

ANNUAL REPORT 2019-20

(April 2019-March 2020)

APR SUMMARY

Name of the KVK : ICAR Krishi Vigyan Kendra, Thiruvannamalai

1. Technology Assessment

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	6	40	40
Livestock	-	-	-
Various enterprises	1	5	5
Total	7	45	45
Technology Refined			
Crops	-	-	-
Livestock	-	-	-
Various enterprises	-	-	-
Total	-	-	-
Grand Total	7	45	45

2. Frontline demonstrations

Details	No. of Farmers/Locations	Area (ha)	Units/Animals
Oilseeds	-	-	-
Pulses	-	-	-
Cereals	20	8	-
Vegetables	40	10	-
Other crops-Millet	40	16	-
Total	100	34	-
Livestock & Fisheries	10	-	250
Other enterprises	15	-	2
Total	25	-	-
Grand Total	125	34	-

3. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	65	709	263	972
Rural youths	11	108	53	161
Extension functionaries	3	39	14	53
Sponsored Training	8	60	116	176
Vocational Training	1	7	8	15
Total	88	923	454	1377

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	238	12392
Other extension activities	509	-
Total	747	12392

5. Mobile Advisory Services

Message Type	Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	Total
Text only	6	2	1	3	3	5	20
Total	6	2	1	3	3	5	20

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	18.53	162749.00
Planting material (No.)	5473	124920.00
Bio-Products (kg)	3746.75	162765.00
Livestock Production (No.)	785	40107.00
Fishery production (No.)	-	-

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	156	6000.00
Water	9	900.00
Plant	-	-
Total	165	6900.00

8. HRD and Publications

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

DETAILED PROGRESS REPORT 2019-20

1. GENERAL INFORMATION ABOUT THE KVK

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

a) Name of the KVK	:	ICAR - Krishi Vigyan Kendra
b) Address	:	Kilnelli village, Chithathur post, Vembakkam Taluk, Thiruvannamalai District, Tamil Nadu- 604 410
c) Landline Phone No.	:	+91 6384093303
d) Fax No.	:	-
e) Official Mobile No.	:	+91 6384093303
f) email ID	:	kvktvmalai91@gmail.com

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

a) Name of the Host Organization	:	Tamil Nadu Board of Rural Development
b) Address	:	No:24, II nd floor, Crescent park street, T.Nagar, Chennai-600 017
c) Landline Phone No.	:	044-24361319
d) Fax No.	:	044-24360234
e) Official mobile No.	:	9444021523
f) email ID	:	tnbrd1978@gmail.com

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

a) Name	:	Mr.N.Rameshraj
b) Phone - residence	:	--
c) Mobile	:	9943727419
d) email ID	:	rameshraj_horti@yahoo.co.in

1.4. Year of sanction : 1991

1.5. Staff Position (as on 31th March, 2020)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Educational Qualification	Specialization	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent/Temporary	Category (SC/ ST/ OBC/ Others)
1	Senior Scientist and Head	Vacant	-	-	-	-	-	-	-	-	-
2	Subject Matter Specialist	Mr.N.Rameshraj	Subject Matter Specialist	Horticulture	M.Sc., (Agri.)	Horticulture	15600-39100 + GP : 5400/-	26880/-	07/04/2003	Permanent	OBC
3	Subject Matter Specialist	Mrs.T.Margaret	Subject Matter Specialist	Home Science	M.Sc., M.phil (H.Sc.,)	Home Science Extension		26880/-	07/04/2003	Permanent	OBC
4	Subject Matter Specialist	Mr.P.Narayanan	Subject Matter Specialist	Plant Protection	M.Sc., (Agri.)	Plant Pathology		18240/-	08/01/2014	Permanent	OBC
5	Subject Matter Specialist	Mr.V.Suresh	Subject Matter Specialist	Agri. Extension	M.Sc., (Agri.)	Agri. Extension		18240/-	20/01/2014	Permanent	OBC
6	Subject Matter Specialist	Dr.K.Mayakrishnan	Subject Matter Specialist	Animal Science	M.V.Sc.,	Veterinary Extension		15600/-	01/07/2019	Permanent	SC
7	Subject Matter Specialist	Vacant	-	-	-	-		-	-	-	Permanent

8	Programme Assistant	Miss.N.K.Tamilarasi	Programme Assistant	Lab Technician	B.Sc., (Agri.)	-	(9300-34800) + GP: 4200/-	9300/-	29/07/2019	Permanent	OBC
9	Computer Programmer	Mr.O.Sekar	Programme Assistant	Computer Programmer	B.Sc., PGDCA	-		22130/-	01/09/1997	Permanent	OBC
10	Farm Manager	Miss.M.Sanathi	Farm Manager	Farm Manager	B.Sc., (Agri.)	-		9300/-	28/06/2019	Permanent	OBC
11	Accountant / Superintendent	Mrs.M.Viji	Assistant	-	M.Com.,	-		23120/-	01/02/1993	Permanent	OBC
12	Stenographer	Mrs.A.K.Geetha	Jr. Stenographer Grade III	-	B.Com., (DCA)	-	(5200-20200) + GP: 2400/-	14230/-	01/10/1997	Permanent	OBC
13	Driver	Mr.S.Janarthanan	Driver (Jeep)	-	VIII Std	-	(5200-20200) + GP: 2000/-	11760/-	01/09/1993	Permanent	OBC
14	Driver	Mr.T.Selvaraj	Driver (Tractor)	-	X Std	-		11600/-	01/01/1996	Permanent	OBC
15	Supporting staff	Mr.T.Varadhan	Supporting staff	-	V Std	-	(5200-20200) + GP: 1800/-	10150/-	01/02/1994	Permanent	OBC
16	Supporting staff	Mr.G.Selvam	Supporting staff	-	IV Std	-		10150/-	01/07/1995	Permanent	OBC

1.6. Total land with KVK (in ha) :

S.No	Item	Area (ha)
a.	Under building	0.20
b.	Orchard/Agro-forestry	10.80
c.	Under Crops	3.40
d.	Under Demonstration Units	0.50
e.	Others	5.57
Total		20.47

1.7. Infrastructural Development:
A) Buildings

S. No	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR		696	25,34,244.00	Not applicable		
2.	Farmers Hostel	ICAR		305	14,96,643.00			
3.	Staff Quarters							
	1. SMS quarters	ICAR		390	13,42,350.00			
	2. Assistant Quarters	ICAR		300	9,00,000.00			
4.	Demonstration Units							
	1. Animal shed	ICAR		145.0	173384.05			
	2. Poultry shed	ICAR		29.2	88793.75			
	3. Goat shed	ICAR		22.1	88793.75			
	4. Mushroom shed	ICAR		24.7	96797.35			
	5. Workshop	ICAR		65.79	181236.25			
5	Fencing	ICAR		6407.3 Meter	5,58,765.00			
6	Threshing floor	ICAR		270.8	2,92,757.00			
7	Vehicle shed	ICAR		80.4	192764.00			

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms./hrs Run	Present status
Jeep : TN-09 AF – 0775	2004	4,82,356/-	276300	In condemned condition
MF Tractor & Trailer : TN-25 AX 1058	2012	5,70,000/-	1816.0	Good
Hero Honda : TN-09 AP 4662	2006	36,890/-	85731	Need to be replaced
Hero Honda passion plus : TN-25 S 0563	2009	49,476/-	86988	Good

C) Equipments & AV aids

Sl. No.	Name of the equipment	Year of purchase	Cost (Rs.)	Present status
1	Steel Almirah 5.5 ft. Green colour	9/15/1993	2750	Good
2	Steel Almirah 6.5 ft. Green colour	9/15/1993	15200	Good
3	Wooden table with cup-board L shape	11/20/1993	5500	Good
4	Wooden table with cup-board L shape	11/20/1993	6200	Good
5	Wooden Teapoy 5x2 ft.	11/20/1993	1750	Good
6	Wooden cupboard	11/20/1993	3300	Good
7	Polymer chairs-CH 23 type	3/7/1995	285000	Need to be replaced
8	Steel cot super size 6 x 4 ft	9/25/2004	33880	Need to be replaced
9	Steel dining table 5 x 2 x 2.5 ply wood top	9/25/2004	16120	Need to be replaced
10	Iron rack	3/1/2005	3500	Good
11	Revolving stool	3/8/2005	565	Good
12	Digital Conductivity meter	3/10/2005	10444	Good
13	Hot air oven - Guna Make	3/10/2005	15033	Good
14	Hot plate - Sunbim Make	3/10/2005	24998	Good
15	Refrigerator – Whirlpool	3/10/2005	19998	Good
16	Spectro photometer Model SL177	3/17/2005	60300	Good
17	Grinder - NACLE - 65mm x 25mm motor - 1/4 HP Stainless Steel	3/23/2005	30009	Good
18	Electronic balance -AUY 220, Capacity:20 gms	3/26/2005	100242.5	Good
19	Servo Voltage Stabilizer with 5 KVA Electronic High/Low Voltage cut off	3/30/2005	9008	Good
20	Teak plywood table 6 x 2.5 x 2.5 ft-8 x 2.5 x 2.5 ft	1/3/2006	86280	Good
21	LCD-Panasonic Projector	3/22/2007	55000	Good
22	Computer Tables	9/19/2008	0	Good
23	Printer Tables	9/19/2008	0	Good
24	Chairs	9/19/2008	0	Good
25	Laser Printer-Hp LJ 1505	2/17/2009	0	Need to be replaced
26	Pruning saw heavy duty	2/18/2010	3474	Good
27	Lopping shear	2/18/2010	1283	Good
28	Secature	2/18/2010	1624	Good
29	Garden tools	2/18/2010	386	Good
30	Garden hoe	2/18/2010	565	Good
31	Garden fork with steel handle	2/18/2010	291	Good
32	Leaf rabe with handle	2/18/2010	291	Good
33	Hand saw	2/18/2010	239	Good
34	Secature-Geneo	2/18/2010	445	Good
35	Portable Generator --Birla Ecogen-EG 3000 AS Model	3/9/2010	77520	Need to be replaced

36	Inverter-Usha Zentra digital-1400 VA with Tubular battery SR-2 Nos	3/9/2010	27500	Need to be replaced
37	Rotavator-Model:36/30	3/25/2010	60320	Condemned
38	Tope-Round Vessel-10 G-6.700 kg	6/8/2010	1045	Good
39	Tope-Round Vessel-10 G-17.060 kg (52-60")	6/8/2010	2750	Good
40	Kaivadi Big Vegetable stainer-1.400 kg	6/8/2010	532	Good
41	Vegetable Kothu-SS 2.800 kg	6/8/2010	700	Good
42	Milk cane-SS-1.480 kg	6/8/2010	385	Good
43	Bucket- Satha-SS-1.580 kg	6/8/2010	253	Good
44	MS Jarnee-MS-2.060 kg	6/8/2010	134	Good
45	MS Stand-Fire wood Stove stand-16.080 kg	6/8/2010	1045	Good
46	Prestige Pressure cooker-20 lit.	6/19/2010	3770	Need to be replaced
47	Wet Grinder-Jumbo Junior 6" Plate grinding machine with stand, 1.5 HP single phase motor	7/5/2010	12540	Good
48	72 x 48 x 4 " Inch Cushion Double Bed Mattress	8/5/2010	76608	Good
49	72 x 36 x 4 " Cushion Mattress	8/5/2010	29352	Good
50	VST-Sakthi Power tiller-130DI with CT85 fitted diesel engine	8/13/2010	148190	Need to be replaced
51	Prestige mixture Grinder 3 Jar	2/17/2011	3465	
52	Idly Pannai – Small	2/26/2011	495	Good
53	Tabara with lid	2/26/2011	555	Good
54	Iron Kadai	2/26/2011	400	Good
55	Hot pack	2/26/2011	1300	Good
56	Public Address system - Ahuja PS x 1200 Amplifier Speaker	3/11/2011	10860	Good Good
57	Public Address system - Ahuja AW 490 VHL Cordless dual mike	3/11/2011	2513	
58	Ahuja SRX 50 x T Speaker box	3/11/2011	5587	Good
59	DVD Player-Sony-SR700H	3/11/2011	4050	Good
60	Deep Freezer-110 lit capacity (-200C)-ELANPRO	3/31/2012	31500	Good
61	Refrigerated Centrifuge (Centrifuge tube two types 1.Rotor 2. Expend of) 20000 RPM speed-RCF37570 - 8 to 400C-Remi with Rotor	3/31/2012	198500	Good Good
62	Vacuum desiccators-Made 3.3 low expansion Borosilicate Glass	3/31/2012	5000	
23	Hot air oven-Double walled chamber	3/31/2012	30000	Good
64	Laminar Air flow chamber- Clean air model	3/31/2012	57250	Good
65	BOD Incubator - Horizontal - Capacity : 6 Cubic feet - Lark	3/31/2012	74425	Good
66	Vortex mixer - 200-2800 RPM variable speed	3/31/2012	3738	Good
67	D.O Meter - Range 0-20 ppm, 0-600C	3/31/2012	8400	Good
68	Digital pH Meter - Range -2.00 to 16.00pH	3/31/2012	9450	Good
69	Digital Colony counter - 5 digit, Size 110mm	3/31/2012	5000	Good
70	Thermo hygrometer - Range 0-100 %	3/31/2012	1312	Good
71	Digital moisture meter-VFD Display	3/31/2012	86000	Good

72	Microscope with stand - Lens dia 145 mm,	3/31/2012	5250	Good
73	UV rays chamber - UV lamp long wave length 365nm	3/31/2012	6875	Good
74	Magnetic stirrer-Fitted with Pilot lamps, Variable speed stirring.	3/31/2012	4095	Good
75	Brix meter-0-45 %	3/31/2012	3500	Good
76	Brix meter-45 to 85 %	3/31/2012	3500	Good
77	Phase contrast microscope-Antifungal and anti reflection	3/31/2012	57000	Good
78	Dissection microscope-ISI standard with movable condenser	3/31/2012	1575	Good
79	Water bath - Tank-Double walled chamber with thermo stat	3/31/2012	4725	Good
80	Stereo zoom microscope - Digital imaging systems	3/31/2012	103050	Good
81	10 KVA Wide range single phase electronic servo voltage stabilizer	3/31/2012	21755	Good
82	Whirlpool Air Conditioner split 1.5 ton 5 Star with stabilizer	3/31/2012	33000	Need to be replaced
83	IFB Microwave oven-20 lits. Capacity	3/31/2012	4500	Good
84	Mridaparikshak-Mini Soil Testing kit	3/31/2017	180600	Good
85	Ahuja Portable Speaker with Mic	2019	9000	Good

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

Date : 06.03.2020 and No. of Participants : 21

I. SALIENT RECOMMENDATIONS OF THE SAC MEMBERS

The President, TNBRD, Chennai

- Follow up of the farmers who got financial assistance from the bank is important and study may be undertaken to know the improvement in the livelihoods.
- More number of soil and water samples may be tested for the year 2020-21.

The Principal Scientist, ATARI, Zone X, ICAR, Hyderabad

- The KVK should concentrate to implement the mandated activities on the priority basis.
- The Animal Science scientist may visit KVK vellore for further strengthening of demonstration units at the KVK.
- The KVK may pave attention to beautify the campus with the available funds.

The Programme Coordinator, ICAR KVK, Thiruvallur

- The Plant pathology scientist may take up the mushroom production unit activities in the KVK instead of Home Science scientist.

The Professor & Head, Farmers Training Centre, Enathur

- The KVK should increase more number of animal husbandry activities and concentrate on income generation through animal husbandry under revolving fund.

The Joint Director of Agriculture, Thiruvannamalai

- The KVK activities should be extensive all over the district for the effective technological dissemination.
- The KVK should consult before entering area coverage details of crops with concerned departments.

The District Development Manager, NABARD, Thiruvannamalai

- The KVK may establish an extension centre at Thiruvannamalai if possible to improve its visibility to the entire district.
- The KVK should give trainings on marketing skills to the Farmer producer company members and other farmers.

The Lead District Manager, Indian Bank, Thiruvannamalai

- Crop based technological details for bankable projects may be developed by the KVK.
- Brochures and pamphlets on insurance and other important schemes may be circulated during KVK activities in consultation with other line departments.

The Assistant Director, Horticulture, Thiruvannamalai

- The KVK may impart trainings on flower crops, value addition in lemon grass and medicinal plants.

The Assistant Engineer, Dept. of Agri. Engineering, Thiruvannamalai

- The KVK may collaborate with agri engineering department in all possible activities of KVK.

The Deputy Director, Agribusiness & Agrimarketing, Thiruvannamalai

- The KVK should concentrate more trainings on value addition of fruit and vegetable crops.

The Assistant Director, Dept. of Sericulture, Thiruvannamalai

- The KVK may promote sericulture in association with sericulture department in the possible KVK activities.

The Assistant Engineer, District Industrial Centre, Thiruvannamalai

- Awareness on various schemes implemented by DIC may be created by KVK among farmers.

The Block Manager, Women Development Corporation, Thiruvannamalai

- The KVK may collaborate with Women Development Corporation in conduction of nutri garden trainings to SHGs.

Farmer Members**Mr.V.Vasudevan, Farmer, Desur, Vandavasi.**

- The KVK should take up more number trainings to school and college students to attract youth in agriculture.
- Importance should be given for the Promotion of organic farming in the district.

Mrs.M.Sumathi, Farmer, S.V.Nagaram, Arni.

- Bee keeping may be promoted by KVK as an agri allied entrepreneurial activity.

