom Production **(Online)**	1	-	-	-	-	-	-	-	-	21
Bee-keeping	**1**	**26**	**7**	**33**	**4**	**0**	**4**	**30**	**7**	**37**
Farm mechanization/ Repair and maintenance of farm machinery and implements	2	28	5	33	4	3	7	32	8	40
Value addition	2	-	-	-	-	-	-	-	-	119
Dairying	1	7	10	17	5	2	7	12	12	24
Ornamental fisheries	**2**	**23**	**9**	**32**	**1**	**1**	**2**	**24**	**10**	**34**
Freshwater fish culture	**1**	**4**	**0**	**4**	**0**	**0**	**0**	**4**	**0**	**4**
Ornamental Fish Culture **(Online)**	**3**	-	-	-	-	-	-	-	-	**424**
Freshwater fish culture **(Online)**	**4**	-	-	-	-	-	-	-	-	**645**
Nutrition and diet **(Online)**	3	-	-	-	-	-	-	-	-	197
TOTAL	23	-	-	-	-	-	-	-	-	1748

7.D. Training for Rural Youths including sponsored training programmes (off campus)

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

		Male	Female	Total	Male	Female	Total	Male	Female	Total
Rural Crafts	1	24	36	60	0	0	0	24	36	60
TOTAL	1	24	36	60	0	0	0	24	36	60

7.E.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
Low cost and nutrient efficient diet designing **(Online)**	1	0	75	75	0	0	0	0	75	75
Total	1	0	75	75	0	0	0	0	75	75

7.F. Training programmes for Extension Personnel including sponsored training programmes (off campus): Nil

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										
Total										

7.G. Sponsored training programmes conducted

S.No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	**Crop production and management**										
1.a.	Increasing production and productivity of crops										
1.b.	Commercial production of vegetables										
1.c	Nursery Management	**2**	**23**	**18**	**41**	**0**	**3**	**3**	**23**	**21**	**44**
2	**Production and value addition**										
2.a.	Fruit Plants										
2.b.	Ornamental plants										
2.c.	Spices crops										
3.	**Soil health and fertility management**										
4	**Production of Inputs at site**										
5	**Methods of protective cultivation**										
6	**Others (pl.specify)**										
7	**Post harvest technology and value addition**										
7.a.	Processing and value addition										
7.b.	Others (pl.specify)										
8	**Farm machinery**										
8.a.	Farm machinery, tools and implements	**2**	**28**	**8**	**33**	**4**	**3**	**7**	**32**	**8**	**40**
8.b.	Others (pl.specify)										
9.	**Livestock and fisheries**										
10	**Livestock production and management**										
10.a.	Animal Nutrition Management	**1**	**7**	**10**	**17**	**5**	**2**	**7**	**12**	**12**	**24**
10.b.	Animal Disease Management										
10.c	Fisheries Nutrition										
10.d	Fisheries Management (Paid Training)	**1**	**21**	**2**	**23**	**1**	**0**	**1**	**22**	**2**	**24**
10.e.	Others (pl.specify)										
11.	**Home Science**										
11.a.	Household nutritional security										
11.b.	Economic empowerment of women										
11.c.	Drudgery reduction of women										
11.d.	Others (pl.specify)										
12	**Agricultural Extension**										
12.a.	CapacityBuilding and Group Dynamics										
12.b.	Others (pl.specify)										
	Total	**6**	**79**	**38**	**114**	**10**	**8**	**18**	**89**	**43**	**132**

Details of sponsoring agencies involved

1. ASCI

2. CDB

3. MANAGE through ATMA

4. Krishi Bhavan, Chakkittapara

7.H. Details of Vocational Training Programmes carried out by KVKs for rural youth: Nil

S.No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Crop production and management										
	Grand Total	-	-	-	-	-	-	-	-	-	-

7.F. Details of Skill Training Programmes carried out by KVKs under ASCI

S. No.	Name of Job Role	Date of Start	Date of Close	Total Participants	No. of Participants									Date of Assessment	No of Participants passed assessment
					General			SC/ST			Grand Total				
					Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	Dairy farmer/entrepreneur	07.02.2020		24	7	10	17	5	2	7	12	12	24	-	-
2.	Friends of coconut tree	10.02.2020		20	12	3	15	4	1	5	16	4	20	-	-

PART VIII – EXTENSION ACTIVITIES (2020)

