PROFORMA FOR PREPARATION OF ANNUAL REPORT (April 2018-March 2019)

APR SUMMARY

(Note: While preparing summary, please don't add or delete any row or columns)

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	188	2802	4562	7364
Rural youths	36	1087	1022	2109
Extension functionaries	1	41	53	94
Sponsored Training	4	323	723	1046
Vocational Training	1	3	9	12
Total	**180**	**3311**	**6005**	**9681**

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	100	40	
Pulses	175	70	
Cereals	10	2	
Vegetables	16	3	
Other crops	14	3	
Total	**315**	**118**	
Livestock & Fisheries	136	1.65	510
Other enterprises	34	7	
Total	**170**	**8.65**	**510**
Grand Total	**485**	**126.65**	**510**

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	3	15	15
Livestock	2	15	15
Various enterprises	1	5	5
Total	**6**	**35**	**35**
Technology Refined			
Crops			
Livestock			
Various enterprises			
Total			
Grand Total	**6**	**35**	**35**

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	455	29381
Other extension activities	155	-
Total	**610**	**29381**

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marketing	Awar e-ness	Other enterprise	Total
KVK, Kancheepuram	Text only	2	49				5	56
	Voice only							
	Voice & Text both							
	Total Messages	**2**	**49**				**5**	**56**
	Total farmers Benefitted	**1837**	**30527**				**3115**	**35519**

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	625	250000
Planting material (No.)	824205	501825
Bio-Products (kg)	2052	137040
Livestock Production (No.)	2732	87225
Fishery production (No.)	1732	4800

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	189	47250
Water	81	16200
Plant	0	0
Total	**270**	**63450**

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	3
2	Conferences	4
3	Meetings	13
4	Trainings for KVK officials	4
5	Visits of KVK officials	4
6	Book published	0
7	Training Manual	3
8	Book chapters	2
9	Research papers	26
10	Lead papers	0
11	Seminar papers	3
12	Extension folder	6
13	Proceedings	2
14	Award & recognition	3
15	Ongoing research projects	0

DETAILED REPORT OF ANNUAL PROGRESS REPORT 2018-19

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone	E mail
	Office	
Krishi Vigyan Kendra Kattupakkam – 603 203 Kancheepuram District	044 - 27452371	kvk-kattupakkam@tanuvas.org.in kvkkpm@yahoo.co.in kvk.Kancheepuram@icar.gov.in

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

Address	Telephone		E mail
	Office	FAX	
Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051.	044 - 25551586	-	registrar@tanuvas.org.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr.K.Velmurugan	-	9443441098	rkaruvel@gmail.com

1.4. Year of sanction: 1985

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

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Perman-ent /Temp-orary	Category (SC/ST/ OBC/ Others)
1	Programme Coordinator	Dr.K.Velmurugan	Senior Scientist and Head	Horticulture	37400-67000 +AGP 10000	58200	20.10.2001	Permanent	SC
2	Subject Matter Specialist	Dr.M.Siddharth	SMS	Agri. Engg.	37400-67000 +AGP 10000	56500	17.10.2017	Permanent	SC
3		Dr.M.Vimalarani	SMS	Home Science	37400-67000 +AGP 8000	47800	10.08.2005	Permanent	OBC
4		Dr.T.Selvaraj	SMS	Soil Science	15600-39100 +AGP 8000	38120	22.06.2017	Permanent	OBC
5		Dr.K.Devaki	SMS	Animal Science	15600-39100 +AGP 7000	33910	01.08.2014	Permanent	OBC
6		Dr. Gayathri Subbiah	SMS	Plant Pathology	15600-39100 +AGP 7000	32610	03.10.2012	Permanent	OBC
7		Dr.K.Sivakumar	SMS	Fisheries	15600-39100 +AGP 6000	23610	01.12.2015	Permanent	OBC
8	Programme Assistant	Tmt.K.R.Girija	Assistant		20600-65500	45900	02.04.2018	Permanent	OBC
9	Farm Manager	Selvi.M.Muthupriya	Farm Manager		35900-113500	16000 (Consalidated)	04.03.2019	Temporary	OBC
10	Computer Programmer	Tmt.M.Shanmugapriya	Programme Assistant (Computer)		35900-113500	16000 (Consalidated)	12.03.2019	Temporary	OBC
11	Accountant	Th.A.Jeyamony	Superin-		36900-116600	54100	17.10.2013	Permanent	OBC

	Superintendent		tendent						
12	Stenographer	Th.K.Thangaraj	St.Typist Gr.III		20600-65500	39600	28.05.2007	Permanent	OBC
13	Driver	Th.C.Raje	Driver		35400-112400	44900	21.11.2016	Permanent	OBC
14	Driver	Th.N.Narayanan	Driver		19500- 62000	26200	13.12.2013	Permanent	SC
15	Supporting staff	Th.E.Sundaram	Attendent		15900- 50400	29600	20.07.2000	Permanent	SC
16	Supporting staff	Vacant	Attendent		15700- 50000	-	-	-	-

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1	Under Buildings	0.08
2.	Under Demonstration Units	2.10
3.	Under Crops	9.82
4.	Orchard/Agro-forestry	8.00
5.	Others (specify)	-

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	1989	350	500000	-	-	Completed
2.	Farmers Hostel	ICAR	1998	305	1019000	-	-	Completed
3.	Staff Quarters	ICAR	1998	230	739000		-	Completed
4.	Demonstration Units		-	-	-	-	-	-
	i. Orchard	Revolving fund	2008	500	30000	-	-	-
	ii. Ornamental nursery	Revolving fund	2008	10	500	-	-	-
	iii. Vermi compost unit	Revolving fund	2009	5	2000	-	-	-
	iv. Rabbit unit	Revolving fund	2009	7	3000	-	-	-
	v. Azolla production unit	Revolving fund	2010	2	2000	-	-	-
	vi. Medicinal plants	Revolving fund	2010	5	2000	-	-	-
	vii. Fodder production unit	Revolving fund	2007	1000	50000	-	-	-
	viii. Kitchen garden	Revolving fund	2008	5	20000	-	-	-
	ix. Goat Shed	ICAR	2014	150	200000	-	-	-
	x. Dairy Shed	Revolving Fund	2014	40	90000	-	-	-
5	Fencing	-	-	-	-	-	-	-
6	Rain Water harvesting system	-	-	-	-	-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	-	-	-	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Bolero Jeep	11/05/2017	738966	26474	Running
Tempo Traveller	5/30/2005	750000	99998	Running
Tractor	4/6/2009	760000	1394	Running
Scooty pep	6/22/2009	50000	49626	Running
Hero honda	8/25/2009	70000	58592	Running

C) Equipments & AV aids

Name of the equipment	**Year of purchase**	**Cost (Rs.)**	**Present status**
Seed cum Fertilizer Broadcaster	2003	3000	Good condition
Paddy Drum Seeder	2003	3500	Good condition
Peg type weeder	1995	1000	Good condition
Groundnut stripper	2002	1200	Good condition
Star weeder	2002	3500	Good condition
Paddy parboiling unit	1986	1154	Good condition
Hand Operated Groundnut Decorticator	1986	3500	Good condition
Poultry and Fish meal Pelletizer	1991	3736	Good condition
Power weeder	2011	19760	Good condition
Brush cutter	2011	19950	Good condition
Power tiller	2011	150000	Good condition
Power sprayer	2011	4800	Good condition
Incubator	2013	18000	Good condition
Fodder cutter	2013	18119	Good condition
A.V.Aids			Good condition
Display boards	1997	1035	Good condition
Television B and W	1990	3300	Good condition
Pentax camera K – 100	1986	4019	Good condition
Data Projector	2007	92,800	Good condition
Colour T.V	1997	17,975	Good condition
VCR	1997	1600	Good condition
Digital camera	2004	20000	Good condition
Generator – 2 no.	2009	90819	Good condition
Office Equipments			Good condition
Type writer (Tamil)	1985	5518	Good condition
Type writer (English)	1985	5370	Good condition
Computer and Accessories			Good condition
Desktop PC with multimedia kit	2000	59117	Good condition
FAX Modem	2000	9110	Good condition
UPS-1 KVA	2000	1250	Good condition
Lexmark printer	2000	8000	Good condition
HP Ink Jet Printer	2003	3200	Good condition
Scanner	2004	3550	Good condition
Public Address system	2006	10000	Good condition
e-connectivity system provision			Good condition

Window AC	2009		Good condition
Chairs (Godrej)	2009		Good condition
Server with Keyboard and mouse (1)	2009		Good condition
Monitor 17" for server (1)	2009		Good condition
Online UPS – 3 KVA	2009		Good condition
Desktops (CPU with Keyboards & Mouse – 5)	2009		Good condition
Monitor (17" TFT LCD – SVGA, TCO – 03)	2009		Good condition
UPS – 65 UPS for Desktops computers – 5	2009		Good condition
TVS Dot-matrix Printer 245 – 1	2009		Good condition
HP LaserJet P1505 Printer – 1	2009		Good condition
HP 8JG3110 Scanner	2009		Good condition
DAX 24 port switch	2009		Good condition
Camera – Canon SX 540	2019	19000	Good condition
Projector- BenQ MX611	2019	47000	Good condition
HP LaserJet P1020 plus Printer	2019	11300	Good condition
HP LaserJet P1005 MFP Printer	2019	18299	Good condition
Desktops computers	2019	41701	Good condition

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

Sl.No.	Date	No of Participants	Salient Recommendations
1.	08.02.2019	17	Given below

**** Attach a copy of SAC proceedings along with list of participants*** : The details are given in 9th Point – Scientific Advisory Committee Meeting.

2. DETAILS OF DISTRICT (2018-19)

2.0. Operational jurisdiction of KVKs (Andhra Pradesh & Telangana only)/ Give names of districts& Tehsils

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

S. No	Farming system/enterprise
1	Paddy - Paddy – Pulses, Paddy - Paddy – Vegetables, Paddy - Groundnut – Sesame, Dairy, Goat, Sheep, Poultry, Pig

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

S. No	Agro-climatic Zone	Characteristics
1	North Eastern Zone of Tamil Nadu	Annual average rainfall – 992.3 mm, Sandy clay loam soil, red soil and alluvial soil, Mostly irrigated and some parts under rain fed condition

2.3 Soil types

S. No	Soil type	Characteristics	Area in ha
1	Sandy clay loam soil	Good water holding capacity and medium clay content and good fertile condition	46000
2	Red soil	Less water holding capacity, medium clay content	16500
3	Clay loam soil	High clay content and good water holding capacity	12100

2.4. Area, Production and Productivity of major crops cultivated in the district for 2018-19

* (Andhra Pradesh, Tamil Nadu & Puducherry)/for jurisdiction districts in case of Telangana

Kharif

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	22100	58400	40

Rabi

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	60500	197300	37.1
2	Groundnut	5900	77100	29.9
3	Blackgram	-	1200	7.39
4	Sugarcane	2050	59200	990

Summer

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	-	71600	37.4

2.5. Weather data

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
January	2.59	30	20.2	82
February	1.57	31.8	21.1	79
March	8.92	34.2	23.6	78
April	0.36	36	27.0	72
May	5.60	37.6	28.3	64
June	45.44	37.9	27.1	62
July	57.98	36.6	26.4	68
August	174.77	24.4	24.9	76
September	86.27	33.5	25.4	79
October	118.53	32.7	24.7	83
November	255.73	29.9	23.3	87
December	36.17	29.9	22.0	79

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (Latest data)

Category	Population	Production	Productivity
Cattle			
Crossbred	279.2(in '000)	104.223 (in '000Tonnes)	6.8
Indigenous	342.4(in '000)	64.700 (in '000Tonnes)	2.5
Buffalo	154434	27.246 (in '000Tonnes)	4.43
Sheep			
Crossbred	20219	Chevon – 26.495 (in million kgs)	
Indigenous	99427		
Goats	192242	Mutton – 15.326 (in million kgs)	
Pigs	2509	Pork – 0.670 (in million kgs)	
Crossbred	625		
Indigenous	1884		
Rabbits	3028		
Poultry			
Hens	132949	371.386 (in lakh Nos.)	
Desi	115126	180.200 (in lakh Nos.)	94.660
Improved	17823	137.186 (in lakh Nos.)	287.620
Ducks	42747		
Turkey and others	3229 and 4992		

Category	Area	Production	Productivity
Fish			
Marine	87.2 km (44 Fishing Village)	22490.15 (tons)	-
Inland	15055 ha	11665.78 (tons)	0.77 (t/ha)
Prawn			
Scampi	26 ha	80 (tons)	3.07 (t/ha)
Shrimp	256 ha	1050 (tons)	4.10 (t/ha)

2.7 Details of Adopted Villages (2018-19)

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							
DFI villages							
1	Thirukalukundrum	Thirukalukundrum	Sooradimangalam	2018	Paddy Pulses Vegetables Livestock	Low yield and soil fertility problem. Pests and Disease menace in Coconut and field crops Lack of awareness on processing technologies	ICM, IPDM and Compost production Value addition Poultry production

2.8 Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Millets, Groundnut, Pulses and Vegetables	Introduction of high yielding varieties Integrated crop management practices Integrated pest and diseases management Integrated farming system for diff ecosystem Organic agriculture / vegetable cultivation Terrace gardening
Dairy	Hygienic maintenance of animals Regular vaccination Infertility & disease management in livestock
Dairy and Rabbit	Scientific disease management Green fodder cultivation Establishment of rabbit production unit
Sheep and Goat	Scientific disease management like Deworming and vaccination
Pig	Regular Deworming & Vaccination Proper care of piglets
Poultry	Training on scientific management of Poultry Prevention and control of diseases Backyard poultry farming
Fisheries	Composite fish culture in farm ponds

2.9 Salient Achievements of (April 2018-March, 2019) (Mandated activities/ Projects)

S.No	Activity	Target	Achievement
1.	Technologies Assessed and refined(No.)	0	0
2.	On-farm trials conducted (No.)	6	6
3.	Frontline demonstrations conducted (No.)	20	20
4.	Farmers trained (in Lakh)	0.10	0.11
5.	Extension Personnel trained (No.)	80	94
6.	Participants in extension activities (in Lakh)	0.3	0.3
7.	Production of Seed (in Quintal)	10	13.56
8.	Planting material produced (in Lakh)	4	5
9.	Live-stock strains and finger lings produced (in Lakh)	0.015	0.01732
10.	Soil, Water, plant, manures samples tested (in Lakh)	0.001	0.00346
11.	Mobile agro-advisory provided to farmers (in Lakh)	0.3	0.39
12.	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	125	189
13.	No.of Soil Health Cards issued by Traditional Laboratory (No.)	75	81

Give Salient Achievements by KVK during the year in bullet points:

3. TECHNICAL ACHIEVEMENTS

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

OFT (Technology Assessment)				**FLD (crop/enterprise/CFLDs)**			
1				**2**			
Number of technologies		**Total no. of Trials**		**Area in ha**		**Number of Farmers**	
Targets	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**
6	6	35	35	127	127	485	485

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					**Extension Activities**			
3					**4**			
Number of Courses			**Number of Participants**		**Number of activities**		**Number of participants**	
Clientele	**Targets**	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**
Farmers	138	138	6000	6420	450	455	25000	29381
Rural youth	36	36	2000	2109				
Extn. Functionaries	1	1	80	94				

Seed Production (Qtl.)			**Planting material (Nos.)**		
5			**6**		
Target	**Achievement**	**Distributed to no. of farmers**	**Target**	**Achievement**	**Distributed to no. of farmers**
22	13.56	128	100000(CNG)	264000	216

3.b. TECHNOLOGY ASSESSMENT

Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	Source of	No. of	No. of

			technology with year	trials	farmers
Integrated Nutrient Management					
Varietal Evaluation	Bhendi	Assessment of Bhendi varieties for Kancheepuram district	TNAU, IIHR,	5	5
Integrated Pest Management	Chillies	Sucking Pest Management in Chillies	NIPHM , 2014 BAU, 2016	5	5
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					
Weed Management					
	Paddy	Assessment of performance of composting culture in composting process	NCOF-2017	5	5
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Post Harvest Technology / Value addition	Millets	Assessment of acceptability of Beta carotene enriched Millets Bar	TNAU	5	5
Drudgery Reduction					
Storage Technique					
Others (Pl. specify) Fisheries					
Total					

Summary of technologies assessed under livestock by KVKs

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease Management				
Evaluation of Breeds				
Feed and Fodder management				
Nutrition Management				
Production and Management	Dairy	Assessment of the effectiveness of Prosync-NC in oestrus synchronizationin dairy cattle	10	10
Others (Pl. specify) Fisheries	Fish culture	Assessment of suitable varieties for short seasonal fish culture TNJFU, 2014, CIFA, 2015	5	5
Total				

Summary of technologies assessed under various enterprises by KVKs

Thematic areas	Enterprise	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers

3.c. TECHNOLOGY ASSESSMENT IN DETAIL

(From technology please give full details under the broad thematic areas such as varietal evaluation, Nutrient management , pest and disease management, weed management, Integrated Crop Management, cropping systems, improve tools and implements, livestock enterprises,gender specific technologies etc)

(The format for preparing the same is furnished below)

Technology Assessment - 1

1) Thematic area :Resource conservation technology
2) Title:Assessment on performance of composting culture in composting materials
3) Scientist involved:Dr T Selvaraj
4) Details of farming situation: The technology is pertaining to waste decomposer application methods for natural compost production.The farming situation is rainfed where the experiments had been conducted
5) Problem definition:
Kancheepuram district is having a diversified syytem of agricultural production .The agricultural and animal husbandary wastes generated in this district is of social and environmental concern.At most times the wastes become a breeding ground for pests and diseases for human as well as cattles.
6)Technology Assessed
Farmers practice : Farm waste conservation methods are not followed by farmers and the nutrients gets wasted in due course of time
TO1: Arka Microbial consortia-Decomposer is applied to produce 1 tonne of manure.The cost of decomposer is Rs 1800/-
TO2:Wastewaste decomposer(NCOF-2015)
The cost NCOF waste decomposer is Rs 20 per 50 gram of materials.This 50 gram is enough to produce 10 tonnes of compost .Moreover it is economical and efficient in conversion of waste as compost.
7)Critical Inputs given
About 120 numbers of NCOF Waste decomposers (each 50 gm) given to farmers for demonstration .Exactly 5 trials had been undertaken for comparative evaluation.IIHR waste decomposer at the rate of 10 Kg for an amount of Rs 1050 purchased and applied to generate 10 tonnes of compost.
8) Results
For producing 1tonne of compost BCR arrived as follows
Treatment cost of production

Treatment(NCOF)	Cost of Production of 1 tonne of compost	Net returns	BCR
Farmers practice Improper use of farm waste	Cow dung = Rs.350	Rs.1000/-(FYM)	1:3
TO1 Waste+200 lit spray	Labour cost,cowdung waste decomposer cost=1500	1 tonn of compost 1000 Kg @10 Rs=10,000	1:7
TO2Waste+5 Kg of decomposer	Labour cost,cowdung waste decomposer Cost= Rs 2300	1 tonn of compost 1000@10 Kg=Rs 10,000	1:5

Table Performance of the technology

Technology	No of Trials	Net returns	B:C Ratio	Data on other performance indicators C:N
Farmers practice Improper use of farm waste	5	0.01 Lakhs	1:3.0	1:60
Tech 2 Use of NCOF Waste decomposer to treat 1lit of waste		0.1 Lakhs	1:7.0	1:28
Tech.1 Use of IIHR Waste decomposer To treat 1 lit of waste		0.1 Lakhs	1:5.0	1:30

Description of the results:
Trials conducted to evaluate the performance of waste decomposer developed by IIHR and NCOF were utilized for evaluation of economic and application efficiency of the consortia materials.Fromthr trial results it has been observed that 50 gram of NCOF Decomposer is used to produce 1 tonne of compost,

whereas 5 Kg of IIHR waste decomposer is used to produce 1 tonne of compost.The benefit-cost ratio of NCOF decomposer is higher compared to that of IIHR decomposer.The NCOF decomposer innoculam could be maintained by the farmer permanently by diluting the materials in 200 litres of water added with 2 Kg of Jaggery

9) Feed back of the farmers involved: The farmers realized the economic and utilization efficiency of decomposer materials

10) Feed back to the scientist who developed the technology:The application of NCOF Decomposer is simple and best.It is highly cost effective.The waste materials gets decomposed quickly.

Technology Assessment – 2

1. Thematic area: Horticulture
2. Title : **Assessment of Bhendi varieties for Kancheepuram district**
3. Scientists involved: Dr.K.Velmurugan and Dr.Gayathri Subbiah
4. Details of farming situation:

Bhendi is one of the important crops cultivated throughout the year in Kancheepuram district. It is mainly grown in irrigated condition. Soil type being sandy loam in areas of cultivation. The seasonal rainfalls in the areas are 1048.6 mm. Mostly private varieties are grown and the vegetables are sold to Chennai markets. During field visits, it was observed that the farmers were facing the problem high cost in seed purchase, incidence borers, leaf hoppers and vein clearing disease.

Sufficient variability in respect of earliness, fruit number, weight, colour, shape, size, flavour, sweetness and disease resistance was in demand among the farmers which offered a great scope for marketing. In order to meet out the farmers need OFT program to assess Bhendi varieties suitable for Kancheepurm District was conducted in Nerumbur, Alzgusamuthiram and Mathulamkuppam Villages.

5. Problem definition / description: (one paragraph)

- High seed cost involved
- Non adoption of Integrated Crop Management practices and cultivation of high yielding varieties
- Incidence of borers, leaf hoppers and vein clearing disease

6. Technology Assessed: (give full details of technology as well as farmers practice)
   Technology 1: Private variety (Shakthi)
   Technology2: Cultivation of Co 4 variety
   Technology 3: Cultivation of Arka nikhitha

7. Critical inputs given: (along with quantity as well as value)
   1. Hybrid Co-4 Seeds - 500 gm @ Rs.1000
   2. Arka nikhita – 500 gm @ Rs.1000/-
   3. Azospirillum – 1 kg @ Rs.120/kg
   4. Phospho bacteria - 1 kg @ Rs.120/kg
   5. Pseudomonas - 1 kg @ Rs.120/kg
   6. Pheromone traps and lures - 12 nos @ Rs. 300/-
   7. Sticky traps – 4 nos. @ Rs.200/-

8. Results:

Table: Performance of the technology

Technology Option	***No. of***	***Yield (t/ha)***	***Net Returns***	***B:C ratio***	***Data on Other***

	trials		***(Rs. in***		***performance indicators* YMV incidence%***
Farmers Practice (Shakthi)	*5*	*17.36*	113580	*2.91*	*20.4*
*Technology 1(*Cultivation of Co 4 variety*)*		*18.12*	125380	*3.26*	*6.0*
*Technology 3(*Cultivation of Arka nikitha*)*		*17.60*	119410	*3.11*	*10.0*

**** Other performance indicators: such as pest intensity, weed population, test weight, duration etc***

Description of the results: (one page) in addition you can use graphs also

High yielder recorded in CO 4 hybrid 18.12 t/ha compared to Shakthi variety (17.36 t/ha). Resistant to YMV disease was seen in CO 4 hybrid with moderate resistant to the disease in Arka nikitha variety. Usage of pheromone traps, sticky traps effectively managed the pest attack in the field compared to farmers practice.

Fig 1: Cost of cultivation and gross income in the technologies

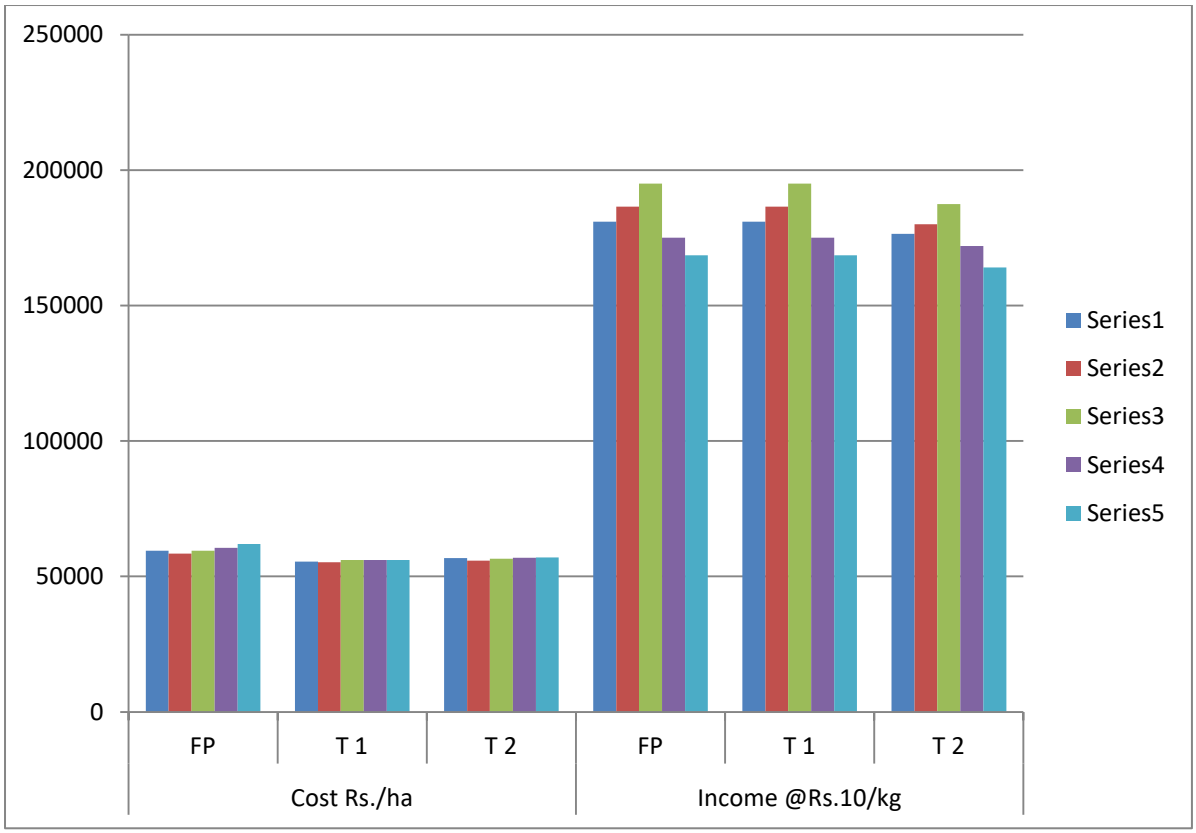
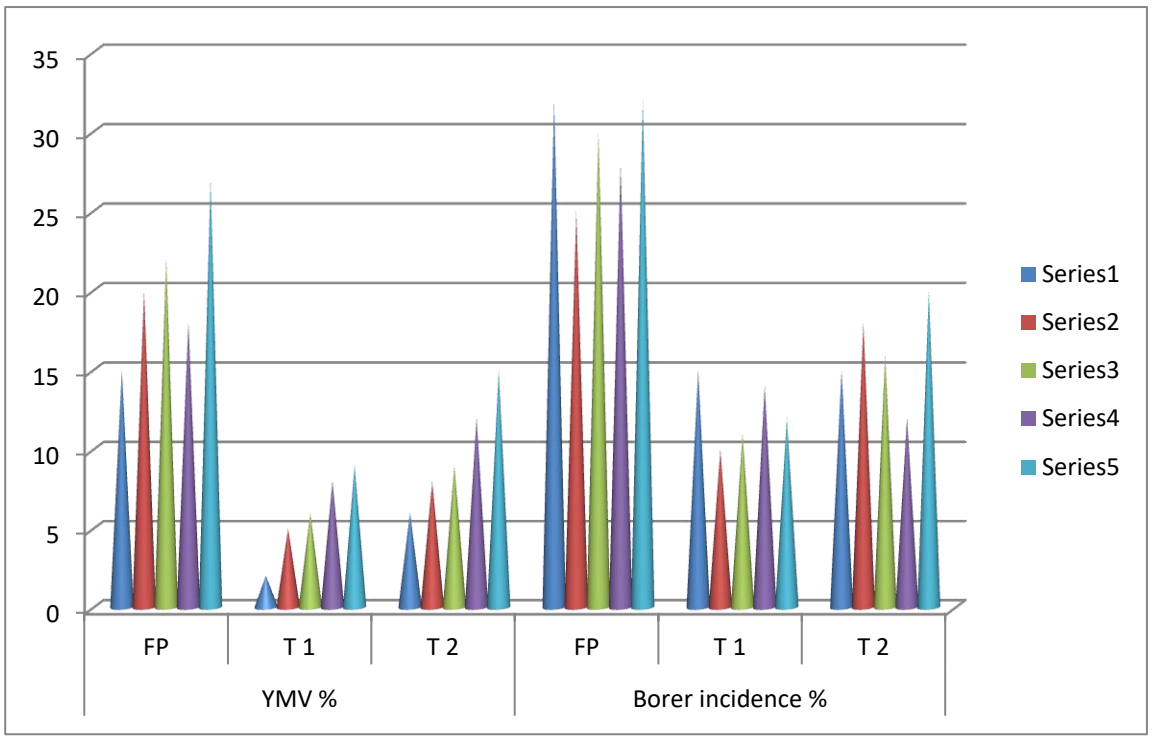


Fig 2: Pest incidence % in the technologies



Constraints faced:

Though yield obtained by CO 4 is high, the seed availability during season was the main constraint faced by the farmers. The egg parasitoid card and pheromone lures were not available locally for the farmers.