List of members participated in the SAC meeting: Annexure-I

2. DETAILS OF DISTRICT (2019-20)

2.0. Operational jurisdiction of KVKs:

1. Name of the District : Thiruvannamalai, Tamil Nadu
2. Geographical Position :
North Latitude Between : *11 ° 55' and 13° 15' N*
East Longitude Between : *78°20' and 79 °50' E*
3. Total Geographical area : 6188 Sq. Km
4. District Headquarters name : Thiruvannamalai
5. No. Taluk details : 12
6. No. of Block : 18
7. No. of Village panchayats : 860
9. No. of Revenue villages : 1067

10. Taluk and block wise village details of the district:

S. No	Name of the taluk	Taluk HQ	Name of Blocks covered	No. of Village Panchayat	No. of Revenue villages
1	Thiruvannamalai	Thiruvannamalai	Thiruvannamalai	69	78
			Thurinjapuram	47	57
2	Kilpennathur	Keelpennathur	Keelpennathur	45	77
3	Thandarampattu	Thandarampattu	Thandarampattu	47	63
4	Chengam	Chengam	Chengam	44	64
			Pudupalayam	37	43
5	Kalaspakkam	Kalaspakkam	Kalaspakkam	45	52
6	Polur	Polur	Polur	40	73
7	Jamunamarathur	Jamunamarathur	Jamunamarathur	11	34
8	Chetpet	Chetpet	Chetpet	49	76
9	Arni	Arani	Arani	38	26
			West Arani	37	23
10	Vandavasi	Vandavasi	Vandavasi	61	61
			Thellar	61	61
			Peranamallur	57	57
11	Cheyyar	Cheyyar	Cheyyar	53	70
			Anakavur	55	61
12	Vembakkam	Vembakkam	Vembakkam	64	91
Total				860	1067

2.1. Major farming systems/enterprises

S. No	Farming system/enterprise
1	Irrigated : Paddy – Paddy-Paddy
2	Irrigated : Paddy-Groundnut - Vegetables
3	Rainfed : Groundnut-Pulses
4	Irrigated : Vegetable-Vegetables

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

S. No	Agro-climatic Zone	Characteristics
1	North Eastern Zone, Vellore	The Mean average temperature is 28.62°C. Hot during summer (35 - 37°C). Cool during winter periods (24 -26°C). The temperature regime is hyper thermic.
2	Agro ecological situation : Eastern ghats - (TN uplands) and Deccan plateau	Hot semi arid eco region with red loamy soils.

2.3. Soil types in the jurisdiction

Sl.No.	Soil type	Characteristics	Area(ha)
1	Red Loam	The texture varies from sand to clay and the majority being loam. Porous and friable structure, absence of lime free from carbonates.	78256
2	Red sandy loam	Contain enough clay materials, dominated by sand particles, having visible particles and having very gritty structure.	63160
3	Black Loamy	Consist of mixture of sand clay and decaying organic matter having high nutritive value.	18793

2.4. Area, Production and Productivity of major crops cultivated in the jurisdiction for 2019-20 Season : Kharif, Rabi and Summer

S. No	Crop	Area (ha)	Production ('000'tonnes)	Productivity (kg/ha)
1	Paddy	93636	349075	3728
2	Cumbu	2292	5517	2407
3	Cholam	22	16	740
4	Ragi	2636	6419	2435
5	Samai	4825	6080	1260
6	Maize	1035	3071	2967
7	Blackgram	34856	15371	441
8	Greengram	1158	742	641
9	Redgram	1569	1536	979
10	Groundnut	70454	119138	1691
11	Gingelly	1806	556	308
12	Coconut	503	3590 (Nuts)	7137 (nuts)
13	Sugarcane	18127	1413906	78 ton/ha.
14	Turmeric	375	2576	6870
15	Tapioca	1530	64570.6	42203
16	Cotton	585	135 lint	231 (Lmt)
17	Tomato	717	9354.7	13047
18	Brinjal	991	10236.0	10329
19	Bhendi	653	4290.2	6570
20	Chillies	912	1788	1961
21	Banana	2405	76739	31908

22	Mango	405	2217.0	5474
23	Onion	76	658	8652
24	Others	14979	-	-
Total Cropped area (ha)		256547	-	-

2.5. Weather data (April 2019 to March 2020)

Month	Rainfall (mm)	Temperature °C		Relative Humidity (%)
		Maximum	Minimum	
April	15.80	35.60	27.30	51.30
May	28.50	36.50	28.00	50.90
June	58.30	35.10	28.00	50.80
July	72.00	33.40	27.70	50.70
August	42.80	34.20	27.40	67.50
September	136.60	33.30	26.60	35.20
October	180.60	30.70	24.20	69.60
November	187.60	28.50	22.50	73.30
December	25.00	28.10	22.10	69.10
January	0.10	27.50	20.50	60.10
February	0.70	30.60	23.50	61.20
March	0.00	35.30	25.00	48.00
Average	747.9	32.4	25.23	57.31

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2019-20)

Category	Population	Production	Productivity
Cattle			
<i>Crossbred</i>	520565	505260	6.86
<i>Indigenous</i>			
Buffalo	74741	104355	4.30
Sheep			
<i>Crossbred</i>	260611	424140	-
<i>Indigenous</i>			
Goats	227509	341440	-
Pigs			
<i>Crossbred</i>	10782	17200	-
<i>Indigenous</i>			
Rabbits	89	-	-
Poultry			
Hens	483712	8834000	-
<i>Desi</i>			
<i>Improved</i>			
Ducks			
Turkey and others			
Domestic dogs	19373	-	-

2.7. Details of Adopted Villages (2019-20)

Sl. No.	Taluk/mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Vembakkam, Arni, Vandavasi	Vembakkam, Arni, Vandavasi	Sathuperipalayam, Ariyur, Maruthadu	2016-17	Paddy	Cultivation of old varieties, lack of awareness on season specific varieties, Yield reduction. Lack of adoption of improved varieties, low yield, lack of awareness on IPDM, Severe infestation of Brown plant hopper, Blast, BLB, stem borer, leaf folder and Tungro, extensive use of chemical pesticides. Drudgery during weeding operations, Lack of knowledge on post harvest management.	Varietal demonstration, Integrated Crop Management, Integrated Pest and Disease Management, Drudgery reduction, Value addition.
2	Kilpennathur	Kilpennathur	S.Nammiyandhal	2018-19	Maize	Cultivation of old varieties, Lack of knowledge on high yielding & drought tolerant varieties, Poor yield, Lack of knowledge on value addition. High incidence of Fall army worm, Shoot fly, Charcoal rot, Downey mildew.	Integrated Crop Management, Integrated Pest Management, Value addition.
3	Arni	Arni	Sathuperipalayam	2016-17	Finger Millet	Cultivation of long duration and old varieties, Lack of awareness on high yielding & drought tolerant variety, Low yield, Lack of knowledge on value addition. Low market value for raw millets.	Varietal Demonstration, Integrated Crop Management, IPDM, Value addition

4	Polur, Arni	Polur, Arni	Padavedu, Sathuperipalayam	2016-17	Pearl millet, Little millet	Cultivation of old varieties ,Lack of awareness on high yielding & drought tolerant variety, High incidence of Blast disease , Low yield, Lack of knowledge on value addition. Low market value for raw millets.	Varietal demonstration, Integrated Crop Management, IPDM, Value addition.
5	Arni, Vandavasi	Arni, Vandavasi	Padavedu Maruthadu	2016-17	Redgram	Cultivation of age old and long duration variety SA 1, Severe Incidence of root rot & Sterility mosaic disease, Pod borer damage, Low yield, More labour required for grading and, winnowing of pulses.	Integrated Crop Management, Integrated Pest and Disease Management, Value addition.
6	Vembakkam	Vembakkam	Ariyur	2017-18	Greengram	Prolonged cultivation of age old varieties, Low market price for small size and non-shiny seeds, Non synchronized maturity, Incidence of YMV, Aphids, and Powdery mildew. More labour required for grading and, winnowing of pulses.	Varietal evaluation, Integrated Crop Management, IPDM,Drudgery reduction, Value addition.
7	Vembakkam	Vembakkam	Ariyur	2017-18	Groundnut	Lack of awareness on the new varieties, less drought tolerant, Cultivation of VRI 2, Incidence of Root rot, leaf spot, rust and Spodoptera, poor yield. Lack of knowledge on value addition.	Varietal evaluation, Integrated Crop Management, IPDM, Drudgery reduction, Value addition.

8	Arni	Arni	Sathuperipalayam	2016-17	Brinjal	Low yield, Flower drop, Lack of application of growth regulators, Lack of adoption of improved technologies, Incidence of shoot & fruit borer and little leaf, Wilt, Imbalanced nutrition, Poor quality seedlings and field establishment.	Integrated Crop Management, Nursery management, Integrated Pest and Disease Management
9	Vandavasi, Kilpennathur	Vandavasi, Kilpennathur	Maruthadu, S.Nammiyanthal	2017-18	Bittergourd, Ridge gourd, Snake gourd	Low fruit set, Maleness, Lack of adoption of location specific hybrids, Imbalanced nutrition, Lack of adoption of improved technologies, High incidence of mosaic, fruit fly, Sucking pests, Downy mildew and powdery mildew.	Varietal demonstration and evaluation, ICM, Integrated Nutrient management, Integrated Pest Management
10	Vembakkam, Arni	Vembakkam, Arni	Ariyur, Sathuperipalayam	2017-18	Chillies	Low yield, Imbalanced nutrition, Flower drop, Low Dry Recovery and incidence of Fruit rot, Leaf curl. High incidence of leaf curl, mites, thrips and fruit borer.	Varietal evaluation, Integrated Crop Management, Nursery management, Integrated Nutrient management, IPDM.

11	Vandavasi, Kilpennathur	Vandavasi, Kilpennathur	Maruthadu, S.Nammiyanthal	2016-17	Watermelon, Musk melon	Low yield, Imbalanced nutrition, Differential maturity of fruits, wilt, nematode, Bud necrosis, Fruit cracking, Lack of adoption of improved technologies,	Integrated Crop Management, Integrated Nutrient management, IPDM.
12	Polur	Polur	Padavedu	2016-17	Banana	Low bunch grade and weight, Fusarium wilt, Nematode incidence and Sigatoka leaf spot, Imbalanced nutrition, Lack of knowledge on improved planting methods, Lack of knowledge on value addition.	Precision farming, Foliar nutrition, IPDM, Value addition
13	Kilpennathur, Vandavasi	Kilpennathur, Vandavasi	S.Nammiyanthal, Maruthadu	2016-17	Bhendi	Low yield, Imbalanced nutrition, Non adoption of improved technologies, Yellow vein Mosaic Virus.	Varietal demonstration, Integrated Crop Management, IPDM
14	Kilpennathur	Kilpennathur	S.Nammiyanthal,	2018-19	Colocasia	Low yield, Non adoption improved production practices, Leaf blight and Sucking pests	Integrated Crop Management, Integrated Disease Management
15	Arni, Kilpennathur, Vandavasi,	Arni, Kilpennathur, Vandavasi,	All clusters	2018-19	Fruits and Vegetables	No value addition, Low market price, Lack of knowledge on value addition.	Value addition
16	Polur, Vembakkam	Polur, Vembakkam	All clusters	2018-19	Milk	Distress sale of milk, Lack of awareness in processing, Low shelf life of paneer, Bland flavour of paneer , Lack of variety in paneer	Value addition

17	Vembakkam	Vembakkam	Ariyur	2016-17	Poultry birds	Less number of egg production, Low hatchability, Chick mortality, Less feed efficiency	Backyard poultry farming
18	Vandavasi	Vandavasi	Maruthadu	2016-17	Nutritional security	Wide spread prevalence on macro and micronutrient deficiency, Lack of awareness on linkage between sanitation, health and nutrition	Nutrition garden
DFI villages							
1	Vandavasi	Vandavasi	Kilsembedu (Maruthadu Cluster)	2016-2017	Paddy	Cultivation of old varieties, lack of awareness on season specific varieties, High infestation of pest & diseases BPH, Stem borer, Tungro, BLB and Blast, High incidence of pest and disease, Yield reduction, Lack of knowledge on value addition.	Integrated Crop Management, Integrated Pest and Disease Management, Drudgery reduction, Value addition.
2					Bittergourd, Ridge gourd, Snake gourd,	Low fruit set, Maleness, Lack of adoption of location specific hybrids, Imbalanced nutrition, Lack of adoption of improved technologies, High incidence of mosaic, fruit fly, Sucking pests, Downy mildew and powdery mildew.	Varietal evaluation, Integrated Crop Management, Integrated Nutrient management, IPDM.
3					Bhendi	Low yield, Imbalanced nutrition, Non adoption of improved technologies, Yellow vein Mosaic Virus.	Varietal Demonstration, Integrated Crop Management, IPDM.

4	Arni	Arni	Adhanur	2017-2018	Paddy	Cultivation of old varieties, lack of awareness on season specific varieties, High infestation of pest & diseases BPH, Stem borer, Tungro, BLB and Blast, High incidence of pest and disease, Yield reduction, Lack of knowledge on value addition.	Integrated Crop Management, IPDM, Drudgery reduction, Post harvest technology, Value addition.
5					Little Millet	Prolonged cultivation of age old varieties, Non synchronized maturity, Incidence of YMV, Aphids, and Powdery mildew. More labour required for grading and, winnowing of pulses.	Varietal Demonstration, ICM, IPDM Value addition.
6					Groundnut	Lack of awareness on the new varieties, less drought tolerant, Cultivation of VRI 2, Incidence of Root rot, leaf spot, rust and Spodoptera, poor yield. Lack of knowledge on value addition.	Varietal Demonstration, ICM, IPDM, Drudgery reduction, Value addition.
7					Chillies	Low yield, Imbalanced nutrition, Flower drop, Low Dry Recovery and incidence of Fruit rot, Leaf curl. High incidence of leaf curl, mites, thrips and fruit borer.	Varietal evaluation, ICM, Nursery management, Integrated Nutrient management, IPDM.

2.8. Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Groundnut, Blackgram, Millets, Colacasia, Brinjal, Chillies, Bhendi, Cucurbits.	Integrated Crop Management
Greengram, Groundnut, Chillies	Varietal assessment
Paddy, Groundnut, Finger millet, pearl millet, Snakegourd, Bhendi	Demonstration of high yielding hybrids/varieties
Paddy, Groundnut, Blackgram, Vegetables	Integrated Nutrient and weed Management
Paddy, Groundnut, Maize, Pulses, Sugarcane, Snakegourd, Banana, , Brinjal, Watermelon	Integrated Pest and Disease Management
Paddy, Groundnut, Millets and Blackgram	Quality seed production
Paddy	Conservation of traditional varieties
Paddy, Groundnut, Pulses, Coconut	Farm Mechanization
Banana, Vegetables	Precision farming
Brinjal, Chilli, Tomato	Scientific nursery management
Paddy, Banana and vegetables	Organic farming
Paddy, Pulses, Fruits and Vegetables	Post harvest management
Crops and livestock	Integrated Farming System, Poultry farming
Field crops, Fruits, Vegetables, Milk	Value addition, Drudgery reduction

2.9. Salient Achievements of (April 2019-March, 2020) (Mandated activities/ Projects)

S.No	Activity	Target	Achievement
1.	Technologies Assessed (No.)	13	13
2.	On-farm trials conducted (No.)	7	7
3.	Frontline demonstrations conducted (No.)	135	125
4.	Farmers trained (in Lakh)	0.01215	0.01324
5.	Extension Personnel trained (No.)	100	53
6.	Participants in extension activities (in Lakh)	0.04450	0.12392
7.	Production of Seed (in Quintal)	74	18.53
8.	Planting material produced (in Lakh)	0.041	0.05473
9.	Live-stock strains and fingerlings produced (in Lakh)	0.0156	0.0785
10.	Soil, Water, plant, manures samples tested (in Lakh)	0.01	0.0019
11.	Mobile agro-advisory provided to farmers (in Lakh)	0.26720	0.437295
12.	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	100	94
13.	No.of Soil Health Cards issued by Traditional Laboratory (No.)	900	96

2.10. Salient Achievements by KVK during 2019-20.

- Climate smart millet crops viz., Pearl millet, finger millet, little millet, foxtail millet, kodo millet, proso millet, banyard millet have been promoted in the district over an area of 10981 hectares, which increased the income of the farmers to the tune of rupees 34950/ha.
- Quality seeds of improved high yielding new varieties viz., VBN-8 (Black gram) 8.39 Qtl and Co-52 (Paddy) 1.46 qtl and groundnut variety TCGS 1043 (3.65qtl) were supplied to the farmers and the varieties have spread over an area of 22,120 ha in the district.
- With a view to increase the productivity of the vegetables by 20-30 %, foliar nutrition has been promoted by KVK. Total quantity of 593 kg of IHR vegetable special (Micronutrient formulation) has been produced and distributed to farmers. At present the technology has spread over an area of 1082 ha in the district.
- As an alternative income generation activity, the beekeeping has been promoted in the district by KVK. Total no of 11 small scale bee farms have been established in the district and 125 farmers directly benefited through KVK mandated activities.
- Total no of 17 Integrated Farming System models have been established and maintained under the KVK's technical support. They serve as model farms in the district.
- Five Subject Matter Specialists of KVK received the best extension worker award from the District Collector, Thiruvannamalai during the republic day celebration 2020 for their outstanding work in implementation of Jal Shakti Abhiyan Programme.

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2019-20

i) OFT (Technology Assessment)

Number of technologies		Total no. of Trials	
Targets	Achievement	Targets	Achievement
13	13	45	45

ii) FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement
135	125	36	34	135	125

iii) Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)

Number of Courses			Number of Participants	
Clientele	Targets	Achievement	Targets	Achievement
Farmers	65	74	975	1163
Rural youth	16	11	240	161
Extn. Functionaries	5	3	100	53

iv) Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
237	238	4450	12392

v) Seed Production (q)

Target	Achievement	Distributed to no. of farmers
74	18.53	151

vi) Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
4100	5473	245

v) Livestock (Nos.)

Target	Achievement	Distributed to no. of farmers
1560	785	64

vii) Bio inputs (Nos.)

Target	Achievement	Distributed to no. of farmers
3000	3746.75	762

3.B. TECHNOLOGY ASSESSMENT

i) Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers
Varietal Evaluation	Greengram	TO1 : Greengram variety CO (Gg) 8	TNAU, 2013	7	7
		TO2 : Greengram variety DGG-1	UAS, Dharward 2015		
		TO3 : Green gram variety VRM (Gg) 1	-		
	Groundnut	TO1 : Groundnut variety CO -7	TNAU, 2013	7	7
		TO2 : Groundnut variety TCGS-1043	RARS, Tirupati 2013		
		TO3 : Groundnut variety VRI -2	-		
	Chilli	TO1: Cultivation of CO1 Chilli hybrid	TNAU, 2010	8	8
		TO2: Cultivation of Arka Khiati Chilli hybrid.	IIHR, 2011		
		TO3: Cultivation of private hybrids	-		
Ridge gourd	TO1: Cultivation of Ridge gourd COH1	TNAU, 2018	8	8	
	TO2: Cultivation of Arka Vikram Ridge gourd hybrid.	IIHR, 2016			
	TO3: Cultivation of private hybrids	-			
Integrated Pest Management	Banana	TO 1: Inject Azadirachtin 1500 ppm @ 4 ml (2 ml at 45 cm from the ground level another 2 ml 150 cm from the ground level) in the pseudostem at monthly interval from 5th to 8th month.	TNAU, 2012	5	5
		TO2: Banana pseudostem trap @ 100/ha. Swabbing the cut surface of the traps with <i>Beauveria assiana</i> or <i>Heterorhabditis indica</i> @ 20g trap.	NRCB, 2012		
		TO 3: Soil application of Carbofuron granules during the incidence.			