8.1. Extension Programmes (including extension activities undertaken in FLD programmes)

Nature of Extension Programme	No. of Programmes	No. of Participants (General)			No. of Participants SC / ST			No.of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	4	73	57	130	0	0	0	3	2	
Kisan Mela	-	-	-	-	-	-	-	-	-	-
Kisan Ghosthi	1	13	3	16	0	0	0	0	10	10
Exhibition	2	1000s	1000s	1000s	-	-	-	-	-	-
Film Show	15	-	-	-	-	-	-	-	-	-
Method Demonstrations	9	97	89	186	11	5	16	7	6	13
Farmers Seminar (Online)	1	-	-	197	-	-	-	-	-	-
Workshop	-	-	-	-	-	-	-	-	-	-
Group meetings	-	-	-	-	-	-	-	-	-	-
Lectures delivered as resource persons	30	544	306	850	22	6	28	23	31	54
Newspaper coverage	69	-	-	-	-	-	-	-	-	-
Radio talks	3	-	-	-	-	-	-	-	-	-
TV talks	4	-	-	-	-	-	-	-	-	-
Popular articles	15	-	-	-	-	-	-	-	-	-
Extension Literature	-	-	-	-	-	-	-	-	-	-
Advisory Services	3780	2903	599		11	7		121	68	
Scientific visit to farmers field	45	174	58	232	0	13	13	6	7	13
Farmers visit to KVK	240	4490	1627	6117	-	-	-	5	3	8
Diagnostic visits	23	43	0	43	0	2	2	4	1	5
Exposure visits	3	26	13	39	2	3	5	0	0	0
Ex-trainees Sammelan	1	4	17	21	0	0	0	5	3	8
Soil health Camp	-	-	-	-	-	-	-	-	-	-
Animal Health Camp	-	-	-	-	-	-	-	-	-	-
Agri mobile clinic	-	-	-	-	-	-	-	-	-	-
Soil test campaigns	1	12	0	12	-	-	-	-	-	-
Farm Science Club Conveners meet	-	-	-	-	-	-	-	-	-	-
Self Help Group Conveners meetings	2	3	5	8	-	-	-	-	-	-
Mahila Mandals Conveners meetings	-	-	-	-	-	-	-	-	-	-
Celebration of important days (specify)										
National farmers day (23.12.20)	1	-	-	-	-	-	-	-	-	-
World Soil Day (05.12.20)	1	-	-	-	-	-	-	-	-	-

Live telecast of PM Kisan money release programme (25.12.20)	1	-	-	-	-	-	-	-	-	-
World Coconut Day (2.9.20)	1	-	-	-	-	-	-	-	-	-
Poshan Mah (17.9.20)	1	-	-	-	-	-	-	-	-	-
World Environment Day(5.6.2020)	1	18	4							
Garib Kalyan Yojana (19.6.20)	1	3	2					1		
International Yoga Day (21.6.20)	1	13	12		1	0		5	2	
World Earth Day (22.04.20)	1	15	26		2	2				
Republic day and awareness on duty and responsibility	1	15	10							
Webcasting of PMs address world potato conclave	1	10	3					8	5	
Any Other (Specify)										
Seminars attended	9	-	-	-	-	-	-	19	1	20
Consultancy services	277	321	21	342	1	1	2	8	8	16
Emails	185	-	-	-	-	-	-	-	-	-
AI	29	-	-	-	-	-	-	-	-	-
Goat Breeding	16	-	-	-	-	-	-	-	-	-
Exposure visit										
Meetings attended	11	3	3	6	0	0	0	126	108	234
Total	**4786**	**8780**	**2855**	**11635**	**50**	**39**	**89**	**341**	**255**	**596**

8.2 Special Extension Programmes

Nature of Extension Programme	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No.of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Jal Shakti Abhiyan	-	-	-	-	-	-	-	-	-	-
Fertilizer Use Awareness Campaign										
World environment day	06.06.2020	0	6	6	-	-	-	6	2	8
World yoga day	21.06.2020	10	17	27	-	-	-	2	1	3
Farmers day	17.08.2020	40	15	55	-	-	-	7	4	11
World Soil Day	05.12.2020			105				5	-	5
Live telecast of PM-Kisan money release programme	25.12.2020	5	20	25	-	-	-	2	0	2

PART IX – PRODUCTION OF SEED, PLANT AND LIVESTOCK MATERIAL (2020)

9.A. Production of seeds by the KVKs

Crop category	Name of the crop	Name of the Variety	Name of the Hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers to whom provided
Cereals (crop wise)						
Oilseeds						
Pulses						
Commercial crops						
Vegetables	Brinjal, Okra, Tomato, Ash gourd, Cowpea, Amaranthus etc.	-	-	761 packets	15220	200
Flower crops						
Spices	Turmeric and ginger	IISR Pragati and IISR Varada	-	42.2	42300	156
Fodder crop seeds						
Fiber crops						
Forest Species						
Others (specify)						
Total	**-**	**-**	**-**	**-**	**57520**	**356**

9.B. Production of hybrid seeds by the KVKs: Nil

Crop category	Name of crop	Name of the hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers to whom provided
Total					

9.C. Production of planting material by the KVKs

Crop category	Name of the crop	Variety	Hybrid	Number	Value (Rs.)	Number of farmers to whom provided
Commercial						
Vegetable seedlings	Cabbage, Cauliflower, Tomato, Brinjal, Curry leaf etc.	-	-	10,402	49,202	500
Fruits	Mango, Rose apple, passion fruit etc.	-	-	52	1140	25
Ornamental plants	Crotons	-	-	243	4860	30
Medicinal and Aromatic	Aloe Vera, Neem	-	-	27	530	10
Plantation	Arecanut, Coconut, Cocoa etc.	Mohitnagar, Kuttiady, etc.	-	2369	1,25,720	250
Spices	Nutmeg, Bush pepper, black pepper, garcinia, colubrinum, thippali etc.	IISR-Kerala Sree, IISR Viswasree, Thevam, etc.	-	16,564	13,72,450	4000
Tuber						
Fodder crop saplings						
Forest Species	Teak	-	-	132	2640	20
Others(specify)						
Total				29,789	15,56,542	4,835

9.D. Production of hybrid planting materials by the KVKs: Nil

Crop category	Name of crop	Name of the hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers to whom provided
Total					