9. Feed back of the farmers involved:

Among the three varieties, TNAU released variety CO 4 was preferred by the farmers as it was resistant of YMV disease compared to Arka nikitha and Shakthi varieties. The fruit size was preferred by the consumers as it wasn't long compared to Shakthi variety.

Technology Assessment - 3

1. Thematic area: Value Addition
2. Title: Assessment of Acceptability of Beta carotene enriched millet Bar
3. Scientists involved: Dr.M.Vimalarani

4. Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words)
Not applicable

5. Problem definition / discription: (one paragraph)

Millets are more reliable and produce a harvest even under adverse growing conditions. Millets can be used for traditional as well as novel foods. The richness of starch, protein and fibre, niacin, magnesium, phosphorus, manganese, iron, potassium, essential amino acids and vitamin E make millets an important nutritional bio-source. In addition, millets have therapeutic benefits such as prevention of heart diseases, diabetes, migraine and premature death. In line with the recent awareness on functional foods and neutraceuticals, millets have a great potential. The revival of millets can be achieved through

concerted efforts of research, marketing testing, and entrepreneurial training and demonstration to stimulate the processing of high quality, competitive products for urban areas.

- Farmers grow millets and sell it as such without any processing,
- Poor market price for millets
- Lack of awareness on ready to eat millet foods
- Millets ready mixes

Processing technologies used for improving the edible and nutritional characteristics of millet as well as challenges, limitations, and future perspectives to promote millet utilization as food for a large and growing population.

6. Technology Assessed: (give full details of technology as well as farmers practice)
Farmers grow millets and sale as raw form without any processing and get poor revenue. Assessment of beta carotene enriched millet bar helped farmers to produce value added millets products and market the same.

Technology Option
Technology 1- Plain Millet Bar
Technology 2- Mango pulp added Millet Bar
Technology 2- Mango pulp added Millet Bar
7. Critical inputs given: (along with quantity as well as value)
Critical Inputs such as demonstration materials – Millets including Baja, Sorghum, jaggery, Mango pulp and other miscellaneous materials.
Packaging materials- Hand operated sealing machine and food grade pouches
8. Results:

Table : Performance of the technology

Technology Option	***No.of trials***	***Yield (t/ha)***	***Net Returns (Rs. in lakh./ha)***	***B:C ratio***	***Data on Other performance indicators****
Farmers Practice-Groundnut Chikki	*3*			*1:1.6*	*Groundnut Chikki*
Technology 1- Plain Millet Bar				*1:2.1*	*Plain Millet Bar*
Technology 2- Mango pulp added Millet Bar				*1:1.9*	*Mango pulp added Millet Bar*
Technology 3(Mention details)					

**** Other performance indicators: such as pest intensity, weed population, test weight, duration etc***

Description of the results: (one page) in addition you can use graphs also
Constraints faced:
Growing awareness about the nutritional value of millet in the past few years, especially the less popular small varieties such as little, kodo, foxtail and barnyard, has put pressure on the limited supply available.

More than half of India's women and children, and one in five men, are anemic. Their loss of productivity shaved $22.64 billion (Rs 1.5 lakh crore) off India's gross domestic product in 2016, more than three times the health budget for 2017-18. Malnutrition is also implicated in India's growing tide of diabetes, as India Diabetes is now affecting the urban poor as well as the affluent.

This renewed focus on millet may not be easy to achieve. India's average annual millet production stood at 17.79 million tonnes between 2010-11 and 2014-15. This is less than a tenth of the 215 million tonnes of rice and wheat produced. So large-scale procurement of millet presupposes a radical change in India's crop-growing pattern. Making millet a significant part of the average Indian's diet will require the reversal of a food preference trend that can be traced back half a century.

The assessment was carried out to achieve the aim of feeding children and adolescents with millets in their liked form.

Pakkam village of Madhuranthagam Block was selected for the assessment study. Ten farm women who work in the agriculture field were selected for the study. Initial survey based on their socio-economic background was collected to understand the Nutritional profile of the farm women. Selected women were given awareness on programmes to be conducted for the whole year. They were given lecture on Nutritional importance of millets in daily dietaries.

Trial I preparation of Groundnut chikki
Trial II-Preparation of Plain Millet Bar
Trial III- Preparation of Mango pulp added Millet Bar.
Conduct of Acceptability Test/Sensory Profile of Millet Bar and Organoleptic Evaluation

Sensory attributes of foods are important indicators of acceptability and sustainability of processed foods in the ever growing processed food market. Organoleptic Evaluation is an important tool for assessing the acceptability.
The results of the sensory evaluation of value added millet bar in comparison with control groundnut chikki is given below.

Hedonic Scale for sensory Evaluation of Millet Bar (Five point Hedonic Scale)

S.No.	Parameters	Scale	Product		
			Chikki	Millet Bar	Beta carotene Enriched Millet Bar
1	Colour and Appearance	Excellent	✓		
		Good		✓	✓
		Fair			
		Poor			
		Very poor			
2	Taste	Excellent			
		Good	✓	✓	✓
		Fair			
		Poor			
		Very poor			
3	Texture	Excellent			✓
		Good	✓	✓	
		Fair			
		Poor			
		Very poor			
4	Flavour	Excellent			✓
		Good	✓	✓	
		Fair			
		Poor			
		Very poor			
5	Over all acceptability	Excellent	✓		✓
		Good		✓	
		Fair			
		Poor			
		Very poor			

Sensory evaluation test was carried out among twenty farm women to get the correct point for the acceptability of developed millets based products.
The data depicts that beta carotene enriched millet bar was liked by most of the panelist since it flavours mango and rich in nutrients(4.40) when compared with millet bar and chikki.

Mean Sensory Profile of Millet Bar*

Attributes	Trial I (Control)	Trial I (Millet Bar)	Trial III (B. Millet Bar)
Colour and Appearance	4.21	4.12	4.32
Taste	4.01	4.13	4.21
Texture	3.90	3.90	4.18
Flavour	3.18	3.81	4.30
Over all acceptability	3.40	3.20	4.40
Mean total Score	19.03	19.04	21.41
Acceptability Index	76.12	76.16	85.6

*Five point Hedonic scale

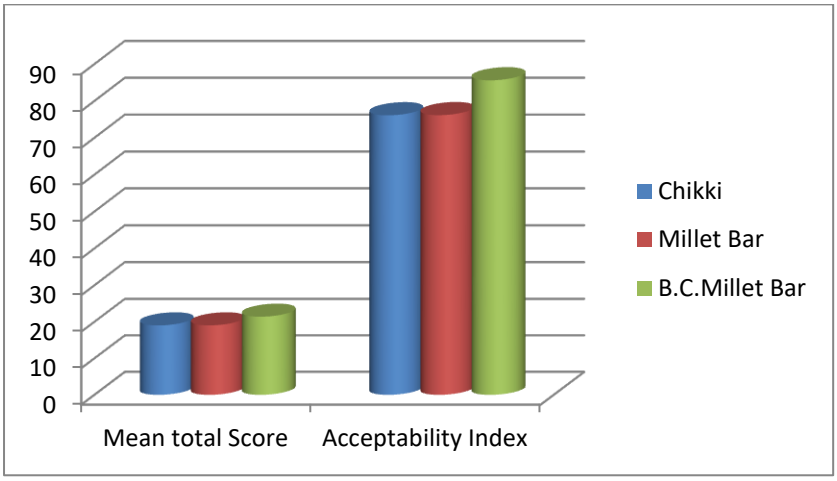


Figure 1 Mean sensory profile of millet bar

Nutrient composition of the Millet Bar

Adding value to foods in terms of nutrients would help to improve the nutrient intake by the community.

Nutrient content of Groundnut in comparison with millet bar and mango millet bar

Nutrients	**Groundnut chikki**	**Millet Bar**	**Mango enriched Millet Bar**
Protein (g)	27.2	13.1	20.3
Energy(kcal)	114.4	935.0	972.0
Fat(g)	40.0	5.2	5.4
Carbohydrate(g)	168.7	209.5	285.5
Beta Carotene	-	-	995
Fibre(g)	3.1	1.2	1.55
Iron(mg)	7.1	12.0	12.7
Calcium(mg)	217.0	182.0	189.0
Phosphorous(mg)	430.0	356.0	364.0

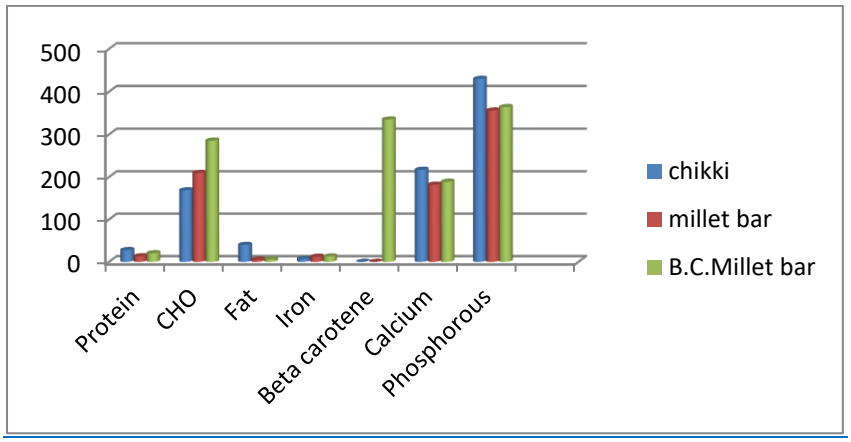


Figure 2 Nutrient content of the products

Storage Quality of the Millet Bar

Addition of nutrient rich ingredients though helps to enrich nutrient content of the end product, its effect on storage quality would indicate the market potential of new food product.

Storage quality or shelf life evaluation of the product will determine and validate the length of the time of the product would retain quality during storage. With increase in storage duration taste and texture score significantly decreased moderately.

Millet bar was found acceptable upto three months of storage period.

Control product Groundnut chikki was found acceptable even at the end of storage period of six months.

Storage quality of food is influenced by several intrinsic and extrinsic factors such as food composition, environmental conditions, handling procedure, packaging barriers and etc.

Prepared product were packed in the 20 micron food grade pouches and silver lined food grade covers.

9. Feed back of the farmers involved:

- Participants felt that the trial was very useful to them, since many of them were unaware of the nutritional quality of millets
- They were interested in participating in the programme and were planning to start an enterprise
- Farmers with land, who participated in the programme assured to cultivate millets in their

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

- The technology is new and good for assessing the millets bar
- Helped farmers to adopt the technology for cultivation of this nutritionally rich varieties
- Children and adolescents prefer such type of product.

Technology Assessment - 4

1. Thematic area: Dairy farming
2. Title: Assessment of the effectiveness of Prosync-NC in oestrus synchronization in dairy cattle
3. Scientists involved: Dr.K.Devaki
4. Details of farming situation: (about 500 words)

Synchronization of estrus implies the manipulation of the estrous cycle or induction of estrus to bring a large percentage of a group of females into estrus at a short, predetermined time. Synchronization of estrus is one of the advanced managemental process through which the humane errors and managemental costs could be minimized. It is particularly beneficial in large cattle herd, where timely heat detection is difficult due to exhibitions of less external heat symptoms. Estrous synchronization in cattle involves manipulating the females' estrous cycle so they can be bred at about

the same time. The normal 21-day estrous cycle in cattle can be altered by following an effective estrous synchronization protocol.

There are several advantages to consider when following an estrous synchronization protocol, including: 1) shortening the calving interval, which allows females (especially heifers) to conceive earlier in the breeding season; 2) more effectively using AI and embryo transfer to reduce time and labor in detecting estrus (heat); and 3) producing a more uniform calf crop with similar ages. Estrous synchronization will not substitute for lack of nutrition, herd health or poor herd management; therefore, it is not effective in non-cycling females.

Instead of females being bred over a 21-day period, synchronization can shorten the breeding period to less than five days, depending on the treatment regimen. Scientific management of cows and calves is possible within the limited resources due to the friendly environment. Production of uniform calf crop for the future replacement in the farm is another important advantage of this programme. In migratory herd of cattle maintained by nomads, synchronization of oestrus may improve the production potential by inseminating the animals with superior germ plasm within a predefined short period at low altitudes before or after the animals reared in summer grazing at alpine pastures available on the great Himalaya.

Although there are so many ways to synchronize the heat in cattle, Controlled Internal Drug Release device (CIDR) and Oestrus synchronization in cattle with TANUVAS Prosync- NC were chosen for the study to find out the efficacy of the drugs. CIDRs are coated with progesterone.

Progesterone is a naturally produced steroid hormone by the corpus luteum of mammalian ovaries. In vivo, progestrone functions to maintain pregnancy. Progesterone provides a potent suppression of estrus, making it important for estrus synchronization in herds of animals. When the CIDR is removed at the end of a treatment period, a rapid drop in concentration of systemic progesterone occurs in each animal. Thus promoting a synchronized estrus effect within the herd, and allowing for artificial insemination of the herd to take place.

Prosync- NC aids in controlled release of hormones which in turn results in induction of ovulatory heat within short time frame using this cream. A patch was applied on the depilated skin over the lower region of the selected cows and bandaged. On the removal of the 7th day, the animal will come to heat within 12 days of with drawl and the animal will be inseminated.

Keeping these points in mind, a FLD was performed in farmer's field using both CIDR and TANUVAS Prosync-NC. The results were described separately.

5. Problem definition / discription: (one paragraph)

Anoestrum and Repeat breeding
Reduced income
Higher treatment cost
Low milk production
Higher medicine cost

6. Technology Assessed: (give full details of technology as well as farmers practice)

Tech :1 No oestrus treatment (Farmers Practice)
Tech: 2 Oestrus synchronization in cattle with CIDR (TANUVAS, 2012)
Tech: 3 Oestrus synchronization in cattle with Prosync –NC (TANUVAS, 2017)

7. Critical inputs given: (along with quantity as well as value)
Prosync- NC – 1 No. – Rs.400
CIDR – 1 No. – Rs.700
Inj.Lutalyse – 2 ml – Rs.100
Mineral mixture & Dewormers – 2 Nos. – Rs.150
Display board – Rs.1000
For 10 demos - Rs.14500

8. Results:

Table : Performance of the technology

Technology Option	No.of trials	Milk yield (in litres)	Net Return (Rs.)	B:C ratio	Data on Other performance indicators*	
					Stage of oestrum	Conception rate (%)
Farmers Practice (No treatment given)	10	4.7litres	1145	1.49	Dioestrum	30
Technology1 (Oestrus synchronization in cattle with CIDR)		5.3litres	1755	1.76	Metoestrum	80
Technology2 (Oestrus synchronization in cattle with Prosync-NC)		5.4litres	2240	2.24	Metoestrum	70

* Other performance indicators: such as pest intensity, weed population, test weight, duration etc

Description of the results: (one page) in addition you can use graphs also

It was found that in farmers practice, the farmers did not follow any treatment to induce oestrum in their dairy animals. Ten farmers with three animals were selected at Athur village, Kattankolathur block, Kancheepuram district for the study. In this trail, the farmers did not follow any treatment to synchronize the animals to induce oestrum in their animals (farmer practice). In this trial, the parameters such as milk yield, stage of oestrum and conception rate were recorded. It was found that in farmers practice, the milk yield was found to be 4.7 litres/day and the conception rate to be 30%. The stage of oestrum was found to be dioestrum.

In technology 1, ten animals were selected and treated with Controlled Internal Drug Release device (CIDR). It was found that in this technology, the Milk yield was found to be 5.3 litres. CIDRs (Controlled Internal Drug Release) are an intravaginal progesterone insert used in the dairy cattle, goat and sheep industries. The progesterone is released at a controlled rate into the bloodstream after insertion. In all species, CIDRs are used for the synchronization of estrus. This can be highly beneficial in large herds because with the synchronization of estrus, groups of cows and heifers can be bred at the same time in a narrow window. In this trial, the animals were dewormed initially and supplemented with TANUVAS Mineral mixture @ 30 gms daily. The selected animals were inserted with the CIDR device intravaginally on day 0 and PGF2 alpha injection were given to the treated animals on day 6. Removed the CIDR on day 7 and the animals in oestrum were inseminated on the 12th day. Artificial insemination was done at metoestrum stage in animals.Pregnancy diagnosis was done on 60th day. It was found that, out of 10 animals 8 animals were found to be positive for pregnancy.Hence the conception rate was found to be 80% in this trial. This clearly indicated that the usage of CIDR device aids in oestrum synchronization in dairy animals at field condition.

In technology 2, ten animals were selected and treated with TANUVAS Prosync- NC. It was found that in this technology, the Milk yield was found to be 5.4 litres. Prosync- NC aids in controlled release of hormones which inturn results in induction of ovulatory heat within short time frame using this cream. A patch was applied on the depilated skin over the lower region of the selected cows and bandaged.Transdermal patch was used for bovine oestrus synchronization.In this trial, the animals were dewormed initially and supplemented with TANUVAS Mineral mixture @ 30 gms daily. The selected animals were treated with TANUVAS Prosync-NC on day 0 , removed on day 7 and the animals in oestrum were inseminated on the 9th day. Artificial insemination was done at metoestrum stage in animals. Pregnancy diagnosis was done on 60th day. It was found that, out of 10 animals 7 animals were found to be positive for pregnancy. Hence the conception rate was found to be 70% in

this trial. This clearly indicated that the usage of TANUVAS Prosync-NC aids in oestrum synchronization in dairy animals at field condition.

Constraints faced:

The constraints experienced by the dairy farmers were provided under the four heads , namely

1. Bio-physical constraints
2. Socio-economic constraints
3. Technological constraints and
4. Institutional constraints

1. Bio-physical constraints

"Non-availability of TANUVAS Prosync - NC" kit was expressed as a major bio-physical constraint of the respondents. During the data collection, most of the respondents reported that the kit were not available in time either in local markets or KVK. They further revealed that the kit are not available in adequate quantity to fulfill their needs.

2. Socio-economic constraints

The important socio-economic constraint expressed by majority of the respondents was difficulty in procurement of technical inputs. This might be due to the availability of kit in TRPVB, Madhavaram, it is difficult for the farmers to procure it in time. Higher cost involved in procurement of CIDR device is the constraint faced by the dairy farmers in field condition.

Technological constraints

The first and foremost technological constraint experienced by the farmers was non-availability of suitable technical person to insert CIDR intravaginally in dairy animals at suitable time. Other technological constraint expressed by the farmers in using TANUVAS Prosync - NC was that the transdermal patch if not secured properly, it hinder the result. Hence, most of the respondents were not convinced about the merits of this technology.

9. Feed back of the farmers involved:

Highly satisfied

As the milk yield of the dairy animals was increased due to adoption of this technique, the farmers expressed higher level of satisfaction towards this technology.

Low cost technology

As the cost of each kit is just Rs.350/- and also there is considerable increase in the milk yield, this technology can be easily propagated to other dairy farming villages.

Easy for application

The application of this technique is very easy and also user friendly. Hence there is higher level of satisfaction among the farmers.

Higher pregnancy rate

Estrus synchronization

A more profitable herd or flock

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

The TANUVAS Prosync - NC kit produced by TRPVB scientist was more farmer friendly and adhesive property is less which inturn results in falling of the transdermal patch .

It was found to be difficult to procure the inputs as it was available in Madhavaram only, which is far away for the farmers. Hence the scientists may send these kits directly to the KVK for effective propagation on request from the farmers.

The positive feedback given by farmers include ease in use (user friendly) and oestrus synchronization at low cost.

Technology Assessment - 5

1. Thematic area: Crop Protection
2. Title : **Assessment of Sucking Pest management practices in Chillies**
3. Scientists involved: Dr.GayathriSubbiah
4. Details of farming situation:

Chillies are an important vegetable crop cultivated by farmers in Kancheepuram district throughout the year. It is mainly grown in irrigated condition. Soil type is sandy - clay loam in areas of cultivation with soils low in nitrogen, medium in phosphorous and potash. The seasonal rainfall is 793.93mm with 20 rainy days in the district.

Mostly varieties are grown as green chilli and red chilli and the fruits are sold to Chennai markets. During field visits along with the State Department of Horticulture officials, it was observed that the farmers were facing the problem of sucking pest infestation mainly caused by thrips and mites which caused heavy yield losses (40%) along with excess use of chemicals. These have become regular pests of the crop in traditional chilli growing tracts, resulting in the qualitative and quantitative crop loss. An awareness programme was conducted on Need based application of chemicals for pest management in Chillies. In order to train the farmers and create awareness on need based use of chemicals to manage sucking pests OFT program to assess management practices for sucking pests in chillies was conducted in Thimmavaram village, Kattankulatur block.

5. Problem definition / description: (one paragraph)

- Incidences of sucking pest like thrips and mites in Chillies were occurring continuously in the chillies growing areas of Kancheepuram district. The infested leaves developed crinkles and upward curling symptoms with elongated petiole which resulted in poor fruit setting. In early stages of infestation stunted growth was observed. In case of mite infection, downward curling with stunted growth was observed.
- Excess use of chemical pesticides
- Yield losses (40%) and
- Low market value for the product

6. Technology Assessed: (give full details of technology as well as farmers practice)

Technology 1: Use of chemicals indiscriminately

Technology2:

- Inter crop with *Sesbania grandiflora* provide barrier which regulate the thrips population
- Seed treatment with imidacloprid 70% WS @ 4g/kg of seed
- Application of fipronil 5% SL@1.5ml/L at 25-30 DAT (Thrips)
- Spraying of fenazaquin 10 EC@ 2ml/L at 55-60 DAT (Mites)

(Source: NIPHM, 2014)

Technology 3:

- Seedlings dip with imidacloprid 70 WS @ 2gm/L
- Spraying of neem oil@1% at 25-30 DAT
- Spraying of imidacloprid 17.8 SL@0.5ml/L at 40-45 DAT
- Spraying *of Verticilium lecani* (vertimec) @ 5 gm/L at 55-60 DAT (Mites)

(Source: BAU, 2016)

7. Critical inputs given: (along with quantity as well as value)

Agathi seeds – 100g @ Rs50/-
Fipronil 5% SL – 250 ml @ Rs.300/-
Fenazaquin 10EC – 100ml @ Rs.300/-
Verticillium lecanii – 250 g @ Rs 50/-
Dimethoate 30 % EC – 250ml @ 200/-

8. Results:

Table: Performance of the technology

Technology Option	No.of trials	Yield (t/ha)	Net Returns (Rs. in	B:C	Data on Other performance indicators* Fruit weight /plant (kg)	Thrips infestation	Mites infestation
Technology 1 Farmers Practice (Use of chemicals)	5	13.25	66250	1.59	1.5	41.0	38.0
Technology 2 (Inter crop with Agathi, Seed treatment with imidacloprid 70% WS @ 4g/kg of seed, Application of fipronil 5% SL@1.5ml/L at 25-30 DAT (Thrips), Spraying of fenazaquin 10 EC@ 2ml/L at 55-60 DAT (Mites)		13.64	81400	1.67	2.4	9.0	7.0
Technology 3 (Seedlings dip with imidacloprid 70 WS @ 2gm/L, Spraying of neem oil@1% at 25-30 DAT, Spraying of imidacloprid 17.8 SL@0.5ml/L at 40-45 DAT, Spraying of Verticilium lecani (vertimec) @ 5 gm/L at 55-60 DAT (Mites)		13.68	85050	1.70	2.6	7.0	7.0

**** Other performance indicators: such as pest intensity, weed population, test weight, duration etc***

Description of the results: (one page) in addition you can use graphs also Constraints faced:

The On Farm Trial was conducted against the major sucking pests (thrips and mites) of Chillies and the occurance of leaf curl disease caused by them by comparing with the farmers practices. The farmers preferred variety Priyanka was taken for the programme. Among these, both technologies were found significantly applicable over the farmer's method of management in controlling the pests. Technology 3 comprising seedlings dip with imidacloprid 70 WS @ 2gm/L, spraying of neem oil@1% at 25-30 DAT, spraying of imidacloprid 17.8 SL@0.5ml/L at 40-45 DAT, spraying of *Verticilium lecani* @ 5 gm/L at 55-60 DAT (for Mites) and their need based application was effective in controlling the pest population and enhancing the yield (13.68t/ha) compared to the farmers practice (13.25t/ha). The farmers obtained additional income from Technology 1 as agathi fetched them income every month as green leaf vegetable. Likewise reduction in thrips population (9 % and 7% of infected plants) was observed in respective technologies compared to check (41% of infestation).

Fig1: Cost involved in application of pesticides against sucking pests

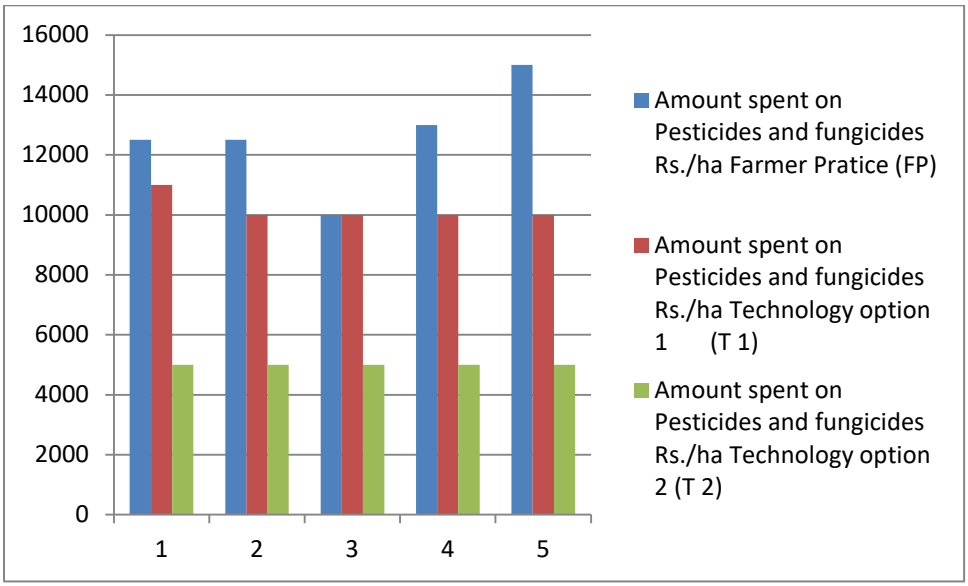
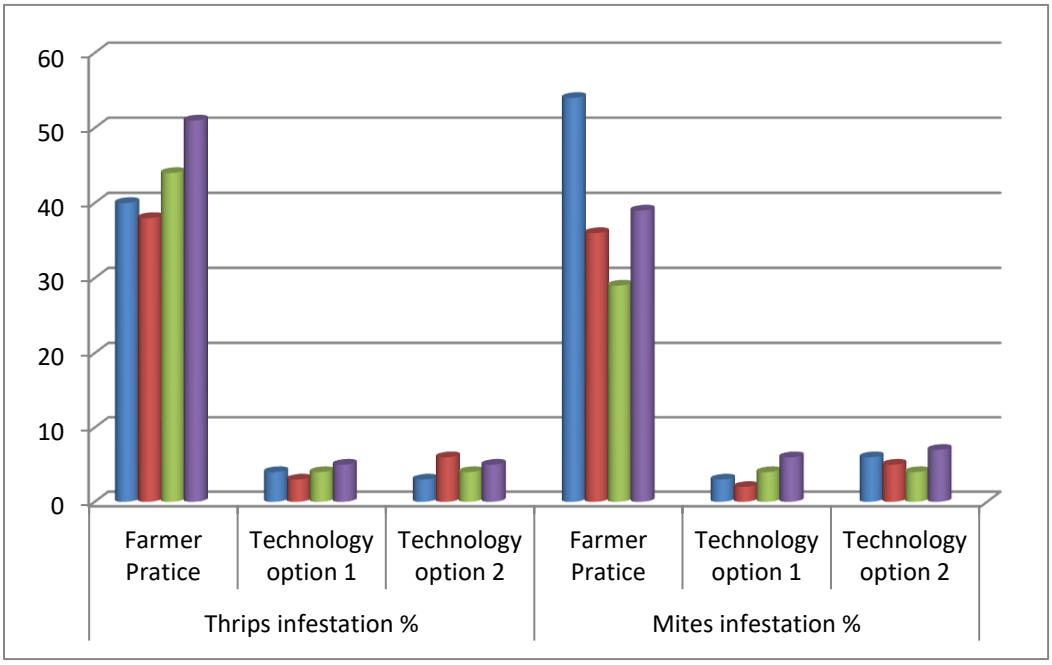


Fig2: Pest incidences in various technologies



9. Feedback of the farmers involved:

Need based recommended chemicals were applied to control the pests. Agathi as intercrop fetched additional income of Rs.200/month. Amount spent on chemicals were reduced (Rs.3000/acre).