Integrated Disease Management	Maize	TO 1: <ul style="list-style-type: none"> ▪ Summer ploughing ▪ Seed treatment with Fortezaduo (Cyantraniliprole + Thiamethoxam) @ 4 ml/Kg ▪ Border crop with grain sorghum as trap crop (advance sowing) & legume intercrop (cowpea) to promote natural enemies (few rows at intervals) ▪ Collection and destruction of Egg masses ▪ Installation of <i>S. frugiperda</i> pheromone traps @ 4 no's/ac (PCI or Hyderabad chemicals) ▪ Azadirachtin 10000 ppm spray 10 to 15 DAS ▪ EPN or Bt @ 2g/lt 15 – 21 DAS ▪ Spray of Insecticide – 21 -28 & 36-42 DAS ▪ Spray of <i>Metarhizium anisopliae</i> (1×10^7) @ 2ml/lt 30-35 DAS. ▪ Poison baiting @ 45-65 DAS Thiodicarb 75WP @ 2g/lit. 	ICAR-IIMR, Ludhiana/ DPPS&Q	5	5
		TO 2: 4-5 Application of Chlorpyrifos 3 ml/l + Chlorantraniliprole @ 0.3 ml/l	-		
Post Harvest Technology / Value addition	Millets	TO1: Millet cookies with addition of Thulasi powder @ 20g/kg (2%) + Whole Wheat flour + Millets (Ragi, Jowar)	UAS Dharwad, 2015	5	5
		TO2: Millet cookies with addition of Thuthuvalai powder @ 20g/kg (2%) + Whole Wheat flour + Millets (Ragi, Bajra)	TNAU, 2015		
		TO3: Maida + Dalda + White sugar + Artificial colour	-		
Total				37	37

2018-19					
Integrated Pest Management	Banana (2018-19)	TO1: Soil application of Bio-nematicide (combination of plant extract calotropis, neem, adathoda, kolinji, pungam and abutilan indicum) @ 250ml/acre. Alternated with Drenching of Bio-fungicide	Farmer innovation, 2018	5	5
		TO2: Pseudomonas fluorescens 2.5 kg/ha + FYM +neem cake. T.viride @ 2.5 kg/ha for 4 times at 3rd, 4th, 5th and 7th month after planting. Pralinage with Carbofuran @ 40g. Drenching with Carbendazim 0.2 %.	TNAU, 2015		
Total			-	5	5

- ii) Summary of technologies assessed under livestock by KVKs : Nil
- iii) Summary of technologies assessed under various enterprises by KVKs : Nil

3.C. TECHNOLOGY ASSESSMENT IN DETAIL

3.c.1. Assessment of Maize Fall Army worm management in Maize

1. **Thematic area** : Integrated Pest Management
2. **Title** : Assessment of Maize Fall Army worm management in Maize.
3. **Scientists involved** : Subject Matter Specialist (Plant Protection)
4. **Details of farming situation :**

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy loam	L	M	M	213.40	8

5. Problem definition / description:

Severe incidence of Fall Army Worm (FAW) in maize (60.21%) with reduction of yield (44 %). The fall armyworm causes serious leaf feeding damage as well as direct injury to the ear and it can damage maize plants in nearly all stages of development. The adult moth is a fast flyer and can cover 100 km a night and poor knowledge on management practices lead to severe yield loss. Indiscriminate application of chemical pesticides results in higher cost, hazardous to the environment and residual effect edible product.

6. Technology Assessed:

TO1 :

- Summer ploughing.
- Seed treatment with Fortezaduo (Cyantraniliprole + Thiamethoxam) @ 4 ml/Kg.
- Border crop with grain sorghum as trap crop (advance sowing) & legume intercrop.
- (cowpea) to promote natural enemies (few rows at intervals).
- Collection and destruction of Egg masses.
- Installation of *S. frugiperda* pheromone traps @ 4 no's/ac (PCI or Hyderabad chemicals).
- Azadirachtin 10000 ppm spray 10 to 15 DAS.
- EPN or Bt @ 2g/lt 15 – 21 DAS.
- Spray of Insecticide – 21 -28 & 36-42 DAS.
- Spray of *Metarhizium anisopliae* (1x10⁷)@ 2ml/lt 30-35 DAS.
- Poison baiting @ 45 -65 DAS Thiodicarb 75WP @ 2g/lit.

TO2 : 4-5 Application of Chlorpyrifos 3 ml/l + Chlorantraniliprole @ 0.3 ml/l.

7. Critical inputs given:

Name of the input	Quantity	Value in Rupees
Metarhizium	5 Lit.	3000.00
Neem Oil	5 Lit.	5000.00
<i>Pheromone trap Funnel</i>	20 Nos	420.00
Fall Army Worm lure	20 Nos	708.00
Entopathogenic	5 kg	2844.00
Fodder seeds	1 kg	600.00
Chlorontriliniprole	200 ml	3680.00
Thiometharam	500 ml	1200.00
Cow pea seed	1 kg	200.00
Field Board	5 Nos	1000.00
Total Rs.		18652.00

8. Results :

Table 1 : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Return (Rs./ ha)	BCR	Pest incidence of FAW (%)
TO 1: IPM Practices	5	51.78	44817.00	2.04:1	26.12 %
TO 2: Pesticide application		39.46	20148.00	1.43:1	54.71 %

Table 2 : Data on other performance indicators*

Parameters observed	TO 1	TO 2
Pest Infestation (%)	26.62	54.71
Yield(q/ha)	51.75	39.46
Gross Cost (Rs./ha)	43212/-	46934/-
Gross Income (Rs./ha)	88029/-	67082/-
Net income (Rs./ha)	44817/-	20148/-
BCR	2.04	1.43

Description of the results:

In maize, fall army worm is the major problem for the farmers. The farmers mostly rely on the pesticide for the management, despite of array of alternate methods available. Keeping in this view, assessed integrated maize fall army worm management technologies in Andampallam village of Thiruvannamalai block. The results revealed that the yield increased and pest incidence reduced in IPM technology implemented plots. The TO1 recorded higher yield (51.75 q/ha) as compared with farmers' practice (39.46 q/ha). Besides, average increase in yield to the tune of 31.22 percent with higher BCR of 2.04 and very low incidence of FAW (26.62 %) were recorded in TO1 as compared to other technological options. The farmers reacted that IPM package was good with an additional income of Rs. 24669.00 per ha compared to farmers practice.

9. Feed back of the farmers involved:

The farmers felt that cultivation of maize with IPM package has given higher yield and economic returns with low incidence of fall army worm (FAW) compared to normal practice.

10. Feed back to the scientist who developed the technology

Maize Fall Army Worm resistant variety may be developed with high yield potential.

3.c.2. Assessment of Green gram varieties for higher productivity

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of Greengram varieties for higher Productivity
3. **Scientists involved** : Subject Matter Specialist (Agronomy)
4. **Details of farming situation :**

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Rainfed	Kharif	Sandy loam	M	H	M	504.8	26

5. Problem definition / description:

Greengram is a major pulse crop cultivated in Thiruvannamalai District. It is cultivated mainly during two seasons viz., Kharif (June-July), Rabi (September - October). Farmers cultivating the small seeded and non-shiney greengram variety VRM (Gg)1 in large area, But it is getting the low market price. The small seeded greengram variety VRM (Gg)1 is highly susceptible to Yellow mosaic virus, Powdery mildew diseases which affect the yield. And production cost also higher due to application of massive amount of pesticides.

6. Technology Assessed:

- TO1 : Greengram variety CO (Gg) 8
 TO2 : Greengram variety DGG-1
 TO3 : Greengram variety VRM(Gg) 1 (Farmers' practice)

7. Critical inputs given:

Name of the input	Quantity	Value in Rupees
Greengram variety CO-8	28 kg	2688.00
Greengram variety DGG-1	28 kg	2576.00
<i>Trichoderma viride</i>	14 kg	1750.00
Field board	7 Nos	1400.00
Total Rs.		8414.00

8. Results

Table 1 : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Return (Rs./ ha)	BCR	Other performance indicators*
TO 1 : Greengram variety CO (Gg)8	7	9.84	41590/-	2.12 : 1	<ul style="list-style-type: none"> ▪ Number of plants/sqm ▪ Plant height (cm) ▪ Number of branches/plant ▪ Number of pods/plant ▪ Yield (q/ha) ▪ BCR
TO 2 : Greengram variety DGG-1		12.65	64707/-	2.77 : 1	
TO3 : Greengram variety VRM(Gg)1		7.43	21398/-	1.56 : 1	

Table 2 : Data on other performance indicators*

Parameters observed	Greengram CO-8	Greengram DGG-1	Greengram VRM(Gg) 1
Number of plants/sqm	31	32	32
Plant height (cm)	47.43	52	47
Number of branches/plant	4	3	3
Number of pods/plant	24	26	23
Percent disease incidence	7.83	5.43	14.2
Yield(q/ha)	9.84	12.65	7.43
Gross Cost (Rs./ha)	37164/-	36516/-	38035/-
Gross Income (Rs./ha)	78754/-	101223/-	59433/-
Net income (Rs./ha)	41590/-	64707/-	21398/-
BCR	2.12	2.77	1.56

Description of the results:

The greengram varietal assessment trials were conducted in seven locations covering seven farmers, during kharif season (2019-20). During the varietal assessment various parameters were observed and recorded. The number of pods per plant recorded low in farmers practice VRM (Gg) 1 (23 nos.) followed by CO-8 (24 nos.) and highest pods per plant (26 nos.) were recorded in DGG-1 greengram variety.

The mean average yield (12.65 Qtl/ha) was recorded in DGG-1 greengram variety, which 41.26.72% higher compared to VRM (Gg)1 (7.43 Qtl/ha) followed by CO-8 greengram variety (9.84 Qtl/ha). Farmers have obtained the highest net income of Rs. 64707/-/ha in greengram variety DGG-1 followed by CO-8 (Rs.41590/ha) and lowest net income was recorded in farmers practice VRM (Gg) 1 (Rs.21398/ha). The highest benefit cost ratio of 2.77 was recorded in DGG-1 and lowest was recorded in VRM (Gg) 1 (1.56).

9. Feed back of the farmers involved:

The Greengram variety DGG-1 shown moderate resistance to yellow mosaic virus. This variety produced higher yield and fetches higher market price compared to VRM (Gg)1. This variety is highly suitable for kharif season.

10. Feed back to the scientist who developed the technology:

Based on the assessment of greengram varieties at field level this DGG-1 variety is highly suitable for kharif season. Resistant to yellow mosaic virus. This variety produced higher yield compared to VRM(Gg) 1. However, an improved variety with higher yield potential and immunity to YMV may be developed.

3.c.3. Assessment on performance of Groundnut varieties for rainfed condition

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment on performance of Groundnut varieties for rainfed condition
3. **Scientists involved** : Subject Matter Specialist (Agronomy)
4. **Details of farming situation :**

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy loam	M	H	M	25.8	5

5. Problem definition / description:

Groundnut is a major oilseed crop cultivated in larger area in Thiruvannamalai District. The groundnut has been cultivated by farmers' mainly during two season's viz., Kharif (June-July), Rabi (September - October). Farmers are getting the low yield and market price due to cultivation of very age old variety VRI-2 in large area. The groundnut variety VRI-2 is less drought tolerant and highly susceptible to early and late leaf spot, rust diseases resulting in low crop yield and higher production cost per hectare due to application of massive amount of pesticides.

6. Technology Assessed:

TO1 : Cultivation of Groundnut variety CO-7

TO2: Cultivation of Groundnut variety TCGS 1043

TO3 : Cultivation of Groundnut variety VRI 2 (Farmers' practice)

7. Critical inputs given:

Name of the input	Quantity	Value in Rupees
Groundnut CO7 (Kernel)	175 kg	16625.00
Groundnut ICGV03043 (Kernel)	175 kg	14875.00
<i>Trichoderma viride</i>	14 kg	1750.00
Field board	7	1400.00
Total Rs.		34650.00

8. Results :

Table 1 : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Return (Rs./ha)	BCR	Other performance indicators*
TO 1 : Groundnut variety CO-7	7	21.65	73487/-	2.61 : 1	<ul style="list-style-type: none"> ▪ Number of plants/sqm ▪ Plant height (cm) ▪ Number of pods/plant ▪ Yield (q/ha) ▪ BCR
TO 2 : Groundnut variety TCGS 1043		24.59	89002/-	2.92 : 1	
TO3 : Groundnut variety VRI 2		16.58	45102/-	1.98 : 1	

Table 2 : Data on other performance indicators*

Parameters observed	Groundnut CO-7	Groundnut TCGS 1043	Groundnut VRI 2
Number of plants/sqm	30	29	30
Plant height (cm)	40	46	35
Number of pods/plant	24	27	16
Yield(q/ha)	21.65	24.59	16.58
Gross Cost (Rs./ha)	45595/-	46259/-	46064/-
Gross Income (Rs./ha)	119082/-	135261/-	91166/-
Net income (Rs./ha)	73487/-	89002/-	45102/-
BCR	2.61	2.92	1.98

Description of the results:

The Groundnut varietal assessment trials were conducted in seven locations covering seven farmers, during Rabi season (2019-20). During the varietal assessment various parameters were observed and recorded. The number of pods per plant recorded very low in farmers practice VRI 2 (16 nos.) followed by CO-7 (24 nos.) and highest pods per plant (27 nos.) were recorded in TCGS1043 groundnut variety.

The mean average yield (24.59 Qtl/ha) was recorded in TCGS1043 Groundnut variety, which is 32.57% higher compared to VRI 2 (16.58 Qtl/ha) followed by CO-7 groundnut variety (21.65 Qtl/ha). Farmers have obtained the highest net income of Rs. 89002/ha in groundnut variety TCGS1043 followed by CO-7 (Rs.73487/ha) and lowest net income was recorded in farmers practice VRI-2 (Rs.45102/ha). The highest benefit cost ratio of 2.92 was recorded in TCGS1043 and lowest was recorded in VRI-2 (1.98).

9. Feed back of the farmers involved:

The Groundnut variety TCGS1043 has recorded higher yield and getting higher market price compared to VRI-2. This variety is highly suitable for Rabi season.

10. Feed back to the scientist who developed the technology:

Based on the assessment of groundnut varieties at field level, this TCGS 1043 variety is performed well and highly suitable for rainfed condition.

3.c.4. Assessment of Improved hybrids for higher productivity in Chilli

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of Improved hybrids for higher productivity in Chilli
3. **Scientists involved** : Subject Matter Specialist (Horticulture).
4. **Details of farming situation :**

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy loam	H	M	M	In progress	

5. **Problem definition / description:**

The farmers were not aware of the improved high yielding Chilli hybrid suitable for their location. As a result, low yield (28%) and income were obtained as compared to potential yield and income levels of improved hybrids.

6. **Technology Assessed:**

TO1 : Cultivation of CO1 Chilli hybrid.

TO2 : Cultivation of Arka Khyati Chilli hybrid.

TO3 : Cultivation of private hybrids (Farmers' practice).

7. **Critical inputs given:**

Name of the input	Quantity	Value in Rupees
CO1 Chilli hybrid seeds	0.240 kg	5760.00
Arka Khyati Chilli hybrid seeds	0.240 kg	4800.00
Vegetable Special	24 kg	4200.00
Field board	8 Nos	1600.00
Total Rs.		16360.00

8. **Results** : In Progress.

3.c.5. Assessment of Improved hybrids for higher productivity in Ridge gourd

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of Improved hybrids for higher productivity in Ridge gourd
3. **Scientists involved** : Subject Matter Specialist (Horticulture)

4. Details of farming situation :

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy clay loam	M	H	M	In progress	

5. Problem definition / description:

The farmers were not aware of the improved high yielding ridge gourd hybrid suitable for their location. As a result, low yield (30%) and income were obtained as compared to potential yield and income levels of improved hybrids.

6. Technology Assessed:

TO1 : Cultivation of Ridge gourd COH1.

TO2 : Cultivation of Arka Vikram Ridge gourd.

TO3 : Cultivation of private hybrids (Farmers' practice).

7. Critical inputs given:

Name of the input	Quantity	Value in Rupees
Ridge gourd COH1 seeds	1.2 kg	3600.00
Arka Vikram Ridge gourd seeds	1.2 kg	3600.00
Pheromone trap	16 Nos	1440.00
Lures	48 Nos	1432.00
Vegetable Special	8 kg	1400.00
Field board	8 Nos	1600.00
Total Rs.		13072.00

8. Results : In Progress

3.c.6. Assessment of technological modules against stem weevil (*Odoiporus longicollis*) in banana

1. Thematic area : Integrated Pest Management

2. Title : Assessment of technological modules against stem weevil (*Odoiporus longicollis*) in banana.

3. Scientists involved : Subject Matter Specialist (Plant Protection).

4. Details of farming situation:

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy loam	L	M	M	0.80	0

5. Problem definition / description:

The incidence of stem weevil in Banana was 35.42 percentage. The Banana stem weevil attacks the plant during flowering and bunch formation stages and causes severe yield loss (22 %) by preventing bunch development. The early symptom which indicates weevil and grub activity is the presence of jelly exudation on the banana stem. Due to feeding by grubs, the pseudostem becomes hollow and can even break at the apical region after a gush of wind.

The grubs cause more damage by making long tunnels in the pseudostem. This results in yellowing and withering of leaves, exudation of sap from leaf sheaths, decaying of peduncles and immature ripening of fruits. Indiscriminate application of chemical pesticides results in higher cost and hazardous to the environment and edible product. So the stem weevil of banana is one of the major problem to the banana growing farmers.

6. Technology Assessed:

TO 1 : Inject Azadirachtin 1500 ppm @ 4 ml/Plant (2 ml at 45 cm from the ground level another 2 ml 150 cm from the ground level) in the pseudostem at monthly interval from 5th to 8th month.

TO 2: Banana pseudostem trap @ 100/ha. Swabbing the cut surface of the traps with *Beauveria bassiana* or *Heterorhabditis indica* @ 20g trap

TO 3: Soil application of Carbofuron granules during the incidence (Farmers' practice).