9.C. Production of Bio-Products

Bio Products	Name of the bio-product	Quantity (q)	Value (Rs.)	Number of farmers to whom provided
Bio Fertilizers		182.11	48,624.28	300
Micro nutrient mixtures	Banana micro nutrient mixture	2.255	45100	200
Bio-pesticide	Neem soap, Pheromone traps, Nanma, Menma etc	313 nos.	29,010	150

Bio-fungicide	-			
Bio Agents	-			
Bio-control agents	Trichoderma, Pseudomonas, Bevaria etc.	8.68	86,170	800
Total	-	-	**2,08,904.28**	**1,450.00**

9.D. Production of livestock

Particulars of Livestock	**Name of the breed**	**Number**	**Value (Rs.)**	**Number of farmers to whom provided**
Dairy animals				
Cows				
Buffaloes				
Calves				
Others (Pl. specify)				
AI	-	39	3900	32
Goat breeding	-	74	10650	70
Poultry				
Broilers				
Layers				
Duals (broiler and layer)				
Japanese Quail				
Turkey				
Emu				
Ducks	Live	14.75	2212.5	10
Others (Pl. specify)				
Quail Eggs	-	2485	6212.5	200
Duck eggs	-	519	5190	50
Piggery				
Piglet				
Others (Pl.specify)				
Fisheries				
Fingerlings	Guppy, Molly, Goldfish, Fighter etc.	1440	12581	150
Others (Pl. specify)				
Fish feed	Starter, 1mm, 2mm, 4mm	431.33	30916.5	125
Fish medicine		32	1800	
		11.96	5583	
Live feed	-	67	3350	
Aquatic plants	-	220	3535	
Service charge	-	-	7138	50
Others – fish bowl etc		18	1380	15
Total			**94448.5**	**702**

PART X – PUBLICATIONS, SUCCESS STORY, INNOVATIVE METHODOLOGY, ITK, TECHNOLOGY WEEK

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

(A) KVK Newsletter:
Date of start: 2010 Periodicity:Half yearly Copies printed in each issue: 50

(B) Literature developed/published

Item	Number
Research papers- International	-
Research papers- National	2
Technical reports	-
Technical bulletins	-
Popular articles - English	-
Popular articles – Local language	15
Extension literature	1
Booklets	11
Training manuals	3
News letter	1
TOTAL	**33**

10.B. Details of Electronic Media Produced

S. No.	Type of media	Title	Details
	CD / DVD	**KVK at a Glance**	-
	Mobile Apps	-	-
	Social media groups with KVK as Admin	**1) Ornamental fish farmers group** **2) Vegetable farmers group** **3) Mushroom farmers group** **4) General KVK group (4 nos)**	-
	Facebook account name	**www.facebook.com/ kvkcalicut**	-
	Instagram account name	-	-
	Twitter	**www.twitter.com/kvkcalicut**	-
	YouTube	**www.youtube/kvkcalicut**	-

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

Title: Organic Turmeric cultivation - Experience of a woman SHG

Background

India is the major producer, consumer and exporter of spices in the world, growing about 60 different varieties of spices and produces about 94 lakh MT of spices, of which, about 9.6 lakh MT (10 %) is exported to more than 150 countries. Since organic foods are free from chemical contaminants, the demand for these products is steadily increasing. Organic farming is a form of agriculture that relies on techniques such as crop rotation, green manure, compost and biological pest control. In this system only natural fertilizers and pesticides are allowed, but it excludes or strictly limits the use of synthetic fertilizers and pesticides, plant growth regulators such as hormones, genetically modified organisms, human sewage sludge and nano materials. The organic farming does not aim only at higher crop yield or returns but also developing long term self-sustainable practices. With the increasing demand for organic foods, the demand for spices and spice products are also steadily increasing.

Interventions

In Kerala, turmeric is being cultivated in isolated area and cultivated area is very less (2630 ha). There is an ample scope for reducing the cost of cultivation through judicious use of inputs. In Kerala cultivated coconut area is 7,90223 ha and only 10% is utilised for intercropping. Turmeric is suitable to cultivate as intercrop in coconut garden. Most of the farmers in Kerala belongs to small and marginal groups and are finding difficult to make ends meet. At the same time they are conscious about soil ill health and health deterioration due to consuming foods having pesticides. Organic package of turmeric consisting application of inputs, such as FYM, vermicompost, neem cake and neem oil for the pest control, application of Trichoderma and PGPRs for disease control was developed by ICAR-IISR for the benefit of farmers. In order to popularise the technology, the organic package of turmeric was demonstrated as FLD in an area of one acre coconut garden in Kavunthara Panchayat. The organic cultivation of turmeric was done by women SHG under Service Cooperative Bank in Kavumthara Panchayat.

Process

Before implementing the FLD, a training programme on cultivation of organic turmeric to farmers in Kavumthara panchayat including women SHG group was conducted. Attracted by the training programme, a women SHG group consisting 10 members under the leadership of Mrs. Sakeena implemented the organic demonstration programme in Kavumthara Panchayat. This SHG with active farming members of Service cooperative bank, Kavumthara provided good support to registered farmers by arranging improved seeds, inputs, technical knowhow and helped for marketing.