The timely application of chemicals at different intervals provided the farmers to go in for recommended pesticides for specific pests which enabled them to diagnosis the pest incidence.

Technology Assessment - 6

1. Thematic area: **Fish farming**

2. Title: **Assessment of suitable varieties for short seasonal fish culture**

3. Scientists involved: Dr.K.Sivakumar

4. Details of farming situation: Seasonal ponds, ditches and road-side canals that are formed from the excavation for house or road construction, and ponds dug for household uses or irrigation or temples and other farms can be used for aquaculture of short-cycle species such as the carp varieties, catfishes and Tilapia. Even 80 to 1000 m^2 ditches as shallow as 70 to 80 cm or up to 150 cm can be used for culture of these species, and so can ponds that retain water for only 3 to 5 months and certain cases it reaches up to 6 to 7 months. On-farm agricultural wastes and by-products can be used as inputs. The culture practice is simple and requires very low labor input. Hence, if can be undertaken by women and children to produce fish for household consumption and for market. Landless farmers can also benefit from this technology; they can culture fish in common property roadside ditches or any kind fish ponds including farm ponds.

5. Problem definition / description:

- Unawareness on scientific knowledge in fish culture
- Lower fish yield (<2000kg/Ha)
- Due to the poor income status of the farmers
- Lack of knowledge on fish varieties suitable for short seasonal farming

6. Technology Assessed:

TO1: Polyculture of carps and Tilapia (Farmer practices)
TO2: Culturing of Pangasius catfish (TNJFU, Nagapattinam - 2014)
TO3: Culturing of Indian major carps (CIFA, Bhubaneswar - 2015)

7. Critical inputs given:

Fingerlings of Pangasius catfish (1.0 Nos/M^2)	1000 Nos/0.10 Ha	Rs. 2600/-
Fingerlings of Indian major carps (Catla, Rohu, Mrigal) (1.0 Nos/M^2)	1000 Nos/0.10 Ha	Rs. 2000/-
Display board	1 No	Rs. 1000/-
No of trials	5 Nos	Total value Rs. 24,000/-

8. Results: Table : Performance of the technology

Technology Option	***No. of trials***	***Fish Yield (Kg/ha)***	***Net Returns (Rs. /ha)***	***B:C***	***Data on Other performance indicators****	
					Average weight per fish (Kg)	***Survival (%)***
Farmers Practice	*5*	*2303.3*	*60597*	*1.49*	*0.31*	*74.3*
Technology 1(Mention details)		*3946.8*	*172873*	*2.21*	*0.46*	*85.8*
Technology 2(Mention details)		*3448.1*	*138610*	*2.01*	*0.41*	*84.1*

**** Other performance indicators: such as pest intensity, weed population, test weight, duration etc***

Description of the results:

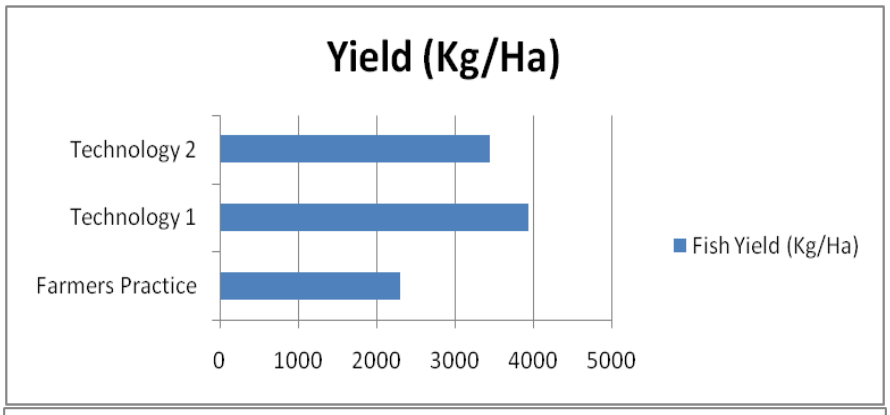
Constraints faced:

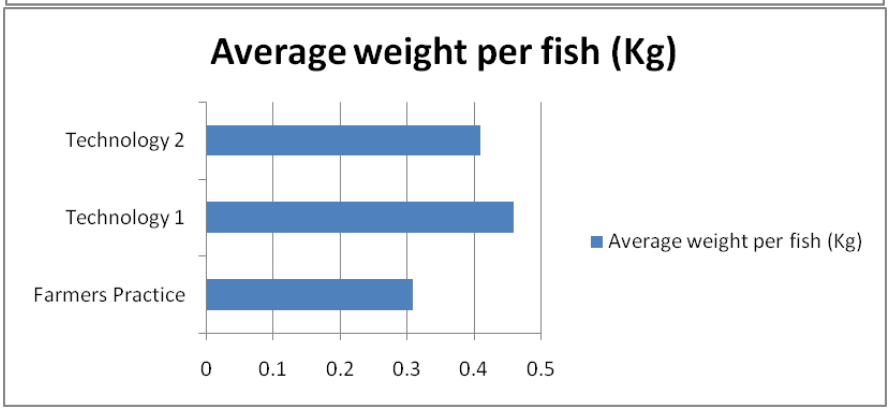
It was found that in farmers practice, the farmers did not stock any particular variety of fish. It was stocked with varieties of minor and major carps and tilapia. Totally five farmers with area of 0.3 Ha were selected at Mudaiyure, Kilativakkam, Chinnamakulam, Kaliyapettai and Poraghal of the Kancheepuram district for this study. In this trail, the farmers did not follow any artificial feeds. During this trial, the parameters such as fish yield (Kg/Ha), average body of per fish (Kg/fish) and survival (%) were recorded. It was found that in farmers practice, they have not followed the feeding schedule, recording of average body of fish and estimated survival during the fish culture including the natural plankton productivity of the pond.

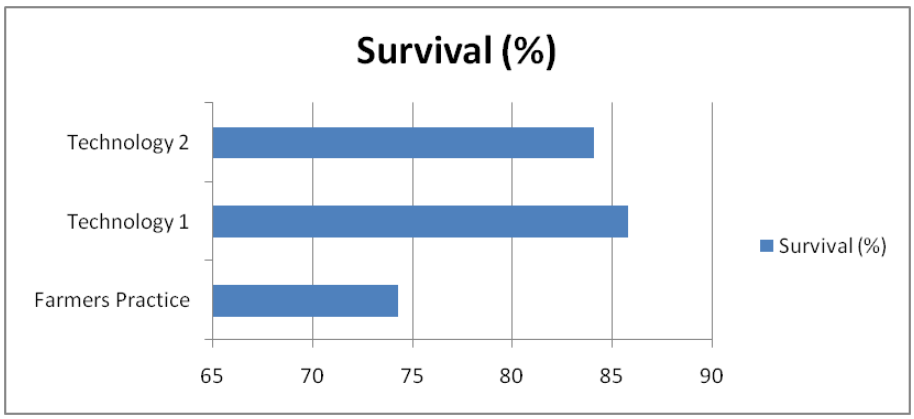
In technology 1, the Pangasius catfishes were stocked at the rate of 1000 Nos in 0.1 Ha. The organic manures such as cow dung, poultry manure were used during the pond preparation and till the end of culture period. The model fish sampling were conducted regularly after the 45 days of culture duration. In the case of feeds, the artificial pellet feed, rice bran and ground nut oil cake (1:2 to 1:4 ratio), and locally available vegetables were used. The plankton bloom i.e. natural productivity of pond was estimated regularly. The fish pond was maintained with the total culture period of 5 months i.e. as one short season recorded with the following parameters at the end of harvest fish yield – 3946.8 kg/ha, average weight per fish – 0.46 Kg and survival – 85.8 %.

In technology 2, the Indian Major Carps fishes were stocked at the rate of 1000 Nos in 0.1 Ha. The organic manures such as cow dung, poultry manure were used during the pond preparation and till the end of culture period. The model fish sampling were conducted regularly after the 45 days of culture duration. In the case of feeds, the artificial pellet feed, rice bran and ground nut oil cake (1:2 to 1:4 ratio), and locally available vegetables, fodder grasses were used. The plankton bloom i.e. natural productivity of pond was estimated regularly. The fish pond was maintained with the total culture period of 5 months i.e. as one short season recorded with the following parameters at the end of harvest fish yield - 3448.1 kg/ha, average weight per fish – 0.41 Kg and survival – 84.1 %.

It was found that in technology-1, the improved fish yield and other parameters were recorded at the end of harvest than others; they are fish yield – 3946.8 kg/ha, average weight per fish – 0.46 Kg and survival – 85.8 %. Hence, it can be proved that TNJFU, Nagapattinam technology - culturing of Pangasius catfish is effective in short seasonal fish ponds. Hence this technology can be popularized among rural fish farmers to get better fish production and to improve their income status.







9. Feed back of the farmers involved:
   - The farmers are satisfied as well with this technology.
   - The farmers used/utilized variety of feed available locally during these trials. It was helped to reduce the cost of production.
   - This is one of the simple and viable practices of fish culture method. Hence there is higher level of satisfaction among the farmers.
   - Harvested fishes fetched better market price and aided to improve their income status.

10. Feed back to the scientist who developed the technology:
   - This technology showed the higher fish yield - 3946.8 kg/ha, average weight per fish – 0.46 Kg and survival – 85.8 % in the short seasonal fish ponds.
   - It proved that Pangasius catfish culture accepted the different kinds of feed which were provided during the trials. Therefore, it aided to decrease the feed cost.
   - It also helped to motivate surrounding Agricultural farmers to do fish culture as one of IFS component in their farms.

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	ICM	Demonstration of CO52 paddy with ICM Practices	Awarenesscamp, on and off campus training	2	20	25

**** Thematic areas as given in Table 3.1 (A1 and A2)***

b. Details of FLDs implemented during the current year (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial 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	Paddy	ICM	Demo on CO52 & ICM	2018 Rabi	ICAR	2	2	1	9	10	Nil
2	Coconut	Pest Management	Rhinoceros Beetle Management	Rabi 2018	ICAR	2	2	-	10	10	-

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Paddy	Rabi	Irrigated	SCL	Low	Low	Medium	Black gram	15.10.18	22.02.19	1048.1	17.8
Coconut	Rabi 2018	Irrigated	Sandy Clay loam	L	L	M	Coconut	-	Every month	1048.1	17.8
Brinjal	Rabi	Irrigated	Sandy Clay loam	L	L	M	Paddy	13.2.19	5.4.2019	1048.1	17.8

Technical Feedback on the demonstrated technologies

S. No	**Feed Back**
1. Paddy	Paddy CO52 Variety is resistant to pest and diseases, Crop lodging is not experienced even
2. Coconut	Beetle Damage got reduced and no. of nuts/tree increased, Amount spent on pesticide application completely avoided
3. Brinjal	More number of harvests was observed. Incidence of pest like borer was less.

Farmers' reactions on specific technologies

S. No	**Feed Back**
1. Paddy	Seed treatment with Pseudomonas controlled Blast and BLB
2. Coconut	*Metarhizium anisophiliae* application to manure pits effectively controlled grubs, RB lure and castor cake usage reduced the beetle damage and increased nut yield/tree
3. Brinjal	Grafted brinjal fetched good market price. The cost of cultivation for second and third crop reduced as it can be used as ratoon crop.

Extension and Training activities under FLD

Sl.No.	**Activity**	**No. of activities organised**	**Date**	**Number of participants**	**Remarks**
1	Field days				
	Paddy	1	05.03.19	23	-
	Coconut	1	5.3.2019	9	-
2	Farmers Training				
	Paddy	1	03.01.19	10	-
	Coconut	3	9.4.2018,31.10.2018,15.2.2019	68	-
	Brinjal	2	3.10.2018 & 4.10.2018, 18.12.2018	508	-
3	Media coverage				
4	Training for extension functionaries				

Performance of Frontline demonstrations

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 (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Pulses																			
Oilseeds																			
Cereals																			
Paddy	ICM	Demonstration of CO52 paddy with ICM Practices	CO-52	CO-49	10	2	104	61	87.5	**67**	30.5	37711	91485	53774	2.4	41000	71200	30200	1.7
Commercial crops																			
Millets																			
Vegetables	ICM	Demonstration of Grafted brinjal	Grafted brinjal	Ujjala	10	2	400.	360	380.	325.	16.92	70250	229575	159325	3.26	68875	195525	126650	2.83
Fruits																			
Plantation crops	Pest management	Rhinoceros beetle management	Tall	Tall	10	2	240	215	228	213	7.04	61045	140725	79680	2.71	67825	144515	76690	2.10

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 (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Spices and condiments																			
Flowers																			

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

** BCR= GROSS RETURN/GROSS COST

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Major parameters Milk yield (in Litres)		% change in major parameter	Other parameter SCC (in Lakhs.)		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)
					No. of days for wound healing			% of wound closure									
Cattle					Demo	Check		Demo	Check								
	Dairy	Demonstration of Mastiguard efficacy in Clean Milk Production	20	20	8.16	5.69	43.00	2.0	6.9	3450	7340	3890	2.13	3600	5166	1566	1.44
	Dairy	Demonstration of Nano dermal cream to accelerate wound healing in Dairy cows	15	5 animals /demo	5	11	54.54	71.0	18.3	150	306	156	2.04	93	141	48	1.52
Buffalo																	
Dairy																	
					Marketing weight (gms/ kg)			Livability(%)									
Poultry	Poultry	Popularisation of Grama priya chicken as a backyard venture among rural farmers	10	20 chicks/demo	1.15	0.775	48.39	91	33	1629	3803	2174	2.33	1629	2794	1165	1.72
					Disease incidence (%)			Mortality (%)									
	Poultry	Demonstration of EVM for prevention of Ranikhet disease in Poultry	20	10 birds /demo	7	89	92.13	80.75	1.3	68	189	121	2.78	80	97	17	1.21

Sheep																	
Goat																	

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

FLD on Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters yield		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demonstration (kg/ha)	Check (kg/ha)		Demonstration (Kg/fish)	Check (Kg/fish)	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Fisheries																	
	Fish culture	Demonstration of Polyculture in periphyton enhanced system using sugarcane Bagasse	5	5	3801.6	2865.2	32.68	0.44	0.38	149082	304128	155046	2.04	134044	229216	95172	1.71
Fisheries																	
	Fish culture	Demonstration of Grass carp in control of aquatic weed infested water bodies of Kancheepuram district	6	6	3914.6	2743.2	42.70	0.46	0.36	149841	313168	163327	2.09	152400	219456	67056	1.44
Fisheries					Demo (% kg of fish/prawn)	Check (% kg of fish/prawn)		Demo (Colour)	Check (Colour)								
	Fish Value addition	Demonstration of Low cost solar dryer for fish and prawns	60	4	33.3	27.8	19.78	Milky colour & soft texture	Slight brown colour & hard texture	165	300	135	1.81	155	200	45	1.29

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

FLD on Other enterprises

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)
Mushroom																
Apiculture				Honey yield/unit /annum (kg)												
	Demonstration of Bee hives in peri urban areas of Kancheepuram district	4	4	2.0	Nil	-	-	-	700/annum	800/annum	100/annum	0.14	-	-	-	-
Maize Sheller																
Value Addition																
	Demonstration of Tomato products for Income generation of Farm women	10	1	Acceptability	Shelf life	20 % in taste	Nutrient retention	**Consumer preference**	250/kg	375/kg	125	1:1.5	116	200	84	1:1.2
	Demonstration of Ready to eat food products from Low glycemic index Traditional Rice Kulankar variety	10	1	Increase in shelf life	Low shelf life	25% increase in shelf life	Flavour	Bland taste	185/kg	350/kg	165	1:1.9	100	160	60	1:1.6
Vermi Compost																

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check

FLD 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
Power weeder	Brinjal	Weeding through the power weeder	6	1	Weeding time and Labour reduction	0.03ha	0.005ha	500	-	-	21/ha	21/ha	-	Rs.6300/ha	-	Rs.6300/ ha
Sugarcanr Bud Chipper	Sugarcane	Sugarcane bud chipping using bud chipper	4	1	Bud chipping time and Labour reduction	550bud chipps	120bud chipps	358	-	-	-	-	-	26 %	-	26 %

FLD on Other Enterprise: Kitchen Gardening

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units	Yield (Kg)		% change in yield	Other parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demonstration	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)

FLD on Demonstration details on crop hybrids *(Details of Hybrid FLDs implemented during 2018-19)*

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						
Oilseed crop													
Pulse crop													
Cereal crop													
Vegetable crop													
Fruit crop													
Other (specify)													

FLDs conducted with the funding of other sources including CFLD/ATMA/NABARD/other ICAR institutes etc

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	Average										
Groundnut	ICAR	ICM	ICM practices demonstration in Dharani 13 groundnut variety	Dharani 13	TMV13	100	40	21	15	18	14	28.5	37800	97050	59250	2.5	35312	69000	33688	2.0
Greengram	ICAR	ICM	ICM practices demonstration in VBN-3 greengram variety	VBN-3	CO-7	25	10	8.5	5.0	6.6	5.1	17.7	40810	67200	26390	1.9	38570	59325	20755	1.5
Blackgram	ICAR	ICM-Kharif	ICM practices demonstration in VBN-6 Blackgram variety	CO-6	VBN-5	25	10	7.6	5.8	6.7	5.8	15.5	39150	68385	29235	2.3	37380	60465	23085	1.61
Blackgram	ICAR	ICM-Rabi	ICM practices demonstration in VBN-6 Blackgram variety	CO-6	VBN-5	125	50	8.2	6.5	7.4	6.7	10.44	39275	68450	29175	1.7	39360	58265	18905	1.40

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Cattle																	
					Birth weight (gms)			Mortality rate (%)									
Rabbit	Rabbit	Popularisation of backyard rabbit rearing among rural youth to enhance the livelihood status	5	3 (2 female + 1 male) rabbits/demo	28	34.4	22.86	2.2	40	1035	2300	1265	2.22	442	850	408	1.92
Buffalo																	

Dairy																	
Poultry																	
Sheep																	
Goat																	

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

FLD on Fisheries: Nil

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)

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

FLD on Other enterprises

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)

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check

FLD 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

4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production	0	0	0	0	0	0	0	0	0	0
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	2	17	6	23	4	0	4	21	6	27
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	4	40	3	43	1	0	1	41	3	44
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	6	44	3	47	7	0	7	51	3	54
Soil & water conservatioin	1	3	0	3	0	0	0	3	0	3
Integrated nutrient management	3	19	1	20	6	-	6	25	1	26
Production of organic inputs	1	76	18	94	10	8	18	86	26	112
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**17**	**199**	**31**	**230**	**28**	**8**	**36**	**227**	**39**	**266**
II Horticulture										
a) Vegetable Crops										
Production of low value and high volume crops	08	177	57	234	23	9	32	200	66	266
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	0	0	0	0	0	0	0	0	0	0
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	2	23	2	25	9	0	9	32	2	34
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (a)	**10**	**200**	**59**	**259**	**32**	**9**	**41**	**232**	**68**	**300**
b) Fruits										
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	0	0	0	0	0	0	0	0	0	0
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	2	27	1	28	12	0	12	39	1	40
Processing and value addition	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops	0	0	0	0	0	0	0	0	0	0
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	2	27	1	28	12	0	12	39	1	40
f) Spices										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (f)	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)										
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	6	108	60	168	13	15	28	121	75	196
Poultry Management	7	274	84	358	38	6	44	312	90	402
Piggery Management	1	13	3	16	2	0	2	15	3	18
Rabbit Management	2	34	8	42	16	0	16	50	8	58
Animal Nutrition Management	1	8	0	8	0	0	0	8	0	8
Disease Management	1	8	0	8	0	0	0	8	0	8
Feed & fodder technology	1	6	0	6	0	0	0	6	0	6
Production of quality animal products	1	16	0	16	0	0	0	16	0	16
Others (pl specify) Goat Managemant	3	289	30	319	40	15	55	329	45	374
Total	**23**	**756**	**185**	**941**	**109**	**36**	**145**	**865**	**221**	**1086**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Design and development of low/minimum cost diet	0	0	0	0	0	0	0	0	0	0
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	1	5	7	12	1	2	3	6	9	15
Processing and cooking	3	14	24	38	3	11	14	17	35	52
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	1	4	8	12	2	2	4	6	10	16
Value addition	5	21	44	65	8	12	20	29	56	85
Women empowerment	0	0	0	0	0	0	0	0	0	0
Location specific drudgery reduction technologies	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**10**	**44**	**83**	**127**	**14**	**27**	**41**	**58**	**110**	**168**
VI Agril. Engineering										
Farm Machinary and its maintenance	6	29	6	35	18	3	21	47	9	56
Installation and maintenance of micro irrigation systems	2	14	2	16	6	3	9	18	5	23
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	2	34	2	36	6	2	8	40	4	44
Others (pl specify)										
Total	**10**	**77**	**10**	**87**	**30**	**8**	**38**	**105**	**18**	**123**
VII Plant Protection										
Integrated Pest Management	2	8	0	8	0	0	0	8	0	8
Integrated Disease Management	2	8	0	8	0	0	0	8	0	8
Bio-control of pests and diseases	1	3	1	4	0	0	0	3	1	4
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Oraganic Manure Production	1	21	3	24	0	0	0	21	3	24
Azolla	2	29	4	33	5	6	11	34	10	44
Bee keeping	1	2	4	6	2	6	8	4	10	14
Total	**9**	**71**	**12**	**83**	**7**	**12**	**19**	**78**	**24**	**102**
VIII Fisheries										
Integrated fish farming	1	30	6	36	5	0	5	35	6	41
Carp breeding and hatchery management	1	21	1	22	9	0	9	30	1	31
Carp fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Composite fish culture	1	12	0	12	6	0	6	18	0	18
Hatchery management and culture of freshwater prawn	1	17	1	18	0	0	0	18	0	18
Breeding and culture of	2	17	0	17	18	25	43	35	25	60

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
ornamental fishes										
Portable plastic carp hatchery	1	25	0	25	7	4	11	32	4	36
Pen culture of fish and prawn	1	19	0	19	2	0	2	21	0	21
Shrimp farming	1	9	1	10	2	0	2	11	0	12
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (Brackishwater fish, Murrel, Tilapia & Catfish culture)	4	83	5	88	14	0	14	97	5	102
Total	**13**	**233**	**14**	**247**	**63**	**29**	**92**	**297**	**42**	**339**
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Bee-colonies and wax sheets	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Apiculture	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	0	0	0	0	0	0	0	0	0	0
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**92**	**1580**	**394**	**1974**	**283**	**129**	**412**	**1863**	**523**	**2386**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	4	38	84	122	1	6	7	39	90	129
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	1	26	11	37	6	4	10	32	15	47
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	3	66	3	69	0	0	0	0	0	69
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	1	21	4	25	0	0	0	21	4	25
Soil & water conservatioin	0	0	0	0	0	0	0	0	0	0
Integrated nutrient management	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	1	30	30	60	0	28	28	30	58	88
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**10**	**181**	**132**	**313**	**7**	**38**	**45**	**122**	**167**	**358**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	0	0	0	0	0	0	0	0	0	0
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	0	0	0	0	0	0	0	0	0	0
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (a)	0	0	0	0	0	0	0	0	0	0
b) Fruits										
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	0	0	0	0	0	0	0	0	0	0
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants										
Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (f)	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)	0	0	0	0	0	0	0	0	0	0
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	15	10	97	107	312	624	936	322	721	1043
Poultry Management	11	12	329	341	44	587	631	56	916	972
Piggery Management	0	0	0	0	0	0	0	0	0	0
Rabbit Management	0	0	0	0	0	0	0	0	0	0
Animal Nutrition Management	0	0	0	0	0	0	0	0	0	0
Disease Management	0	0	0	0	0	0	0	0	0	0
Feed & fodder technology	0	0	0	0	0	0	0	0	0	0
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Others (pl specify) Goat Management	19	0	651	651	0	746	746	0	1397	1397
Total	**45**	**22**	**1077**	**1099**	**356**	**1957**	**2313**	**378**	**3034**	**3412**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	**6**	**34**	**66**	**100**	**21**	**36**	**37**	**55**	**102**	**157**
Design and development of low/minimum cost diet	**3**	**23**	**128**	**151**	**11**	**63**	**74**	**34**	**191**	**225**
Designing and development	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
for high nutrient efficiency diet										
Minimization of nutrient loss in processing	0	0	0	0	0	0	0	0	0	0
Processing and cooking	**2**	**9**	**27**	**36**	**4**	**11**	**15**	**13**	**38**	**57**
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	**1**	**11**	**21**	**32**	**2**	**7**	**9**	**13**	**28**	**41**
Value addition	**5**	**16**	**38**	**54**	**11**	**28**	**39**	**27**	**66**	**120**
Women empowerment	**1**	**0**	**25**	**25**	**0**	**7**	**7**	**0**	**32**	**32**
Location specific drudgery reduction technologies	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Women and child care	1	0	14	14	0	7	7	0	21	21
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**19**	**93**	**319**	**412**	**49**	**159**	**188**	**142**	**478**	**653**
VI Agril. Engineering										
Farm Machinary and its maintenance	6	39	24	63	21	12	33	60	36	96
Installation and maintenance of micro irrigation systems	2	23	14	37	4	3	7	27	17	44
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	2	21	16	37	13	14	27	34	30	64
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**10**	**83**	**54**	**137**	**38**	**29**	**67**	**121**	**83**	**204**
VII Plant Protection										
Integrated Pest Management	0	0	0	0	0	0	0	0	0	0
Integrated Disease Management	0	0	0	0	0	0	0	0	0	0
Bio-control of pests and diseases	0	0	0	0	0	0	0	0	0	0
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
VIII Fisheries	0	0	0	0	0	0	0	0	0	0
Integrated fish farming	3	51	154	205	6	0	6	57	154	211
Carp breeding and hatchery management	1	16	0	16	0	0	0	16	0	16
Carp fry and fingerling rearing	1	0	40	40	0	0	0	0	40	40
Composite fish culture	1	25	0	25	0	0	0	25	0	25
Hatchery management and culture of freshwater prawn	0	0	0	0	0	0	0	0	0	0
Breeding and culture of ornamental fishes	0	0	0	0	0	0	0	0	0	0
Portable plastic carp hatchery	1	11	9	20	0	0	0	11	9	20
Pen culture of fish and prawn	1	0	12	12	0	0	0	0	12	12
Shrimp farming	1	0	12	13	0	0	0	0	12	13
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	3	0	47	47	0	0	0	0	47	47

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**12**	**104**	**274**	**378**	**6**	**0**	**6**	**110**	**274**	**384**
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Bee-colonies and wax sheets	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Apiculture	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	0	0	0	0	0	0	0	0	0	0
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**96**	**483**	**1856**	**2339**	**456**	**2183**	**2639**	**939**	**4039**	**4978**

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	0	0	0	0	0	0	0	0	0	0
Weed Management	0	0	0	0	0	0	0	0	0	0
Resource Conservation Technologies	6	55	90	145	5	6	11	60	96	156
Cropping Systems	0	0	0	0	0	0	0	0	0	0
Crop Diversification	4	40	3	43	1	0	1	41	3	44
Integrated Farming	0	0	0	0	0	0	0	0	0	0
Micro Irrigation/irrigation	0	0	0	0	0	0	0	0	0	0
Seed production	3	66	3	69	0	0	0	0	0	69
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Crop Management	7	65	7	72	7	0	7	72	7	79
	1	3	0	0	0	0	0	0	0	3
Soil & water conservatioin	1	3	0	3	0	0	0	3	0	3