7. Critical inputs given:

S.No	Name of the input	Quantity	Value (Rs.)
1	Banana Corm Injector	10 Nos	6490.00
2	Beaveria bassiana	15 kg	5880.00
3	<i>Azadiractitin</i>	10 Lit	7840.00
4	Field board	5 Nos	1000.00
Total			21210.00

8. Results : In Progress

3.c.7. Assessment of different types of herbal powder in preparation of millet cookies

1. Thematic area : Value addition
2. Title : Assessment of different types of herbal powder in preparation of millet cookies
3. Scientists involved : Subject Matter Specialist (Home science).
4. Details of farming situation : Not applicable

5. Problem definition / description:

Nowadays consumption of refined flour cookies with artificial flavor and colours are rapidly increasing in our daily lives. Refined flour products and artificial taste makers are tempting but they are not healthy, but it is becoming a part of our diet and it impacts our health drastically. Refined flour based products may be connected to weight gain, metabolic problems, cardiovascular disease, and even cancer.

6. Technology Assessed:

TO 1 :Millet cookies with addition of Thulasi powder @ 20g/kg (2%) + Whole Wheat flour + Millets – Jowar (UAS Dharward – 2017).

TO 2 : Millet flour cookies with addition of Thuthuvalai powder @ 20g/kg (2%) + Whole wheat flour + Millets – Ragi (CS & RI – 2015).

TO 3 : Refined wheat flour cookies. (Farmers' practice).

7. Critical inputs given:

S.No	Name of the input	Quantity	Value (Rs.)
1	Sealing machine	1 No.	1050.00
2	Thulasi powder	320 gm	120.00
3	Thuthuvalai powder	200 gm	100.00
4	Wheat	20 kg	700.00
5	Ragi	8 kg	288.00
6	Sorghum	8 kg	280.00
7	Sugar	20 kg	760.00
8	Plastic container	300 Nos	1800.00
9	Margarine	18 kg	3600.00
10	Demo board	1	200.00
Total			8898.00

8. Results:

Table 1: Performance of the technology

Technology Option	No. of trials	Production (kg)	Net Return (Rs.)	BCR	Data on Other performance indicators	
					Consumer acceptability	Shelf life
TO1	5	50	11200.00	3.95 : 1	4.0	60 days
TO2		50	13600.00	4.40 : 1	4.2	60 days
TO3		50	6600.00	2.94 : 1	3.5	30 days

Description of the results:

The selected entrepreneurs had been demonstrated on preparation of different types of cookies using millet cookies (Ragi) with Thuthuvalai powder and millet cookies (Jowar) with Thulasi powder. The Thuthuvalai incorporated cookies (TO2) has received higher consumer acceptability, market price resulting in higher income.

9. Feed back of the farmers involved:

Millet cookies (Ragi) with Thuthuvalai powder are highly acceptable based on the high shelf life (60 days), Consumer acceptability (based on texture, flavor and colour) and its therapeutic properties and this programme was an eye-opener for all.

10. Feed back to the scientist who developed the technology :

Consumer acceptability of Millet cookies (Ragi) with Thuthuvalai powder has been found most preferred by consumers and highly remunerative.

RESULT FOR OFT : 2018-2019

I. Assessment of suitable management practice for Panama Wilt in Banana

- 1. Thematic area** : Integrated Disease Management
- 2. Title** : Assessment of technological modules for the management of Panama Wilt in Banana
- 3. Scientists involved** : Subject Matter Specialist (Plant Protection).

4. Details of farming situation:

Farming situation	Season	Soil type	Fertility status			Seasonal rain fall (mm)	No. of rainy days
			N	P	K		
Irrigated	Rabi	Sandy loam	H	M	M	793.91	29

5. Problem definition / description:

Severe incidence of panama wilt disease (Fungal complex) 36.88 percentage with reduction of yield (23%). The disease progression results in the collapse of leaves, Vascular portion which eventually lead to death of the plant. Once established in a field, the fungus persists in soil for an indefinite period of time. The continuous usage of diseased planting materials and poor knowledge on management practices lead to severe yield loss. Indiscriminate application of chemical fungicides results in higher cost and hazardous to the environment and edible product.

6. Technology Assessed:

TO 1 : *Pseudomonas fluorescens* 2.5 kg/ha + FYM +neem cake. *T.viride* @ 2.5 kg/ha for 4 times at 3rd, 4th, 5th and 7th month after planting. Pralinage with Carbofuran @ 40g Drenching with Carbendazim 0.2 %.

TO 2: Soil application of Bio-nematicide (combination of plant extract calotropis, neem, adathoda, kolinji, pungam and abutilan indicum) @ 250ml/acre. Alternated with Drenching of Bio-fungicide (Neem, Nerunchi, Neerium, Eucalyptus, Lantana camera @ 1 litre / acre.

TO 3 : Application of Carbofuron (Farmers' practice).

7. Critical inputs given:

S.No	Name of the input	Quantity	Value (Rs.)
1	Bionematicide	5 lit	18770.00
2	Biofungicide	10 lit	5200.00
3	<i>Trichoderma viride</i>	20 kg	2500.00
4	<i>Pseudomonas fluorescens</i>	20 kg	2500.00
5	Field board	5 no	1000.00
Total			29970.00

8. Results :

Table 1 : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Return (Rs./ ha)	BCR	Other performance indicators
					Percent Disease Incidence (%)
TO 1	5	546.46	364227/-	2.74 : 1	4.28
TO 2		539.02	354611/-	2.68 : 1	5.96
TO3		483.38	268669/-	2.12 : 1	29.35

Description of the results:

Among the Panama wilt management practice assessed viz., TO1 (TNAU) and TO2 (farmer innovation) against farmers' practice, the TO1 recorded higher yield (546.46 q/ha) as compared to TO2 (539.02 q/ha) and farmers' practice (483.38 q/ha). Besides, average increase in yield to the tune of 13.04 percent with higher BCR of 2.74 and very low incidence of Panama wilt disease (4.28 %) were recorded in TO1 as compared to other technological options. Overall, the TNAU developed Panama wilt management practice (TO1) had been found effective management of disease in Banana and also the technological practices performed well in terms of yield and net income (Rs.364227.00) as compared to Farmers innovation (TO2) and farmers' practice.

9. Feed back of the farmers involved:

The farmers felt that cultivation of Banana with IDM package (TO1) has given higher yield and higher economic returns with low incidence of panama wilt disease compared to other technologies.

10. Feed back to the scientist who developed the technology:

- Early detection of diseased plants may be helpful to the farming community. So user/farmer friendly identification kit may be available in district level.
- Panama wilt and Nematode resistant cultivars may be developed with high yield potential and suitable for our district.

3.D. FRONTLINE DEMONSTRATION

a. Follow-up of FLDs implemented during previous years

S. No.	Crop/ Enterprise	Thematic Area	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Paddy	Varietal demonstration	Demonstration of CO51 paddy	<ul style="list-style-type: none"> ▪ Supply of seeds at low cost. ▪ Conduction of training, demonstration and Mass media coverage. 	752	29990	24800
2	Paddy	IPDM	Integrated pest and disease management in paddy	<ul style="list-style-type: none"> ▪ Trainings, Demonstration, Exhibition, Advisory service, Mass media coverage 	65	2560	2350
3	Paddy	Drudgery reduction	Direct sown paddy drum seeder	<ul style="list-style-type: none"> ▪ Supply of drum seeder at nominal cost. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	451	15937	12750
4	Blackgram	Varietal demonstration	Demonstration of VBN- 8 blackgram	<ul style="list-style-type: none"> ▪ Supply of seeds at low cost. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	157	1080	432
5	Greengram	Varietal demonstration	Demonstration of CO 8 Greengram	<ul style="list-style-type: none"> ▪ Supply of seeds at low cost rate. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	84	442	306

6	Groundnut	Varietal demonstration	Demonstration of TCGS1043 groundnut	<ul style="list-style-type: none"> ▪ Supply of seeds at low cost rate. ▪ Conduction of training, demonstration and Mass media coverage. 	286	5242	6378
7	Chilli	Varietal demonstration	Demonstration of CO(CH)1 Chilli hybrid	<ul style="list-style-type: none"> ▪ Supply of seeds at subsidized rate. ▪ Conduction of training, demonstration and Mass media coverage. 	38	565	107
8	Bittergourd	ICM	Integrated Crop Management in Bittergourd	<ul style="list-style-type: none"> ▪ Supply of technological inputs at subsidized rate. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	18	322	110
9	Bitter gourd	IPDM	Integrated pest and disease management.	<ul style="list-style-type: none"> ▪ Trainings, Demonstration, Exhibition, Advisory service, Mass media coverage. 	16	204	52
10	Brinjal	Varietal demonstration	Demonstration of VRM(BR)1 Spiny brinjal with ICM practices	<ul style="list-style-type: none"> ▪ Supply of seeds at subsidized rate. ▪ Conduction of training, demonstration and Mass media coverage. 	44	469	137
11	Banana	ICM	Integrated Crop Management in banana	<ul style="list-style-type: none"> ▪ Supply of technological inputs at subsidized rate. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	16	285	146

12	Turmeric	ICM	Integrated Crop Management in turmeric	<ul style="list-style-type: none"> ▪ Supply of technological inputs at subsidized rate. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	12	102	49
13	Colocasia	ICM	Integrated Crop Management in Colocasia	<ul style="list-style-type: none"> ▪ Supply of technological inputs at subsidized rate. ▪ Conduction of training, demonstration, Exhibition and Mass media coverage. 	6	650	52
14	Chilli	ICM	Integrated Crop Management in Chilli	<ul style="list-style-type: none"> ▪ Supply of seeds at subsidized rate. ▪ Conduction of training, demonstration and Mass media coverage. 	22	215	43
15	Brinjal	IPDM	Integrated pest and disease management.	<ul style="list-style-type: none"> ▪ Trainings, Demonstration, Exhibition, Advisory service, Mass media coverage. 	19	321	74
16	Millet	Value addition	Preparation of convenience food (Health mix, Adai mix, Laddu mix, Muruku mix)	<ul style="list-style-type: none"> ▪ Trainings, Demonstration, Exhibition, Mass media coverage. 	15	85	-

b. Details of Front Line Demonstrations (FLDs)

b.1. Cereals

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
1	Paddy	Varietal demonstration	<p><u>Demonstration of ADT-53 paddy variety.</u></p> <ul style="list-style-type: none"> ▪ Seed treatment with Azospirillum and Phosphobacteria each 2 kg/ha. ▪ Soil application of Pseudomonas fluorescens 2.5 kg/ha. ▪ Soil application of Paddy Micronutrient mixture 25 kg/ha. ▪ Soil application of ZnSo₄ at 25kg/ha. ▪ Foliar application of TNAU PPFM spray 2.5 lit/ha. ▪ Foliar application Cartap Hydrochloride 50% SP1000 gm/ha. 	Rabi 2019-20	ICAR	4	4	2	8	10	-

2	Paddy	IPDM	<p><u>IPDM in paddy</u></p> <ul style="list-style-type: none"> ▪ <i>Pseudomonas fluorescens</i> - Seed treatment @ 10 g/kg. ▪ Soil application @ 1kg/ac. ▪ Seedling root dip @ 1kg/ac. ▪ Foliar application of <i>Lecanicillium lecanii</i> @ 1 lit/ac. ▪ Bund crops with Gingelly, Pulses, Sunflower, Cowpea, and marigold. ▪ Release of <i>Trichogramma japonicum</i> @ 2 cc. ▪ Release of <i>Trichogramma chilonis</i> @ 2 cc. ▪ Installation of solar light trap @ 1/acre. ▪ Installation of Stem borer pheromone trap @ 10/acre. ▪ Installation of Yellow sticky trap @ 5/ac. ▪ Need based application of Neem oil @ 3%. 	Kharif 2019	ICAR	4	4	2	8	10	-
---	-------	------	---	-------------	------	---	---	---	---	----	---

b.2. Millets

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
1	Pearl millet	Varietal Evaluation	<p><u>Varietal Features of Pearl millet CO 10</u></p> <ul style="list-style-type: none"> ▪ High protein content (12.07%) ▪ Area of adoption entire state of Tamil Nadu ▪ Suitable for Rainfed and Irrigated condition ▪ Resistant to downy mildew disease 	Rabi 2019-20	ICAR	6	6	4	11	15	-
2	Finger millet	Varietal Evaluation	<p><u>Demonstration of finger millet variety KMR 340</u></p> <ul style="list-style-type: none"> ▪ Demonstration of Finger millet variety KMR-340. ▪ Seed treatment with <i>Trichoderma viride</i> 4 gm/kg ▪ Soil application of <i>Azospirillum</i> and <i>Phosphobacteria</i> each 2 kg/ha. 	Rabi 2019-20	ICAR	6	6	3	12	15	-

			<ul style="list-style-type: none"> ▪ Soil application of <i>Pseudomonas fluorescens</i> 2.5 kg/ha. ▪ Soil application of Millet Mn mixture 5 kg/ha ▪ Foliar application of TNAU PPFM spray 2.5lit/ha 								
3	Little millet	Varietal Evaluation	<p><u>Demonstration of Little millet variety ATL-1.</u></p> <ul style="list-style-type: none"> ▪ Seed treatment with <i>Trichoderma viride</i> 4 gm/kg. ▪ Soil application of Azospirillum and sphobacteria each 2 kg/ha. ▪ Soil application of <i>Pseudomonas fluorescens</i> 2.5 kg/ha. ▪ Soil application of Millet Mn mixture 5 kg/ha. ▪ Foliar application of TNAU PPFM spray 2.5lit/ha. 	Rabi 2019-20	ICAR	4	4	2	8	10	-

b.3. Horticultural crops

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
1	Bhendi	Varietal Evaluation	<p><u>Demonstration of Bhendi hybrid CO 4</u></p> <ul style="list-style-type: none"> ▪ Demonstration of CO4 Bhendi hybrid ▪ Soil application of <i>Trichoderma viride</i> @ 2.5kg/ha ▪ Soil application of neem cake – 250 kg/ha. ▪ Vegetable special Spray @ 0.1 % ▪ Spraying of Neem, Pongamia soaps @ 1% ▪ Installation of Pheromone traps @ 12/ha. ▪ Installation of Yellow sticky traps @ 25/ha. ▪ Spraying of Imidacloprid 17.8% SL 80ml/ac. 	Kharif 2019	ICAR	2	2	2	8	10	-

2	Bitter gourd	ICM	<p><u>Integrated Crop Management in Bitter gourd</u></p> <ul style="list-style-type: none"> ▪ NPK application based on soil test. ▪ Soil application of <i>P. fluorescens</i> @2.5kg/ha. ▪ Vegetable special Spray @ 0.1 %. ▪ Soil application of neem cake – 250 kg/ha. ▪ Spraying of Ethrel @ 250 ppm. ▪ Spraying of Neem, Pongamia soaps @ 1%. ▪ Installation of Pheromone traps @ 12/ha. ▪ Installation of Yellow sticky traps @ 25/ha. 	Kharif 2019	ICAR	2	2	0	10	10	-
3	Snake gourd	Varietal Evaluation	<p><u>Demonstration of snake gourd COH-1</u></p> <ul style="list-style-type: none"> ▪ Demonstration of COH -1 snake gourd. ▪ Soil application of <i>P. fluorescens</i> @ 2.5kg/ha. ▪ Soil application of neem cake – 250 kg/ha. ▪ Vegetable special spray @ 	Not implemented due to non availability of hybrid seeds							

			<p>0.1 %.</p> <ul style="list-style-type: none"> ▪ Spraying of Ethrel @ 100 ppm. ▪ Spraying of Neem, Pongamia soaps @ 1%. ▪ Installation of Pheromone traps @ 12/ha. ▪ Installation of Yellow sticky traps @ 25/ha. ▪ Foliar application of Azoxystrobin 25 SC @ 200 ml/ac (Powdery & Downy mildew) ▪ Spraying of Imidacloprid 17.8% SL 80ml/ac (Sucking pest). 								
4	Snake gourd	IPDM	<p><u>IPDM in Snake gourd</u></p> <ul style="list-style-type: none"> ▪ Soil Application of Neem cake @ 100kg/acre. ▪ Soil application of Pseudomonas fluorescens @ 1kg/ac. ▪ Soil application of Paecilomyces @ 1kg/ac. ▪ Installation of Pheromone traps and lures for fruit fly @ 12/ha. ▪ Installation of yellow sticky 	Kharif 2019	ICAR	2	2	2	8	10	-

			<p>trap @ 12/ha.</p> <ul style="list-style-type: none"> ▪ Foliar application of Neem & Pongamia soaps @1%. ▪ Azoxystrobin 25 SC @ 200 ml/ac (Foliar diseases), Imidacloprid 17.8% SL 80ml/ac. 								
5	Water melon	IPDM	<p><u>IPDM in Water melon</u></p> <ul style="list-style-type: none"> ▪ Soil application of Neem cake @250kg/ha. ▪ Soil application of P. fluorescens @2.5kg/ha. ▪ Soil application of Trichoderma viride @2.5kg/ha. ▪ Installation of fruit fly Pheromone traps @12/ha. ▪ Installation of Blue sticky traps @ 25/ha. ▪ Foliar application of micronutrients @ 1 %. ▪ Foliar application of Neem soap and Pongamia soap @ 1%. 	Rabi 2019-20	ICAR	4	4	2	8	10	-

2018-19											
6	Chilli	ICM	<p><u>Integrated Crop Management in Chillies.</u></p> <ul style="list-style-type: none"> ▪ NPK application based on soil test. ▪ Spraying of vegetable special @0.5% at 15 days intervals. ▪ Soil application of neem cake @ 250 kg/ha. ▪ Soil application of Pseudomonas @ 2.5 kg/ ha. ▪ Installation of Yellow sticky traps @ 25/ha. ▪ Cultivation of maize as border crop. ▪ Installation of fruit borer pheromone. trap @12/ha. ▪ Foliar application of Neem and Pongamia soaps @1%. ▪ Foliar application of flubendiamide 39.35%SC 150 ml/ha. (Fruit borer). 	Rabi 2018-19	ICAR	2	2	0	10	10	-