Technology

The demonstration on organic cultivation of turmeric was carried out during 2019-20. Garden having more than 20 years old coconuts was selected and inter spaces of coconut garden was used for planting turmeric. Land was prepared by digging with spade on the receipt of early monsoon showers during April and beds of 1.0 m width, 30 cm height and of convenient length was prepared with a spacing of 50 cm between beds. Small pits were made at spacing of 25 cm x 25 cm with a hand hoe on the beds and healthy, disease free rhizomes of turmeric (25 g) variety IISR Pragati having 1-2 buds were sown. IISR Pragati is a short duration variety (180 days) having an average yield of 38 t/ha. It is moderately resistant to root knot nematode and has high curcumin (5.02%) across different locations. Local variety of turmeric was used as check under same management conditions.

Well decomposed cattle manure or compost @ 10 tones/acre, neem cake 800 kg/acre were applied in beds at the time of planting. Vermicompost 800 kg/ acre was applied at 45 and 90 days after planting. Ash 250 g/acre was applied at 45 days after planting, to rectify micronutrient deficiency, turmeric micronutrient mixture developed by IISR was sprayed @ 5g/litre of water during 60 and 90 days after planting. The crop was mulched immediately after planting with available materials such as green leaves, dried coconut leaves etc. Every bit of farm waste was recycled within the farm itself by vermicomposting for which KVK Peruvannamuzhi arranged special trainings with the help of scientists from ICAR-IISR. The crop was also

drenched with *Bacillus amyloliquefaciens*, a PGPR formulation for its disease prevention and growth promotion on 30 and 60 DAP. After weeding, manures, were applied at 45 and 90 days after planting followed by mulching and earthing up for proper aeration and for the development of rhizomes. No major pest and disease was observed during the growing period.

The crop was harvested 180 days after planting and cleaned. Yield in the demonstration plots ranged from 60.0 q/ acre to 120.0 q/ acre with an average of 86.5 q/ acre. Yield in the local check ranged from 50 q/acre to 72 q/acre with an average of 58.3 q/ acre. Being an improved variety majority of the produce was sold as seed material to needy farmers directly and the remaining as cured turmeric. On an average, yield increase of 11.96 per cent over local check was observed. The total expenditure was Rs.1,56,340/ acre and gained a net returns of Rs. 77,078 with a BCR of 1.49 for Pragati and 1.25 for local variety. In normal situation people were not involved in turmeric cultivation due to less profit. But the present awareness about curcumin and its nutaceutical potentials among the general public given array of hope for farmers for cultivating the crop organically that it fetched good income to SHG.

Impact

Convinced by the better performance under organic cultivation and due to great demand of organic seed rhizomes of Pragati, Mrs. Sakeena, the group leader told that all cultural operations in their plot was carried out by family members. Success of the seed production programme has also attracted nearby unemployed women as well as farmers and they have come forward to cultivate the variety organically as intercrop in order to enhance income from coconut garden. Thus farmer to farmer spread of the information has further helped in spreading of the production technologies in to other wards of the districts. All the 10 members in the group have decided to cultivate the crop in more area during following seasons.

View of the field

View of the field

	
View of the field	**Filed day**

Title: Mushroom cultivation -a boon for doubling farmers' income

Background-

Generally the people of North Kerala prefer non-vegetarian food in their diet. But regular use of it will result in health ailments like cholesterol, obesity, etc. Hence as a substitute for meat, at the same time giving a meaty taste, mushrooms play the role of better counterpart. Besides, it can be grown very well on paddy straw, dry banana sheath, etc as media which are very much available in the area. Paddy straw, banana sheath etc are wasted, and sometimes even burnt, which has got environmental impacts. Hence considering the conversion of waste into wealth, the programme of utilisation of paddy straw for mushroom cultivation as media was planned. Also the people were mostly unaware about the nutritive value of mushrooms. Hence the programme of FLD on Popularisation of different oyster mushroom varieties in Kozhikode district was proposed.

Interventions

Process:

Three different oyster mushroom varieties viz., *Pleurotes florida, Hypsizygous ulmarius and Pleurotus oeus (commonly called as White oyster mushroom, Blue oyster mushroom and Pink oyster mushroom respectively)* were popularised in the programme. Under this programme quality mushroom spawn of all the three different varieties were given to five farmers in Naduvannur and Ulliyeri panchayats. A total of sixteen trainings and demonstrations covering 488 trainees, exposure and information sharing to 872 students from eleven different schools of the district during the Agriculture Education Day celebrations were conducted at KVK during April, 2018 to March, 2020. A total of 4 training programmes were provided by KVK in 2020 and 427 kg of mushroom spawn was made available from KVK during January 2020 to December, 2020.

Impact

One of the beneficiary Mr.Mithun Vijay, 29 years old has started practicing mushroom production under this FLD programme. He has started a mushroom production unit at Koothali village of Kozhikode district, seeing the demand for mushrooms in the local market. The construction of the mushroom production unit has been completed and is waiting for a water source and is in the process of starting the unit. Meantime, he is running the mushroom production unit at his home by converting one of the rooms into a unit. Mithun has been selling mushroom to the local market @ Rs. 400/- per kg, under the name Oval Group of Hitech Farms, which also includes poultry unit run by him. During

the lock down period, when people were not getting fish or other non vegetarian items, Mithun could sell out the produce to his neighbours with good demand. Even after the release of lockdown, Mr. Mithun is getting high demand for mushroom from the earlier costumers, hotels and even supermarkets in the locality.Hence he maintains 100 beds reularly and ensures regular supply of mushroom. Recently Mithun has obtained FSSAI registration and the demand for mushroom is increasing day by day, as explained by Mithun.