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated nutrient management	3	19	1	20	6	0	6	25	1	26
Production of organic inputs	2	106	48	154	10	36	46	116	84	200
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**27**	**357**	**152**	**506**	**29**	**42**	**71**	**317**	**191**	**580**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	0	0	0	0	0	0	0	0	0	0
Off-season vegetables	0	0	0	0	0	0	0	0	0	0
Nursery raising	0	0	0	0	0	0	0	0	0	0
Exotic vegetables	0	0	0	0	0	0	0	0	0	0
Export potential vegetables	0	0	0	0	0	0	0	0	0	0
Grading and standardization	0	0	0	0	0	0	0	0	0	0
Protective cultivation	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (a)	0	0	0	0	0	0	0	0	0	0
b) Fruits	0	0	0	0	0	0	0	0	0	0
Training and Pruning	0	0	0	0	0	0	0	0	0	0
Layout and Management of Orchards	0	0	0	0	0	0	0	0	0	0
Cultivation of Fruit	0	0	0	0	0	0	0	0	0	0
Management of young plants/orchards	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Export potential fruits	0	0	0	0	0	0	0	0	0	0
Micro irrigation systems of orchards	0	0	0	0	0	0	0	0	0	0
Plant propagation techniques	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (b)	0	0	0	0	0	0	0	0	0	0
c) Ornamental Plants										
Nursery Management	0	0	0	0	0	0	0	0	0	0
Management of potted plants	0	0	0	0	0	0	0	0	0	0
Export potential of ornamental plants	0	0	0	0	0	0	0	0	0	0
Propagation techniques of Ornamental Plants	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (c)	0	0	0	0	0	0	0	0	0	0
d) Plantation crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (d)	0	0	0	0	0	0	0	0	0	0
e) Tuber crops										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (e)	0	0	0	0	0	0	0	0	0	0
f) Spices										
Production and Management technology	0	0	0	0	0	0	0	0	0	0
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (f)	0	0	0	0	0	0	0	0	0	0
g) Medicinal and Aromatic Plants										
Nursery management	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Production and management technology	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total (g)	0	0	0	0	0	0	0	0	0	0
GT (a-g)										
III Soil Health and Fertility Management										
Soil fertility management	0	0	0	0	0	0	0	0	0	0
Integrated water management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient Management	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Management of Problematic soils	0	0	0	0	0	0	0	0	0	0
Micro nutrient deficiency in crops	0	0	0	0	0	0	0	0	0	0
Nutrient Use Efficiency	0	0	0	0	0	0	0	0	0	0
Balance use of fertilizers	0	0	0	0	0	0	0	0	0	0
Soil and Water Testing	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
IV Livestock Production and Management										
Dairy Management	21	118	157	275	325	639	964	443	796	1239
Poultry Management	18	286	413	699	82	593	675	368	1006	1374
Piggery Management	1	13	3	16	2	0	2	15	3	18
Rabbit Management	2	34	8	42	16	0	16	50	8	58
Animal Nutrition Management	1	8	0	8	0	0	0	8	0	8
Disease Management	1	8	0	8	0	0	0	8	0	8
Feed & fodder technology	1	6	0	6	0	0	0	6	0	6
Production of quality animal products	1	16	0	16	0	0	0	16	0	16
Others (pl specify) Goat Management	22	289	681	970	40	761	801	329	1442	1771
Total	**68**	**778**	**1262**	**2040**	**465**	**1993**	**2458**	**1243**	**3255**	**4498**
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	6	34	66	100	21	36	37	55	102	157
Design and development of low/minimum cost diet	3	23	128	151	11	63	74	34	191	225
Designing and development for high nutrient efficiency diet	0	0	0	0	0	0	0	0	0	0
Minimization of nutrient loss in processing	1	5	7	12	1	2	3	6	9	15
Processing and cooking	5	23	51	74	7	22	29	30	73	103
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Storage loss minimization techniques	2	15	29	44	4	9	13	24	42	86
Value addition	10	37	82	119	19	40	59	56	122	178
Women empowerment	1	0	25	25	0	7	7	0	32	32
Location specific drudgery reduction technologies	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Women and child care	1	0	14	14	0	7	7	0	21	21
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	**29**	**137**	**402**	**539**	**63**	**186**	**229**	**205**	**592**	**817**
VI Agril. Engineering										
Farm Machinary and its maintenance	12	68	30	98	39	15	54	107	45	152
Installation and maintenance of micro irrigation systems	4	37	16	53	10	6	16	45	22	67
Use of Plastics in farming practices	0	0	0	0	0	0	0	0	0	0
Production of small tools and implements	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Small scale processing and value addition	2	21	16	37	13	14	27	34	30	64
Post Harvest Technology	2	34	2	36	6	2	8	40	4	44
Others (pl specify)										
Total	20	160	64	224	68	37	105	226	101	327
VII Plant Protection										
Integrated Pest Management	5	116	26	0	0	0	0	0	0	142
Bio-control of pests and diseases	2	43	18	0	0	0	0	0	0	63
Production of bio control agents and bio pesticides				0	0	0	0	0	0	
Others (pl specify) 1. Oraganic Manure Production	1	21	3	0	0	0	0	0	0	24
2. Azolla	2	29	4	5	6	0	0	0	0	44
Total	**10**	**209**	**51**	**5**	**5**	0	0	0	0	**273**
VIII Fisheries										
Integrated fish farming	4	81	160	241	11	0	11	92	160	252
Carp breeding and hatchery management	2	37	1	38	9	0	9	46	1	47
Carp fry and fingerling rearing	1	0	40	40	0	0	0	0	40	40
Composite fish culture	2	37	0	37	6	0	6	43	0	43
Hatchery management and culture of freshwater prawn	1	17	1	18	0	0	0	17	1	18
Breeding and culture of ornamental fishes	2	17	0	17	18	25	43	35	25	60
Portable plastic carp hatchery	2	36	9	45	7	4	11	43	13	56
Pen culture of fish and prawn	2	19	12	31	2	0	2	21	12	33
Shrimp farming	2	10	13	23	2	0	2	12	13	25
Edible oyster farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Fish processing and value addition	3	0	47	47	0	0	0	0	47	47
Others (Brackishwater fish, Murrel, Tilapia & Catfish culture)	4	83	5	88	14	0	14	97	5	102
Total	**4**	**81**	**160**	**241**	**11**	**0**	**11**	**92**	**160**	**252**
IX Production of Inputs at site										
Seed Production	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Bio-agents production	0	0	0	0	0	0	0	0	0	0
Bio-pesticides production	0	0	0	0	0	0	0	0	0	0
Bio-fertilizer production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	0	0	0	0	0	0	0	0	0	0

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Organic manures production	0	0	0	0	0	0	0	0	0	0
Production of fry and fingerlings	0	0	0	0	0	0	0	0	0	0
Production of Bee-colonies and wax sheets	0	0	0	0	0	0	0	0	0	0
Small tools and implements	0	0	0	0	0	0	0	0	0	0
Production of livestock feed and fodder	0	0	0	0	0	0	0	0	0	0
Production of Fish feed	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Apiculture	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
X Capacity Building and Group Dynamics										
Leadership development	0	0	0	0	0	0	0	0	0	0
Group dynamics	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Mobilization of social capital	0	0	0	0	0	0	0	0	0	0
Entrepreneurial development of farmers/youths	0	0	0	0	0	0	0	0	0	0
WTO and IPR issues	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
XI Agro-forestry										
Production technologies	0	0	0	0	0	0	0	0	0	0
Nursery management	0	0	0	0	0	0	0	0	0	0
Integrated Farming Systems	0	0	0	0	0	0	0	0	0	0
Others (pl specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**188**	**2063**	**2250**	**4313**	**739**	**2312**	**3051**	**2802**	**4562**	**7364**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	0	0	0	0	0	0	0	0	0	0
Training and pruning of orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation of vegetable crops	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Integrated farming	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Vermi-culture	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Bee-keeping	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Value addition	1	6	5	11	4	2	6	10	7	17
Small scale processing	0	0	0	0	0	0	0	0	0	0
Post Harvest Technology	0	0	0	0	0	0	0	0	0	0

Tailoring and Stitching	0	0	0	0	0	0	0	0	0	0
Rural Crafts	1	2	6	8	1	1	2	3	7	10
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Dairying	3	55	4	59	11	1	12	66	5	71
Sheep and goat rearing	3	271	27	298	34	7	41	305	34	339
Quail farming	1	21	5	26	1	0	1	22	5	27
Piggery	2	31	5	36	6	0	6	37	5	42
Rabbit farming	1	21	5	26	0	0	0	21	5	26
Poultry production	3	214	58	272	33	16	49	247	74	321
Ornamental fisheries	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Freshwater prawn culture	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Cold water fisheries	0	0	0	0	0	0	0	0	0	0
Fish harvest and processing technology	0	0	0	0	0	0	0	0	0	0
Fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**15**	**621**	**115**	**736**	**90**	**27**	**117**	**711**	**142**	**853**

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
Nursery Management of Horticulture crops	0	0	0	0	0	0	0	0	0	0
Training and pruning of orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation of vegetable crops	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Integrated farming	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Vermi-culture	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Bee-keeping	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Value addition	0	0	0	0	0	0	0	0	0	0
Small scale processing	1	11	7	18	3	4	7	14	11	25
Post Harvest Technology	1	5	6	11	3	1	4	8	7	15
Tailoring and Stitching	0	0	0	0	0	0	0	0	0	0
Rural Crafts	0	0	0	0	0	0	0	0	0	0
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Dairying	8	168	129	297	10	0	10	178	129	307
Sheep and goat rearing	3	0	179	179	0	262	262	0	441	441
Quail farming	0	0	0	0	0	0	0	0	0	0
Piggery	0	0	0	0	0	0	0	0	0	0
Rabbit farming	0	0	0	0	0	0	0	0	0	0
Poultry production	11	198	226	424	10	91	101	208	317	525
Ornamental fisheries	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Freshwater prawn culture	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0

Pearl culture	0	0	0	0	0	0	0	0	0	0
Cold water fisheries	0	0	0	0	0	0	0	0	0	0
Fish harvest and processing technology	0	0	0	0	0	0	0	0	0	0
Fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**24**	**382**	**547**	**929**	**26**	**358**	**384**	**408**	**905**	**1313**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	0	0	0	0	0	0	0	0	0	0
Training and pruning of orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation of vegetable crops	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Integrated farming	0	0	0	0	0	0	0	0	0	0
Seed production	0	0	0	0	0	0	0	0	0	0
Production of organic inputs	0	0	0	0	0	0	0	0	0	0
Planting material production	0	0	0	0	0	0	0	0	0	0
Vermi-culture	0	0	0	0	0	0	0	0	0	0
Mushroom Production	0	0	0	0	0	0	0	0	0	0
Bee-keeping	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Value addition	1	6	5	11	4	2	6	10	7	17
Small scale processing	1	11	7	18	3	4	7	14	11	25
Post Harvest Technology	1	5	6	11	3	1	4	8	7	15
Tailoring and Stitching										
Rural Crafts	1	2	6	8	1	1	2	3	7	10
Production of quality animal products	0	0	0	0	0	0	0	0	0	0
Dairying	11	223	133	356	21	1	22	244	134	378
Sheep and goat rearing	6	271	206	477	34	269	303	305	475	780
Quail farming	1	21	5	26	1	0	1	22	5	27
Piggery	2	31	5	36	6	0	6	37	5	42
Rabbit farming	1	21	5	26	0	0	0	21	5	26
Poultry production	14	412	284	696	43	107	150	455	391	846
Ornamental fisheries	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Freshwater prawn culture	0	0	0	0	0	0	0	0	0	0
Shrimp farming	0	0	0	0	0	0	0	0	0	0
Pearl culture	0	0	0	0	0	0	0	0	0	0
Cold water fisheries	0	0	0	0	0	0	0	0	0	0
Fish harvest and processing technology	0	0	0	0	0	0	0	0	0	0
Fry and fingerling rearing	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**36**	**981**	**644**	**1625**	**106**	**378**	**484**	**1087**	**1022**	**2109**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient management	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0
Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	1	41	53	94	0	0	0	41	53	94
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0
Household food security	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**1**	**41**	**53**	**94**	**0**	**0**	**0**	**41**	**53**	**94**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient management	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0

Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	0	0	0	0	0	0	0	0	0	0
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0
Household food security	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	0	0	0	0	0	0	0	0	0	0
Integrated Nutrient management	0	0	0	0	0	0	0	0	0	0
Rejuvenation of old orchards	0	0	0	0	0	0	0	0	0	0
Protected cultivation technology	0	0	0	0	0	0	0	0	0	0
Production and use of organic inputs	0	0	0	0	0	0	0	0	0	0
Care and maintenance of farm machinery and implements	0	0	0	0	0	0	0	0	0	0
Gender mainstreaming through SHGs	0	0	0	0	0	0	0	0	0	0
Formation and Management of SHGs	0	0	0	0	0	0	0	0	0	0
Women and Child care	0	0	0	0	0	0	0	0	0	0
Low cost and nutrient efficient diet designing	0	0	0	0	0	0	0	0	0	0
Group Dynamics and farmers organization	0	0	0	0	0	0	0	0	0	0
Information networking among farmers	0	0	0	0	0	0	0	0	0	0
Capacity building for ICT application	0	0	0	0	0	0	0	0	0	0
Management in farm animals	1	41	53	94	0	0	0	41	53	94
Livestock feed and fodder production	0	0	0	0	0	0	0	0	0	0
Household food security	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	**1**	**41**	**53**	**94**	**0**	**0**	**0**	**41**	**53**	**94**

Table. Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Increasing production and productivity of crops	2	27	1	28	12	0	12	39	1	40
Commercial production of vegetables	0	0	0	0	0	0	0	0	0	0
Production and value addition										**0**
Fruit Plants	0	0	0	0	0	0	0	0	0	0
Ornamental plants	0	0	0	0	0	0	0	0	0	0
Spices crops	0	0	0	0	0	0	0	0	0	0
Soil health and fertility management	0	0	0	0	0	0	0	0	0	0
Production of Inputs at site	0	0	0	0	0	0	0	0	0	0
Methods of protective cultivation	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	**2**	**27**	**1**	**28**	**12**	**0**	**12**	**39**	**1**	**40**
Post harvest technology and value addition										
Processing and value addition	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Farm machinery										
Farm machinery, tools and implements	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries										
Livestock production and management	1	57	123	180	99	225	324	156	348	504
Animal Nutrition Management	1	49	258	307	79	116	195	128	374	502
Animal Disease Management	0	0	0	0	0	0	0	0	0	0
Fisheries Nutrition	0	0	0	0	0	0	0	0	0	0
Fisheries Management	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	**2**	**106**	**381**	**487**	**178**	**341**	**519**	**284**	**722**	**1006**
Home Science										
Household nutritional security	0	0	0	0	0	0	0	0	0	0
Economic empowerment of women	0	0	0	0	0	0	0	0	0	0
Drudgery reduction of women	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Agricultural Extension										
CapacityBuilding and Group Dynamics	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	**4**	**133**	**382**	**515**	**190**	**341**	**531**	**323**	**723**	**1046**

Name of sponsoring agencies involved

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial floriculture	0	0	0	0	0	0	0	0	0	0
Commercial fruit production	0	0	0	0	0	0	0	0	0	0
Commercial vegetable production	0	0	0	0	0	0	0	0	0	0
Integrated crop management	0	0	0	0	0	0	0	0	0	0
Organic farming	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Post harvest technology and value addition										
Value addition	0	0	0	0	0	0	0	0	0	0

Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Dairy farming	0	0	0	0	0	0	0	0	0	0
Composite fish culture	0	0	0	0	0	0	0	0	0	0
Sheep and goat rearing	0	0	0	0	0	0	0	0	0	0
Piggery	0	0	0	0	0	0	0	0	0	0
Poultry farming	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Income generation activities										
Vermicomposting	0	0	0	0	0	0	0	0	0	0
Production of bio-agents, bio-pesticides,	0	0	0	0	0	0	0	0	0	0
bio-fertilizers etc.	0	0	0	0	0	0	0	0	0	0
Repair and maintenance of farm machinery	0	0	0	0	0	0	0	0	0	0
and implements	0	0	0	0	0	0	0	0	0	0
Rural Crafts	1	2	6	8	1	3	4	3	9	12
Seed production	0	0	0	0	0	0	0	0	0	0
Sericulture	0	0	0	0	0	0	0	0	0	0
Mushroom cultivation	0	0	0	0	0	0	0	0	0	0
Nursery, grafting etc.	0	0	0	0	0	0	0	0	0	0
Tailoring, stitching, embroidery, dying etc.	0	0	0	0	0	0	0	0	0	0
Agril. para-workers, para-vet training	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	1	2	6	8	1	3	4	3	9	12
Agricultural Extension										
Capacity building and group dynamics	0	0	0	0	0	0	0	0	0	0
Others (pl. specify)	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	**1**	**2**	**6**	**8**	**1**	**3**	**4**	**3**	**9**	**12**

3. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	63	12962	115	**13077**
Diagnostic visits	78	511	10	**521**
Field Day	9	169	0	**169**
Group discussions	3	124	7	**131**
Kisan Ghosthi	3	368	0	**368**
Film Show	57	2212	14	**2226**
Self -help groups	3	138	10	**148**
Kisan Mela	3	1150	50	**1200**
Exhibition	22	4259	118	**4377**
Scientists' visit to farmers field	66	85	3	**88**
Plant/animal health camps	3	187	15	**202**
Farm Science Club	1	27	0	**27**
Ex-trainees Sammelan	0	0	0	**0**
Farmers' seminar/workshop	3	236	10	**246**
Method Demonstrations	56	1410	31	**1441**
Celebration of important days	30	2718	51	**2769**
Special day celebration	4	435	30	**465**
Exposure visits	25	798	24	**822**
Others (Guest lecture)	66	1647	2	**1649**
Total	**495**	**29436**	**490**	**29926**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	3
Extension Literature	10
Newspaper coverage	9
Popular articles	27
Radio Talks	44
TV Talks	35
Animal health amps (Number of animals treated)	1 (142)
Others (Research article)	26
Total	**155**

Messages sent

MOBILE ADVISORY SERVICES THROUGH MKISAN PORTAL

(While filling mobile advisory data, only fill numbers under 'Type of messages'. Please don't add any text)

No of registered farmers:1837

Types of Messages	Type 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	2	1837	49	30527	0	0	0	0	0	0	5	3115	56	35519
Voice & Text both	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Messages	**2**	**1837**	**49**	**30527**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**3115**	56	35519
Total farmers Benefitted	**2**	**1837**	**49**	**30527**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**3115**	56	35519

MOBILE ADVISORY SERVICES THROUGH OTHERS

(While filling mobile advisory data, only fill numbers under 'Type of messages'. Please don't add any text)

No of registered farmers:

Types of Messages	Type 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														
Voice only														
Voice & Text both														
Total Messages														
Total farmers Benefitted														

6. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS

Types of Activities	No. of Activities	Number of Participants	Related crop/livestock technology
Gosthies	0	0	-
Lectures organised	0	0	-
Exhibition	0	0	-
Film show	0	0	-
Fair	0	0	-
Farm Visit	0	0	-
Diagnostic Practicals	0	0	-
Distribution of Literature (No.)	0	0	-
Distribution of Seed (q)	0	0	-
Distribution of Planting materials (No.)	0	0	-
Bio Product distribution (Kg)	0	0	-
Bio Fertilizers (q)	0	0	-
Distribution of fingerlings	0	0	-
Distribution of Livestock specimen (No.)	0	0	-
Total number of farmers visited the technology week	0	0	-

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

Production of seeds by the KVKs (give quantity of seed in quintals only)

Enterprise	Name of crop	Variety	Seed produced		Seed supplied to farmers						Seed supplied to oth agencies	
			Quantity (q)	Value (Rs)	Free seed			Priced seed			Quantity (q)	Value (I
					Quantity (q)	No of farmers	Value (Rs)	Quantity (q)	No of farmers	Value (Rs)		
CEREALS	Wheat											
	Paddy											
	Maize											
	Sorghum (Jowar/Cholam/Jonna)											
	Pearl Millet (Bajra/Cumbu/Sajja)											
	Finger millet (Ragi)											
	Foxtail Millet (Korra/Thenai)											
	Barnyard Millet (Kuthiraivali/Udalu, Kodisama)											
	Kodo Millet (Varagu/Arikelu)											
	Little Millet (Samai/Samalu)											
	Proso Millet (Pani Varagu/variga)											
	Barley											
	Brown top millet											
	Total Cereals											
OIL SEEDS	Groundnut											
	Sunflower											
	Safflower											
	Sesame											
	Castor											
	Niger											
	Rapeseed & Mustard											
	Linseed											

	Soybean											
	Total Oil Seeds											
PULSES	Pigeon pea (Red Gram)											
	Chick pea (Bengal gram)											
	Green gram											
	Black gram											
	Cowpea											
	Horse gram											
	Lentil											
	Rajma											
	Field pea											
	Total Pulses											
VEGATABLES	Bhendi (Okra/Ladies finger)											
seeds	French bean											
	Radish											
	Onion											
	Chilli (Seeds)											
	Tomato (Seeds)											
	Brinjal (Seeds)											
	Gourds (snake, bottle, bitter, ribbed etc)											
	Pumpkin											
	Vegetable Pea											
	Total Vegetables											
FRUITS												
seeds												
	Total Fruits											
FLOWERS												
seeds												
	Total Flowers											
SPICES	Turmeric rhizome											
seeds	Coriander											
	Garlic											
	Fenugreek											
	Total Spices											
FODDER	Fodder Sorghum	Co.Fs.29	520	208000				520	220	208000		
	Fodder Sorghum	Co.Fs.31	105	42000				105	45	42000		
seeds	Fodder Cowpea											
	Desmanthus/Hedge lucerne											
	Lucerne											
	Stylo											
	Alfalfa											
	Berseem											
	Total Fodder		**625**	**250000**				**625**	**265**	**250000**		
Special Planting	Potato											
Materials	Small onion bulb											

(Quintals)	Sugarcane setts (if sold by weight)											
	Total special planting materials											
GREEN	Dhaincha											
MANURE	Sesbania											
seeds	Sunnhemp											
	Other Green manure seeds											
	Total Green Menure seeds											
COMMERCIAL	Cotton											
CROPS	Other Commercial Crop seeds											
seeds	Other Commercial Crop seeds											
	Total Commercial Crops											
	Grand Total of Seeds		625	250000				625	265	250000		

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	
					Free supply			Priced				
			Quantity (Nos)	Value (Rs)	Quantity (Nos)	No of farmers	Value (Rs)	Quantity (Nos)	No of farmers	Value (Rs)	Quantity (Nos)	Value (Rs)
VEGATABLES	Brinjal seedlings		5100	5100	0	0	0	5100	62	5100	0	0
	Chilli seedlings		4500	4500	0	0	0	4500	38	4500	0	0
	Tomato seedlings		600	600	0	0	0	600	15	600	0	0
	Cabbage seedlings		0	0	0	0	0	0	0	0	0	0
	Cauliflower seedlings		0	0	0	0	0	0	0	0	0	0
	Broccoli seedlings		0	0	0	0	0	0	0	0	0	0
	Capsicum seedlings		0	0	0	0	0	0	0	0	0	0
	Onion seedlings		0	0	0	0	0	0	0	0	0	0
	Onion bulb (aggregatum)		0	0	0	0	0	0	0	0	0	0
	Cucumber seedlings		0	0	0	0	0	0	0	0	0	0
	Bottle gourd seedlings		0	0	0	0	0	0	0	0	0	0
	Bitter gourd seedlings		0	0	0	0	0	0	0	0	0	0
	Sponge gourd seedlings		0	0	0	0	0	0	0	0	0	0
	Pumpkin seedlings		0	0	0	0	0	0	0	0	0	0
	Knolkhole seedlings		0	0	0	0	0	0	0	0	0	0
	Summer Squash seedlings		0	0	0	0	0	0	0	0	0	0
	Marrow seedlings		0	0	0	0	0	0	0	0	0	0
	Total Vegetable planting materials		**10200**	**10200**	**0**	**0**	**0**	**10200**	**115**	**10200**	**0**	**0**
FRUITS	Aonla		0	0	0	0	0	0	0	0	0	0
grafts	Litchi		0	0	0	0	0	0	0	0	0	0
seedlings and	Mango		0	0	0	0	0	0	0	0	0	0
cuttings	Papaya seedlings		0	0	0	0	0	0	0	0	0	0
	Guava		0	0	0	0	0	0	0	0	0	0

	Jack fruit		0	0	0	0	0	0	0	0	0	0
	Beal		0	0	0	0	0	0	0	0	0	0
	Citrus		0	0	0	0	0	0	0	0	0	0
	Lemon		0	0	0	0	0	0	0	0	0	0
	Mausammi		0	0	0	0	0	0	0	0	0	0
	Karonda		0	0	0	0	0	0	0	0	0	0
	Pomegranate		0	0	0	0	0	0	0	0	0	0
	Custard apple		0	0	0	0	0	0	0	0	0	0
	Apple		0	0	0	0	0	0	0	0	0	0
	Ber		0	0	0	0	0	0	0	0	0	0
	Jamun		0	0	0	0	0	0	0	0	0	0
	Pear		0	0	0	0	0	0	0	0	0	0
	Peach		0	0	0	0	0	0	0	0	0	0
	Kiwi		0	0	0	0	0	0	0	0	0	0
	Apricot		0	0	0	0	0	0	0	0	0	0
	Walnut		0	0	0	0	0	0	0	0	0	0
	Banana succers		0	0	0	0	0	0	0	0	0	0
	Banana seedlings		0	0	0	0	0	0	0	0	0	0
	Total Fruit planting materials		0	0	0	0	0	0	0	0	0	0
FLOWERS AND	Marigold		0	0	0	0	0	0	0	0	0	0
ORNAMENTAL	Tube Rose (Rajnigandha)		0	0	0	0	0	0	0	0	0	0
PLANTS	Chrysanthmum		0	0	0	0	0	0	0	0	0	0
seedlings and	Rose		0	0	0	0	0	0	0	0	0	0
cuttings	Hibiscus (Gudhal)		0	0	0	0	0	0	0	0	0	0
	Crotan plant		0	0	0	0	0	0	0	0	0	0
	Calandula (Pot marigold)		0	0	0	0	0	0	0	0	0	0
	Vervina		0	0	0	0	0	0	0	0	0	0
	Pendula		0	0	0	0	0	0	0	0	0	0
	Baugain villia		0	0	0	0	0	0	0	0	0	0
	Durenta Golden		0	0	0	0	0	0	0	0	0	0
	Gladiolus		0	0	0	0	0	0	0	0	0	0
	Harshingar		0	0	0	0	0	0	0	0	0	0
	Glardia		0	0	0	0	0	0	0	0	0	0
	Ficus benajamina		0	0	0	0	0	0	0	0	0	0
	Red erration		0	0	0	0	0	0	0	0	0	0
	Poppy		0	0	0	0	0	0	0	0	0	0
	Sweet William		0	0	0	0	0	0	0	0	0	0
	Chirayata		0	0	0	0	0	0	0	0	0	0
	Ashok		0	0	0	0	0	0	0	0	0	0
	Total Flowers and Ornamental planting materials		0	0	0	0	0	0	0	0	0	0
MEDICINAL	Lemon Grass		0	0	0	0	0	0	0	0	0	0
AND	Aswagandha		0	0	0	0	0	0	0	0	0	0
AROMATIC	Satawar		0	0	0	0	0	0	0	0	0	0
PLANTS	Mahogani		0	0	0	0	0	0	0	0	0	0

seedlings and	Turmeric		0	0	0	0	0	0	0	0	0	0
cuttings	Medicinal Plants		535	25075	535	47	0	0	0	0	0	0
	Total medicinal and aromatic		**535**	**25075**	**535**	**47**	**0**	**0**	**0**	**0**	**0**	**0**
FORESTRY	Poplar		0	0	0	0	0	0	0	0	0	0
AND	Arjun		0	0	0	0	0	0	0	0	0	0
PLANTATION	Siris		0	0	0	0	0	0	0	0	0	0
CROPS	Catechu		0	0	0	0	0	0	0	0	0	0
seedlings and	Chironji		0	0	0	0	0	0	0	0	0	0
cuttings	Mahua		0	0	0	0	0	0	0	0	0	0
	Karanj		0	0	0	0	0	0	0	0	0	0
	Neem		0	0	0	0	0	0	0	0	0	0
	Teak		0	0	0	0	0	0	0	0	0	0
	Eucalyptus		0	0	0	0	0	0	0	0	0	0
	Saguan		0	0	0	0	0	0	0	0	0	0
	Samel		0	0	0	0	0	0	0	0	0	0
	Casuarina		0	0	0	0	0	0	0	0	0	0
	Coconut seedlings		0	0	0	0	0	0	0	0	0	0
	Arecanut seedlings		0	0	0	0	0	0	0	0	0	0
	Total forest and plantation crops		0	0	0	0	0	0	0	0	0	0
FODDER	Napier grass		0	0	0	0	0	0	0	0	0	0
slips	Para grass		0	0	0	0	0	0	0	0	0	0
	Super Napier grass		0	0	0	0	0	0	0	0	0	0
	Sudax Chery		0	0	0	0	0	0	0	0	0	0
	Cumbu Napier grass (Co 3, Co 4, Co 5 etc)		264000	132000	0	0	0	264000	214	132000	0	0
	Other fodder plants (Specify)		0	0	0	0	0	0	0	0	0	0
	Total Fodder crops		**264000**	**132000**	**0**	**0**	**0**	**264000**	**214**	**132000**	**0**	0
SPICES	Turmeric		0	0	0	0	0	0	0	0	0	0
	Coriander		0	0	0	0	0	0	0	0	0	0
	Garlic		0	0	0	0	0	0	0	0	0	0
	Fenugreek		0	0	0	0	0	0	0	0	0	0
	Other Fibre Crops (Specify - seed only)		0	0	0	0	0	0	0	0	0	0
	Total Spices		0	0	0	0	0	0	0	0	0	0
	Fodder Sorghum		0	0	0	0	0	0	0	0	0	0
	Fodder Cowpea		0	0	0	0	0	0	0	0	0	0
	Desmanthus/Hedge lucerne		0	0	0	0	0	0	0	0	0	0
	Lucerne		0	0	0	0	0	0	0	0	0	0
	Stylo		0	0	0	0	0	0	0	0	0	0
	Alfalfa		0	0	0	0	0	0	0	0	0	0
	Berseem		0	0	0	0	0	0	0	0	0	0
	Other Fodder Seeds		0	0	0	0	0	0	0	0	0	0
	Total Fodder		0	0	0	0	0	0	0	0	0	0
GREEN	Dhaincha		0	0	0	0	0	0	0	0	0	0
MANURE	Sesbania		0	0	0	0	0	0	0	0	0	0
	Sunnhemp		0	0	0	0	0	0	0	0	0	0