7	Colocasia	ICM	<p><u>Integrated Crop Management in Colocasia.</u></p> <ul style="list-style-type: none"> ▪ NPK application based on soil test. ▪ Soil application of neem cake @ 250 kg/ha. ▪ Soil application of Vermicompost @ 2 t/ha. ▪ Spraying of vegetable special @0.5% at 1days intervals. ▪ Installation of Yellow sticky traps @ 25/ha. ▪ Application of Arka microbial consortium @ 12 kg/ha. ▪ Foliar application of Neem and Pongamia soaps @1%+Foliar application of Fosetyl aluminum 80 % WP (Taro blight). 	Rabi 2018-19	ICAR	2	2	0	10	10	-
---	-----------	-----	---	-----------------	------	---	---	---	----	----	---

c. Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Paddy	Rabi	Irrigated	Clay loam	M	L	M	Paddy	First week of December 2019	Last week of March 2020	25.8	2
Paddy	Kharif	Irrigated	Sandy clay loam	M	L	M	Groundnut	First week of September 2019	Last week of January 2020	529.9	14
Pearl millet	Rabi	Irrigated	Sandy loam	M	H	M	Groundnut	Fourth week of March 2020	In progress		
Finger millet	Rabi	Irrigated	Sandy loam	M	L	M	Groundnut	Fourth week of March 2020	In progress		
Little millet	Rabi	Rainfed	Sandy loam	H	M	M	Blackgram	First week of December 2019	Last week of February 2020	25.8	2
Bhendi	Kharif	Irrigated	Clay loam	M	H	M	Groundnut	Fourth week of September 2019	Second week of March 2020	393	18
Bitter gourd	Kharif	Irrigated	Red sandy loam	H	L	M	Snake gourd	Second week of September 2019	Second week of March 2020	520	28
ICM-Snake gourd	Not implemented due to non availability of hybrid seeds										
IPDM-Snake gourd	Kharif	Irrigated	Sandy loam	L	M	M	Pulses	Second week of September 2019	Third week of February 2020	530.6	14

Water melon	Rabi	Irrigated	Sandy loam	M	H	M	Paddy	First week of February 2020	Second week of April 2020	0.70	-
2018-19											
Chilli	Rabi	Irrigated	Sandy clay loam	H	M	M	Groundnut	First week of January 2019	Second week of July 2019	171.6	13
Colocasia	Rabi	Irrigated	Sandy loam	H	M	M	Groundnut	Third week of February 2019	First week of September 2019	350.4	27

d. Technical Feedback on the demonstrated technologies

S. No	Crop	Feed Back
1	Paddy-ADT43	The paddy variety ADT53 performed well against the existing paddy variety ADT-45 during rabi season. Recorded an average yield of 62.42 q/ha which is 18% higher than local check. Non lodging nature helped in easy mechanical harvesting.
2	Paddy-IPDM	The IPDM Technologies reduced the pest and diseases incidence viz, Stem Borer (4.32%), Tungro (4.52%), Blast (11.36), BLB (9.08 %) and Leaf folder (3.51%). Technologies found increasing the yield (19.60%) and higher net return (43290.00/ha).
3	Pearl millet	In Progress
4	Finger millet	In Progress.
5	Little millet	The little millet variety viz., ATL1 is more suitable for mechanical harvesting, it has high milling recovery. Recorded an average yield of 30.3 q/ha which is 32 % higher than the local variety.
6	Bhendi	The bhendi hybrid CO4 has recorded higher yield (15%) as compared to private hybrids(local check). It has high resistance to yellow vein mosaic virus (3.25%) as compared to local check (15.58%). The market preference is very good for the variety.
7	Bitter gourd	The adoption of ICM technologies resulted in 29% higher yield (420.88 Q/ha) as compared to farmer practice. The produce fetched higher market price due to better quality. Farmers obtained higher income. The BCR recorded was 2.12.
8	Snake gourd	Not implemented due to non availability of seeds.
9	Snake gourd	The IPDM Technologies reduced the pest and diseases incidence viz, Fruit fly (9.45%), mosaic (8.43 %). Technologies found increasing the yield (18.41%) and higher net return (432688.00/ha).

10	Water melon	The IPDM Technologies reduced the pest and diseases incidence viz, Fruit fly (8.21%), mosaic (10.28 %). Technologies found increasing the yield (26.70%) and higher net return (138397.00/ha).
2018-19		
11	Chilli	The adoption of ICM technologies resulted in 29% higher yield (199.06 Q/ha) as compared to farmer practice. The produce fetched higher market price due to better quality. Farmers obtained higher income. The BCR recorded was 2.15.
12	Colocasia	The adoption of ICM technologies resulted in 29% higher yield (332.75 Q/ha) as compared to farmer practice. The produce fetched higher market price due to better quality. Farmers obtained higher income. The BCR recorded was 2.69.

e. Farmers' reactions on specific technologies

S. No	Crop	Feed Back
1	Paddy	The paddy variety ADT53 given higher yield and income. It is non lodging in nature.
2	Paddy	The farmers felt that IPDM technologies in paddy increased the yield and net income, reduced the application of pesticides with effective management of pest and diseases.
3	Pearl millet	In progress
4	Finger millet	In progress
5	Little millet	The ATL1 little millet variety given higher yield and income.
6	Bhendi	The bhendi hybrid CO4 given higher yield and income. It is highly resistant to YVMV disease.
7	Bitter gourd	The adoption of ICM technologies given higher yield and income. The quality of the fruits improved and fetched good market price.
8	Snake gourd	Not implemented due to non availability of seeds.
9	Snake gourd	The farmers felt that IPDM technologies in Snake gourd increased the yield, reduced the requirement of chemical pesticides and fungicides with better control of pest and diseases.
10	Water melon	The farmers felt that IPDM technologies in Watermelon increased the yield, reduced the requirement of pesticides with better control of pest and diseases.
2018-19		
11	Chilli	The adoption of ICM technologies given higher yield and income. The quality of the fruits improved and fetched good market price.
12	Colocasia	The adoption of ICM technologies given higher yield and income. The quality of the tubers improved and fetched good market price.

f. Extension and Training activities under FLD

Sl. No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	11	24.4.19, 29.4.19, 27.05.19, 09.09.19, 28.12.19, 31.12.19, 01.01.20, 09.03.20, 10.03.20, 17.03.20,	341	-
2	Farmers Training	22	27.6.19, 08.7.19, 17.7.19, 27.7.19, 30.7.19, 31.7.19, 4.10.19, 23.10.19, 29.10.19, 30.10.19, 21.11.19, 6.12.19, 16.12.19, 4.1.20, 5.2.20, 24.2.20, 25.2.20, 2.3.20, 9.3.20, 16.3.20, 20.3.20	291	-
3	Media coverage	4	09.12.19, 28.12.19, 13.2.20, 17.3.20	Mass	-
4	Training for extension functionaries	3	13.11.19, 17.3.20, 19.3.20	53	-

g. Performance of Frontline demonstrations

i) Frontline demonstrations on crops

Crop	Thematic Area	Technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs/ha)				Economics of check (Rs/ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
							High	Low	Avg.										
Cereals																			
Paddy	Varietal evaluation	Demonstration on paddy ADT53	ADT53	ADT45	10	4	63.55	56.81	62.42	52.79	18	48435	102994	54559	2.13:1	50579	82778	32199	1.64:1
Paddy	IPDM	IPDM in paddy	White ponni	White ponni	10	4	46.28	44.90	45.51	38.05	20	38630	81920	43290	2.12:1	41590	68492	26902	1.65:1
Millets																			
Pearl millet	Varietal evaluation	Demonstration on pearl millet CO10	CO10	Local variety	15	6	In progress												
Finger millet	Varietal evaluation	Demonstration on Finger millet KMR 340	KMR 340	Local variety	15	6	In progress												
Little millet	Varietal evaluation	Demonstration on Little millet ATL1	ATL1	Local variety	10	4	31.25	29.10	30.3	23	32	24375	90900	66525	3.73:1	22250	69000	46750	3.1:1

Crop	Thematic Area	Technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs/ha)				Economics of check (Rs/ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
							High	Low	Avg.										
Vegetables																			
Bhendi	Varietal evaluation	Demonstration on Bhedni CO4	CO4	Sakthi	10	2	221.64	216.45	219.48	191.39	15	124705	374542	249837	3.0:1	127275	325266	197991	2.56:1
Bitter gourd	ICM	ICM in Bitter gourd	Abishek	Abishek	10	2	423.60	417.45	420.88	326.61	29	327874	927322	599447	2.58:1	340211	720588	380877	2.12:1
Sanke gourd	Varietal evaluation	Demonstration of COH1	COH1	Mahyco-1	Not implemented due to non availability of seeds.														
Snake gourd	IPDM	IPDM snake gourd	Mahyco-MHSN-1	Mahyco-MHSN-1	10	2	544.67	539.21	541.55	457.35	18	274033	706721	432688	2.58:1	278769	596839	318070	2.14:1
Water melon	IPDM	IPDM in water melon	NS 295	NS 295	10	4	298.45	290.67	294.92	232.77	27	82795	221192	138397	2.67:1	91966	174577	82611	1.9:1
2018-19																			
Chilli	ICM	ICM in chilli	Indira	Indira	10	2	201.3	196.6	199.06	154.81	29	143790	405636	261846	2.82:1	145500	313178	167678	2.15:1
Colocasia	ICM	ICM in Colocasia	Andhra local	Andhra local	10	2	357.5	311	332.75	257.5	29	278115	935585	657470	3.36:1	276375	743376	467001	2.69:1

ii) **Frontline demonstrations on Livestock**

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units (Animal/Poultry/Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Poultry																	
Aseel	Production and Management	Popularization of Tanuvas Aseel chicken under backyard condition	10	250	1.79 kg body weight	1.36 kg body weight	32	-	-	2832	6557.84	3725.84	2.32:1	2082	3506	1424	1.68:1

iii) **Frontline demonstrations on Fisheries** : Nil

iv) **Frontline demonstrations on Other enterprises** : Nil

Category	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.) or Rs./unit				Economics of check (Rs.) or Rs./unit				
				Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)	
Value Addition																	
Convenience Foods (2018-19)	Convenience Foods (Health mix, Adai mix, Laddu mix, Muruku mix, Cookies)	20	1	Shelf life (30 days) as raw produce	Shelf life (6 months)	-	-	-	6550 / 100 kg of mix	16985/ 100 kg of mix	10435	1:2.59	4700	7000	2300	1:1.48	

v) **Frontline demonstrations on Women Empowerment** : Nil

vi) **Frontline demonstrations on Farm Implements and Machinery** :

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total
IRRI Super bag	Paddy	Post harvest management	5	-	Recovery (%) /four months	100	91.8	9	-	-	-	-	-	-	-	-

vii) **Frontline demonstrations on Other Enterprise: Kitchen Gardening** : Nil

viii) **Frontline demonstrations on crop hybrids**

Crop	technology demonstrated	Hybrid Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)			
					Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average						
Vegetable crop													
Bhendi	Demonstration on Bhedni CO4	CO4	10	2	22164	21645	21948	19139	15	124705	374542	249837	30:1

h) FLDs conducted with the FUNDING OF OTHER SOURCES including CFLD/ATMA/NABARD/other ICAR institutes etc

i) Other Source funded FLDS in CROPS

Crop	Source of fund	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
				Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
								High	Low	Avg										
CFLD Black gram (Kharif)	ICAR	ICM	<ul style="list-style-type: none"> ▪ Demonstration of VBN-8 variety of Blackgram. ▪ Seed treatment and soil application of Rhizobium and phosphobacteria @ 1 kg /acre each. ▪ Soil application <i>T.viride</i> @ 1 kg /acre during sowing and 20 DAS. 	VBN-8	T-9	50	20	8.51	7.13	7.9	6.5	21.54	32486	64870	32384	2.00	38757	56548	17791	1.46
CFLD Black gram (Rabi)	ICAR	ICM	<ul style="list-style-type: none"> ▪ Foliar application of pulse wonders @ 2.25 kg/acre at 30 DAS. ▪ Setting up of yellow sticky trap @ 5 Nos/acre. ▪ Application of NPV @ 250 SL/acre during incidence. 	VBN-8	T-9	50	20	8.49	7.1	7.8	6.5	20	28348	58734	30386	2.07	32456	42186	9730	1.30

CFLD Groundnut (Kharif)	ICAR	ICM	<ul style="list-style-type: none"> ▪ Demonstration of TCGS1043 variety of groundnut. ▪ Seed treatment and soil application of Rhizobium @ 1 kg /acre. ▪ Seed treatment and soil application of <i>T.viride</i> and <i>Pseudomonas</i> (Consortia) @ 2 kg /acre each. 	TMV 14	VRI 2	25	10	22.29	20.85	21.4	17.25	24.05	42296	117680	71384	2.54	51320	94875	43555	1.85
CFLD Groundnut (Rabi)	ICAR	ICM	<ul style="list-style-type: none"> ▪ Basal application of micronutrient mixture @ 5 kg /acre. ▪ Foliar application of groundnut rich @ 2.25 kg/acre at 30 and 45 DAS. ▪ Application of gypsum @ 160 kg/acre at Basal and 45 DAS. 	TMV 14	VRI 2	25	10	28.21	25.88	27.18	21.65	26.33	46296	120630	74334	2.60	53240	96974	43734	1.82

- ii) Other Source funded FLDS in Livestock : Nil
- iii) Other Source funded FLDS in Fisheries : Nil
- iv) Other Source funded FLDS in Other enterprises : Nil
- v) Other Source funded FLDS in Women Empowerment : Nil
- vi) Other Source funded FLDS in Farm Implements and Machinery : Nil

4. TRAINING PROGRAMMES

4.1. Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Seed production	1	13	2	15	3	0	3	16	2	18
Integrated Crop Management	1	10	1	11	2	1	3	12	2	14
Total	2	23	3	26	5	1	6	28	4	32
II Horticulture										
a) Vegetable Crops										
Nursery raising	1	15	0	15	0	0	0	15	0	15
Integrated Crop Management	1	15	0	15	2	0	2	17	0	17
Organic farming in vegetables	2	12	11	23	3	2	5	15	13	28
Precision farming in vegetables	1	13	8	21	1	0	1	14	8	22
Total	5	55	19	74	6	2	8	61	21	82
b) Fruits	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants	0	0	0	0	0	0	0	0	0	0
d) Plantation crops	0	0	0	0	0	0	0	0	0	0
e) Tuber crops	0	0	0	0	0	0	0	0	0	0
f) Spices	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants	0	0	0	0	0	0	0	0	0	0
GT (a-g)	5	55	19	74	6	2	8	61	21	82
III Soil Health and Fertility Management										
Soil fertility management	1	14	5	19	2	0	2	16	5	21
Total	1	14	5	19	2	0	2	16	5	21
IV Livestock Production and Management										
Dairy Management	1	12	1	13	3	0	3	15	1	16
Poultry Management	2	18	0	18	5	5	10	23	5	28

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others (pl specify)-Sheep and goat farming	1	8	0	8	4	0	4	12	0	12
Total	4	38	1	39	12	5	17	50	6	56
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	16	4	20	0	0	0	16	4	20
Value addition	3	9	23	32	0	19	19	9	42	51
Women empowerment	2	0	33	33	0	7	7	0	40	40
Total	6	25	60	85	0	26	26	25	86	111
VI Agril. Engineering										
Farm Machinery and its maintenance	1	10	5	15	0	0	0	10	5	15
Total	1	10	5	15	0	0	0	10	5	15
VII Plant Protection										
Integrated Pest Management	1	12	1	13	3	0	3	15	1	16
Integrated Disease Management	1	10	4	14	0	0	0	10	4	14
Total	2	22	5	27	3	0	3	25	5	30
VIII Fisheries										
IX Production of Inputs at site										
Apiculture	1	24	3	27	3	0	3	27	3	30
Total	1	24	3	27	3	0	3	27	3	30
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	22	211	101	312	31	34	65	242	135	377

4.2 Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Integrated Crop Management	6	49	5	54	10	7	17	59	12	71
Total	6	49	5	54	10	7	17	59	12	71
II Horticulture										
a) Vegetable Crops										
Nursery raising	1	16	2	18	0	0	0	16	2	18
Integrated Crop Management	4	42	3	45	4	0	4	46	3	49
Organic farming in vegetables	1	15	2	17	0	3	3	15	5	20
Total (a)	6	73	7	80	4	3	7	77	10	87
b) Fruits										
Others (pl specify)-Precision farming in banana	1	13	2	15	3	0	3	16	2	18
Total (b)	1	13	2	15	3	0	3	16	2	18
c) Ornamental Plants	0	0	0	0	0	0	0	0	0	0
d) Plantation crops	0	0	0	0	0	0	0	0	0	0
f) Spices										
Others (pl specify)-ICM in Chilli	1	7	1	8	2	0	2	9	1	10
Total (f)	1	7	1	8	2	0	2	9	1	10
g) Medicinal and Aromatic Plants										
Others (pl specify) – ICM in aromatic plants	1	13	3	16	2	0	2	15	3	18
Total (g)	1	13	3	16	2	0	2	15	3	18
GT (a-g)	9	106	13	119	11	3	14	117	16	133
III Soil Health and Fertility Management										
Integrated Nutrient Management	1	14	1	15	2	0	2	16	1	17
Total	1	14	1	15	2	0	2	16	1	17

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
IV Livestock Production and Management										
Dairy Management	1	10	2	12	3	0	3	13	2	15
Poultry Management	1	12	0	12	2	0	2	14	0	14
Rabbit Management	1	12	1	13	2	0	2	14	1	15
Feed & fodder technology	1	11	1	12	0	2	2	11	3	14
Others (pl specify)-Sheep and goat rearing	2	25	0	25	5	0	5	30	0	30
Total	6	70	4	74	12	2	14	82	6	88
V Home Science/Women empowerment										
Storage loss minimization techniques	1	0	0	0	4	1	5	4	1	5
Value addition	6	13	55	68	0	19	19	13	74	87
Location specific drudgery reduction technologies	2	4	27	31	0	2	2	4	29	33
Total	9	17	82	99	4	22	26	21	104	125
VI Agril. Engineering										
VII Plant Protection										
Integrated Pest Management	11	99	21	120	38	2	40	137	23	160
Integrated Disease Management	1	5	2	7	1	0	1	6	2	8
Production of bio control agents and bio pesticides	1	18	1	19	0	0	0	18	1	19
Total	13	122	24	146	39	2	41	161	26	187
VIII Fisheries										
IX Production of Inputs at site										
Vermi-compost production	1	9	3	12	2	0	2	11	3	14
Total	1	9	3	12	2	0	2	11	3	14
X Capacity Building and Group Dynamics	0	0	0	0	0	0	0	0	0	0
XI Agro-forestry	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	45	387	132	519	80	36	116	467	168	635