Three women Mr. Sobhana, Rugmini and Vimala in the nearby households in Changaroth panchayat have purachased mushroom spawn from KVK and started a unit in a small shed in one of the household, by taking loan from Kudumbasree. They too have been selling mushroom to the local shops in their locality and has been earning enough money that they have repayed the loan amount and have even made profit out of it. Moreover they could supply the mushroom to other households even during the lockdown period and they are seeing it as a great achievement, as it added to their income, along with satisfaction.

Mr. Paveesh, a school teacher from a rural area of Kozhikode district has attended training of our KVK. He has also strated a mushroom production unit at his backyard. He regularly supplies mushroom in the local market and has even turned to value addition. The products like mushroom pickle, mushroom cutlet are sold under the brand name Padmini mushrooms.

Horizontal Spread: More farmers have come forward from different areas of Kozhikode district for taking up cultivation of the oyster mushroom. KVK is assisting farmers by providing good quality spawn to the farmers of the district. During the initial phases of release of lockdown, the mushroom spawn was delivered to the houses considering the diffculty in reaching at KVK. Mushroom cultivation is an enterprise which can be started with low investment and can make profit out of it, utilizing the leisure time.

While demonstration of diffrent mushroom varieties, it was found that there was more demand for *Hypsizygous ulmarius* and *Pleurotes florida*, while there was hesitation among the public for purchasing the spawn of pink mushroom, fearing it is a poisonous one. But later on, with the popularisation of the variety, people got convinced and started demanding for it, though it is quite hard and takes more time to cook.

Economic gains:

Mushroom cultivation is a profitable enterprise, which needs very low initial investment and running cost. This enterprise is actually based on waste utilisation, and turning it into wealth. The oyster mushroom variety *Pleurotes florida* yielded an average of 856 g per bed, with a net returns of 9765 and BC ratio of 3.71 in 49-50 days, the *Hypsizygous ulmarius* gave a net returns of 8422 and BC ratio of 3.33 in 53 days . The pink oyster mushroom *Pleurotes oeus* recorded a BC ratio of 2.63 in 40 days time period. The economics when worked out ends in a conclusion that mushroom cultivation if taken up with utmost care can even result in not doubling, but tripling the farmers income within a short time span of 2 months, that too with less physical exertion.

Employment Generation:

Several rural youth, including farm women has taken up mushroom cultivation, considering its scope during the lockdown period. Since the shops and other business units were locked during the period, the general public has turned to agriculture and even mushroom cultivation which needs very less physical work and investment.

Mushroom sold in packets

Mushroom in beds

Mrs. Sobhana and Team, Perambra

Value added products from mushroom

Mr. Paveesh in his mushroom shed

Mr. Mithun with mushroom beds

10.D. Give details of Innovative Methodology or Innovative Approach of Transfer of Technology developed and used during the year

10.E. Give details of Indigenous Technical Knowledge 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	Scientific Rationale
1	Elephant foot yam	Usu of cormels as planting material in poly bag and later using for field planting in pits.	To save cost of planting material (corm) and to produce family suited size of corms for easy marketing and closer planting to save space for marginal farmers.	The cormels are generally used for culinary requirement of kitchen and not meant for sales in market.The crmels on raising in poly bag for a month and planting subsequently will yied small sized corms suitable for small families that can be easily carried in small carrybags unlike 3-4 kg whole corms raised from corm pieces . By using this method the cost of seed

				material for elephant foot yam (Rs.3-4 lakhs/ha for corm pieces) can be saved.

Seed corms of elephant foot yam

Corms and cormels

10 F. Technology Week celebration during 2020: Nil

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

Other Details

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Gosthies			
Lectures organized			
Exhibition			
Film show			
Fair			
Farm Visit			
Diagnostic Practicals			
Supply of Literature (No.)			
Supply of Seed (q)			
Supply of Planting materials (No.)			
Bio Product supply (Kg)			
Bio Fertilizers (q)			
Supply of fingerlings			

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Supply of Livestock specimen (No.)			
Total number of farmers visited the technology week			

10 E. Recognition and Awards: 1

Mr. K T Francis, Mullankunnu and Mr. Xavior, Kallnode felicitated as best spice farmers by CARI, Goa during March 2020

PART XI – SOIL AND WATER TEST

11.1 Soil and Water Testing Laboratory

A. Status of establishment of Lab :

1. Year of establishment : 2010
2. List of equipments purchased with amount :

Sl. No	Name of the Equipment	Qty.	Cost	Status
1	Electronic physical balance	1	6160	Working
2	Chemical balance	1	42162	"
3	pH meter	1	14388	"
4	Oven	1	15476	"
5	Water distillation still	1	41340	"
6	Digestion and distillation system	1	130802	"
7	Hot plate	1	4120	"
8	Spectrophotometer	1	55230	"
9	Shaker	1	48038	"
10	Conductivity meter	1	14960	"
11	Flame photometer	1	37026	"
12	Refrigerator	1	16890	"
13	Grinder	1	1950	"
14	Double distillation unit	1	63250	"
15	Electronic balance	1	6800	"
16	Mridaparishak	2	180000	"
Total		**17**	**678592**	