	Other Green manure seeds		0	0	0	0	0	0	0	0	0	0
	Total Green Menure seeds		0	0	0	0	0	0	0	0	0	0
Special Planting	Mushroom spawn		0	0	0	0	0	0	0	0	0	0
Materials	Sugarcane setts (If sold by Numbers)		0	0	0	0	0	0	0	0	0	0
sold by numbers	Other seed materials (sold by numbers)		0	0	0	0	0	0	0	0	0	0
	Total special planting materials		0	0	0	0	0	0	0	0	0	0
Any other planting material sold by numbers	Paddy seedlings		0	0	0	0	0	0	0	0	0	0
	Any other (specify)		0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0
	Total Commercial Crops		0	0	0	0	0	0	0	0	0	0
	Grand Total of Seeds		**824205**	**501825**	**1605**	**141**	**0**	**822600**	**987**	**426600**	**0**	**0**

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**	
					Free distribution			**Priced**				
			Quantity (kg)	**Value (Rs)**	**Quantity (kgs)**	**No of farmers**	**Value (Rs)**	**Quantity (kgs)**	**No of farmers**	**Value (Rs)**	**Quantity (kgs)**	**Value (Rs)**
Bio-fertilizers	Rhyzobium		0	0	0	0	0	0	0	0	0	0
	Azotobacter		0	0	0	0	0	0	0	0	0	0
	Acetobacter		0	0	0	0	0	0	0	0	0	0
	Azospirillum		0	0	0	0	0	0	0	0	0	0
	BGA		0	0	0	0	0	0	0	0	0	0
	Azolla		284	5680	0	0	0	284	164	5680	0	0
	VAM		0	0	0	0	0	0	0	0	0	0
	Phosphate solubilizers		0	0	0	0	0	0	0	0	0	0
	Potassium Solubilizers		0	0	0	0	0	0	0	0	0	0
	Sulphur Solubilizers		0	0	0	0	0	0	0	0	0	0
	Waste decomposer		0	0	0	0	0	0	0	0	0	0
	Bio composting culture		0	0	0	0	0	0	0	0	0	0
	Other Effective Micro Organisms (Specify)		0	0	0	0	0	0	0	0	0	0
	Total bio-fertilizers		284	5680	0	0	0	284	164	5680	**0**	**0**
Bio-inputs	Panchakavya		600	60000	0	0	0	600	285	60000	0	0
	Vermicompost		2459	24590	0	0	0	2459	68	24590	0	0
	Earthworms for vermicompost		0	0	0	0	0	0	0	0	0	0
	Compost		0	0	0	0	0	0	0	0	0	0
	Other bio-inputs (specify)		0	0	0	0	0	0	0	0	0	0
	Total bio-inputs		0	0	0	0	0	0	0	0	0	0
Bio-Pesticides	*Beauveria bassiana*		0	0	0	0	0	0	0	0	0	0
for insect pests	*Trichoderma viridi*		0	0	0	0	0	0	0	0	0	0
Fungal diseases	*Metarrhizium anisoplae*		0	0	0	0	0	0	0	0	0	0
Nematodes	*Psuedomonas*		0	0	0	0	0	0	0	0	0	0

	EPN		0	0	0	0	0	0	0	0	0	0
	Trichogramma (Unit)		0	0	0	0	0	0	0	0	0	0
	Insect Parasitoids (Specify)		0	0	0	0	0	0	0	0	0	0
	Insect Parasitoids (Specify)		0	0	0	0	0	0	0	0	0	0
	Insect Parasitoids (Specify)		0	0	0	0	0	0	0	0	0	0
	Insect Parasitoids (Specify)		0	0	0	0	0	0	0	0	0	0
	Insect Parasitoids (Specify)		0	0	0	0	0	0	0	0	0	0
	Neem Soap		0	0	0	0	0	0	0	0	0	0
	Pongamia Soap		0	0	0	0	0	0	0	0	0	0
	Botanicals (Specify)		0	0	0	0	0	0	0	0	0	0
	Total bio-pesticides		600	60000	0	0	0	600	285	60000	0	0
	Total bio-products		**2052**	**137040**	**0**	**0**	**0**	**2052**	**1062**	**137040**	0	0

Production of livestock materials

Category	Name of the livestock/fish/feed	Variety/improved species name/Commercial name (if any)	Production		Supplied to farmers						Supplied to other agencies	
					Free distribution			Priced				
			Quantity (No)	Value (Rs)	Quantity (No)	No of farmers	Value (Rs)	Quantity (No)	No of farmers	Value (Rs)	Quantity (No)	Value (Rs)
Dairy cattle	Cow		0	0	0	0	0	0	0	0	0	0
	Cow		0	0	0	0	0	0	0	0	0	0
	Cow Calf		0	0	0	0	0	0	0	0	0	0
	Cow Calf		0	0	0	0	0	0	0	0	0	0
	Bufallo		0	0	0	0	0	0	0	0	0	0
	Bufallo		0	0	0	0	0	0	0	0	0	0
	Bufallo calf		0	0	0	0	0	0	0	0	0	0
	Bufallo calf		0	0	0	0	0	0	0	0	0	0
	Other diary cattle (Specify)		0	0	0	0	0	0	0	0	0	0
	Total Dairy Cattle		0	0	0	0	0	0	0	0	0	0
Goat and Sheep	Goat	Cross bred goats	0	0	0	0	0	0	0	0	0	0
	Goat		0	0	0	0	0	0	0	0	0	0
	Goat		0	0	0	0	0	0	0	0	0	0
	Sheep		0	0	0	0	0	0	0	0	0	0
	Sheep		0	0	0	0	0	0	0	0	0	0
	Sheep		0	0	0	0	0	0	0	0	0	0
	Lamb		0	0	0	0	0	0	0	0	0	0
	Lamb		0	0	0	0	0	0	0	0	0	0
	Other goat/sheep (Specify)		0	0	0	0	0	0	0	0	0	0
	Total goat and sheep		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Poultry	Desi bird											
	Desi bird		0	0	0	0	0	0	0	0	0	0
	Desi bird chicks		1623	77550	0	0	0	1623	18	77550	0	0
	Desi bird chicks		0	0	0	0	0	0	0	0	0	0
	Broiler		0	0	0	0	0	0	0	0	0	0

	Layer		0	0	0	0	0	0	0	0	0	0
	Dual purpose birds	Grama priya	15	2250	0	0	0	15	8	2250	0	0
	Japanese Quail	Nandanam quail chicks	200	1200	0	0	0	200	2	1200	0	0
	Turkey		0	0	0	0	0	0	0	0	0	0
	Emu		0	0	0	0	0	0	0	0	0	0
	Ducks	Pekin	9	1800	0	0	0	9	4	1800	0	0
	Desi bird egg	Cross bred	885	4425	0	0	0	885	59	4425	0	0
	Broiler hybrid egg		0	0	0	0	0	0	0	0	0	0
	Layer egg (breeding)		0	0	0	0	0	0	0	0	0	0
	Egg (Commercial)		0	0	0	0	0	0	0	0	0	0
	Quail egg (breeding)		0	0	0	0	0	0	0	0	0	0
	Quail egg (commercial)		0	0	0	0	0	0	0	0	0	0
	Others under poultry (specify)		0	0	0	0	0	0	0	0	0	0
	Total poultry		**2732**	**87225**	**0**	**0**	**0**	**2732**	**91**	**87225**	**0**	**0**
PIGGERY	*Pigs adults*		0	0	0	0	0	0	0	0	0	0
	Piglets		0	0	0	0	0	0	0	0	0	0
	Pork		0	0	0	0	0	0	0	0	0	0
	Others related to piggery)		0	0	0	0	0	0	0	0	0	0
	Total Piggery		0	0	0	0	0	0	0	0	0	0
	Grant Total Livestock		**2732**	**87225**	**0**	**0**	**0**	**2732**	**91**	**87225**	**0**	**0**
FISHERY	Fingerlings of Fish type (specify)	Ornamental fishes	1732	4800	0	0	0	1732	48	4800	0	**0**
	Fish meat (kg)		0	0	0	0	0	0	0	0	0	0
	Total Fishery		**1732**	**4800**	**0**	**0**	**0**	**1732**	**48**	**4800**	**0**	**0**
	Grand Total Livestock and fishery		**4464**	**92025**				**4464**	**139**	**92025**	0	0
Others			0	0	0	0	0	0	0	0	0	0
Farm Implements	**Paddy Drum Seeder**		14	67200	0	0	0	14	14	67200	0	0
	Cono Weeder		27	35100	0	0	0	27	27	35100	0	0
	Dry Land Weeder		18	86000	0	0	0	18	18	86000	0	0
	Bandicoot Trap		89	53400	0	0	0	89	89	53400	0	0
	Groundnut		2	8000	0	0	0	2	2	8000	0	0
	Amla Seed Remover		1	2000	0	0	0	1	1	2000	0	0
	Total		**151**	**251700**	0	0	0	**151**	**151**	**251700**	0	0

8. 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	189	76	265	24	
Soil Health Cards (SHC)	189	76			47,270

Samples	No.of Samples	No.of Farmers	No.of Villages	Amount realized (Rs.)
Water	81	56	13	16,200
Plant	-			
Manure	-			
Others (pl.specify)	-			
Total	81	56	13	16,200

9. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
08.02.2019	17

Note: please attach the proceedings of sac meeting along with the list of participants

MINUTES OF 21ST SCIENTIFIC ADVISORY COMMITTEE MEETING HELD ON 08.02.2019

MEMBERS PRESENT

1. **Dr. C. Balachandran**
   Vice - Chancellor
   Tamil Nadu Veterinary and Animal Sciences University
   Madhavaram Milk Colony
   Chennai – 600 051

2. **Dr.Y.G.Prasad**
   Director
   ICAR-Agricultural Technology Application Research Institute (ATARI)
   Zone-X, CRIDA Campus, Santoshnagar,
   Hyderabad – 500 059

3. **Dr.D.Ramasamy**
   Director of Extension Education i/c
   Tamil Nadu Veterinary and Animal Sciences University
   Madhavaram Milk Colony, Chennai - 600 051

4. **Dr. N.K.Sudeep Kumar**
   Professor and Head
   University Publication Division
   Tamil Nadu Veterinary and Animal Sciences University
   Madhavaram Milk Colony, Chennai - 600 051

5. **Dr.A.Baskaran**
   Principal Scientist
   ICAR-Agricultural Technology Application Research Institute (ATARI)
   Zone-X, CRIDA Campus, Santoshnagar,
   Hyderabad – 500 059

6. **Dr. K. Velmurugan**
Professor and Head
ICAR-Krishi Vigyan Kendra, Kattupakkam – 603 203
Kancheepuram district

7. **Dr. S.T.Selvan**
Professor and Head
Post Graduate Research Institute in Animal Sciences
Tamil Nadu Veterinary and Animal Sciences University
Kattupakkam – 603 203

8. **Dr. P.Ravisankar**
Principal Scientist,
ICAR –Central Institute of Brackishwater Aquaculture
75, Santhome High Road, R.A.Puram, Chennai-600 028

9. **Dr.M.Senthilkumar (Representative of DEE, TNAU, Coimbatore)**
Nodal Officer-KVKs and Assistant Professor,
Tamil Nadu Agricultural University,
Coimbatore

10. **Dr.D.Gurumurthy,**
Regional Joint Director,
State Department of Animal Husbandry,
Kancheepuram District

11. **Thiru.P.Immanuel**
Deputy Director of Horticulture,
State Department of Horticulture,
Panjupettai, Kancheepuram District

12. **Th.C.Dineshkumar**,
Sub –Inspector of Fisheries,
State Department of Fisheries
75, Santhome High Road, R.A.Puram, Chennai-600 028

13. **Mrs. K.Vijay Lakshmi,**
Assistant Engineer,
State Department of Agriculture Engineering,
Nandanam, Chennai-600 028

14. **Tmt. K.Banumathi,**
Child Development Project Officer,
Kattankulathur
Kancheepuram District

15. **Th.V. Palani**
Progressive Farmer & Farmer representative
Govindavadi village,
Kancheepuram District

16. **Th. K. Baskaran**
Progressive Farmer & Farmer representative
Kilmaruvathur village,
Kancheepuram District

17. **Th. V. Manoharan**
Progressive Farmer & Farmer representative
Pattumudaiyarkuppam village,
Kancheepuram District

Minutes of 21th SAC held on 08.02.2019
Suggestion & Recommendation of the committee members

I. Mrs. P.Goldy Premavathy, Deputy Director, State Dept. of Agriculture

1) Pest repellent crops like Desmanthus need to be popularized among farmers because it is recommended to control fall army worm in maize
2) Prevention and awareness programme on control of fall army worm may be conducted in Kancheepuram District for the benefit of farmers
3) Paddy variety Co-52 good quality seeds are in deficit which can be made available to the farmers
4) Groundnut seed separator and Dibbler are needed for farmers to take up cultivation.
5) Pulse harvester along with seed separator have to be demonstrated for the benefit of farmers
6) Wild boar and Monkey menance management technology have to be addressed to the farmers.
7) IFS Model may be created to suite urban farmers.

II. Dr. P.Ravisankar, Principal Scientist, CIBA, Chennai

1) Training programme to be conducted in Fish rearing through Tribal sub plan scheme and infrastructure may be created.
2) Business incubation work can be jointly organize with CIBA for the benefit of farmers in Kancheepuram District
3) DFI Technologies to be supplemented to the adopted village farmers in Kancheepuram district
4) More number of training programmes may be conducted related to peri-urban area to enhance economic independence
5) Technologies suitable for making Packaging materials from the Agricultural waste materials like Banana, Jute, betel nut products for income generation to the farmers
6) Fish marketing in model villages may be organized with support from CIBA on Hygienic practices, market model and cleanliness may be popularized.

III. Dr.D.Gurumurthy, Regional Joint Director, State Dept. of Animal Husbandry

1) Training and Interaction may be organized on unconventional feeding materials for the dairy farmers
2) Training programme on Breeding management in Goat and Dairy may be organized for free Goat and Dairy Scheme beneficiaries.
3) Disease management Training to be given to livestock farmers at field
4) Azolla & hydrophonic fodder cultivation may be promoted as cost effective technique in livestock farming

IV. Mr.P. Immanuel, Deputy Director, State Dept. of Horticulture

1) Training is required on Value addition of Fruits and Vegetables to prevent wastage during post harvest handling and to promote nutrition management among women and children
2) Organic methods and package of practices are required for pest and disease management suitable for urban areas
3) Training on Protected cultivation 4 structures suitable for Kancheepuram district may be popularized
4) Vertical gardening technology may be promoted among urban farmers
5) Commercial production technologies of cucumber with new varieties may be popularized
6) Crop diversification in fruit crops and new varieties like Dragon fruit may be popularized
7) TNAU released papaya varieties need to be popularized since Red lady variety seeds are not available in required quantity.
8) Taro cultivation training programmes may be organized for profitable vegetable production

V. Mrs. K.Vijay Lakshmi, Assistant Engineer, State Dept. of Agri-Engineering

1) Conduct awareness programme on Farm ponds to water harvesting and motivate farmers to develop farm ponds.
2) Motivate farmers to utilize renewable energy like errection of Solar pumps through subsidy schemes
3) Agricultural implements and Co-operative farming through utilizing subsidy schemes are to be informed to beneficiaries

VI. Th.K.Bhaskaran, Progressive farmer, Kilmaruvathur village

1) Training on value addition of Water melon is required during seasonal time in order to avoid market loss to the farmers

VII. Th. V.Manoharan, Progressive farmer, Pattumudaiyarkuppam village

1) Combined Harvester for maize is required during harvesting time and same may be demonstrated
2) Assistance may be rendered to farmers to market sunflower seeds
3) Seed procurement & sale price need to be revised for pulse crop under Seed hub programme
4) Fodder crop Seeds need to be made available through PPP mode
5) Grafted Brinjal with good quality variety need to be demonstrated through FLD scheme
6) Training on Lotus cultivation techniques may be popularize among farmers as crop diversification for profitable farming

VIII. Th. V.Palani, Progressive farmer, Govindavadi village

1) Training on Irrigation management in paddy (paddy cultivation through drip irrigation) have to be organized for effective utilization of water resources
2) Management of livestock during summer need to be given

3) Production of Organic inputs and awareness on organic farming training programme need to be conducted
4) Maintenance and servicing of Agricultural Implements training need to be given to the farmers.

IX. Dr.S.T.Selvan, Professor and Head, PGRIAS, Kattupakkam

1) More number of IFS training programme have to be conducted
2) Training on farm economics and livestock farm management have to be organized
3) Training on farm waste management have to be organized

X. Dr.A.Baskaran, Principal Scientist, ATARI, Hyderabad

1) Government subsidy schemes should be informed to all the beneficiaries in the District by collecting from all line departments.
2) Bankable projects should be prepared and given to the farmers for availing financial aids from financing institution
3) Awareness programme on Organic registration procedures have to be conducted for the willing farmers
4) Impact assessment have to be studied and reasons for not adopting technologies need to record

XI. Th.C.Dineshkumar, Sub –Inspector of Fisheries, State Dept. of Fisheries

1) Integrated farming system (IFS) training and a model farm with successful farmer may be developed
2) Training programme may be included about fish feeds and fish marketing like live fish marketing/ harvested fishes to be promoted through hands on training
3) Cage culture of fish farming have to be demonstrated with training
4) Training on fish waste utilization and decomposition technologies need to be conducted

XII. Tmt.K.Banumathi, Project Officer, CDPO, ICTR Block, Kancheepuram

1) Nutrition gardens should be developed in Anganwadi centers of all block in the District.
2) Nutrition Education to Anganwadi workers are need to be conducted.

XIII Dr.M.Senthilkumar, Nodal Officer-KVKs and Assistant Professor, TNAU, Coimbatore (Representative of DEE, TNAU, Coimbatore)

1) Developmental activities may be carried along with other Line Departments in DFI Village.
2) Agriculture related Trainings may be conducted for College Students rural youth for self employment

XIV Dr.N.K.Sudeepkumar, Professor and Head, University Press,TANUVAS

1) Documentation of Technologies to be done.
2) Price fixation for Pulses to be done for Seed Hub Project.
3) Mushroom mother spawn production training to be given to farmers.
4) Research article to be published by staff members.

5) Farm machineries exhibition need to be conducted.
6) Successful farmers to be called as Co-trainers for training programme to motivate participants
7) Training on Balanced nutrition for children and women need to be conducted.
8) ATMA Exposure visit have to organize for the benefit of farmers

XV Dr.D.Ramasamy, DEE i/c, TANUVAS

1) Percentage of adoption of KVK technologies among farmers should be assessed.
2) Programmes on Agricultural Tourism for city people to rural area need to be arranged.

XVI Dr.Y.G.Prasad, Director, ICAR-ATARI, Hyderabad

1) KVK is to be operated as single window delivery system
2) Each subject matter specialist should produce impact assessment on source of technologies (TNAU / CIBA/TANUVAS).
3) Physical Expenditure and outcome need to be submitted for the programme conducted (Outcome based budgeting & expenditure)
4) Survey and impact analysis have to be done with successful farmers

XVII Dr.C.Balachandran, Vice-Chancellor, TANUVAS

1) Technologies suitable for short term & long tern condition in the fields of Animals Husbandry and Agriculture need to be given emphasize
2) Alternate farming technologies like lotus cultivation trainings need to be arranged
3) Farmer producer organizations (FPOs) are to be utilized for transferring newer technologies
4) FPOs may be used for data collection in percentage of technology adoption
5) Proposals related to Peri urban areas need to be concentrated
6) Database creation to be made
7) Weather data have to be given to the farmers & weather forecast for farming system need to be done.

10. PUBLICATIONS

Publications in journals

S. No	Authors	Year	Title	Journal
1	K.Devaki, P.Mathialagan, VE. Sabarathnam, P.Kumaravel and S.M.K.Karthickeyan	Vol.7(6):1732-1736, June 2018	Validation of Ethno veterinary medicines used for anoestrum treatment in cattle	Int.J.curr.Microbiol.App.Sci. (International Journal of Current Microbiology and Applied Sciences)
2	K. Devaki P.Mathialagan VE.Sabarathnam and P.Kumaravel	December'2018 (19.12.2018 & 20.12.2018) Page no.193-194	Validation study on different Ethno veterinary medicines used for wound treatment in backyard poultry	National Conference on "Native Chicken Production:Opportunities for Conservation,Productivity Enhancement and Commercial Exploitation in view of Global Warming"
3	K. Devaki	December'2018 (19.12.2018 & 20.12.2018) Page no.193-194	Front line demonstration on Nandanam-IV chick production through custom hatching	National Conference on "Native Chicken Production:Opportunities for Conservation,Productivity Enhancement and Commercial Exploitation in view of Global Warming"
4	K. Devaki and K.Velmurugan	December'2018 (19.12.2018 & 20.12.2018) Page no.193-194	Effectiveness of On-Campus Training Programme on Knowledge Enhancement of KVK trainees regarding Native Chicken Rearing	National Conference on "Native Chicken Production:Opportunities for Conservation,Productivity Enhancement and Commercial Exploitation in view of Global Warming"
5	K. Devaki and K.Velmurugan	December'2018 (19.12.2018 & 20.12.2018) Page no.193-194	Knowledge Level of ATMA Beneficiaries on Native Chicken Production	National Conference on "Native Chicken Production:Opportunities for Conservation,Productivity Enhancement and Commercial Exploitation in view of Global Warming"
6	Selvaraj.T and Dineshkumar.D	11(22) 2018-pp 3074-3078	Assessment of Productivity Potential and Pedological Investigation in subbalapuram series Soils of Thirunelveli district of Tamilnadu	Trends in biosciences
7	Selvaraj.T and Dineshkumar.D	11(22)2018-pp 3114- 3118	Screening of Different genotypes of brinjal for sodicity stress Tolerance under laboratoryconditions	Trends in biosciences
8	Selvaraj.T and Dineshkumar.D	10(12)2018-pp 6373- 6370	Application of IPCC model in methane emission potential evaluation in selected landfills of Tamilnadu	Trends in biosciences
9	Selvaraj.T and Dineshkumar.D	11(27)2018-pp 0974-8431	Evaluation of Differential methods of Estimation of SOM	Trends in biosciences
10	Selvaraj.T and Dineshkumar.D	11(27)2018-pp 0974-8431	Evaluation of Azolla and BGA for N-Substitution towards yield improvement in Rice varieties	Trends in biosciences
11	Dr.M.Vimalarani & Dr.K.Velmurugan	Feb 2019	A study on post harvest processing to enhance milling quality of Foxtail millet	National Level Conference on Indian Traditional & functional foods(NUTRIZIONE-19) pp 76-81, ISBN 978-93-84136-15-4

12	Dr.M.Vimalarani Dr.P.G.Thenmozhi & Dr.K.Velmurugan	Feb 2019	Development, Evaluation & storage study of pirandai pickle(Cissus quadrongularis)	Vulavar Valviyalil Kalnadai Maruthuva Arivial-Kalnadai Nallam Published by Naam Thamizhar publishers ISBN-978-93-88697-63-7 pp 639-643
13	Dr.P.G.Thenmozhi Dr.M.Vimalarani & Dr.S.Senthurkumaran	Feb 2019	A study on Development of flavoured and Herbal paneer to increase keeping quality	Vulavar Valviyalil Kalnadai Maruthuva Arivial-Kalnadai Urpathi Published by Naam Thamizhar publishers ISBN-978-93-88697-63-7 pp 93-98
14	Dr.Gayathri Subbiah and Dr.Velmurugan	2018	"Eco friendly pest and disease management practices in Groundnut"	Accepted for publication in Journal of Biological control.
15	Sivakumar K, Kannappan S,	Vol.I(1): 631-638, 2019	Effect of marine algae *Ulva fasciata* against luminescent disease causing *Vibrio harveyi* in shrimp larviculture	International Tamil Conference on "Role of Veterinary science in farmers Livelihood" held at MVC, Chennai-7 on 22.2.2019 &23.02.2019.