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Seed production	1	13	2	15	3	0	3	16	2	18
Integrated Crop Management	7	59	6	65	12	8	20	71	14	85
Total	8	72	8	80	15	8	23	87	16	103
II Horticulture										
a) Vegetable Crops										
Nursery raising	2	31	2	33	0	0	0	31	2	33
Integrated Crop Management	5	57	3	60	6	0	6	63	3	66
Organic farming in vegetables	3	27	13	40	3	5	8	30	18	48
Precision farming in vegetables	1	13	8	21	1	0	1	14	8	22
Total (a)	11	128	26	154	10	5	15	138	31	169
b) Fruits										
Others (pl specify)-Precision farming in banana	1	13	2	15	3	0	3	16	2	18
Total (b)	1	13	2	15	3	0	3	16	2	18
c) Ornamental Plants	0	0	0	0	0	0	0	0	0	0
d) Plantation crops	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Others (pl specify)-ICM in Chilli	1	7	1	8	2	0	2	9	1	10
Total (f)	1	7	1	8	2	0	2	9	1	10
g) Medicinal and Aromatic Plants										
Others (pl specify) – ICM in aromatic plants	1	13	3	16	2	0	2	15	3	18
Total (g)	1	13	3	16	2	0	2	15	3	18
GT (a-g)	14	161	32	193	17	5	22	178	37	215

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
III Soil Health and Fertility Management										
Soil fertility management	1	14	5	19	2	0	2	16	5	21
Integrated Nutrient Management	1	14	1	15	2	0	2	16	1	17
Total	2	28	6	34	4	0	4	32	6	38
IV Livestock Production and Management										
Dairy Management	2	22	3	25	6	0	6	28	3	31
Poultry Management	3	30	0	30	7	5	12	37	5	42
Rabbit Management	1	12	1	13	2	0	2	14	1	15
Feed & fodder technology	1	11	1	12	0	2	2	11	3	14
Others (pl specify)-Sheep and goat rearing	3	33	0	33	9	0	9	42	0	42
Total	10	108	5	113	24	7	31	132	12	144
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	1	16	4	20	0	0	0	16	4	20
Storage loss minimization techniques	1	0	0	0	4	1	5	4	1	5
Value addition	9	22	78	100	0	38	38	22	116	138
Women empowerment	2	0	33	33	0	7	7	0	40	40
Location specific drudgery reduction technologies	2	4	27	31	0	2	2	4	29	33
Total	15	42	142	184	4	48	52	46	190	236
VI Agril. Engineering										
Farm Machinery and its maintenance	1	10	5	15	0	0	0	10	5	15
Total	1	10	5	15	0	0	0	10	5	15
VII Plant Protection										
Integrated Pest Management	12	111	22	133	41	2	43	152	24	176
Integrated Disease Management	2	15	6	21	1	0	1	16	6	22
Production of bio control agents and bio pesticides	1	18	1	19	0	0	0	18	1	19
Total	15	144	29	173	42	2	44	186	31	217

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
VIII Fisheries	0	0	0	0	0	0	0	0	0	0
IX Production of Inputs at site										
Vermi-compost production	1	9	3	12	2	0	2	11	3	14
Apiculture	1	24	3	27	3	0	3	27	3	30
Total	2	33	6	39	5	0	5	38	6	44
X Capacity Building and Group Dynamics										
XI Agro-forestry	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	67	598	233	831	111	70	181	709	303	1012

4.4 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
Integrated farming	1	14	0	14	2	0	2	16	0	16
Mushroom Production	1	0	0	0	0	16	16	0	16	16
Bee-keeping	2	14	2	16	12	2	14	26	4	30
Repair and maintenance of farm machinery and implements-Coconut tree climber	2	29	1	30	10	0	10	39	1	40
Value addition	3	3	7	10	8	63	71	11	70	81
Small scale processing	2	0	21	21	0	4	4	0	25	25
Integrated Pest and Disease Management	2	22	6	28	5	1	6	27	7	34
Bio pesticides production and its application	1	12	0	12	5	0	5	17	0	17
Precision farming in vegetables	1	12	1	13	3	0	3	15	1	16
TOTAL	15	106	38	144	45	86	131	151	124	275

4.5 Training for Rural Youth 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
Value addition	1	0	3	3	0	2	2	0	5	5
Organic farming in vegetables	1	14	0	14	3	0	3	17	0	17
TOTAL	2	14	3	17	3	2	5	17	5	22

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated farming	1	14	0	14	2	0	2	16	0	16
Mushroom Production	1	0	0	0	0	16	16	0	16	16
Bee-keeping	2	14	2	16	12	2	14	26	4	30
Repair and maintenance of farm machinery and implements-Coconut tree climber	2	29	1	30	10	0	10	39	1	40
Value addition	4	3	10	13	8	65	73	11	75	86
Small scale processing	2	0	21	21	0	4	4	0	25	25
Integrated Pest and Disease Management	2	22	6	28	5	1	6	27	7	34
Bio pesticides production and its application	1	12	0	12	5	0	5	17	0	17
Precision farming in vegetables	1	12	1	13	3	0	3	15	1	16
Organic farming in vegetables	1	14	0	14	3	0	3	17	0	17
TOTAL	17	120	41	161	48	88	136	168	129	297

4.7 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	1	5	4	9	0	0	0	5	4	9
Any other - Recent advances in horticultural crop production & Advances in plant protection technologies in agri and Horticultural crops	2	26	10	36	8	0	8	34	10	44
TOTAL	3	31	14	45	8	0	8	39	14	53

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

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Low cost and nutrient efficient diet designing	1	5	4	9	0	0	0	5	4	9
Any other - Recent advances in horticultural crop production & Advances in plant protection technologies in agri and Horticultural crops	2	26	10	36	8	0	8	34	10	44
TOTAL	3	31	14	45	8	0	8	39	14	53

4.10 Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Bee keeping technology	1	7	1	8	6	1	7	13	2	15
Production and value addition										
Others -Value addition in Fruits and Vegetables	1	0	18	18	0	2	2	0	20	20
Total	2	7	19	26	6	3	9	13	22	35
Post harvest technology and value addition										
Processing and value addition	2	0	0	0	8	53	61	8	53	61
Others -Processing and value addition	2	0	33	33	0	7	7	0	40	40
Total	4	0	33	33	8	60	68	8	93	101
Farm machinery										
Farm machinery, tools and implements	2	29	1	30	10	0	10	39	1	40
Total	2	29	1	30	10	0	10	39	1	40
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Home Science	0	0	0	0	0	0	0	0	0	0
Agricultural Extension	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	8	36	53	89	24	63	87	60	116	176

4.11 Name of sponsoring agencies involved

1. ATMA-STRY Thiruvannamalai
2. FPTC by Ministry of Food Processing Industries
3. State Department of Agriculture
4. Coconut Development Board

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition										
Value addition	1	4	3	7	3	5	8	7	8	15
Total	1	4	3	7	3	5	8	7	8	15
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Income generation activities	0	0	0	0	0	0	0	0	0	0
Agricultural Extension	0	0	0	0	0	0	0	0	0	0
Grand Total	1	4	3	7	3	5	8	7	8	15

5. EXTENSION PROGRAMMES

5.1 Extension programmes conducted

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	39	98	0	98
Advisory Services over phone	0	340	25	365
Diagnostic visits	16	256	6	262
Field Day	11	341	5	346
Group discussions	7	218	0	218
Film Show	14	168	5	173
KisanMela	3	2320	156	2476
Exhibition	6	2860	13	2873
Scientists' visit to farmers field	82	1504	18	1522
Plant/animal health camps	1	102	12	114
Farm Science Club	2	89	2	91
Ex-trainees Sammelan	1	44	3	47
Method Demonstrations	11	163	0	163
Celebration of important days	4	9	113	122
Exposure visits	1	25	0	25
Jal Shakthi Abhiyan meeting	16	1961	63	2024
Parthenium Awareness Camp	1	28	0	28
Fertilizer Application Awareness Programme	1	194	0	194
Tree plantation drive awareness camp	1	171	0	171
Farmers exposure visit to KVK	8	365	12	377
Farmers Scientist interaction	4	93	8	101
Soil Health Campaign	3	84	0	84
Swatcha meeting	5	222	6	228
International Potato conference live web	1	71	1	72
Total	238	11726	448	12174

5.2 Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	4
Extension Literature	27
News paper coverage	28
Popular articles	2
TV Talks	18
Animal health camps (Number of animals treated)	48
Others- News letter	2
Farmers visit to KVK	279
Officials visit to KVK	46
Lecture delivered as resource persons	51
Success stories	4
Total	509

6. MOBILE ADVISORY SERVICES

6.1. No of registered farmers on m-kisan portal : 44420

6.2 Details of messages sent through m-kisan portal

Types of Messages	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	5	111692	2	11616	-	-	3	92685	1	11030	6	198911	17	425935
Total	5	111692	2	11616	-	-	3	92685	1	11030	6	198911	17	425935

6.3 MOBILE ADVISORY SERVICES THROUGH OTHERS

No of registered farmers : 27100

Types of Messages	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	1	94	-	-	-	-	-	-	2	11266	-	-	3	11360
Total	1	94	-	-	-	-	-	-	2	11266	-	-	3	11360

7. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS : Nil

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

8.1 Production of seeds by the KVKs (quintal)

Enterprise	Name of crop	Variety	Seed produced		Seed supplied to farmers						Seed supplied to other agencies	
			Qty (q)	Value (Rs)	Free seed			Priced seed			Qty (q)	Value (Rs)
					Qty (q)	No of farmers	Value (Rs)	Qty (q)	No of farmers	Value (Rs)		
CEREALS	Paddy	CO 52	6.46	9044	0	0	0	1.46	5	2044	5	7000
	Total Cereals	-	6.46	9044	0	0	0	1.46	5	2044	5	7000
OIL SEEDS	Groundnut	TCGS 1043	3.65	47205	0	0	0	3.65	6	47205	0	0
	Total Oil Seeds	-	3.65	47205	0	0	0	3.65	6	47205	0	0
PULSES	Black gram	VBN 8	8.3	99600	0	0	0	3.3	51	39600	5	60000
	Total Pulses	-	8.3	99600	0	0	0	3.3	51	39600	5	60000
VEGATABLES	-	-	-	-	-	-	-	-	-	-	-	-
FRUITS	-	-	-	-	-	-	-	-	-	-	-	-
FLOWERS	-	-	-	-	-	-	-	-	-	-	-	-
SPICES	-	-	-	-	-	-	-	-	-	-	-	-
FODDER	Fodder Sorghum	COFS 31	0.115	6900	0	0	0	0.115	11	6900	0	0
	Total Fodder	-	0.115	6900	0	0	0	0.115	11	6900	0	0
COMMERCIAL	-	-	-	-	-	-	-	-	-	-	-	-
	Grand Total of Seeds		18.525	162749	0	0	0	18.525	73	95749	10	67000

8.2 Production of planting materials by the KVKs (seedlings, cuttings. Slips in numbers)

Enterprise	Name of crop	Variety	Planting material produced		Planting material supplied to farmers						Planting material supplied to other agencies	
			Qty (Nos)	Value (Rs)	Free supply			Priced			Qty (Nos)	Value (Rs)
					Qty (Nos)	No of farmers	Value (Rs)	Qty (Nos)	No of farmers	Value (Rs)		
VEGATA BLES	-	-	-	-	-	-	-	-	-	-	-	-
FRUITS	Mango	Banganapalli, Imampasand	445	40870	0	0	0	218	44	27250	0	0
	Guava	L49	59	4565	0	0	0	37	16	2915	0	0
	Lemon	Andhra Local	66	1760	0	0	0	55	17	1650	0	0
	Sapota	Kalipatti	130	9860	0	0	0	68	22	8930	0	0
	Sathukodi	Andhra Local	100	14460	0	0	0	96	13	14400	0	0
	Total Fruit planting materials	-	800	71515	0	0	0	474	112	55145	0	0
FLOWER S	-	-	-	-	-	-	-	-	-	-	-	-
ORNAM ENTAL	-	-	-	-	-	-	-	-	-	-	-	-
FOREST RY AND PLANTA TION	Siris	Local(Vagai)	50	500	0	0	0	8	2	80	0	0
	Chironji	Local (Vengai)	1385	20450	0	0	0	1320	22	19800	0	0
	Mahua	-	-	-	-	-	-	-	-	-	-	-
	Karanj	Local (Pungam)	50	450	0	0	0	40	5	400	0	0
	Neem	Local	50	500	0	0	0	38	7	380	0	0

	Teak	Local	1333	19745	0	0	0	1283	32	19245	0	0
	Gulmohar	Local	50	500	0	0	0	31	6	335	0	0
	Mahagany	Local	384	5760	0	0	0	384	12	5760	0	0
	Redsander	Local	1070	15975	0	0	0	1055	30	15825	0	0
	Total forest and plantation crops	-	4372	63880	0	0	0	4159	116	61825	0	0
FODDER	Cumbu Napier grass (Co 3, Co 4, Co 5 etc)	COFS51	50	50	0	0	0	50	1	50	0	0
	Total Fodder crops		50	50	0	0	0	50	1	50	0	0
SPICES	Other –Curry leaf	Pachai kambu	933	9330	0	0	0	790	16	7900	0	0
	Total Spices	-	933	9330	0	0	0	790	16	7900	0	0
GREEN MANURE	-	-	-	-	-	-	-	-	-	-	-	-
Any other planting material sold by numbers	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total of Seeds		-	6155	144755	0	0	0	5473	245	124920	0	0

8.3 Production of Bio-Products

Category	Name of the product	Commercial name (if any)	Bio-products produced		Bio-products supplied to farmers						bio-products supplied to other agencies	
			Qty (kg)	Value (Rs)	Free distribution			Priced			Qty (kgs)	Value (Rs)
					Qty (kgs)	No of farmers	Value (Rs)	Qty (kgs)	No of farmers	Value (Rs)		
Bio-fertilizers	Azolla	-	30.75	615	0	0	0	30.75	29	615	0	0
	Total bio-fertilizers	-	30.75	615	0	0	0	30.75	29	615	0	0

Bio-inputs	Panchakavya											
	Vermicompost	-	2625	13125	0	0	0	2625	28	13125	0	0
	Total bio-inputs	-	2625	13125	0	0	0	2625	28	13125	0	0
Bio-Pesticides	<i>Trichoderma viridi</i>	-	336	42000	0	0	0	316	230	39500	0	0
	<i>Psuedomonas</i>	-	432	54000	0	0	0	382	286	47750	0	0
	Total bio-pesticides	-	768	96000	0	0	0	698	516	87250	0	0
Total bio-products		-	3423.75	109740	0	0	0	3353.75	573	100999	0	0

8.4 Production of livestock materials

Category	Name of the livestock/fish/feed	Variety/imp roved species name/Com mercial name (if any)	Production		Supplied to farmers						Supplied to other agencies	
			Qty (No)	Value (Rs)	Free distribution			Priced			Qty (No)	Value (Rs)
					Qty (No)	No of farmers	Value (Rs)	Qty (No)	No of farmers	Value (Rs)		
Dairy cattle	-	-	-	-	-	-	-	-	-	-	-	-
Goat and Sheep	-	-	-	-	-	-	-	-	-	-	-	-
Poultry	Desi bird	Aseel	129	15130	0	0	0	129	9	15130		
	Japanese Quail	Nandanam	656	24977	0	0	0	656	55	24977	0	0
	Total poultry	-	785	40107	0	0	0	785	64	40107	0	0
PIGGERY	-	-	-	-	-	-	-	-	-	-	-	-
FISHERY	-	-	-	-	-	-	-	-	-	-	-	-
	Grand Total Livestock and fishery	-	785	40107	0	0	0	785	64	40107	0	0

8.5 Others

Category	Name of Items	Unit	Production		Supplied to farmers						Supplied to other agencies	
			Qty	Value (Rs)	Free distribution			Priced			Qty	Value (Rs)
					Qty	No of farmers	Value (Rs)	Qty	No of farmers	Value (Rs)		
MN mixture	Vegetable special	Kg	400	64000	0	0	0	393	69	33775	200	28000
Machinery	Paddy drum seeder	Nos	17	61200	0	0	0	17	17	68000	0	0
	Paddy cono weeder	Nos	13	14300	0	0	0	13	13	20000	0	0
Value added products	Nattu sakkarai	Kg	136	8940	0	0	0	136	93	8940	0	0
Farm products	Fruits (Jack, Sapota, Amla)	kg	203	3941	0	0	0	203	35	3941	0	0
	Coconut	Nos	2435	19198	0	0	0	2435	45	19198	0	0
	Vegetables (Brinjal, Chilli)	kgs	992	16587	0	0	0	992	96	16587	0	0

9. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples/ SHC	No. of Samples		No. of Farmers	No. of Villages	Amount realized (Rs.)
	Using Mini Soil Testing Lab	Through Traditional Lab			
Soil samples	94	86	156	28	6000.00
Soil Health Cards (SHC)	94	86	156	28	-

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Water	10	9	9	900.00
Plant	-	-	-	0.00
Total	10	9	9	900.00

10. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
06.03.2020	21

11. PUBLICATIONS

Publications in journals : Nil

Other publications

S. No	Item	Year	Authors	Title	Publisher
1	Books	2019-20	Mr.N.Rameshraj, Mr.P.Narayanan, Mr.P.Rajesh, Mr.V.Suresh	Organic farming	KVK, Thiruvannamalai
2	Book chapters / manuals	-	-	-	-
3	Training manuals	2019-20	Mr.P.Narayanan, Mr.N.Rameshraj, Mr.V.Suresh, Mrs.T.Margaret	Bee keeping technology	KVK, Thiruvannamalai
		2019-20	T.Margaret	Preparation of instant mix	
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	2019	Mr.P.Narayanan	Integrated Pest Management in banana.	Pachaibhoomi Vol:9, Pg. No. 6-7
		2019	Mr.P.Narayanan	Disease Management in banana	Pachaibhoomi Vol:6, Pg.No. 10-11

5	Technical bulletin/ Folders	2019-20	P.Narayanan	Fall army worm management in maize	KVK, Thiruvannamalai
		2019-20	Mr.N.Rameshraj	Improved cultivation technologies in chillies	
		2019-20	KVK Team	Restoration techniques of soil moisture for sustainable agriculture	
		2019-20	KVK Team	Water management techniques in agriculture	
		2019-20	T.Margaret	Rainwater harvesting at home	
		2019-20	Mr.P.Narayanan	Soil fertility management and soil sampling method	
		2019-20	Dr.K.Mayakrishnan	Disease management in livestock	
		2019-20	Dr.K.Mayakrishnan	Fodder management in cattle during summer	
		2019-20	Dr.K.Mayakrishnan	Backyard poultry rearing	
		2019-20	Dr.K.Mayakrishnan	Foot and mouth disease & Brucellosis under NADCP	
		2019-20	Mr.V.Suresh	Parthenium management	
		2019-20	T.Margaret	Processing and value addition in cereals and millets	
		2019-20	T.Margaret	Bakery production in millets	
6	Reports	-	-	-	-
7	others	-	-	-	-