B. Details of samples analyzed since establishment of SWTL:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages	Amount realized (Rs.)
Soil Samples	3387	3387	88	-
Water Samples	122	122	19	-
Plant samples	-	-	-	-
Manure samples	-	-	-	-
Others (specify)	-	-	-	-
Total	**3509**	**3509**	**107**	-

C. Details of samples analyzed during the 2020:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages
Soil Samples	**112**	**112**	**6**
Water Samples	**15**	**15**	**2**
Plant samples	-	-	-
Manure samples	-	-	-
Others (specify)	-	-	-
Total	**127**	**127**	**8**

11.2 Mobile Soil Testing Kit

A. Date of purchase and current status

Mobile Kits	Date of purchase	Current status
1.	March. 2017	Working

B. Details of soil samples analyzed during 2020 and since establishment with Mobile Soil Testing Kit:

	During 2019	During 2020	Cumulative progress (Total)
Samples analyzed (No.)	-	-	200
Farmers benefited (No.)	-	-	345
Villages covered (No.)	-	-	17

11.3 Details of soil health cards issued based on SWTL & Mobile Soil Testing Kit during 2020:

Particulars	Date (s)	Villages (No.)	Farmers (No.)	Samples analyzed (No.)	Soil health cards issued (No.)
SWTL	-	4	42	42	42
Mobile Soil Testing Kit	-	-	-	-	-

11.4 World Soil Health Day celebration

Sl. No.	Farmers participated (No.)	Soil health cards issued (No.)	VIPs (MP/ Minister/MLA attended (No.)	Other Public Representatives participated	Officials participated (No.)	Media coverage (No.)
1	**52**	**52**	**0**	**2**	**5**	**5**

PART XII. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Gardening and landscaping	20	55	24000 per unit per year	54000 per unit per year
Bush pepper production	325	12	6,400 per unit per year	Rs.42,000 per unit per year
Planting material production and nursery management	375	22.93	2100 per unit per year	90,000 per unit per year

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

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

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

PART XIII - LINKAGES

13A. Functional linkage with different organizations

Name of organization	Nature of linkage
ATMA	MTA meetings, diagnostic visits
NABARD	Financial assistance for bankable projects of KVK beneficiary farmers
KAU	Technical support, supply of technological inputs

Department of Agriculture	As resource person for training programmes, beneficiary identification for various training programmes, conduct of field days, participation in meetings, joint field visits etc.
NGO's, Farmers' clubs etc	As resource person for training programmes
Kudumbashree mission	Organization of training programmes
ASCI	Conduct of sill development training programmes
All India Radio, Kozhikode	Participating in farm radio programmes, wide publicity to KVK training programmes
Kozhikode Agri-horti Society, Kozhikode	Arrangement of exhibitions
Other KVKs	Deployment of experts for programmes, training. sale and procurement of inputs
Kerala State Animal Husbandry department	Animal health campaign,seminar,training etc
Keraka Livestock Development Board	Supply of Frozen Seman for artificial insemination in cows and goats
Dairy Department	Organizing seminar,Ksheerthsavom,Kissan khosti
Cooperative milk societies	Training,Animal Health Campaign etc
ATMA, Agricultural Dept., Fisheries Dept	Training

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

13B. List of 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.)
STRY training on Nursery Management	**December 2020**	**ATMA**	**84000**
Kudumbasree Mission training on fruit processing	**November 2020**	**Kudumbasree Mission**	**35000**

13C. Details of linkage with ATMA

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**				
02	**Research projects**				
03	**Training programmes**	**ATMA STRY programme**		**2**	**Seven days programme**
04	**Demonstrations**				
05	**Extension Programmes**				
	Kisan Mela				
	Technology Week				
	Exposure visit				
	Exhibition				
	Soil health camps				
	Animal Health Campaigns				
	Others (Pl. specify)				
06	**Publications**				
	Video Films				
	Books				
	Extension Literature				
	Pamphlets				

	Others (Pl. specify)				
07	**Other Activities** (Pl.specify)				
	Watershed approach				
	Integrated Farm Development				
	Agri-preneurs development				

13D. 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

13E. 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

13F. Details of linkage with RKVY

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

13G. Kisan Mobile Advisory Services

Month	Message type (Text/Voice)	SMS/voice calls sent (No.)						Total SMS/Voice calls sent (No.)	Farmers benefitted (No.)
		Crop	Livestock	Weather	Marketing	Awareness	Other enterprises		
January	1	**1**	-	-	-	-	-	**1**	**113496**
February	2	-	-	-	-	**2**	-	**2**	**113506**
March	0	-	-	-	-	-	-	**0**	**0**
April	0	-	-	-	-	-	-	**0**	**0**
May	1	-	-	-	-	**1**	-	**1**	**113305**
June	1	**1**	-	-	-	-	-	**1**	**113564**
July	1	**1**	-	-	-	-	-	**1**	**113572**
August	1	-	-	-	-	**1**	-	**1**	**113302**
September	1	-	-	-	-	**1**	-	**1**	**88357**
October	1	-	-	-	-	**1**	-	**1**	**88564**
November	1	-	-	-	**1**	-	-	**1**	**88562**
December	1	-	-	-	-	**1**	**0**	**1**	**88360**
Total	**11**	**3**	**0**	**0**	**1**	**7**	**0**	**11**	**1034588**