Other publications

S. No	Item	Year	Authors	Title	Publisher
1	Books				
2	Book chapters / manuals	2019	Dr.M.Vimalarani	Value added Duck products	Compiled & Edited by Dr.S.T.Selvan Dr.K.Premavalli Dr.S.Prakash PGRIAS, TANUVAS
		2019	Dr.M.Vimalarani	Value added Duck Meat products	Compiled & Edited by Dr.S.T.Selvan Dr.K.Premavalli Dr.S.Prakash PGRIAS, TANUVAS
3	Training manuals				
		2018	K.Velmurugan, M.Siddharth, M.Vimalarani, K.Devaki, T.Selvaraj, Gayathri Subbiah & K.Sivakumar	Recent Technologies in Agriculture and its allied subjects.	KVK, Kattupakkam
		2019	K.Sivakumar K.Velmurugan	Carp culture technologies	KVK, Kattupakkam
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	2018	Dr.M.Vimalarani & K.Velmurugan	Preparation of Herbal and spiced paneer for income generation	Vanigamani pp 44-45
			Vimalarani.M. and Velmurugan .K	Nutritional products from groundnut	Pachai Bhoomi pp12-13
			Vimalarani.M. and Velmurugan .K	Nutritious food for summer season	Vanigamani pp 64-66
			Vimalarani.M. and Velmurugan .K	Medicinal properties of Traditional paddy varieties	Pachai Bhoomi pp 32-33
			Vimalarani.M. and Velmurugan .K	Value added products from Elandai (Jujube)	Vanigamani pp 60-61
			Vimalarani.M. and Velmurugan .K	Medicinal properties of Nutmeg	Vanigamani pp 48-49

			Vimalarani.M. and Velmurugan .K	Medicinal properties of coffee	Vanigamani pp 52-53
			Vimalarani.M. and Velmurugan .K	Medicinal properties of Moringa leaves	Pachai Bhoomi pp 19
			Vimalarani.M. and Velmurugan .K	Medicinal properties of Honey	Vanigamani pp 40-41
			Vimalarani.M. and Velmurugan .K	Traditional Rice snacks for Deepavali	Vanigamani pp 88 -89
			Vimalarani.M. and Velmurugan .K	Millets cakes	Vanigamani pp 46 -48
			Vimalarani.M. and Velmurugan .K	Medicinal properties of pumpkin	Vanigamani January 2019 Page 60 – 62
			Vimalarani.M. and Velmurugan .K	Valuable products from Palmyra tree	Pachai Bhoomi February 2019 Page 34 - 35
			Dr.M.Siddharth Dr.M.Vimalarani Dr.K.Velmurugan	Millet processing equipments	Pachai Bohoom i
			Dr.M.Siddharth Dr.K.Velmurugan	Amla seed extractor	Pachai Bohoomi
			Dr.M.Siddharth Dr.K.Velmurugan	Power weeder	Pachai Bohoomi
			Dr.M.Siddharth Dr.K.Velmurugan	Tomato seed extractor	Pachai Bohoomi
			Vimalarani.M. and Velmurugan .K	Value added Gongura products	Vanigamani February 2019 Page 54 - 56
		2018	Selvaraj.T and Azagudurai.S	Abstracts of the international conference on sustainable energy technologies	International conference,BDU-ICSET 2018 PP93-87526-181
		2018	Selvaraj.T and Azagudurai.S	Abstracts of the international conference on sustainable energy technologies	International conference,BDU-ICSET 2018 PP93-87526-198
		2018	Selvaraj.T and Dineshkumar,D	Global cleanup congress	Global cleanup congress-proced.
		Jan’ 2018	Dr. K.Devaki & Dr.P.R.Nisha	Parasitological control in goats	Pacchai Bhoomi
		Feb’ 2018	Dr. K.Devaki & Dr.K.Velmurugan	Nutritional supplements to improve milk production in dairy animals	Pacchai Bhoomi
		April’2018	Dr. K.Devaki & Dr.K.Velmurugan	Scientific Pig farming	Pacchai Bhoomi
		June’2018	Dr. K.Devaki & Dr.K.Velmurugan	Summer Management in Livestock farming	Pacchai Bhoomi
		October’2018	Dr. K.Devaki & Dr.K.Velmurugan	FMD incidence in rainy and winter season	Pachhai Bhoomi
		December’2018	Dr. K.Devaki & Dr.K.Velmurugan	Winter management in Livestock farming	Pachhai Bhoomi
		2018	Dr.Gayathri Subbiah	Intercrops for pest management	Pachai Bhoomi

		June, 2018: 8(2)	Sivakumar K Velmurugan K	Freshwater Prawn culture	PachaiBoomi
		August, 2018: 19(10)	Sivakumar K Velmurugan K	Getting more profit from JayantiRohu fish culture	Thamilazhavivasayeullagam
		July to September 2018: 11(3)	Sivakumar K	Off-campus training – Fish culture in community ponds	ICAR-KVK, Kancheepuram Newsletter
		December, 2018: 8(8)	Sivakumar K &Velmurugan K	Brackishwater prawn culture	PachaiBoomi
5	Technical bulletin/ Folders	2018	M.Vimalarani and K.Velmurugan	Value added Tomato products	KVK, Kattupakkam
			T Selvaraj K.Velmurugan	World Soil Day	KVK, Kattupakkam
			T Selvaraj K.Velmurugan	Vermicompost techniques	KVK, Kattupakkam
			K. Devaki and K.Velmurugan	Bovine infertility control measures	KVK, Kattupakkam
			K. Devaki and K.Velmurugan	Dairy cows management	KVK, Kattupakkam
			K. Devaki and K.Velmurugan	Azolla supplementation in dairy cattle	KVK, Kattupakkam
			K. Devaki and K.Velmurugan	FMD control measures in winter season	KVK, Kattupakkam
			K. Devaki and K.Velmurugan	Rabbit farming	KVK, Kattupakkam
6	Reports				
7	others				

Newsletter/Magazine

Name of News letter/Magazine	Frequency	No. of Copies printed for distribution
KVK Newsletter	Quarterly	300

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

Trainings attended in the relevant field of specialization (Mention Title, duration, Institution, location etc.)

Name of the staff	Title	Dates	Duration	Organized by
Dr. K. Devaki	International Symposium on "Animals in Disaster"	26.09.18 & 27.09.18	2 days	MVC.Chennai-7
Dr.Gayathri Subbiah	Biological control – Approaches and application	27-29 Sep'18	3 days	National Bureau of Agricultural Insects Resources,Bengaluru
Dr. K. Devaki	Winter school on "Advances in Agricultural Extension and Advisory services"	01.11.18 to 21.11.18	21 days	MANAGE, Hyderabad

Dr.K.Velmurugan	Interactive workshop on Agro forestry	09.11.18	One day	FC & RI, TNAU Mettupalayam
Dr T Selvaraj	Capacity building Programme for growing tree outsidethe forest	14.11.18 to 16.11.18	3 days	IFGTB-Coimbatore
Dr.M.Vimalarani	4 th National Scientific Tamil Conference	19.11.18 & 20.11.18	Two days	Tamilnadu Jayalalitha Fisheries University Vanianchavadi
Dr.Gayathri Subbiah	Scientific Tamil Conference	19.11.18 & 20.11.18	2 days	Tamil Nadu Dr.J.Jayalalitha Fisheries University ,Nagapattinam
Dr.K.Sivakumar	Winter school on Recent advances in Fishery Biology Techniques for Biodiversity evaluation and conservation	01.12.2018 to 21.12.2018	21 days	ICAR-Central Marine Fisheries Research Institute, Kochi
Dr.T.Selvaraj	Attended ICAR short course training-10 days	10.12.18 to 19.12.18	10 days	IISS-Bhopal
Dr. K. Devaki	National Conference on Native Chicken Production	19.12.18 to 20.12.18	2 days	MVC.Chennai-7
Dr.M.Vimalarani	National Conference on Zero Hunger Challenges-Strategies for Food security	20.12.18 & 21.12.18	Two days	College of Food & Dairy technology, Koduvalli
Dr.Gayathri Subbiah	Cutting edge approaches for sustainable plant disease management and Ensuring farmers profit.	21-23 Dec'2018	3 days	National Research Centre for Banana, Tiruchirapalli
Dr.K.Velmurugan	Public finance management system	07.01.19 & 08.01.19	2 days	TNAU Coimbatore
Dr. K. Devaki,	Ethno Veterinary Practices in Livestock and Poultry	11.01.18 & 12.01.18	2 days	MVC.Chennai-7
Dr. K. Devaki	Preparation of model Bankable Projects for livestock and Poultry farms	29.01.19 to 31.01.19	3 days	VC&RI, Namakkal
Dr. K. Devaki	NE zonal Workshop on Problems and needs of livestock farmers	21.02.19	1 day	PGRIAS,Kattupakkam
Dr. K. Devaki	International Tamil Conference on "Role of Veterinary science in farmers Livelihood" .	22.02.19 and 23.02.19	2 days	MVC,Chennai-7
Dr. K. Devaki	Training on "Ethno veterinary practices in livestock and poultry farming"	25.02.19	1 day	VC&RI,Orathanadu
Dr. K. Devaki	To attend Pre- action Plan Meeting	23.03.19	1 day	TNAU,Coimbatore

11. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM

Activities conducted				
No. of Training programmes	**No. of Demonstration s**	**No. of plant materials produced**	**Visit by farmers (No.)**	**Visit by officials (No.)**
-	-	-	-	-

12. INTERVENTIONS ON DISASTER MANAGEMENT/UNSEASONAL RAINFALL/HAILSTORM/COLD WAVES ETC

Introduction of alternate crops/varieties

Crops/cultivars	Area (ha)	Extent of damage	Recovery of damage through KVK initiatives if any
-	-	-	-
Total	-	-	-

Major area coverage under alternate crops/varieties

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

Farmers-scientists interaction on livestock management

Livestock components	Number of interactions	No.of participants
Cattle, Buffaloes, poultry, sheep, goat, pig and rabbit	2	84
Total		

Animal health camps organised

Number of camps	No.of animals	No.of farmers
1	152	98
Total	**152**	**98**

Seed distribution in drought hit states

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

Large scale adoption of resource conservation technologies

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

Awareness campaign

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

13. Awards/rewards 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
Received Best popular article award	2018	During 4 th National Scientific Tamil Conference on 20.11.2018 conducted at Tamil Nadu Dr. Jayalalitha Fisheries University.	Dr.M.Vimalarani
Received Best paper presentation award	2018	National conference on "Native Chicken Production"- 19.12.2018 and 20.12.2018 at MVC, Chennai-7	Dr.K.Devaki

Special Attainments & Achievements of Practical Importance (patents, technologies, varieties, products, concepts, methodologies etc.)				
Category	Title	Year	Individual/ Collaborative	Additional Details/Information

14. Details of sponsored projects/programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Scientific Management of Bovine Breeding through technological backstopping	TNLDA,Chennai	To educate rural dairy farmers on newer techiniques to improve Milk production in dairy cows	1 day	58824
2	Reproductive management of Dairy Cattle for Profitable Dairying	TNLDA,Chennai		1 day	58824
3	Friends of Coconut Tree	Coconut Development Board	To train the unemployed youths/farmers on coconut cultivation and harvesting using coconut tree climber	24-29 December 2018	56500
4	Friends of Coconut Tree	Coconut Development Board	To train the unemployed youths/farmers on coconut cultivation and harvesting using coconut tree climber	3-8 February 2019	56500
				Total	**230648**

Please attach detailed report of each project/programme separately

Report on Phase – I Farmers Orientation Training Programme on "Scientific Management of Bovine Breeding through Technological Backstopping" held on 07.09.2018 at Madurantagam

Sponsored by

Tamil Nadu Livestock Development Agency

(Under National Programme for Bovine Breeding/ Rashtriya Gokul Mission)

A Famers Orientation Phase I training programme on "Scientific Management of Bovine Breeding through technological backstopping" was conducted by Krishi Vigyan Kendra, Kattupakkam at R.A.R.Thirumana Mandapam, Madurantagam taluk, Kancheepuram district on 07.09.2018 during the year 2017-18 for the beneficiaries of Kancheepuram district. This training programme was sponsored by the Tamil Nadu Livestock Development Agency, under National programme for Bovine Breeding to the beneficiaries for the year 2017-18. Five hundred and four beneficiaries of Kancheepuram district were benefitted by this training programme.

The Phase-I farmer orientation training programme was conducted by Krishi Vigyan Kendra, Kattupakkam on 07.09.2018. Dr.K.Velmurugan , Professor and Head, KVK, Kattupakkam welcomed the gathering and delivered the inaugural address to the beneficiaries and explained the activities of KVK to the participated beneficiaries. Dr.K.S.SundarRajan, Additional Director and Chief Executive Officer, Tamil Nadu Livestock Development Agency (TNLDA), Chennai-35 delivered presidential address and distributed training certificates and inputs such as Mineral mixture, Mineral Blocks, Teat cups with KMNO4 powder,CO-4 & CO-5 fodder slips, TANUVAS Teat Protect spray and TANUVAS SCC kit to the progressive dairy farmers. Dr.B.Gurumurthy, Regional Joint Director, Department of Animal Husbandry, Kancheepuram District and Dr.Jayanthi, Assistant Director,TNLDA delivered Special address to the participants. Besides Dr.H.Gopi, Professor and Head, PGRIAS, Kattupakkam, Dr.K.Arivazhagan, Deputy Director, Animal Husbandry department, Madurantagam division, Kancheepuram and Dr.S.Sathish, Manager, KTDCMPU (Kancheepuram, Thiruvallur District Co-operative Milk Producers' Union Ltd.,) and Th.V.S.Parivallal, Consultant, Hand in Hand also participated and graced the occasion. NGO such as Hand in Hand and KTDCMPU mobilised the dairy farmers of Kancheepuram district to this training programme.

As per the training schedule, various guest lectures were delivered by various resource persons on 07.09.2018. Guest lecture on Technological interventions to combat infertility in Bovines was delivered by Dr.K.Krishna kumar, Professor, Post Graduate Research Institute in Animal Sciences, Kattupakkam . Guest lecture on Farmers economic impact on Bovine infertility was delivered by Dr.K.Velmurugan , Professor and Head, KVK, Kattupakkam. Importance of Artificial insemination and oestrus synchronization in dairy cows was delivered by Dr.M.Murugan, Professor and Head, VUTRC, Melmaruvathur. Guest lecture on Newer technologies involved in dairy farming was delivered by Dr. K. Devaki, Assistant Professor, KVK, Kattupakkam. Besides Guest lecture and Practical Demonstration on Hydroponics and Azolla in dairy farming was delivered by Dr.S.Gunasekaran, Assistant Professor, IAN, Kattupakkam on 07.09.2018. A total of 504 farmers participated and benefitted by this training programme.

Topics covered :

1. Technological interventions to combat infertility in Bovines - Dr.K.Krishna Kumar, Professor, Post Graduate Research Institute in Animal Sciences, Kattupakkam
2. Farmers economic impact on Bovine infertility- Dr.K.Velmurugan , Professor and Head, KVK, Kattupakkam.
3. Importance of Artificial insemination and oestrus synchronization in dairy cows - Dr.M.Murugan, Professor and Head, VUTRC, Melmaruvathur
4. Newer technologies involved in dairy farming - Dr.K.Devaki, Assistant Professor, KVK, Kattupakkam

5. Silage making and Alternate feed supplementation in dairy cattle and practical demonstration on Hydroponics and Azolla - Dr.S.Gunasekaran, Assistant Professor, IAN, Kattupakkam.

Fund Allotted : Rs. 58824/-

Report on Phase – II Farmers Orientation Training Programme on "Reproductive Management of Dairy cattle for Profitable Dairying" held on 18.12.2018 at Walajabad
Sponsored by
Tamil Nadu Livestock Development Agency
(Under National Programme for Bovine Breeding/ Rashtriya Gokul Mission)

A Famers Orientation Phase - II training programme on "Reproductive Management of Dairy cattle for Profitable Dairying" was conducted by Krishi Vigyan Kendra, Kattupakkam at C.M.Thirumana Mahal, Walajabad, Kancheepuram district on 18.12.2018 during the year 2017-18 for the beneficiaries of Kancheepuram district. This training programme was sponsored by the Tamil Nadu Livestock Development Agency, under National programme for Bovine Breeding to the beneficiaries for the year 2017-18. Five hundred and two beneficiaries of Kancheepuram district were benefitted by this training programme.

The Phase-II farmer orientation training programme was conducted by Krishi Vigyan Kendra, Kattupakkam on 18.12.2018. Dr.K.Velmurugan, Professor and Head, KVK, Kattupakkam welcomed the gathering and delivered the inaugural address to the beneficiaries and explained the activities of KVK to the participated beneficiaries. Dr.K.S.SundarRajan, Chief Executive Officer, Tamil Nadu Livestock Development Agency (TNLDA), Chennai-35 delivered presidential address and distributed training certificates and inputs such as Mineral mixture, Mineral Blocks, Teat cups with KMNO4 powder,CO-4 & CO-5 fodder slips, TANUVAS Teat Protect spray and TANUVAS SCC kit to the progressive dairy farmers. Dr.B.Gurumurthy, Regional Joint Director, Department of Animal Husbandry, Kancheepuram District and Dr.Jayanthi, Assistant Director,TNLDA delivered Special address to the participants. Besides Dr.S.T.Selvan. Professor and Head, PGRIAS, Kattupakkam, Dr.Alagesan, Deputy Director, Animal Husbandry department, Kancheepuram division, Dr. Narayanan, ADIU, Kancheepuram district and Dr.S.Sathish, Manager, KTDCMPU (Kancheepuram, Thiruvallur District Co-operative Milk Producers' Union Ltd.,) and Th.Dinakaran, staff, Hand in Hand also participated and graced the occasion. NGO such as Hand in Hand and KTDCMPU mobilised the dairy farmers of Kancheepuram district to this training programme.

As per the training schedule, various guest lectures were delivered by various resource persons on 18.12.2018. Guest lecture on "A calf a year - Oestrus synchronization and infertility in Bovines" was delivered by Dr.A.Methai, Assistant Professor, Veterinary Peripheral Hospital Campus, Madhavaram, Chennai. Guest lecture on "Importance of green fodder feeding in dairy animals" was delivered by Dr.K.Velmurugan , Professor and Head, KVK, Kattupakkam. Guest lecture on "Principles of Dairy Animal Management" was delivered by Dr.K.Devaki, Assistant Professor, KVK, Kattupakkam. Guest lecture on "Health care management of dairy cattle" was delivered by Dr.M.Vijayabharathi, Associate Professor, CBBU, PGRIAS, Kattupakkam. Besides guest lecture on "Intensive feeding management to improve reproduction in bovines" and Practical Demonstration on Hydroponics and Azolla in dairy farming was delivered by Dr.S.Gunasekaran, Assistant Professor, IAN, Kattupakkam on 18.12.2018. A total of 502 farmers participated and benefitted by this training programme.

Topics covered :

1 A calf a year - Oestrus synchronization and infertility in Bovines - Dr.A.Methai, Assistant Professor, Veterinary Peripheral Hospital Campus, Madhavaram, Chennai.

2 Importance of green fodder feeding in dairy animals - Dr.K.Velmurugan , Professor and Head, KVK, Kattupakkam.
3 Principles of Dairy Animal Management - Dr.K.Devaki, Assistant Professor, KVK, Kattupakkam
4. Health care management of dairy cattle - Dr.M.Vijayabharathi, Associate Professor, CBBU, PGRIAS, Kattupakkam.
5. Intensive feeding management to improve reproduction in bovines along with practical demonstration on Hydroponics and Azolla - Dr.S.Gunasekaran, Assistant Professor, IAN, Kattupakkam.

Fund Alloted : Rs. 58824/-

Report on Training Programme of "FRIENDS OF COCONUT TREE" sponsored by Coconut Development Board, Chennai

Batch – I (24.12.2018 to 29.12.2018)

A Training programme on "FRIENDS OF COCONUT TREE" was jointly organized by Krishi Vigyan Kendra, Kattupakkam and Coconut Development Board, Chennai during 24.12.2018 to 29.12.2018 at KVK, Kattupakkam. This programme was conducted by Dr.M.Siddharth, Professor (Agricultural Engineering) of KVK, Kancheepuram. The inaugural function was held on the forenoon of 24.12.2018 and the special address was given by Th.A.Jayapandi, Coconut development Board, Chennai. There were 20 participants in the training programme including one women participant from Kancheepuram District. During the training programme various cultivation and production aspect of Coconut was emphasized to the trainees. There were given hands on training on the Coconut Tree Climbing using the Climbing Device which was given at free of cost to all the trainees by the Coconut Development Board. The competition on Coconut Tree Climbing was held on 28.12.2018 and the first, Second and Third prize winners were selected. The Valedictory function was held on 29.12.2018 and the Certificates to the trainees were distributed by Th.Rajeev Bhusan Prasad, Director, Coconut Development Board, Chennai. Dr.K.Velmurugan, Professor and Head, KVK, Kattupakkam emphasized that the trainees should practice the coconut tree climbing in the field after successful completion of the training programme.

Fund Alloted : Rs. 56500/-

Report on Training Programme of "FRIENDS OF COCONUT TREE" sponsored by Coconut Development Board, Chennai

Batch – II (03.02.2019 to 08.02.2019)

A Training programme on "FRIENDS OF COCONUT TREE" was jointly organized by Krishi Vigyan Kendra, Kattupakkam and Coconut Development Board, Chennai during 03.02.2019 to 08.02.2019 at KVK, Kattupakkam. This programme was conducted by Dr.M.Siddharth, Professor (Agricultural Engineering) of KVK, Kancheepuram. There were 20 participants from Kancheepuram District in this training programme. During the training programme various cultivation and production aspect of Coconut was emphasized to the trainees. They were given hands on training on the Coconut Tree Climbing using the Climbing Device which was given at free of cost to all the trainees by the Coconut Development Board. The competition on Coconut Tree Climbing was held on 07.02.2019 and the first, Second and Third prize winners were selected and a cash award of Rs.500/- for first prize, Rs.300/- for second prize and Rs.200/- for third prize were given during the Valedictory function held on 08.02.2019. During

Valedictory function Honorable Vice Chancellor, TANUVAS distributed the Certificates and a Coconut Tree Climbing Device to the trainees. Dr.Y.G.Prasad, Director, ATARI, ICAR, Hyderabad, Dr.D.Ramasamy, Director of Extension Education, TANUVAS and Dr.N.K.Sudheepkumar, Professod and Head, University Publication division, TANUVAS graced the occasion. Dr.K.Velmurugan, Professor and Head, KVK, Kattupakkam emphasized that the trainees should practice the coconut tree climbing in the field after successful completion of the training programme during proposing vote of thanks.

Fund Alloted : Rs. 56500/-

15. Success stories

1. **SUCCESS STORY OF FARMER CULTIVATED CO-52 PADDY**

2. Problem Statement

Sooradimangalam a Village in Kancheepuram District, the farmers of this belt are fond of Cultivating Paddy,in Rabi season every Year. But the farmers are regularly facing problem of Lodging of paddy and low yield by cultivating the local varieties. Through the water source is sufficient for Paddy cultivation, still the climatic condition, during the season and farmers Unscientific Cultivation method, be the reason for incidence of pest an diseases. The farmer who achieved highest yield is Mr.Rajendiran is a standing example for the success. Rabi Season is the Main season for cultivation of Paddy.The deviation of Rainfall is narrow compared to previous years. Highest rainfall received during the end of the period of precipitation is having its highest impacts in the promotion of yield.

3. Plan:

By conducting survey in different blocks of Kancheepuram district, the intensity of problem was ascertained. To alleviate the problem, elite CO 52 seeds which are resistant to pest and diseases were supplied to farmers of Sooradimangalam under Front Line Demonstration project 2018 – 19.Concurrently PRA, training conducted in selected Villages in Kancheepuram District. Elite variety of CO-52 seeds distributed to 10 farmers of the village to cultivate the same in 1 acre each in the specified fields. Frequent visit and advisories entered to the farmers then and there.

Interventions	Number of Programmes	Remarks
PRA	1	Assessment
Field visit	4	For Implementation and Evaluation
Field day	1	Feed back Evalauation
Elite Seed Distribution	1	Two blocks covered
Seed Treatment	1	Demonstration
Crop Stand Evaluation	2	Yield Assessment

4. Output:

By Introduction of this elite CO-52 Variety under Front Line Demonstration project. Farmers have all got disease and pest free harvest. In an average farmers obtained a BCR of 1.6 by cultivating this variety following the specified technologies such as SRI, seed treatment with Bio fertilizers and Bio pesticides. The introduction if Integrated Pest Management and

Integrated Crop Management methods considerably reduced the external application of critical inputs.

5. Outcome:

The technology introduction of elite variety spread over to the adjoining areas viz Sirukaveripakkam and also other blocks in Kancheepuramdistrict.The farmers received higher returns for the amount invested,

6. Impact:

Right now the cultivation CO-52 Variety increased from 110 to 285 ha. Because of introduction of new variety which shown extreme resistance to incidence of Pest and Diseases

2 . SUCCESS STORY OF FARMER CULTIVATED DHARANI 13 GROUNDNUT VARIETY

1. Problem Statement

Nallur Village in Thirukazukundram Block of Kancheepuram District, the farmers are fond of Cultivating groundnut,at Rabi season of every Year, But the farmers regularly facing problem of pest incidence and lack of availability of elite varieties. Through the water source is sufficient for groundnut cultivation, still the climatic condition, during the season and farmers Unscientific Cultivation method, be the reason for incidence of pest an diseases. The farmer who achieved highest yield is Mr.Ezumalai is a standing example for the success.Rabi Season is the Main season for cultivation of groundnut.The deviation of Rainfall is narrow compared to previous years. Highest rainfall received during the end of the period of precipation is having its highest impacts in the promotion of yield .

2. Plan:

By conducting survey in different blocks of Kancheepuram district, the intensity of problem was ascertained. To alleviate the problem, elite Dharani-13 seeds which resistant to pest and diseases were supplied to farmers of Nallur village under Cluster Front Line Demonstration project 2018 – 19.Concurrently PRA, training conducted in selected Village in Thirukazukundram Block of Kancheepuram District. Elite variety of Groundnut seeds distributed to 50 farmers to cultivate the same in 30 cents in the specified fields. Frequent visit and advisories entered to the farmers then and there.

Interventions	Number of Programmes	Remarks
PRA	1	Assessment
Field visit	2	For Implementation and Evaluation
Elite Seed Distribution	1	Two blocks covered
Line Sowing and Solar light trap demonstration	1	Demonstration
Crop Stand Evaluation	4	Yield Assessment

3. Output:

By Introduction of this elite Dharani-13 Variety under Cluster Front Line Demonstration project. Farmers have all got disease and pest free harvest. In an average farmers obtained a BCR of 2.5 by cultivating this variety following the specified technologies such as line sowing, seed treatment with Bio fertilizers and Bio pesticides. The introduction if Integrated Pest

Management and Integrated Crop Management methods considerably reduced the external application of critical inputs.

4. **Outcome:**

The technology introduction of elite variety spread over to the adjoining areas .The farmers received higher returns for the amount invested.

5. **Impact:**

Right now the cultivation of d Green gram increased from 310 to 468 ha. Because of introduction of new variety which shown extreme resistance to incidence of Pest and Diseases

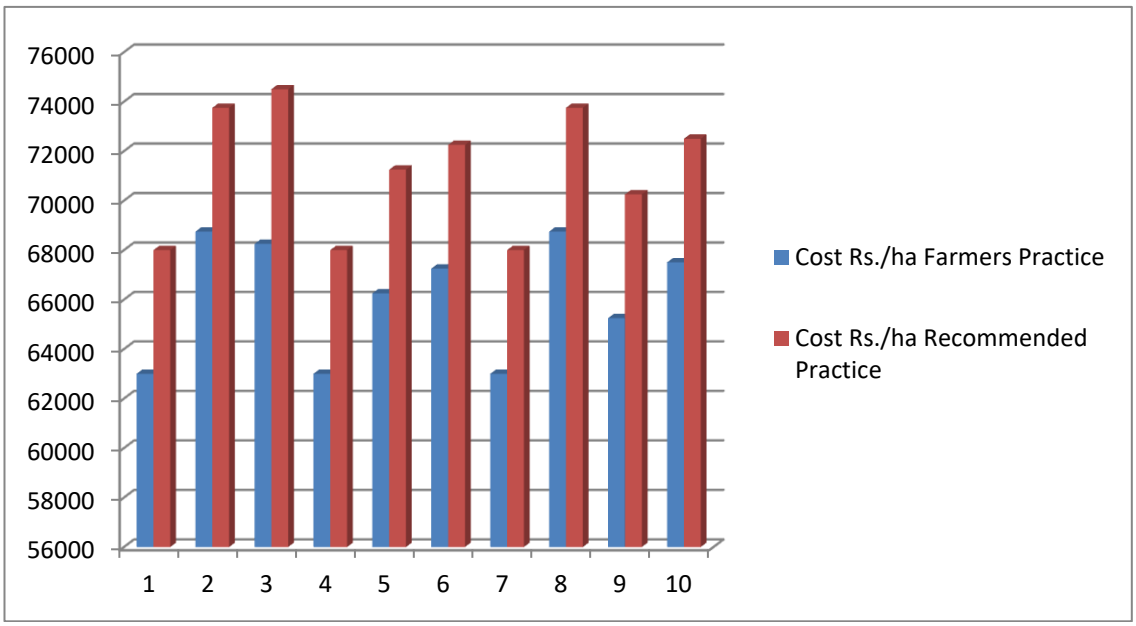
3.Rhinoceros beetle management in Coconut – Demonstration (FLD)

1. Coconut is the major plantation crop grown in Kancheepuram district covering nearly 250ha area. The farmers are facing problems of yield loss due to pest and disease attack. The major pest includes Rhinoceros beetle, red palm weevil and skipper. This results in yield loss (30%) and increased cost of cultivation along with excess use of chemicals to control them. The diagnostic field visits were made in areas where Coconut is grown. Meeting, discussions with farmers and department officials were made to sort out the problem

2. During Farmers – Scientist interaction meeting approaches which in economically viable and socially acceptable pest management practices were explained to the farmers. In order to implement the package of practices, FLD programme was conducted in Sooradimangalam (DFI village) and Vallaithoopu of Sooradimangalam panchayat of Thirukalukundram block in 10 farmers' field. Demonstration was conducted by supplying critical inputs like Coco trap with RB lure, Light trap and *Metarhizium anisophilae.* On campus and Off campus training programmes in the management of Rhinoceros beetle was conducted. Demonstrations on usage of light and pheromone traps were explained to the farmers. Use of fermented Castor cake (1 kg castor cake in 5 litres of water) was demonstrated in coconut farms to attract and trap the beetles. Application of *Metarhizium anisophilae* was done to manure pits as larvae was found to be breeding in the pits. Farmers were trained in identification of pest and its different stages.