Leaflets	2019-20	Mr.P.Rajesh	ICM in pearl millet	KVK, Thiruvannamalai
	2019-20	Mr.P.Rajesh	IPDM in banana	
	2019-20	Mr.N.Rameshraj	ICM in Bhendi	
	2019-20	Mr.P.Narayanan	Do's and don'ts during pesticides application	
	2019-20	T.Margaret	Value addition in vegetables	
	2019-20	Dr.K.Mayakrishnan	Japanese quail rearing	
Pamphlets	2019-20	Mr.N.Rameshraj	ICM in snake gourd	KVK, Thiruvannamalai
	2019-20	Mr.P.Narayanan	IPDM in brinjal	
	2019-20	Mr.P.Rajesh	ICM in greengram	
	2019-20	Mr.P.Rajesh	ICM in groundnut	
	2019-20	Mr.P.Narayanan	IPDM in paddy	
	2019-20	Mr.P.Narayanan	IPDM in watermelon	
Success Stories	2019-20	Mr.N.Rameshraj	Enhancement of yield and income of gourd farmers in Kazhikulam village of Thiruvannamalai district	KVK, Thiruvannamalai
	2019-20	Mr.V.Suresh	Blackgram VBN 8-A new farmers choice variety among the pulse growers in our district	
	2019-20	Mrs.T.Margaret	Income generation through convenience food	
	2019-20	Mr.P.Narayanan	Promotion of Apiculture to enhance the yield through pollination and entrepreneurship creation in our district	
Case studies	2019-20	V.Suresh	IIHR Vegetable Special – A real income booster of the vegetable growers in our district.	KVK, Thiruvannamalai

Newsletter/Magazine

Name of News letter/Magazine	Frequency	No. of Copies printed for distribution
Pasumai Kathir	Biannual	600

12. Training/workshops/seminars etc details attended by KVK staff

Name of the staff	Title	Dates	Duration	Organized by
Mr.N.Rameshraj, Senior Scientist and Head i/c	Nutri-garden training	25.06.19	1	TNAU, Coimbatore
Mr.N.Rameshraj, Senior Scientist and Head i/c	Workshop on NICE plot form	04.07.19	1	MANAGE at TNAU, Coimbatore
Mr.V.Suresh Subject Matter Specialist (Agricultural Extension)	Workshop on NICE plot form organized by the MANAGE at Coimbatore	04.07.19	1	MANAGE at TNAU, Coimbatore
Mr.P.Narayanan Subject Matter Specialist (Plant Protection)	Management of Fall Army Worm in Maize	22.07.19	1	TNAU, Coimbatore
Mr.P.Narayanan Subject Matter Specialist (Plant Protection)	Management of Nematodes in Horticultural crops.	23.07.19	1	TNAU, Coimbatore

13. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM : Nil

14. INTERVENTIONS ON DISASTER MANAGEMENT/UNSEASONAL RAINFALL/HAILSTORM/COLD WAVES ETC : Nil

15. Awards/rewards received by KVK and staff

Recognitions & Awards/Special attainments and Achievements of Practical Importance				
Recognitions & Awards (Team Award/individual				
Item of Recognition	Year	Awarding Organization National / International / Professional; Society	Individual/ collaborative	
Best poster presentation during Annual Review workshop	2019-20	ATARI, Hyderabad	ICAR KVK, Thiruvannamalai	
Best Oral presentation during Annual Review workshop	2019-20	ATARI, Hyderabad	Mr.N.Rameshraj, Senior Scientist and Head i/c	
Best Extension Worker awards-(5 Nos)-Jal Shakti Abhiyan - District Level Best performance during Republic Day	2019-20	District Collector, Thiruvannamalai.	Mr.N.Rameshraj, Senior Scientist and Head i/c	
			Mrs.T.Margaret, SMS Home Science.	
			Mr.P.Narayanan, SMS Plant Protection	
			Mr.V.Suresh, SMS Agricultural Extension	
			Dr.K.Mayakrishnan, SMS Animal Science	
Award for best exhibits	2019-20	Centre of Excellence in Millets, Thiruvannamalai.	Mr.Karthikeyan and Kasthuri (Farmer)from Mottur village of Polur taluk.	
Award for best exhibits	2019-20		Mr.Vijayasathy(Farmer) from Jamunamarathur.	
Award for paddy competition	2019-20	Department of Agriculture at the district level.	Mr.Rajendiran (Farmer)from Desur village, Vandavasi taluk.	
Special Attainments & Achievements of Practical Importance (patents, technologies, varieties, products, concepts, methodologies etc.)				
Category	Title	Year	Individual/ Collaborative	Additional Details/Information
-	-	-	-	-

16. Details of sponsored projects/programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Friends of Coconut Tree (FoCT) – Plant Protection Aspects on Coconut Including Harvesting using the Climbing Device	Coconut Development Board, Chennai	<ul style="list-style-type: none"> ▪ To develop the professional group of youth under the banner of “Friends of Coconut trees” for harvesting and plant protection aspects in coconut. ▪ To impart training to a group of unemployed youth in developing technical skills, entrepreneur capacity, leadership qualities and communication skill to address the need of the coconut growers. ▪ To make them self reliant and instil confidence in undertaking the responsibility of “Friends of coconut Tree”. ▪ To tackle the problem of unavailability of coconut tree climbers for coconut farming. ▪ Generate appropriate technologies to support sustainable growth of coconut sector and generate the employment opportunities for the rural youth. 	6 days + 6 days (2 course)	113000.00
2	Skill Training of Rural Youth on Bee Keeping	ATMA-STRY, Thiruvannamalai	<ul style="list-style-type: none"> ▪ To enhance the knowledge and promote the farmers on Organic farming, Soil fertility management, Green and green leaf manures, Bio fertilizers and its application procedures, Compost production technologies, Water Management technologies, Organic pest and diseases management in field and horticultural crops, Value addition and post harvest management. 	6 days	42000.00

17. SUCCESS STORIES

17.1. Blackgram VBN 8-A new farmers' choice variety among the pulse growers in Thiruvannamalai district

Situation analysis/Problem statement:

Blackgram is one among the major pulse crops cultivated in Thiruvannamalai district during Kharif and Rabi Seasons in an area of 34856 ha with an average productivity of 441 kg/ha. The productivity of the crop was very low due to less awareness towards high yielding varieties, non availability of quality seeds and non adoption of integrated crop management practices in blackgram. The average yield obtained by farmers was 5.6 qtl/ha which was 37.7 % lower than the potential yield. And the income of the farmers (Rs. 36400/ha) was not satisfactory.



Plan, Implementation of activities and Support:

To address these problems faced by the farmers the KVK Thiruvannamalai had implemented CFLD on blackgram in Sathuperipalayam, Pungampadi, Akilandapuram and Morappanthangal villages during Kharif and Rabi 2018-19. The scientists of KVK analyzed the problems of farmers through group meetings in the villages prior to the implementation of cluster Front Line Demonstration programme under National Food Security Mission. The KVK had selected 100 progressive farmers for implementing the cluster front line demonstration programme. The KVK has demonstrated the new high yielding disease resistant black gram variety VBN-8.



blackgram seeds. Demonstration of yellow sticky trap (5 nos/acre) for controlling the sucking pests in blackgram crop.

Foliar application of Nuclear Polyhedrosis virus (250 ml/acre) for the control of pod borer damage in black gram crop. All these technologies were demonstrated in an area of 100 ha in the said villages. The details of various activities implemented are detailed hereunder:

Soil application of bio fertilizer *Rhizobium* and *Phosphobacteria* 1 kg each, soil application of *Trichoderma viride* and *pseudomonas fluorescense* 2 kg each for control the root rot diseases and avoid plant population losses. Foliar application of TNAU pulse wonder (2kg/acres) during the peak flowering and pod formation stage for enhancing the yield and increase the quality and size of



Sl. No.	Particulars	Title	Total	No. of participants
1.	Trainings	Integrated Crop Management in blackgram	1	100
		Integrated Pest and Disease Management in blackgram	1	87
2.	Method demonstration	Demonstration of soil sample collection and seed treatment techniques	1	85
		Demonstration of soil application bio control agents	1	92
		Demonstration of Foliar application of TNAU pulse wonder	1	74
3.	Advisories	Filed visit and Advisory services	22	94
4.	literature	Integrated crop management in Blackgram	500	260
5.	Field day	Integrated crop management in blackgram	2	164

Output:

1. The farmers obtained the average yield of 772 kg/ha it was the 57.12% higher than the district average productivity (441 kg/ha).
2. Pest and disease incidence was reduced drastically due to adoption of pest and disease management practices.
3. The average gross income was recorded as Rs.58,734/ha and net income was Rs, 30,386/ha.
4. Total quantity of 278qtl of seeds were sold to others farmers in the locality by the beneficiary farmers.

Outcome:

The New blackgram variety VBN-8 has spread to the neighboring blocks in Thiruvannamalai district with the help of KVK and the variety has spread to more than 15 blocks covering 876 ha in 120 villages so far. In addition, the seeds were supplied to other districts i.e. Vilupuram, Vellore, Kanchipuram, Thiruvallur, Pudukottai, Trichy in Tamilnadu. And Kannur and Palakad districts in Kerala state. Total number of 1108 farmers has been cultivating this VBN8 variety at present.



Impact:

After the implementation of various activities by KVK including CFLD programmes, the farmers are showing real interest in cultivating VBN8 blackgram for seed purpose. The state department of agriculture is procuring seeds from farmers at very good rate.

As a result, the farmers are getting very good income. More over, with the technical back up of KVK pulse seed clubs are formed in various villages of the district which act as quality seed supply centres. So far, the seed clubs have supplied 402qtl of quality blackgram seeds.

17.2. Enhancement of yield and income of gourd farmers in Kazhikulam village of Thiruvannamalai district

A. Situation analysis / problem statement

The Kazhikulam village in Kilpennathur Taluk of Thiruvannamalai district is known for gourds cultivation. The gourds viz., bitter gourd, snake gourd, ridge gourd, bottle gourd etc., are being cultivated in the village throughout the year. Total number of 225 farm families depend on gourds for their livelihood. An area of 265 acres is under gourds cultivation in the village. The major soil types of the village are red sandy loam and sandy clay loam. The farmers depend majorly on open wells for the irrigation. The village comes under the north eastern climatic zone.

However, the income, of the gourd farmers was not that much satisfactory in the village during previous years, due to fluctuation in yield level of gourds and increased cost of cultivation as a result of **problems mentioned here under:**

- Maleness.
- Lack of micro nutrition.
- Imbalanced nutrition.
- Higher incidence of pests (fruit fly & sucking pests) and diseases (Powdery and downy mildew, viral diseases).
- Lack of adoption of improved production practices.
- Repeated use of own seeds of gourds.



B. Plan, implementation of activities and support by KVK

By seeing the intensive agrarian nature of the village, the KVK, Thiruvannamalai taken it as a prime village in implementing various activities for enhancing the income of the farmers especially gourd growers. The details of activities implemented by KVK are detailed hereunder step by step:

1. Conduction of training:

The on and off campus training programmes were conducted by KVK on various thematic areas mentioned below for the knowledge updation of gourd growers.

1. Integrated Crop Management
2. Integrated Plant Nutrition System
3. Foliar nutrition & growth regulators application
4. Integrated Pest and Disease Management
5. Post Harvest Management

Total number of eight training programmes covering 174 farmers conducted in the village.

2. Conduction of Front Line Demonstration programmes

With a view to practically demonstrate the technologies in farmers fields itself, One Front Line Demonstration programmes covering 10 farmers on Integrated Crop Management Technologies in three crops viz., Bitter gourd was conducted in the village, The Important technologies demonstrated are:

- Sex regulation through ethrel application.
- Foliar nutrition with major emphasis on vegetable special (micro nutrient formulation) application.
- Integrated Plant Nutrition System with major emphasis on fertigation, vermi composting and neem cake application as per the soil fertility status.
- Integrated Pest and Disease Management practices with major emphasis on fligh T pheromone traps usage for the mass trapping of fruit fly, usage of yellow, blue sticky traps pongamia & neem soaps for the control of sucking pests and there by viral diseases.
- Soil application of Trichoderma viride & microbial consortium for the disease control and yield improvement.



3. Organisation of exposure visits

In order to pave the way for direct interaction of gourd farmers with scientists and acquire knowledge, exposure visit were organized to Tamil Nadu Agricultural University, Coimbatore and Indian Institute of Horticultural Research (IIHR), Bengaluru in collaboration with ICICI foundation. Total number of 22 farmers directly benefited.

4. Organisation of workshop and exhibitions

With a view to bring all the technology providers at a single point and create linkage with farmers, exhibitions and workshops on improved technologies have been organized on regular basis in which almost all the gourd growers have been taking part and acquiring knowledge.

5. Distribution of technical literatures

The technical literatures on improved technologies of gourds were distributed to farmers for the wide dissemination of technological information.

6. Field visits and Farm Advisory Services

The KVK scientists have made need based visits to Kazhikulam village and the production problems of the farmers mainly the gourd farmers were addressed immediately which resulted in reduction of unwanted production expenses and higher crop yield and income.

C. Output

The gourd farmers under the technical support of KVK have adopted various improved technologies in gourds cultivation. As a result, the productivity and income levels have increased to the satisfactory level as detailed here under:

Crop		Yield (Q/ha)	Gross cost (Rs./ha)	Gross return (Rs./ha)	Net return (Rs./ha)	BC Ratio
Bitter gourd	Before Intervention	326.61	340211.00	720588.00	380377.00	2.12
	After Intervention	420.88	327874.00	927322.00	599447.00	2.58
Snake gourd	Before Intervention	340.25	278769.00	596839.00	318070.00	2.14
	After Intervention	421.28	274033.00	706550.00	432517.00	2.57
Ridge gourd	Before Intervention	344.63	245549.00	490871.00	245322.00	2.00
	After Intervention	448.40	213756.00	665874.00	452118.00	3.11

It has been assessed that the level of technological adoption has been 88% as per the surveys and group discussion conducted by the KVK.

D. Outcome

By seeing the economic benefits accrued by the gourd farmers of Kazhikulam village, other farmers in adjacent villages have also started adopting the technologies disseminated by KVK, as a result, the technologies have spread to a significant extent in the locality and are being adopted by about 230 farmers in 245 acres of land at present in the locality. It is one of the significant achievements of KVK.

E. Impact

The area under gourds has been increasing year by year in Kilpennathur taluk of Thiruvannamalai district due to very good economic return in short period and close proximity of the location to one of the major markets of south India viz., Koyambedu vegetable market, Chennai. By seeing the interest of the farmers, the State Department of Agriculture and Horticulture have been supporting farmers in terms of supplying machineries viz., tractor, power tillers, weeders, drip irrigation systems under various schemes on subsidized rates. The use of organic inputs viz., vermicompost, neem cake, neem & pongamia soaps, pheromone traps, sticky traps are on increasing trend in the locality. The locality soon will become one of the gourds hubs of the district and contribute significantly to the GDP of the district.

17.3. Promotion of Apiculture to enhance the crop yield through pollination and entrepreneurship creation in Thiruvannamalai district

A. Situation analysis/ Problem statement:

Agriculture is an age old practice in India. Present day's agriculture should be sustainable as well as commercial and scientific based. Thiruvannamalai district is known for diversified crop growing viz., Paddy, Pulses, Groundnut, Brinjal, chillies, gourds, tomato, Banana, Coconut etc. are cultivated in considerable areas. The farmers are getting low yield and income because of mono cropping, high cost of agricultural inputs, non availability of labour, deficit rainfall, non adoption of advanced technologies and devastation of natural pollinators by indiscriminate application of chemical pesticides. In this situation bee keeping is an alternative sustainable agriculture practice to fulfil the over growing employment problem in the district and also bee keeping is a very profitable entrepreneurship in rural areas.

B. Plan, implementation of activities and support by KVK

Keeping this in view, the KVK Thiruvannamalai had taken it as a prime role in implementing bee keeping in farmers' fields for enhancing the yield through cross pollination and create the alternate income generation to the unemployed rural youth. The details of activities implemented by the KVK are detailed hereunder.

1. Training conduction :

Two number of on campus training programme were conducted by the KVK on 27&28th of May 2019 and 11th February 2020 for the knowledge updation of farmers. During the training programmes, the trainees are exposed to hands on practices on different aspects of bee keeping. Totally 45 farmers participated in the programme.



2. Conduction of sponsored programme:



To create awareness on bee keeping the KVK Thiruvannamalai had conducted six days residential training programme from 16.02.2020 to 22.02.2020 held at KVK campus. The training programme was sponsored by Skill Training to Rural Youth – ATMA, Thiruvannamalai. In this training programme 15 rural youth participated and among them 6 participants started the bee keeping in their fields.

3. Mass Media coverage:

For the wider coverage of farmers, the KVK Thiruvannamalai had recorded a programme on bee keeping technologies and the programme was telecasted in Makkal TV on 17&18th December 2019.

4. Distribution of technical literature:

The technical literature on bee keeping technologies were distributed to farmers for the wider coverage of technical information.

5. Bee box supply and advisory service:

Demonstration on profitability of beekeeping, the KVK supplied 28 bee boxes with bee colonies to farmers. The KVK scientists have made the need based visits to the bee farming fields and addressed their problems.

C. Output:

As a result of the successful intervention through technological support by the KVK Thiruvannamalai 11 farmers had started bee keeping in their farms. Which resulted in productivity enhancement through pollination and also created small scale employment.

S. No	Farmer Name	Village	No. of hives	Crops	Yield increase (%)	Additional income* (Rs./ha)
1	Mr.Paranjothi	Perungattur, Vembakkam	4 box	Sapota & Vegetables	10.21	14150.00
2	Mr. Boobalan	Enathavadi, Cheyyar	5 box	Coconut & Vegetables	9.27	15700.00
3	Mrs.Rekha	Iyyampalayam, Arni	14 box	Coconut & Vegetables	9.86	16630.00
4	Mr.Vijayan	Vedanthavadi, Thiruvannamalai	2 box	Vegetables	8.54	9500.00
5	Mrs.Sumathi	Theallar, Vandavasi	3 box	Flower & vegetables	7.93	10500.00
6	Mr.Dhanasekar	Mangalam, Turinjapuram	2 box	Fruits & Vegetables	9.12	10750.00
7	Mr.Vasudevan	Vazhoor, Vandavasi	2 box	Vegetables	10.41	11300.00
8	Mr.Parthasarathi	Athanoor, Arni	4 box	Fruit Orchard	12.34	21500.00
9	Mr.Govindasamy	Athanoor, Arni	1 box	Coconut & Vegetables	10.12	12700.00
10	Mr.Jeyakumar	Athipadi, Thiruvannamalai	4 box	Vegetables	9.42	8900.00
11	Mr.Gandhi	Barathanthangal, Cheyyar	4 box	Vegetables	8.21	9650.00

Note : * Income from crops and bee hives/year

D. Outcome:

By seeing the economic benefits accrued by the bee keeping farmers, other farmers are also showing interest in bee keeping in their fields. Due to positive result of the technology, bee keeping has spread to 125 farmers with the support of State department of Horticulture and Non-Governmental Organisation. Mrs.Parthipan from Jawaduhills now acts as resource person (Participated in STRY – ATMA) in the bee keeping training conducted by the KVK and other agencies of Thiruvannamalai. It is one of the significant achievements of KVK.