PART XIV- PERFORMANCE OF INFRASTRUCTURE IN KVK

14A. 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	

14B. Performance of instructional farm (Crops) including seed production

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals									
Pulses									
Oilseeds									
Fibers									
Spices & Plantation crops									
Spices	May 2019	January 2020	0.01	Pragati	Seed Rhizome	42.2q	10000	42300	-
Floriculture									
Fruits									
Vegetables									
Others (specify)									

14C. Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1	Trichoderma	985 kg	-	98500	-
2	Neemsoap	27.15 kg	-	10860	-
3	Mushroom spawn	427.25 kg	-	51270	-
4	Cuelure	100 Nos.	-	12500	-

14D. 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	Fingerlings	Guppy, Molly, Goldfish, Fighter etc	Fingerlings	1440	-	12581	-
2	Ducks	-	Live	14.75 kg	-	2212.5	-
3	Quail Eggs	-	-	2485	-	6212.5	-
4	Duck eggs	-	-	519	-	5190	-

14E. Utilization of hostel facilities

Accommodation available (No. of beds)

Months	**No. of trainees stayed**	**Trainee days (days stayed)**	**Reason for short fall (if any)**
January	41	14	-
February	50	15	-

March	35	18	-
April	0	0	-
May	1	5	-
June	21	10	-
July	24	26	-
August	20	16	-
September	28	18	-
October	9	8	-
November	38	22	-
December	35	14	-

14F. Database management

S.No	Database target	Database created
1	Farmer database to evaluate DFI	DFI farmers list

14G. Details on Rain Water Harvesting Structure and micro-irrigation system

Amount sanction (Rs.)	Expenditure (Rs.)	Details of infrastructure created / micro irrigation system etc.	Activities conducted					Quantity of water harvested in '000 litres	Area irrigated / utilization pattern
			No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)		

PART XV – SPECIAL PROGRAMMES

15.1 Paramparagath Krishi Vikas Yojana (PKVY)

Sl No.	Name of cluster village	Initial soil fertility status (Average of cluster village)				Facilities created for organic source of manure	Name of Crops cultivated	Variety	Organic inputs applied including bio-agents and botanicals treatment	Yield (q/ha)	Economics	
		Aval. N	Aval. P	Aval. K	OC %						Cost of cultivation (Rs/ha)	Net returns (Rs/ha)
1	Naduvannur	L	M	M		Vermicomposting units Green gram Lime	Rice Coconut Banana Arecanut Vegetables	Oryza WCT Nendran South Canara Local Local		31q 5500 nuts 152q 8 1.8	35000 76000 160000 100000 60000	18000 12250 95000 220000 40000
2	Marudonkara	L	H	L	L	Vermicomposting units Green gram Lime	Coconut Arecanut Banana	WCT South Canara Local Nendran		6100nuts 8.5q 1o5q	61000 110000 140000	22000 275000 70000

15.2 District Agriculture Meteorological Unit (DAMU)

	Agro advisories	Farmers awareness programmes

Sl No.	No of Agro advisories generated	No of farmers registered for agro advisories	No of farmers benefitted	No of programmes	No of farmers benefitted
1					
2					

15.3 Fertilizer awareness programme 2020

State	Name of KVK	Details of Activities/programme Organised	Number of Chief Guests	No. of Farmers attended program	Total participants

15.4 Seed Hub

Crops	*Variety*	*Year of release*	*Production*				*Remarks*
			Target (q)	*Area (ha.)*	*Actual Production (q)*	*Category (FS/CS)*	

15.5 CFLD on Oilseeds:

Sl.No.	Crop	Varieties demonstrated and check	Allocated		Implemented	
			Area (ha)	Demos (No.)	Area (ha)	Demos (No.)
	Total					

15.6 CFLDs on Pulses:

Sl.No.	Crop	Varieties demonstrated and check	Allocated		Implemented	
			Area (ha)	Demos (No.)	Area (ha)	Demos (No.)
	Total					

15.7 Krishi Kalyan Abhiyan

Type of Activity	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No.of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total

15.8 Micro-Irrigation

Type of Activity	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No. of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total

15.9 Tribal Sub-Plan (TSP)

Farmer Training		Women Farmer Training		Rural Youths		Extension Personnel		OFT (No of Technologiess)	Number of farmers involved			Participants in extension activities (No.)	Production of seed (q)	Production of Planting material (Number in lakh)	Production of Livestock strains (Number in lakh)	Production of fingerlings (Number in lakh)	Testing of Soil, water, plant, manures samples (Number)
No. of Trainings/Demos	No. of Farmers	No. of Trainings/Demos	No. of Women Farmers	No. of Trainings/Demos	No. of Youths	No. of Trainings/Demos	No. of Ext. Person		On-farm trials	Frontline demos	Mobile agro-advisory to farmers						

15.10 SCSP

Farmer Training		Women Farmer Training		Rural Youths		Extension Personnel		OFT (No of Technologiess)	Number of farmers involved			Participants in extension activities (No.)	Production of seed (q)	Production of Planting material (Number in lakh)	Production of Livestock strains (Number in lakh)	Production of fingerlings (Number in lakh)	Testing of Soil, water, plant, manures samples (Number)
No. of Trainings/Demos	No. of Farmers	No. of Trainings/Demos	No. of Women Farmers	No. of Trainings/Demos	No. of Youths	No. of Trainings/Demos	No. of Ext. Person		On-farm trials	Frontline demos	Mobile agro-advisory to farmers						