Interventions	Number of Programmes
Diagnostic Field visits	5
Farmers – Scientist meet	1
Farmer identification	3
Demonstrations	3
Field day	1

3. By adopting the use of pheromone trap (1 no/acre), light trap (1 no/acre) and fermented castor cake in water (1 kg castor cake in 5 litres of water) effectively managed the incidence of beetles which reduced the damage caused by the adults. Application of *Metarhizium anisophilae* (250 ml in 750 ml of water sprayed in manure pits) reduced the grubs in breeding sites. Pesticides usage was completely reduced (Rs.3000/acre) and nut yield/tree increase (240 nuts/tree) was also seen. As damage by beetles was reduced, attack of red palm weevil was not present.



4. During field visits, the villagers from nearby places were greatly influenced by the performance of pest management tools like pheromone traps and fermented castor cake usage. The farmers were able to identify the damage symptoms and note the incidence of adult pests. Importance of Crop pest defenders were also explained during field visits.

5. By adopting eco-friendly approaches farmers were highly satisfied as it reduced their cost of pesticide application and this also increased their awareness on environmental safety and healthy living of farmers. In order to encourage farmers, Bio-products like pheromone traps and lures, sticky traps are being sold at ICAR-KVK, Kancheepuram under revolving fund activities.

4. Case study- Processing and Value addition Of Millets products for the higher income generation of SHG women

As women play an active role in the economy of the families, they are enough to invest money and lead better life. There is a linkage between women's access to independent income and her position in the family. It is believed that when women are provided credit and they take up income generating activities, their income is expected to increase. To give rural women visibility they must get organized into self help groups. Group approach is a viable setup to empower women economically, socially and technologically for better livelihood. Role of SHGs is emerging as promising tool in this context. The SHGs are created to enable the joint responsibility towards self and sustainable development. KVK, Kancheepuram identified women SHG members during the year 2016-17 for the conduct of EDP on value added Minor millets products.

Millets are more reliable and produce a harvest even under adverse growing conditions. Millets can be used for traditional as well as novel foods. The richness of starch, protein and fibre, niacin, magnesium, phosphorus, manganese, iron, potassium, essential amino acids and vitamin E make millets an important nutritional bio-source. In addition, millets have therapeutic benefits such as prevention of heart diseases, diabetes, migraine and premature death. In line with the recent awareness on functional foods and neutraceuticals, millets have a great potential. The revival of millets can be achieved through concerted efforts of research, marketing testing, and entrepreneurial training and demonstration to stimulate the processing of high quality, competitive products for urban areas. Thus, in dry regions, processing facilities are particularly vital to the

future of local millet farming. Thus, millets are so compelling to agree the needs and to educate consumers on health benefits and to encourage increased consumption.

Millets production in Kancheepuram district is around 331 ha (950 ha) mainly finger millet and followed by other millets like foxtail millet, Barnyard millet and little millet.

Major problem faced by Millet growing Farmers

- Farmers grow millets and sell it as such without any processing,
- Poor market price for millets
- Lack of awareness on ready to eat millet foods
- Millets ready mixes

Processing technologies used for improving the edible and nutritional characteristics of millet as well as challenges, limitations, and future perspectives to promote millet utilization as food for a large and growing population.

2. Plan, Implement and Support:

KVK intervention in tackling the problem

- Providing technical advices to the farmers and farm women to doubling their income
- Proposed EDP programme on Value added Millets products for the income generation of SHG women.
- Conduct of Training programmes (On and off campus)
- Standardization of new millets based products
- Conduct of Demonstrations
- Imparting latest packaging technologies
- Quality control measures and Licensing
- Providing marketing facilities and tie up with KVK Rural mart and Weekly Bazaar

Therefore, with value added strategies and appropriate processing technologies, the millet grains can find a place in the preparation of several value added and health food products, which may then result in high demand from large urban populations and nontraditional millet users.

3. Output: Results achieved

Conduct of well planned ten classes for the entire period. Home Scientist of KVK, Kancheepuram made an initiative to conduct training programme for SHG women mainly on value addition of locally available foods. The lectures and Hands on demonstration includes the following topics.

- Lecture on processing and value addition of Millets
- Lecture on processing and value addition of Groundnuts
- Demonstration of Millets based ready mixes in the commercial form-
- Adai mix
- Chapathi mix
- Iddiyappam/kozhukattai mix
- Murukku mix
- Uppuma mix
- Millets Health mix
- Millets cookie
- Demonstration of Groundnut based foods-
- Packaging and Labelling (Designing and preparation of stickers)
- Licensing, branding and marketing

A total of eleven food products were taught to them in the commercial production manner in order to market their products.

Sensory Evaluation

In order to determine consumer acceptability the products were evaluated by organoleptic quality attributes by ranking the responses using a 5 point hedonic scale sensory evaluation test with 5 panelists. The sensory qualities, namely, appearance, texture, flavor, colour and overall

acceptability were determined. All the products were highly accepted by the taste panelists in terms of texture, taste and overall acceptability.

Storage studies of the products

The prepared minor millets and groundnut products were packaged and stored in poly propylene pouches so as to keep the product safe and clean and to increase shelf life at ambient room temperature. The developed product can be stored upto three to six months without any deterioration in different flexible pouches under ambient storage conditions. Food grade pouches provide clarity as well as protection against insect and moisture.

Nutritional Qualities

The developed 11 products were given their nutritional value mainly proximate composition in order to depict in the label.

Nutritional Information (100g) Approximate.

Nutrient	Millet Health mix	Chapathi flour	Adai mix	Idiyappam/ Kozhukattai mix	Uppuma mix	Murukku mix
Protein (g)	15	14.4	16	8.3	11	10
Carbohydrates(g)	70	33	55	66	64	60.2
Calories (Kcal)	385	353	336	309	332	305
Fat (g)	2.3	3	2.8	1.4	3.6	3

Nutrient	Idli/Dosai mix	Millets cookies	Groundnut chikki	Groundnut pickle	Groundnut podi
Protein (g)	12	12	26	32	30
Carbohydrates(g)	50.6	72	27	49	47
Calories (Kcal)	327	650	570	800	595
Fat (g)	2.8	50	2.5	51	5

Cost of Production

Cost analysis was carried out inorder to market the products. They were taught to calculate the cost of the manufactured products.

Licensing, branding and marketing

KVK assisted the group members to obtain ***fssai*** certificate for the developed product and the *fssai* number is 22417422000002. They are instructed to open an saving Bank account in the nearby bank for the production and marketing of the product.

5. Outcome: Horizontal spread

- Profitable enterprise for SHG members
- providing Nutritious foods to the consumers
- Extra income to the family
- Appreciation from family members
- SHG women can easily adopt such a venture to earn income in a profitable way.

SHGs enhance the quality and status of women as participants, economic, social and cultural spheres of life. The SHGs are a viable alternative to achieve the objectives of rural development and to get community participation in all rural development programmes. Organisation of rural women into SHGs can go a long way towards bringing women in the mainstream of development.

6. Impact: Large scale/macro level (district/state) evidences related to technological benefits

SHG started their enterprise during March 8, 2017 in a small venture and now they have developed into a good entrepreneurial activity and stated their business during May 2018 in a good mode and large scale in the name of "*V.M.Millets*" in Maraimalai Nagar of Kancheepuram District. They are also selling their products in near by schools in a daily manner and also to other commercial places during functions and important days. SHG women are also given chance to display and sell their products in Exhibitions and mela organised by KVK. They also supply their products to all KVK meetings and functions. KVK also provided shop for the entrepreneurs in the name of "KVK Amudhasurabi Rural Mart".

Success story of their Entrepreneurial activity was published in local Newspapers and Local Tamil magazine' Pachai Bhoomi" . Their success stories were also broad casted in the All India Radio, Chennai, Community Radio SRM University, Kattankolathur and Community Radio Kalpakkam. Their success stories were also telecasted in the Doordharshan Kendra, Chennai and Makkal TV, Chennai. Links **https://youtu.be/abt0PQ16Xu0.**

KVK, Kattupakkam conducted a special programme during International Women s day to introduce their products in the market. All the eleven developed products were packed in the food grade pouches and labelled properly and was launched during the programme. Certificate for the participants were also distributed during the programme. KVK also assisted them to market the products in the KVK Amudhasurabi mart.

Impact:- Economic gain:

They produce 500 to 700 kg of food products per month.

Income generated -Rs.60,000/month

Production cost -Rs.35,000/month

Net profit -Rs.25,000/month

Group members received best Entrepreneurs Award from Rotary club, Maraimalai Nagar, Chennai during Women s day celebration 2019.

5.Value added Tomato Products for Income Generation of SHG women

Tomato is the world's largest vegetable crop after potato and sweet potato, but it tops the list of canned vegetables. The total global area under tomato is 46.16 lakh ha and the global production is to the tune of 1279.93 lakh tonnes.

Tomatoes are an important crop for both the farmer and the consumer in India. With 11% share of global production, India produces more tomatoes than any other country, except China. Despite this, less than 1% of India's tomato production is processed, way below the average of 26% for the world's top 10 tomato producing countries.

Tomato is a climacteric fruit, having respiratory peak during their ripening process. Being a climacteric and perishable vegetable, tomatoes have a very short life span usually 2 to 3 weeks. The post-harvest (post production) and marketing system is a chain of interconnected activities from the time of harvest to the delivery of the food to the consumer often referred to as "farm to fork". Post-harvest losses refer to the measurable quantitative and qualitative food loss in the postharvest system. Losses in fresh horticultural produce are directly related to quality degradation. Quality loss is the result of improper handling and transportation in marketing of produce. Postharvest losses which average between 24 and 40% in developing countries, and between 2 and 20% in developed countries are a major source of waste. High levels of waste result in higher prices for fresh produce, and the farmer increasingly facing poverty. Thus, the reduction of post-harvest losses of perishables is of major importance when striving for improved food security in developing countries

Major problem faced by Tomato Farmers includes

- Poor market price for tomato during excess production
- Lack of awareness on processing of tomato
- Poor storage facilities for tomato

2.Plan, Implement and Support:.

KVK intervention in tackling the problem includes

- Providing technical advices to the farmers and farm women to doubling their income
- Proposed FLD programme on "Demonstration of Tomato products for Income generation of farm women"
- Conduct of Training programmes (On and off campus)
- Standardization of new Tomato based products
- Imparting latest packaging technologies
- Quality control measures and Licensing
- Providing marketing facilities and tie up with KVK Rural mart and other Bazaar
- Popularization of Tomato production among Farm women and SHG women through Trainings and Demonstrations.

Therefore, with valueadded strategies and appropriate processing technologies, the tomatoes can be processed in a better way to improve the marketing of tomato and to get better income to the vegetable farmers.

3.Output: Results achieved among participating farmers, groups in terms of gain in knowledge and skills, productivity in the demonstration field/enterprise, reduction in problem in terms of pests and disease attacks, increased economic benefits, increase in volume of production, processed products quantity and quality etc.

Tomato is one of the most important "protective foods" because of its special nutritive value. It is one of the most versatile vegetable with wide usage in Indian culinary tradition. Tomatoes are used for soup, salad, pickles, ketchup, puree, sauces and in many other ways It is also used as a salad vegetable. Tomato has very few competitors in the value addition chain of processing. Keeping this in mind KVK conducted various programmes to popularize tomato products.

- Conduct of Front Line demonstration on "Demonstration of Tomato products for Income generation of farm women"

Demonstration was conducted in the Thiruvanikovil Tribal area of Kattankolathur Block of Kancheepuram District.

Name of the Villages selected-Thiruvanikovil

Name of the Critical Input supplied- Raw materials and packaging materials

No. of Groups-One Tribal women group (10 members)

Selected Farmwomen were given hands on training on value added tomato products

Products demonstrated include:

- Ketchup
- Tomato pickle
- Tomato Jam
- Tomato powder
- Tomato paste

Sensory quality

The ultimate aim of any food item is not only to provide nutrients but also to givesense of delight to consumers by virtue of desired colour, flavou, taste, texture and overall acceptability. Sensory attributes of foods are important indicators of acceptability and sustainability of processed foods in the ever growing processed food market. Organoleptic Evaluation is an important tool for assessing the acceptability of the developed product.

Sensory evaluation test was carried out among twenty farm women to get the correct point for the acceptability of developed tomato based products.

The data depicts that Tomato pickle was liked by most of the panelist since it can be taken with all type of food items when compared with Tomato jam and ketchup.

TABLE I

Mean Sensory Profile of Tomato products*

Attributes	**Tomato pickle**	**Tomato Jam**	**Ketchup**
Colour and Appearance	4.9	4.51	4.31
Taste	4.8	4.53	4.18
Texture	4.75	4.36	4.37
Flavour	4.81	4.56	4.10
Over all acceptability	4.83	4.62	4.34
Mean total Score	24.09	22.58	21.3
Acceptability Index	96.36	90.32	85.2

*Five point Hedonic scale

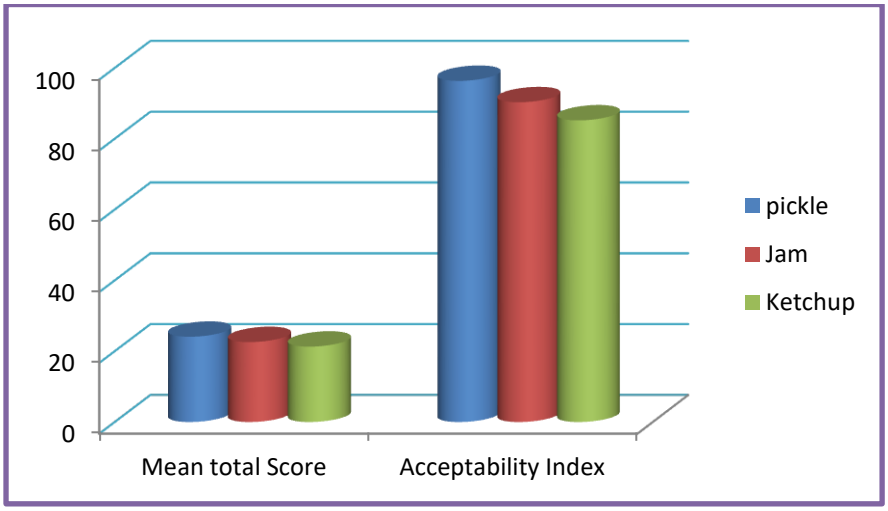


Figure 3 Mean sensory profile of Tomato products

Shelf Life, Packing and Labelling

Tomato ketchup is one of the most popular commercially available sauces in restaurants and domestic households. It is consumed in large amounts by the younger generation, as an accompaniment to hamburgers, pizzas, French fries, and chicken fries.

Tomato ketchup is one of the most popular commercially available sauces in restaurants and domestic households. It is consumed in large amounts by the younger generation, as an accompaniment to hamburgers, pizzas, French fries, and chicken fries.

During processing and storage, tomato products undergo nutritional and sensorial changes. The degradation reactions of individual compounds in tomato products, such as lycopene, sugars, or ascorbic acid are very complex and very dependent on the various factors, initial content, oxygen access, presence of other compounds affecting or participating in the oxidation and non enzymatic browning reaction, the conditions of tomato paste processing and conditions of tomato ketchup production.

The shelf life the products were determined by physical method. The products were stored in dry and cool place. Shelf life of products was evaluated using sensory and microbial analysis periodically in each three months periodically

Tomato pickle:

Stored in glass bottles and pet bottles can retain upto six months with addition of preservatives.

Tomato Jam: Stored in glass bottles and pet bottles can retain upto two months with out any preservatives.

Tomato Ketchup : Stored in long necked Glass bottles and stored upto six months with addition of preservatives.

4.**Outcome:**

Popularization of Tomato production among Farm women and SHG women

Training programmes were conducted to the farm women and SHG women for Tomato product production. Trained members also facilitated to markettheir products with quality testing and labelling. Ten training and demonstration programmesconducted over a period of one year and packaging materials and demonstration materials were supplied to the farm women tostart an enterprise.

Horizontal spread- SHG/Farm women who turned as successful Entrepreneurssuccess stories were published in local magazines, Daily News papers and also through. All India Radio and community Radios.

Literature Published

Literature in the form of popular articles related to processing and value addition in Tomato in the local language. Pamphlets on Value added Tomato products preparation, have been published.

Economics and Cost Analysis

Tomato pickle-

For 1 kg of pickle

Production cost		Rs. 250/-
Sale price		Rs.375/-
Net return		Rs.125/-
Cost Benefit Ratio		**1:1.5**

Tomato Jam-

For 1 kg of Jam

Production cost		Rs. 116/-
Sale price		Rs.250/-
Net return		Rs.134/-
Cost Benefit Ratio		**1:2.1**

Tomato Ketchup -

For 1 kg of Ketchup

Production cost		Rs. 145/-
Sale price		Rs.250/-
Net return		Rs.105/-
Cost Benefit Ratio		**1:1.7**

5. Impact:

Processing and value added tomato products were also demonstrated through other training programmes for the benefit of Kancheepuram farmers and farm women.

Intervention technology:

KVK organizes training programmes in Food processing and Value addition. Thesetrainings help farmers and farm women in gaining technical skill and knowledge to startthe enterprise for self employment and improving the existing practices of vegetable processing like dried products, powders, pickles, products were demonstrated. They were also provided technical information onpacking, licensing and marketing of the final products.

The lectures and Hands on Demonstration include the following topics.

- ❖ Lecture on processing and value addition of vegetables
- ❖ Demonstration of Novel tomato products including vegetable powders

EDP

6. Entrepreunership development programme on "Sorghum based Ready to Eat Products for Income Generation"

Introduction

As women play an active role in the economy of the families, they are enough to invest money and lead better life. There is a linkage between women's access to independent income and her position in the family. It is believed that when women are provided credit and they take up income generating activities, their income is expected to increase. To give rural women visibility they must get organized into self help groups. Group approach is a viable setup to empower women economically, socially and technologically for improved life. Role of SHGs is emerging as promising tool in this context. The SHGs are created to enable the joint responsibility towards self and sustainable development.

Concept

The SHGs bring out the capacity of women in molding the community in right perspective and explore the initiative of women in taking the entrepreneurial ventures. The processes of learning by doing and earning would certainly empower rural women. Self employment also conducive to the development of individual initiative and entrepreneurial talent and offers greater personal freedom.

Sorghum is traditional staple food of the dry land regions of the world, a warm season crop intolerant to low temperatures, resistant to pests and diseases highly nutritious and aclimate-compliantcrop. It ranks fifth in cereals produced world-wide and fourth in India. Generally, sorghum grainsactasaprincipal sourceof protein, vitamins, energyand minerals formillionsof people especially in the semi-arid regions playing a crucial role in the world's food economy. Ithasanutritional profile better thanricewhichis thestaple food of majority of the human population for its rich protein, fibre thiamine, riboflavin, folic acid, calcium, phosphorous, ironand β-carotene. Sorghum is rich in potassium, phosphorus and calcium with sufficient amounts of iron, zinc and

sodium. Due to this, it is being targeted as a means to reduce malnutritionglobally. Ithelps tocontrol heartproblems, obesityand arthritis.

Sorghum and millets can have excellent quality for processing but to obtain that inherent quality a value added, chain securing, identity preserved grain for processing into profitable upscale urban products is necessary. Processing technology is not the major obstacle to successful production of products.

Urban consumers want food products that deliver convenience, taste, texture, color and shelf-stability at an economical cost. Upscale sorghum and millet products that meet these requirements are usually not available in urban areas. We have made excellent prototype products from sorghum which helps consumer not only to get new products but also versatile and notorious products.

Background :

Women group from Vandalur and Kolapakkam area of Kattankolathur Block, Kancheepuram

District was selected for the EDP. SHG women group includes the following members

1. Mrs. R.Parimala
2. Mrs. G.Tamil Selvi
3. Mrs. S.Jayanthi
4. Mrs. J.Punitha
5. Mrs. P.Shimmi
6. Mrs. G.Revathi
7. Mrs. K.Poongodi.
8. Mrs. V.Selvi
9. Mrs.V.Vijaya
10. Mrs. S.Rahini

Selected SHG women were from lower middle class families and from 30 to 45 years of age. Before intervention most of the members were house wives and few of the were doing small business like sale of handicraft items and herbal products. Members were selected based on their interest and involvement in the food processing sector. After getting their family members permission they formed a group and participated in the training programmes.

Plan, Implement and Support:

KVK intervention in tackling the problem

- Providing technical advices to the farmers and farm women to doubling their income
- Conduct of Demonstrations
- Imparting latest packaging technologies
- Quality control measures and Licensing
- Providing marketing facilities and tie up with KVK Rural mart and Bazaar

Intervention technology:

Conduct of well planned ten classes for the entire period. The lectures and Hands on Demonstration includes the following topics.

- Lecture on processing and value addition of millets
- Demonstration of sorghum based products in the commercial form-
- Demonstration of new bakery products from sorghum
- Sorghum cake
- Sorghum cookies
- Sorghum murukku
- Sorghum Nutri ladoo
- Sorghum Pakoda

Inputs supplied to the EDP group

- Hand operated Packaging Machine
- Packaging pouches
- Demonstration materials

Shelf Life, Packing and Labelling

The shelf life the products were determined by physical method. The products were stored in dry and cool place. Shelf life of products was evaluated using sensory and microbial analysis periodically in each three months periodically

TABLE I

Mean Sensory Profile of Sorghum products*

Attributes	**Cake**	**Cookies**	**Murukku**	**Pakoda**	**Nutri Ladoo**
Colour and Appearance	4.6	4.7	4.5	4.3	4.5
Taste	4.5	4.8	4.7	4.2	4.4
Texture	4.4	4.6	4.6	4.1	4.6
Flavour	4.3	4.8	4.2	4.2	4.3
Over all acceptability	4.83	4.8	4.2	4.3	4.4
Mean total Score	22.37	23.7	22.2	21.2	22.2
Acceptability Index	89.4	95.0	88.8	84.8	88.8

*Five point Hedonic scale

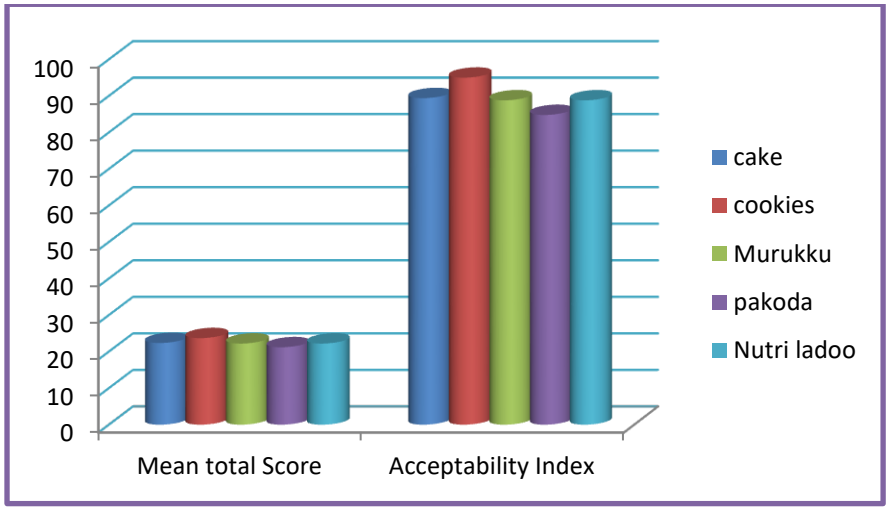


Figure 4 Mean sensory profile of Sorghum products

Economics and Cost Analysis

Sorghum Cake

For 1 kg

Production cost		Rs. 130/-
Sale price		Rs.250/-
Net return		Rs.120/-
Cost Benefit Ratio		**1:1.9**

Sorghum Cookies

For 1 kg

Production cost		Rs. 100/-
Sale price		Rs.200/-
Net return		Rs.80/-
Cost Benefit Ratio		**1:2.0**

Sorghum Murukku

For 1 kg

Production cost		Rs. 110/-
Sale price		Rs.200/-
Net return		Rs.90/-
Cost Benefit Ratio		**1:1.8**

Sorghum Pakoda

Production cost		Rs. 120/-
Sale price		Rs.200/-
Net return		Rs.80/-
Cost Benefit Ratio		**1:1.7**

Sorghum Nutri ladoo

Production cost		Rs. 150/-
Sale price		Rs.240/-
Net return		Rs.90/-
Cost Benefit Ratio		**1:1.9**

5. Impact:

Processing and value added sorghum products were also demonstrated through other training programmes for the benefit of Kancheepuram farmers and farm women.

Intervention technology:

KVK organizes training programmes in Food processing and Value addition. Thesetrainings help farmers and farm women in gaining technical skill and knowledge to startthe enterprise for self employment and improving the existing practices of sorghumprocessing like bakery products and ready to eat other products. They were also provided technical information onpacking, licensing and marketing of the final products.

The lectures and Hands on Demonstration include the following topics.

- Lecture on processing and value addition of millets especially sorghum

- Demonstration of Novel Sorghum food products including Nutrimix, ready to cook foods and ready to eat snack foods.
  Excellent food products can be and are made from sorghum and millets; however, the lack of a consistent supply of good quality grain for processing usually precludes successful marketing of these products. KVK trained SHG women to produce value added products and market them in a profitable manner.

7. Successful Backyard poultry farmer

Situation analysis / problem statement :

Poultry sector plays a pivotal role among the sub-sectors in potentiating the role of animal husbandry in the process of rural economic development of the state. The Indian Poultry Sector within 7.3 per cent growth in poultry population, has witnessed one of the fastest annual growth of about 6 per cent in Eggs and 10 per cent in meat production over the last decade amongst all animal based sectors. The high growth has placed India at 3rd position in Egg production and 5th in Chicken meat production on global basis. Even with this development, the per capita availability is only 52 eggs and 2.3 kg of poultry meat against the recommended levels of 180 Eggs and 11 kg of meat per annum.

Tamil Nadu is leading the states in broiler production with a record production of 397 thousand tonnes in 2009-10. Tamil Nadu ranks second in the country's egg production with a production of 10.8 billion eggs. Tamil Nadu accounts for 17.71 per cent of the poultry population of the country. More than 90 per cent of poultry or poultry products exported from India originates from Tamil Nadu. At present poultry concentration is restricted to certain poultry belts such as Namakkal, Erode and Coimbatore. The poultry keeping has evinced great interest among poultry farmers. Further, due to the changes in consumption behavior of the people in the state towards desi chicken and desi eggs, there is great scope for the development of backyard poultry.

Animal husbandry is still mainly in the hands of small and marginal farmers and landless labourers. Though poultry farming has developed into an industry, eco-friendly backyard poultry rearing is a profitable enterprise in providing regular income to the rural resource poor people and ensuring nutritional security. It still continues to be the livelihood proposition of several

Rural Poultry Sector though contributing nearly 30 per cent of the national egg production is the most neglected one in the state. The fact is that village poultry eggs and meat fetch a much higher price than that of commercial hybrid poultry. However, 70 per cent of the poultry products and eggs are consumed in urban and semi-urban areas and their consumption in rural areas is very low. This low consumption is attributed to limited availability and to some extent poor purchasing power of rural people. In order to overcome this problem, it may be necessary to take up specific rural poultry production programmes with low input technology to meet the requirements of the rural sector, where poultry farming constitutes a source of subsidiary occupation, generating subsistence, income to boost the nutritional standards and health of rural masses. The rural family poultry (backyard poultry) units require very little hand feeding and provide handsome returns with minimum investment. Thus, rural poultry farming not only increases income levels, employment opportunities to small farmers including women but also bring about desired socio-economic change in rural areas which are vital for rural development and rural prosperity.