E. Impact:

The requirement of pure honey has been increasing year by year due to high nutritional properties of honey and very good demand in market. Honeybee is playing vital role in cross pollination and it increases the crop yields in an area of 2 Km surroundings from the bee hives. As the farmers are much interested in bee farming, the state department of Horticulture, NGOs and private organization have been supporting the farmers by providing free trainings, supplying bee hives, and creation of marketing facilities to the farmers. Adoption of this bee keeping technologies in Thiruvannamalai district can significantly increase the district yield in upcoming years and also reduce the migration of people through developing small scale entrepreneurship among unemployed rural people.

17.4. Income generation through convenience food

A. Situation analysis/Problem statement:

Mrs.Saraswathi 38 aged, she is an active farm woman in Duli village of Cheyyar Taluk. She is managing 1.5 acres of family land involved in agriculture allied activities for the past twelve years and she has been regularly cultivating paddy, groundnut and pulses. Her husband is an electrician. But she was not satisfied with the monthly income, as other village people regularly earn high income by committing agriculture and skill oriented works at nearby companies. She is also an active member of Cheyyar Farmers Producers company from 2016.

In this situation Mrs.Saraswathi heard about the KVK training activities jointly organized with Department of Agricultural Business and Marketing. She was continuously approaching the KVK to enrol her name and group of SHG members in her village in the training programme.

B. Plan, implementation of activities and support by KVK:

In this situation Mrs.Saraswathi approached KVK team and got detailed explanation from the Scientist about the millet based convenience foods. She and her group members consists of twenty members have attended three days residential training programme on millet based convenience foods and millet and pulses based instant mix preparation trainings organized by KVK during the year 2017. After completion of trainings, she started collecting all the information through SMS-Home Science and finally she has decided to start millet based products production unit as a group in her own house on trial basis.



Our KVK Scientist continuously motivating their group for the expansion of the production unit by visiting on regular basis. Initially they were facing the problems on purchase of packing materials, obtain FSSAI license, labeling and marketing. The KVK provided technical support to the group for sourcing packing materials, licensing and branding. Moreover, linkage to suppliers (KVK farmers), traders and licensing authorities was also established by KVK for running business effectively by the group.

After making all arrangements, they started the production unit in their village during September 2017. Initially they sold their products Uzhavar Sandhai and other meetings conducted by Line Departments regularly. Whenever they find marketing avenues at their nearing areas they supplied samples to them. In this situation KVK had demonstrated mandatory activity under FLD programme and Cheyyar Farmers Producers Company involved and given supports to arrange marketing facilities in Thiruvannamalai District. Now they standardized all their products by use of quality raw materials during processing, preparation under hygienic condition, packing and labeling. This unit is entirely maintained by the group members. They procure millets and pulses from pulses from nearby areas and districts on need basis.

C. Output:

Initially they started to prepare 75 kg of flour and instant mix per month. Now they have regularly preparing 300 kg/month of Instant mix, 120 kg of millet cookies/month, 80 kg of millet murukku/month and 45 kg pulses laddu/month and selling their entire products to the Farmers producers company and Uzhavarsandhai regularly. They are getting the net income of Rs. 71,300.00/month by spending Rs.38,475.00 towards input, packing materials, transportation and labour costs.

D. Outcome:

By hearing and seeing the economic return obtained by this group other neighbours in the locality have also started convenience foods production units with the guidance of group. At present, there is one unit initiated and functioning effectively in Cheyyar block and it is expected that more units will be established in the forthcoming years.



The future plan is to sale other ready to eat millet products and preserved products. This group is regularly visiting the KVK to update their knowledge on newer technical aspects and machineries.

E. Impact

The group's production unit has become a very good business model for millets in this district. All the line departments have come forward and supporting lot of interventions of this group as well as other groups on minor millets through their schemes. Soon more number of processing units will be established in the district and millet processing will become a viable agribusiness in the district.

18. CASE STUDIES

18.1. IIHR Vegetable Special – A real income booster of the vegetable growers in Thiruvannamalai district.

A. Situation analysis / problem statement

The area under vegetable crops in Tamil Nadu increased to 2.56 lakh ha as per census in 2017-18 with an annual production of 6304 million tonnes. Adoption of high yielding cultivars and FI hybrids and suitable production technologies has largely contributed to the production and productivity. With changes in incomes and consumption patterns, demand for vegetables has been increasing every year.

In Thiruvannamalai district, the area under vegetable crops is 4260 ha. The major vegetable crops cultivated in the district are cucurbits (Cucumber, Gourd, Watermelon, pumpkin), solanaceous vegetables (Brinjal, Bhendi, Tomato, Chilli), and leafy vegetables. The vegetable growing has been one of the main sources of income for larger number of farmers in the district.



Problems identified

Farmers in Thiruvannamalai district are spending huge money on fertilizers. It is of great concern that each farmer is spending about 60-70 % of cost of production only on fertilizers. KVK has conducted a survey in the vegetable growing area in the district revealed that farmers are applying fertilizers indiscriminately. No farmer is aware of recommended dosage of fertilizers for vegetable crops. The role of micronutrients was known to very few farmers. The yield and income levels of vegetables have started fluctuating due to problems mentioned here under :



- Imbalanced nutrition
- Lack of micronutrient application
- Lack of organic addition
- Reduction in soil fertility

B. Plan, implementation of activities and support by KVK

The KVK has acquired from IIHR, Bengaluru the successful technology called Vegetable special, a micronutrient formulation which can boost the yield in vegetable crops by 20-30%. In order to make available the product in the locality for the easy adoption by farmers, the KVK has established the vegetable special production unit and supplying it to farmers since 2014.

Benefits of vegetables special:

- Higher yield (20-30 %).
- Improved quality of vegetables
- Better colour and uniform size vegetables.
- Higher keeping quality

The KVK has included vegetable special as one of the important critical inputs in its activities related to vegetable crops under OFT/FLD, trainings and other extension activities.

The details of the KVK activities are given hereunder:

Name of the activity	No. of programmes	No of farmers benefitted
On Farm testing	6	38
Front Line Demonstration	13	130
Trainings	60	903
Extension activities	42	946
Total	121	2017

Apart from the above activities, awareness on vegetable special technology being created through various in house, off campus and sponsored trainings in collaboration with Department of Horticulture across the district. After seeing the positive results of the technology, it is rapidly spreading to other vegetable growers existing in the district.

C. Output

- Farmers stated that an increase in yield by 20 to 30% was recorded in tomato, brinjal, chillies and gourd crops after using recommended quantity of vegetable special as foliar spray for 3-4 times.
- By using the technology, farmers feel that the quality of the produce in terms of size, weight, taste was also improved.
- The cost on fertilizer also minimized by 15% as the technology has all the required micronutrients.
- The technology also proved that it gives more resistance to crop against pest and diseases.



Details of change in yield and income

Parameters	Bhendi		Brinjal		Chillies		Bittergourd	
	BI	AI	BI	AI	BI	AI	BI	AI
Yield (Q/ha)	181.39	219.48	271.38	344.61	24.63	29.53	326.61	420.88
Yield increase(%)	-	20.99	-	26.98	-	19.89	-	29.00
Net income (Rs.)	187991	249837	210855	246331	85249	153962	380377	599447
BCR	2.36	3.01	2.57	2.92	1.86	2.59	2.12	2.82

Note :BI : Before Intervention, AI : After Intervention

D. Outcome

The IIHR Vegetable special technology has spread over an area of 1082 hectares in Thiruvannamalai district due to the effort taken by KVK in collaboration with State Department of horticulture and it is expected to reach all the vegetable growing area of the district very soon.

E. Impact

There has been a constant increase in the area and productivity of vegetables in Thiruvannamalai district. Use of IIHR vegetable special is directly contributing an average yield increase by 20-30 % in vegetable crops. As the technology have been used by more than 2500 farmers, demand for vegetable special is increasing not only from Thiruvannamalai district, but also from neighboring districts.

19. INNOVATIVE METHODOLOGY OR TRANSFER OF TECHNOLOGY DEVELOPED AND USED DURING THE YEAR**Video dial out Conference**

The Krishi Vigyan Kendra in Collaboration with Reliance Foundation regularly organizing the video dial out conference focusing on providing critical information to farmers across the district to improve their livelihoods. Crucial information such as how to tackle the pest and diseases attack on crop species, preventive measures against livestock diseases could help to safeguard the crops and livestock.

This practice enables the farmers to adopt better decisions on crop management, nutrient deficiencies, pest and disease management practices. Need based video dial out conferencing will be arranged by the messengers at the village level whenever the farmers facing issues during crop cultivation. The farmers were given chance to interact with the scientists directly for the better management practices and solution to the problems. This methodology helps the farmers to overcome their problems instantly.

20. ITKs

Indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development.

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Millets Vegetables	Millet grains were mixed with neem leaves	For avoiding storage pest damage.
		Planting of seeds during no moon day	For better germination of seeds.
		Spraying of Cow Urine	For avoiding pest damage and better growth of the plants
2	Fruits and vegetables	Spraying of butter milk	For flower induction and control flower drop.

21. IMPACT OF KVK ACTIVITIES

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before Rs./ha.	After Rs./ha.
Introduction of paddy variety ADT 53	746	63	72430.00	86600.00
Introduction of little millet ATL-1	86	78	69000.00	90900.00
Introduction of Blackgram Vamban8	100	92	37500.00	53600.00
Introduction of Groundnut variety TMV 14	50	86	94361.00	128902.00
Introduction of pearl millet CO10	92	73	55460.00	75720.00
Precision farming in cucurbits	256	68	720588.00	927322.00
Protray Seedlings Production in Solanaceous Vegetables.	873	71	170250.00	258650.00
Cultivation of CO1 chilli hybrid	544	64	414400.00	489700.00
Precision farming in banana	278	63	570350.00	655550.00
Integrated Nutrient Management in cucurbits	89	82	380500.00	599450.00
Cultivation of improved bhendi hybrid CO4	177	69	325265.00	374542.00
Foliar Nutrition in vegetables	1825	86	586200.00	772750.00
Beekeeping technologies	360	48	122366.00	144730.00
Integrated Pest and Disease Management in paddy	1370	58	68230.00	80746.00
Management of maize fall army worm (FAW)	378	59	67082.00	88029.00

Integrated Panama wilt management in Banana	214	71	507549.00	573787.00
Integrated Pest and Disease Management in Watermelon	186	63	174577.00	221192.00
Mushroom production	542	34	5300.00/ Month	11600.00/ Month
Fruits and vegetable preservation	701	36	6800.00/ Month	25500.00 /Month
Value addition in milk	246	32	6400.00 / 100 litre	7600.00 / 100 litre
Preparation Instant mix	407	31	7500.00 / 100 kg	13500.00 / 100 kg
Direct Sown paddy using Drum Seeder	3011	67	68490.00	82300.00
Demonstration of TANUVAS Aseel Chicken under Backyard condition	60	95	41250.00 / 100 birds	55000.00 / 100 birds

21.1. Case of Large scale adoption

1. Direct sown paddy cultivation using Drum Seeder in Thiruvannamalai district

Problem Statement:

Paddy is an important food crop grown in 93636 ha in almost all the part of Thiruvannamalai district. The farmers were following conventional methods of paddy cultivation. The conventional method leads to high investment cost, non availability and higher costs on labour at the critical crop stages like transplanting, weeding and harvesting. This leads to higher cost on cultivation and delaying in carry out the required operations resulted in yield reduction. Besides delay or no seasonal rainfall and unequal distribution of rain is affecting the regular operations in paddy cultivation. The area under paddy cultivation is decreasing annually mainly due to labour constraints.



Plan, Implement & Support:

There is lot of awareness created on machineries used in paddy cultivation by the KVK as well as the State Department of Agriculture. Mechanization in Paddy cultivation can be possible at all the stages of the crop i.e from sowing to harvesting. The various implements were used to cultivate the paddy are laser leveller, Puddlers, Paddy Drum Seeder, Cono weeder, paddy thresher cum harvester, etc. In Thiruvannamalai district the paddy growers are intensively using the above said implements with the subsidies from agriculture and allied departments for the past five years.

Among the implements, the Paddy Drum Seeder plays a vital role in bringing the true mechanization in paddy cultivation. As there is no need for nursery preparation, the farmers can save the costs on nursery raising, transplanting and weeding. It also reduces the seed cost when compared to the traditional method as the seed required is less(12kgs/acre).



The KVK had introduced the low cost and manually operated KSNM Direct Paddy Seeder to paddy growers of Kaliyur village during Kharif 2012 & kharif 2013 as On Farm Testing (OFT) and Front line Demonstration (FLD). Paddy Drum Seeder is one of the revolutionary equipments that changed the face of sowing paddy seeds in wetland field. Direct paddy drum seeder has eliminated the need of transplantation and hours of manual work nursery raising. At one stretch with single operator effort, it covers 8 rows with 20 cm row to row spacing at a time. Made up of plastic material which makes the operation easy.

By seeing its benefits, the demand for the paddy drum seeder increased slowly and the KVK help the farmers to procure the Direct Paddy Seeder on demands. The KVK extent the demonstrations of paddy drum seeder with the help of state department of agriculture to other parts of the district. The The KVK has sold out a total quantity of 328 drum seeders so for based on the requirement.

Output

- Farmers stated that the sowing with Paddy Drum Seeder drastically reduced the man power in raising the nursery and transplanting. The labour required for direct seeding in one acre area is only 2 against 30 manpower required in normal transplanting method of cultivation.
- The method proved to be one of the most important costs saving technologies in the district by reducing required quantity of seeds to the minimum. The average seed cost (12.5 kg) involved in drum seeder per acre is about Rs.500.00 against 30 kg of seed worth of Rs. 1200.00 in the traditional method of cultivation.
- The crop duration reduced by 6-7 days when compared to the traditional cultivation methods.
- The cost of cultivation was also reduced by 20% and the net income increased by 30%
- It is the effective method of cultivating paddy during drought periods as it required less quantity of water when compared to normal cultivation practices.



Outcome

- The direct sowing of paddy using drum seeder technology has spread over an area of 13050 hectares in Thiruvannamalai district due to the effort taken by KVK in collaboration with State Department of Agriculture.
- The technology has given good relief to the paddy growers from labour shortage during the peak seasons.

Labour savings & Yield improvement in paddy by direct sowing with drum seeder

Technology	Crop Duration (CO 51)	Labour requirements			% saving on labour costs	Average yield (q/ha)	% increase in yield
		Nursery	Transplanting	Weeding			
Direct sown paddy using Drum Seeder	94 days	–	2	8	20.83	54.2	8.18
Conventional Method	110 days	2	30	16		50.1	

The table reveals that the direct sowing of paddy with the drum seeder reduced the labour costs during nursery raising, transplanting and weeding operations by 20.83% thus reduced the cultivation cost of the farmers and the technology also increased the yield by 8.18% which means the farmers can earn additional income.

Impact:

- With the effective involvement of KVK along with state department of agriculture, the drum seeding technology has become very popular among the farmers in the district. The technology has spread in an area of 12750 ha in 2019-20 as per the assessment made by the department of agriculture.
- After seeing its huge demand by the farmers, the state department of agriculture planned to promote the drum seeder on subsidised cost involving the KVK and other NGO's in the district.

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

❖ Blackgram VBN 8 - A new farmers choice variety among the pulse growers in Thiruvannamalai district

To replace the old varieties in blackgram, the KVK has introduced VBN 8 blackgram variety, it fetches good market price in the local market. Owing to the short duration nature, resistant to Yellow Mosaic Vein and few pests, higher yield, this variety has earned very good response and name from the farmers. As a result of the intensive efforts of KVK in collaboration with line departments for the past three years, this variety has spread over an area of 876 hectares in Thiruvannamalai district. The average yield obtained by farmers cultivating VBN 8 blackgram is 772 kg/ha which is 57.12% higher than the district

productivity compared to other old varieties. The average net income obtained by the farmers was Rs.30,386/- per hectare.

❖ **Foliar application of vegetable special – a boon to vegetable growers**

The KVK has demonstrated foliar application of vegetable special, a micro nutrient formulation developed by IIHR (Indian Institute of Horticultural Research), Bengaluru. About 6250 farmers have gained knowledge on the technology directly through various activities of KVK viz., training, demonstrations and extension activities. In order to make the technology (Vegetable special) locally available to the farmers, the KVK has acquired the vegetable special technology from IIHR and supplied to farmers at nominal cost. It has been recorded that adoption this technology has improved the yield to an extent of 25 to 30 % in almost all the vegetable crops it was applied. The technology has been adopted in an area of about 1082 hectares in Thiruvannamalai district and it is expected to reach all the vegetable growing area of the district very soon.

22. Functional linkage with different organizations

Name of organization	Nature of linkage
District collector office	Conduction of Jal Shakti Abhiyan Kisan Melas
State Dept. of Agriculture	Trainings and Demonstrations in various blocks under ATMA project. Conduction of field days under FLD, Farm Advisory Services.
State Dept. of Horticulture	
Department of Agri Business and Agri Marketing.	Trainings and Demonstrations in fruits and vegetable preservations.
State Department of Animal husbandry	The FMD audio CD developed by KVK were distributed to all the block officials, trainings & Advisory services.
NABARD	Establishment of Farmer Producer company and CAT training programmes.
ICICI foundation	Training to the farmers, Technical convergence and other field activities.
Centre for Indigenous Knowledge system. (CIKS)	
Coconut Development Board	Skill trainings, Demonstrations
NEEDS NGO.	Overseas student exposure visit.
TVS Educational trust	Farmer training, field visit and promotion of organic farming.

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Food Processing Training Centre	March 2015	Ministry of Food Processing Industries, New Delhi.	15,00,000.00
Farmer Producer Company	December 2019	NABARD	1144000.00