15.11 NARI

Activity	Achievement	
	Number of activity	No. of farmers/ beneficiaries
OFTs – Nutritional Garden (activity in no. of Unit)		
OFTs – Bio-fortified Crops (activity in no. of Unit)		
OFTs – Value addition (activity in no. of Unit/Enterprise)		
OFTs - Other Enterprises (activity in no. of Unit/Enterprise) (activity in no. of Unit/Enterprise)		

FLDs – Nutritional Garden (activity in no. of Unit)	**1**	**25**
FLDs – Bio-fortified Crops (activity in no. of Unit)		
FLDs – Value addition (activity in no. of Unit/Enterprise)	**1**	**5**
FLD- Other Enterprises (activity in no. of Unit/Enterprise) (activity in no. of Unit/Enterprise)		
Trainings		
Extension Activities		

15.12 KVK Portal

No. of Events added by KVKs	**No. of Facilities added by KVKs**	**Filled Report on Package of Practices (Y/N)**				**Filled Profile Report (Y/N)**							
		Crop	**Livestock**	**Fisheries**	**Horticulture**	**Employees**	**Posts**	**Finance**	**Soil Health Cards**	**Appliances**	**Crops**	**Resources**	**Fish**
353	**5**	**Y**	**N**	**N**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**

15.13 KSHAMTA

Number of Adopted Villages	**No. of Activities**		**No. of farmers benefited**	
	Demo	**Training**	**Demo**	**Training**

15.14 DFI

Sl	District	Taluks	Villages	Farmers (No.)	Average Benchmark Income (Rs/year)	Crops/ enterprises	KVK Interventions	Additional Net Income generated due to KVK interventions (Rs/year)	Total income of farmer (Rs/year)
1	Kozhikode	Koyilandy	Naduvannur	70	150000	Spices, banana, tubers, vegetables, etc	Demonstartion		
			Kottur	70	213000	Paddy, banana, vegetables	Demonstartion		

PART XVI - FINANCIAL PERFORMANCE

16A. 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 (IISR, Calicut)	State Bank of India	Calicut	000861	ICAR Unit, IISR, Kozhikode	30302810771	673002001	SBIN0000861
With KVK	-	-	-	-	-	-	-

16B. Utilization of KVK funds during the year 2019-20 (Rs. in lakh)

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**	17000000	17000000	16281029
2	**Traveling allowances**	175000	175000	174316
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	558408	558408	558408
B	POL, repair of vehicles, tractor and equipments	225192	225192	225192
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	92474	92474	92474
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	10696	10696	10696
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	290000	290000	290000
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	70000	70000	70000
G	Training of extension functionaries	0	0	0
H	Maintenance of buildings	100000	100000	100000
I	Establishment of Soil, Plant & Water Testing Laboratory	19990	19990	19990
J	EDP (2 Nos)/ Innovative activities	55000	55000	55000
K	Nutri gardens	11430	11430	11430
K	Library	21810	21810	21810
TOTAL (A)		**18670000**	**18670000**	**17950345**
B. Non-Recurring Contingencies				
1	**Works**			
2	**Equipment including SWTL & Furniture**			
3	**Vehicle** (Four wheeler/Two wheeler, please specify)			
4	**Library** (Purchase of assets like books & journals)			
TOTAL (B)		**18670000**	**18670000**	**17950345**
C. REVOLVING FUND		**2553166**	**2553166**	**1960651**
GRAND TOTAL (A+B+C)				

16C. Status of revolving fund (Rs. in lakh) for the last 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 2017 to March 2018	2.54	34.8	32.10	5.24
April 2018 to March 2019	5.24	26.42	24.72	1.70
April 2019 to March 2020	1.70	23.83	19.61	5.92

17. Details of HRD activities attended by KVK staff

Name of the staff	Designation	Title of the training programme	Institute where attended	Dates

K K Aiswariya	SMS (Plant Protection)	Production protocols for predators and parasitoids.	NIPHM, Hyderabad	23 to 25.11.2020
Jayakumar C K	PA (Computer)	Full stack web development	EICT, IIT Roorkee	01.10.20 to 14.10.2020
"	PA (Computer)	Capacity building programme for CJSC members	NAARM Hyderabad	27.01.21 to 31.01.2021

18. **Please include any other important and relevant information which has not been reflected above (write in detail). Like details regarding FPO formation, Achievements during COVID-19 lockdown period.**

- Online trainings (20 nos) organized through Cisco Webex, face book, Google meet and Zoom on "cultivation of spices, vegetables, mushroom, Ornamental fishes" and pest and disease management benefited more than 6,000 persons during the COVID period.
- During Covid lock down period extensive training programmes were organised through online media and hundreds of farmers participated in each training programme. Also consultancy services were provide through phone as well as Whatsapp.
- The efforts like daily telephonic advisory (about 10,000 nos) on vegetable cultivation & pest and disease management; farm advisory (8 nos) through print media and online trainings posted in You tube (14 nos) during COVID – 19 period benefited lakhs of farmers effectively.