Plan, Implementation and Support :

Interventions :

Th. M.Anandan from who resides at No.4/297, Annasalai, Karanai Puduchery, Karanaikattur, Chengelpet, Kancheepuram district has about 2 acres of land. He visited KVK Kattupakkam and met Animal Scientist and discussed regarding raising Backyard poultry in batches and marketing the same. He was detailed about the backyard poultry birds namely Gramapriya, Vanaraja and desi chicken and various management practices like housing, feeding and disease management. Participated in Poultry farming training conducted at this Kendra. Field

visits and Advisory services were provided..He adopted TANUVAS technologies such as Poultry concentrate feed, feed additives, water sanitizer, scientific brooding management, Oral pellet vaccine, Dewormers and vaccination schedule

KVK also provided critical inputs like chicks and brooder mash and deworming and vaccine schedule for prevention of various diseases like Ranikhet disease etc., in Poultry. He had initial problems of chick mortality and remedial measures for the same was suggested in the form of proper brooding techniques and disease control measures.

Output:

The economics of his poultry farm is given in the table below:

Parameters	Farm details
Total No of Birds	250 Nos.
Number of eggs produced per day	120 Nos.
Number of eggs produced per month	3600 Nos.
Rate per Egg	Rs. 10
No.of eggs sold for table purpose	2000 Nos.
No.of eggs for hatching purpose	1600 Nos.
No.of chicks hatched	1200 Nos.
Rate/ chick	Rs. 40/chick
No.of chicks sold	1000 Nos.
Amount spent for production	Rs. 30000
Total Output/Gains per month	Rs. 60000
Net Profit per month	Rs. 30000

It revealed that backyard poultry farm fetches improved income to the farmers and is a profitable enterprise for small and marginal farmers if taken on commercial basis with suitable marketing tie –up with poultry outlets.

Outcome :

Horizontal spread

At present, he regularly hatches and procure chicks and sold the birds to the nearby chicken shops. He is selling native chicken eggs at his farm gate at the rate of Rs.10 per egg. He also hatches chicks in his farm and supplied to the needy farmers of Kancheepuram district. He also motivated his village farmers for adoption of backyard poultry by providing hatching eggs and chicks. Under his guidance, ten farmers have started new poultry farms and gets his advise on rearing and marketing the poultry birds. He act as a progressive farmer for the poultry training Programmes to share his experience among the trainees.

Impact:

- Provides employment generation to rural youth
- Improved farm Profit
- Good marketing potential for sale of birds and eggs.
- Round the year income potential
- Improved farmer status and livelihood
- Provides nutritional security to the farmers
- Bring about desired socio-economic change in rural areas which are vital for rural development and rural prosperity.

8.Backyard Rabbit rearing to enhance the rural farmers livelihood

Situation analysis/Problem statement

Rabbit production is one of the livestock enterprises with the greatest potential and room for expansion in Tamil Nadu. This is because of their minimal investment requirements and ability to reproduce fast. Their feed requirement is low, especially with regard to demand for grain. Their housing and disease control management requirements are also low yet their meat is highly nutritious and healthier source of protein when compared with other sources of meat.

Rabbit production has experienced a steady growth in the past few years, with gender biases associated with its production fading away. This is a significant change considering that for many years rabbit production in Tamil Nadu was confined to the youth and young farmers. Though rabbit meat marketing is yet to gain ground, there is hope that with the growing awareness of the benefits of rabbit meat, it will be possible for rabbit meat to be introduced into the regular meat market. With the trend shifting from rearing rabbits merely as pets to that of an income generator units with broiler rabbits such as Newzealand White, Soviet Chinchilla, Grey giant and White Giant, rabbit farming has come up as an option for alleviating rural poverty among the farming community. This animal could be reared by women folk as well as by children as rabbits are very docile and easy to care.

Rabbits are prolific each doe capable of reproducing 4 times a year an average of 8 bunnies per kindling.They have one of the highest feed conversion ratios at 4:1. Rabbit meat is white meat of high quality, easily digestible with low fat, low cholesterol and high protein compared to most other meats. The unsaturated fats (good fats) in rabbit meat make 63% of the total fatty acids. Rabbit meat is lower in percentage fat than chicken, turkey, beef and pork. Rabbit meat provides the lowest calories per kilogram of meat consumed compared to other sources of meat. They have one of the highest feed conversion ratios at 4:1. Rabbit meat is white meat of high quality, easily digestible with low fat, low cholesterol and high protein compared to most other meats. The unsaturated fats (good fats) in rabbit meat make 63% of the total fatty acids.

Rabbit meat is lower in percentage fat than chicken, turkey, beef and pork. Rabbit meat provides the lowest calories per kilogram of meat consumed compared to other sources of meat. Although Rabbit farming is in primitive stage as far as Tamil Nadu is concerned, several farmers are willing to take up rabbitary as an option for getting more output with less input. In this context, Mrs. P.Jeyalakshmi started her rabbit farming with 5 rabbits in 2015 which died after 15 days and was a great failure due to lack of knowledge on the scientific aspects of rabbit rearing. She disowned the rabbitary and concentrated on other works such as embroidery, tailoring etc.

Plan, Implement and Support:

Krishi Vigyan Kendra,Kancheepuram district has been promoting Rabbit farming for the past few years through OFT, FLD, trainings, etc. In this context, Mrs. P.Jeyalakshmi, Rabbit farmer from Kattankulathur (village and taluk) of Kancheepuram district owned one acre of land. She consulted KVK scientists and participated in different animal husbandry training programmes for enhancing her income.I After the training programme, she has started backyard rabbit farming comprising of 1 unit of Newzealand white rabbits which is more suited to Kancheepuram district . She is practicing rabbit farming, which comprises of adult males,females and bunnies.She fed the rabbits with green fodders and vegetable wastes such as greens, raddish, cabbage and cauliflower collected from local markets. The breeding rabbits were fed with concentrate feed and tree leaves of Kalyana murungai and desmanthes. KVK, Kattupakkam identified her as one of the beneficiary under TANUVAS FLD and had given training on scientific rabbit farming with 3 rabbits as base stock. This provoked her interest in Rabbit farming and bought few more rabbits along with the rabbits given. She started rearing Newzealand white only and now she is having 18 rabbits. In order to save the labour, all the farm works are being performed by her and her family members. Every day morning she cleans all the cages and the shed and observes the rabbit for any

disease incidences. She found that cleaning and disinfection would reduce the disease incidences. The rabbits were provided with 100 gms of concentrates daily

Output:

The recorded rabbit parameters such as Mortality rate, Birth weight, Marketing weight and economic parameters were tabulated and given in Table – 1.

Table : 1 Rabbit Economic parameters

Parameters	Check	Demo
Mortality rate (%)	40	2.2
Birth weight (gms)	28	34.4
Marketing weight (gms/kg)	482	990
No.of bunnies (Nos.)	4	8
Gross cost (Rs.)	442	1035
Gross return (Rs.)	850	2300
Net return (Rs.)	408	1265
BCR	1.91	2.22

It was found that Newzealand white rabbits under backyard rearing had given birth to more number of young ones (8) with improved birth weight (34 gms) and marketing weight (990 gms)at 6-7 weeks of age and reduced mortality rate (2%). Marketing for rabbits are being done through whatsapp and SMS to other farmers and the rabbits are sold at the farm gate itself.

Outcome:

Horizontal spread

She motivated her village farmers for adoption of Rabbit farming to improve their livelihood status. She shares her experiences with the fellow farmers who are all visitng the farm and promote rabbit farming. Three of them had ventured into rabbit farming on her advise and they regularly market their animals in nearby meat selling shops and sometimes they also market their animals at their farm gate on live weight basis. Being a progressive rabbit farmer, she is being invited to KVK during rabbit farming training programmes to share her experiences to the trainees.

Impact:

The reasons for Mrs. P. Jeyalakshmi success from his small area were that she does not depend on external inputs for his farm. Everything is sourced from her place itself and that she market the rabbits at his farm gate and entire family was involved in the work so that she need not spend anything extra charge on labourers. Hence backyard rabbit farming fetches

- Provides regular income to the farmers
- Creates employment generation
- Higher market demand
- Direct marketing fetches higher return
- Backyard rabbit rearing is profitable for small farmers and can be taken on commercial basis with suitable marketing tie –up with retail outlets.

9.Demonstration of Low cost solar dryer for fish and prawns

Situation analysis/Problem statement:

The fisheries and aquaculture sector is a vital source of livelihoods, nutritious food and economic opportunities. Fish and fishery products are among the most important agricultural

commodities. From 2007 to 2013, the global fishery production had continuously increased from about 140.7 million metric tonne to 160 million metric tonne. With this increasing production and greater availability for consumers, percapita fish consumption continues to rise up from 10 kg in the 1960s to more than 19 kg in 2013. Among the world, India is the second fish producing country and contribution of 5.43% of total global fish production. In terms of nutritional quality of fish, sometimes dry fish have higher quality standards compared to fresh fish. In India, consumption of dried fishes is about 32% of total marine landings and about 17% of the total catch used for the production of dry fishes. In drying salt is used to destroy the non-halophilic, spore forming bacteria and osmophilic fungi. Dry fish is an important source of animal protein supplement, which is preferred as a key dish or used as a flavoring agent in combination with other food items. In the coastal region where fresh fish is in abundance, such as Acetes, flatfishes, silverbellies, small scads, lizardfish and sciaenids are preferred in the dried form. Drying is one of the oldest known method of preservation of food. Through the technology off food preservation and processing has undergone revolutionary changes over the year and several new products processed employing diverse techniques have made their firm presence in the market, drying stills continues to be the most widely used method for preservation of several foods including fish. Demand of dry products is in both, inside and outside the country and form good source of protein. Fish drying over the years, has grown from a subsistence kind of occupation to a full- fledged flourishing business. Use of dry fish in different way that include fish/prawns for human consumption, low value fishes for the preparation of fish feed as well as poultry feed

Drying of fish and prawn products can help to reduce such losses and waste. The drying of fish and prawn are done under low cost solar dryer, which is one of the most useful and viable technology developed by Tamil Nadu Dr.J.Jayalalithaa Fisheries University (TNJFU), Nagapattinam has greatly enhanced among fish operators' livelihoods in various coastal district of Tamil Nadu where is doing fish value added products. Among fish value added products, dried fish and prawn products are playing an important role than others. Dried products of fish and prawn which are prepared from various small and medium size fish and prawn meat have great potential in local as well as export market. Many of the residents of small fishermen village are subsistence fishers whose livelihoods depend on fishing and fish preservation. The Kancheepuram District is rich in fish resources. Potential for exploitation of marine fisheries in the District is high with the coastal line of 87.2 Km and it has 44 number of marine fishing village covered in 4 blocks. But, most of marine fishing villages are remote locations do not have proper/sufficient access to electricity or cold storage facilities and as a result, spoilage often occur after capture and during storage prior to consumption. With this background 4 self help groups of fisherwomen were formed and demonstrated the drying of fish and prawn preparation under low cost solar dryer with hygienically and effectively. Therefore, it was aimed to introduce and trial a new cost effective method of drying of fish and prawn which will reduce post-harvest losses, add value to the finished product and increase its shelf life, facilitate easy transportation, to maintain a consistent supply based on demand, to reduce post-harvest losses and to increased variety of textures and flavors, resulting in a greater choice for consumers and thereby the livelihood of the fishers may be altered and improved.

Plan, Implementation and Support (KVK Intervention):

ICAR-Krishi Vigyan Kendra (KVK), Kancheepuram has put many efforts to uplift of the poor fishers and providing an opportunity and alternative to improve their livelihood supports with the limited availability of marine resources in the Kancheepuram district through the following KVK mandatory programmes in collaboration with Government of Tamil Nadu, Department of

Fisheries and ICAR - Central Institute of Brackishwater Aquaculture (ICAR-CIBA), Chennai during the recent years.

Table 1: various programme of Plan, Implementation and Support to the fisher-folks by KVK, Kattupakkam

Name of the programme	No of intervention
Critical inputs – Low cost Solar dryer (with fish & prawn meat, and demonstration materials)	4
FLD in 4 Demos (4 SHGs with 60 Nos)	1
Training programme	6
Awareness programme	3
Advisory services	1390
Scientist visit in the farmer's field	37
Technology disseminated in monthly magazine	1
Broadcasting of short message services to farmers	5
Brief Radio talk	1
Guest lectures	3
Other extension programme	10

Output:

Farmer teacher of 4 SHGs (with 60 Nos) in fish value addition among fishers were developed to handle training classes on the significance of dry fish preparation in fish and prawn under low cost solar dryer technology practices in various sizes of fish and prawn varieties have known in the Table – 2.

Table 2: List of farmer teacher in fish value addition among fishers developed in Kancheepuram district

Sl.No	Name of the fishers	Specialized areas	Contact Mobile No
1	Tmt.S.Valli, (Leader of SHGs) Satraskuppam village	Dry fish and prawn preparation	9445794944
2	Tmt.K.Meenatchi, (Leader of SHGs) Vayalur village	Dry fish and prawn preparation	9500299883
3	Tmt.G.Kalpana, (Leader of SHGs) Kovalam-Chemmencherikuppam village	Dry fish and prawn preparation	8056269715
4	Tmt.T.Kalaiamutha, (Leader of SHGs) Nemmelikuppam village	Dry fish and prawn preparation	6369180110

The average production/yield of dry fish product, quality parameters and economical impact recorded from different fisher-folks in Kancheepuram district about dry fish preparation has done with various marine fishing and given in the Table – 3.

Table 3: Average yield of dry fish products, other parameter and economic parameters recorded in various demo plots from Kancheepuram district during 2018-19

Parameters	Check	Demo
Yield (% per kg of fish & prawn)	27.8	33.3
Quality parameter	Slight brown colour & hard texture	Milky colour & soft texture
Gross cost Rs.	155	165

Gross return Rs.	200	300
Net return Rs.	45	135
BCR	1.29	1.81

Fisher-folks Feedback: Low cost solar dryer has aided to get in average higher dry fish yield of 33.3 % per kg of fish and prawn. It is a simple and viable method in preparation of dry fishes than higher cost of mechanical dryer and other sophisticated tunnel dryer. The yielded fish value added product of dry fish was sold for the higher market price of Rs.300/kg

Outcome:

After implementation of various activities of ICAR-KVK, Kattupakkam especially demonstration, awareness programme, guest lecture, training, issuing of pamphlets, advisory services and field visits the adoption of an unique fish value added product of dry fish preparation under low cost solar dryer in Tamil Nadu including Kancheepuram district is given in the Table –

Table 4: For adoption level in fish value added products among fisher-folks of Tamil Nadu including Kancheepuram district - funds released under Central & State Government Sponsored and Central Government Sponsored Schemes on Department of Fisheries during 12th Plan

Name of schemes	Funds released during 12th Plan (Rs. in lakhs)		
	2012-13	2013-14	2014-15
National Fisheries Development Board (NFDB)	1756.58	900.87	1226.06
Development of Marine Fisheries, Infrastructure & Post Harvest Operations	800.00	1909.87	2043.50
National Scheme of Welfare of Fishermen	186.77	450.00	1850.44

(Source: Report of Department of Animal Husbandry, Dairying and Fisheries, 2015-16)

Impact:

KVK contribution had directed to effective improvement in preparation of fish value added products especially dry fish preparation on fish and prawn among the fishers of the Kancheepuram district. Presently, there is about more than 50 active fisher-folks involving preparation of dry fish and other products in the district. Further, now most of the agricultural value added producers were motivated/showing interest towards fish value added products as one of the component in the recent year.

10.Demonstration of Polyculture in periphyton enhanced system using sugarcane Bagasse

Situation analysis/ Problem statement:

Inland culture fishery in the country has witnessed development of specific and widely adaptable culture systems with regard to type of water bodies, culture period, inputs use and with due consideration to the availability of local resources, economic strength of the farmers and market acceptability of the produce. Among total fish production, Inland fisheries sector contributes 78% share, among them carps alone contributing over 85%. Among total water spread of Kancheepuam district possessed, while 59.18% are consisting seasonal water bodies. There is a growing interest among the farming community in other states as well to take up carp culture in a larger extent, thus paving way for demand for its seed and for establishment of commercial scale hatcheries. Carps can be farmed under monoculture or PolycuIture with catfishes and tilapia. Although carp species are contributing the better shares, but the total inland fish production and seed production are fluctuating and showing negative growth in the recent years.

Table 1: Fish production in last five years in Tamil Nadu

Year	Inland		Marine		Total		Fish Seed Production
	Inland ('000 tons)	Growth rate (%)	Marine ('000 tons)	Growth rate (%)	Production ('000 tons)	Growth rate (%)	No of fish seeds produced (million fry)
2009-10	181.80	7.65	401.13	9.81	529.28	9.13	529.28
2010-11	210.20	15.62	404.61	0.87	291.82	5.46	291.82
2011-12	184.75	-12.10	426.74	5.47	611.49	-0.54	431.84
2012-13	191.96	3.90	428.44	0.40	620.40	1.46	188.20
2013-14 (Provisional)	192.03	0.36	432.27	0.89	624.30	0.62	2871.50

(Source: Report of Department of Animal Husbandry, Dairying and Fisheries, 2015-16)

Periphyton is comprised of groups of microorganisms living on submerged substrates. The Group includes algae, filamentous algae, bacteria, protozoans and free-swimming microorganisms such as rotifers and cladocerans. It can be described as an assemblage of organisms growing upon the free surfaces of submerged objects in water and covering them with a slimy coating. Periphyton comprises a major proportion of benthic algal production in shallow aquatic ecosystem. Though, there is a common assumption that the phytoplankton community is the most important in terms of energy fixation and fuelling the food web, research has shown that macrophytes and periphyton are significant and often the dominant contributor to primary production in aquatic ecosystems. Periphyton is readily consumed by browsers such as mahseer, rohu and *Labeo fimbriatus* including other carps and is also helpful in improving water quality by producing oxygen, trapping suspended solids and taking up ammonia and nitrate. Different types of substrates uses in periphyton based aquaculture, bamboo poles and branches, coral reefs, branches of different trees or shrubs, higher aquatic plants, plastic (pvc pipes , plastic sheets, plastic bottles etc.), stones, sugarcane bagasses, jute sticks etc.

The technological interventions during the recent years have led to increase the mean national fish production levels from about 600 kg/ha to over 2,800 kg/ha. The Tamil Nadu naturally fertile and highly potential for fish seed production as well as food fish production. This land is irrigated to a larger extent by extensive canal system and also flood banks of the terrain. The Kancheepuram district is having approximately 1293.18 ha of seasonal fresh water farm pond resources. At present, there is a huge demand existing for inland fish production due to the reduced growth rate (<0.3 kg/fish), size variation among fish population, higher cost of feed, prolonged culture period (>9months) and lack of scientific knowledge on fish culture among the farmers. Therefore, the fish production per unit area is to be achieved by the moderate stocking density with realizing the production of 4 to 10 tones/ha/yr to meet the requirement fish consumption for the growing human population with the available natural resources.

The fish production has to increase to satisfy the growing demand, extending the area under aquaculture is also now constrained by the limited availability of land and water resources. Therefore, the farm ponds are to be selected with available resources to maximize the production. Suitable water bodies namely ponds, seasonal tanks, canals, reservoirs, etc. Periphyton based aquaculture technology using sugarcane bagasse make possible to get maximum fish production from farm pond through utilization of available fish food organisms in all the natural niches and supplemented by artificial feeding and finally this technology may helpful in reduction of cost utilization for feed.

Plan, Implementation and Support (KVK Intervention):

ICAR - Krishi Vigyan Kendra (KVK), Kancheepuram has taken various measures to increase the unit fish production per hectare with limited availability of land and water resources in the Kancheepuram district through the following KVK mandatory programmes in collaboration with Government of Tamil Nadu, Department of Fisheries and ICAR - Central Institute of Brackishwater Aquaculture (ICAR-CIBA), Chennai during the recent years.

Table 2: Programme of Plan, Implementation and Support to the farmers by KVK, Kattupakkam

Name of the programme	No of intervention
Critical inputs - Fingerlings of Catla & Rohu (1.0 Nos/M^2) – 7500 & Plastic ropes (5000 metre)	5
FLD (0.75 Ha in 5 Demos)	1
Training programme (On-campus & Off-campus)	9
Awareness programme	4
Advisory services	1390
Scientist visit in the farmer's field	37
Technology disseminated in monthly magazine/Pamphlets	5
Broadcasting of short message services to farmers	7
Brief Radio talk	3
Guest lectures	10
Other extension programme	17

Output:

Farmer teacher of 5 Nos were developed to handle training classes on the significance of polyculture in periphyton enhanced system using sugarcane Bagasse practices in fish ponds and other water bodies have known in the Table – 3.

Table 3: List of farmer teacher developed in Kancheepuram district

Sl.No	Name of the farmer	Specialized areas	Contact Mobile No
1	Th.G.Saravannan, Kavanurpudhuchery village	Fish polyculture in periphyton enhanced system using sugarcane Bagasse	9894798513
2	Th.T.Balakrishnan, Sankarapuram village	Fish polyculture in periphyton enhanced system using sugarcane Bagasse	9443991047
3	Th.S.Sagadevan, Puthinathottam village	Fish polyculture in periphyton enhanced system using sugarcane Bagasse	9787270199
4	Th.K.Rathinarajasingam, Navalurnatham	Fish polyculture in periphyton enhanced system using sugarcane Bagasse	9884000413
5	Th.K.Rajendran, Silavattam village	Fish polyculture in periphyton enhanced system using sugarcane Bagasse	9442721301

The average fish production/yield, growth and economical impact recorded from different farmers in Kancheepuram district about polyculture in periphyton enhanced system using sugarcane Bagasse has cultivated in the fish ponds and given in the Table – 4.

Table 4: Average fish yield and economic parameters recorded in demo plot from Kancheepuram district during 2018-19

Parameters	Check	Demo
Fish Yield (kg/ha)	2865.2	3801.6
Average growth of fish (kg/fish)	0.38	0.44
Survival (%)	75.40	86.40
Gross cost Rs.	134044	149082
Gross return Rs.	229216	304128

Net return Rs.	95172	155046
BCR	1.71	2.04

Farmers Feedback: Polyculture in periphyton enhanced system using sugarcane Bagasse practices in fish ponds has aided to obtain average higher fish yield of 3801.6 kg/ha. It is a simple and viable practice of fish culture and also harvested fishes fetched for the higher market price of Rs.80/kg

Outcome:

After implementation of KVK's various activities especially demonstration, awareness programme, training, advisory services, guest lecture, issuing of pamphlets and field visits the adoption of fish culture method in ponds is given in the Table – 5.

Table 5: For adoption level of freshwater fish culture in ponds - funds released under CSS and CS Schemes on Department of Fisheries in Tamil Nadu during 12th Plan

(Rs. in lakhs)

Name of Schemes	**Funds released during 12th Plan**		
	2012-13	**2013-14**	**2014-15**
Development of Inland Fisheries & Aquaculture	50.00	0.00	0.00
Development of Marine Fisheries, Infrastructure & Post Harvest Operations.	800.00	1909.87	2043.50
National Scheme of Welfare of Fishermen.	186.77	450.00	1850.44
Strengthening of Database & Geographic Information System of Fisheries Sector.	0.00	0.00	0.00
National Fisheries Development Board (NFDB)	1756.58	900.87	1226.06

(Source: Report of Department of Animal Husbandry, Dairying and Fisheries, 2015-16)

Impact:

KVK involvement had lead to effective improvement in polyculture in periphyton enhanced system using sugarcane Bagasse practices in fish ponds among the fish cultivating farmers in the Kancheepuram district. Presently, there is about more than 100 active fish farmers doing fish culture spreading throughout the district. Further, now most of the agricultural farmers fascinated towards fish culture activity as one of the integrated farm component.

11.Demonstration of Grass carp in control of aquatic weed infested water bodies of Kancheepuram district

Situation analysis/ Problem statement:

Aquatic plants/weeds growing in ponds and lakes are beneficial for fish and wildlife. They provide food, dissolved oxygen, and spawning and nesting habitat for fish and waterfowl. Aquatic plants can trap excessive nutrients and detoxify chemicals. Aquatic wildflowers such as the water lily are sold and planted to provide floral beauty to garden ponds. However, dense growths (over 25% of the surface area) of algae and other water plants can seriously interfere with pond recreation and threaten aquatic life. Water plants can restrict swimming, boating, fishing, and other water sports. Water plants can impart unpleasant taste (musty flavor), decaying vegetation emits offensive odors (rotten egg smell), and algae can discolor pond waters. Dense growths of plants

can cause night time oxygen depletion and fish kills. Green plants produce oxygen in sunlight, but they consume oxygen at night. Decomposing water weeds can deplete the oxygen supply, resulting in sport fish kills from suffocation. Dense plant growths can provide too much cover, preventing predation, and leading to stunted (small-sized) sport-fish populations.

The following problems are occurred during the increasing of aquatic weeds/plants in the water bodies;

- Restricted recreation
- Fish kills
- Fish flavor problems
- Pond water odor problems
- Drinking water taste problem
- Stunted fish growth

Aquatic Plant Control Methods

Selection of the best treatment or combination of treatments depends on the species of water plant, the extent of the problem, economic considerations, local environmental conditions, and pond uses. First, be sure that you have an aquatic plant problem. Some aquatic plant growths are minor and temporary, and do not require costly weed control actions, thereby saving you worry, time, and money. If aquatic plants cover more than 25% of the pond surface area, you should consider implementing weed control. Second, different types of weeds (algae, floating-leaf weeds, emergent weeds, and submersed weeds) require different treatments. Depending on the type of weed and the severity of the problem, one or a combination of the following control methods can be very effective:

Aquatic Plant Control Methods

- Dredge and deepen the pond
- Harvest (manual or mechanical removal) weeds
- Manipulate water levels
- Shade, dye
- Install pond bottom liners
- Use biological controls
- Use chemical controls

Biological Controls (Grass Carp)

Introducing animals and plants that eat or compete with waterweeds represents another control method. Herbivorous animals (those that eat plants) include a wide variety of insects, snails, crayfish, tadpoles, turtles, fish, ducks, geese, and swans which can be stocked in ponds to consume aquatic plants. Of these, the triploid (sterile fish with 50% more chromosomes than normal) Chinese grass carp (*Ctenopharyngodon idella*) is a plant-eating fish that can be stocked in ponds to provide effective, economical plant control. The recommended stocking rate is about 12 fish (stock large fish 9-12 inches in length) per surface acre. Ponds with very dense weeds may require more fish and those with less, fewer fish. These fish will try to migrate up or downstream out of your pond, so block fish passage out of the pond. Most states require a permit from the fish and game agency to import and stock these non-native fish. One problem with introducing grass carp and other herbivores into ponds for aquatic plant control is that their body wastes act as fertilizers and stimulate aquatic plant growth. Herbivorous animals, by recycling nutrients, may do more harm than good. Many different types of aquatic plants compete with one another for space, light, nutrients, and other critical factors. Therefore, it is sometimes possible to discourage the growth of nuisance aquatic plants by planting beneficial ones. Grass carp may eat beneficial as well as nuisance plants.

Grass carp is a native Chinese freshwater fish. It has been introduced to about 40 other countries and there have been limited reports about the natural populations occurring in those

areas. It inhabits lakes, rivers and reservoirs. It is a basically herbivorous fish that naturally feeds on certain aquatic weeds/plants. However, the fry/larvae feed on zooplankton. Under culture conditions, grass carp can well accept artificial feed such as the by-products from grain processing, vegetable oil extraction meals, and pelleted feeds, in addition to aquatic weeds and terrestrial grasses. Grass carp normally dwell in mid-lower layer of the water column. Comparatively, it prefers clear water and can move swiftly. Flowing water and changes in water level are essential environmental stimuli for natural spawning. Grass carp grow rapidly and reach a maximum weight of 35 kg in the wild.

In our country the freshwater fish culture has showed development of specific and widely adaptable culture systems with regard to type of water bodies, culture period, inputs use and with due consideration to the availability of local resources, economic strength of the farmers and market acceptability of the produce. Among total fish production, Inland fisheries sector contributes 78% share, among them carps alone contributing over 85%. Among total water spread of Kancheepuam district possessed, while 59.18% are consisting seasonal water bodies. There is a growing interest among the farming community in other states as well to take up carp culture in a larger extent, thus paving way for demand for its seed and for establishment of commercial scale hatcheries. Carps can be farmed under monoculture or PolycuIture with catfishes and tilapia. Although carp species are contributing the better shares, but the total inland fish production and seed production are fluctuating and showing negative growth in the recent years.

Table 1: Fish production in last five years in Tamil Nadu

Year	Inland		Marine		Total		Fish Seed Production
	Inland (‘000 tons)	Growth rate (%)	Marine (‘000 tons)	Growth rate (%)	Production (‘000 tons)	Growth rate (%)	No of fish seeds produced (million fry)
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2010-11	210.20	15.62	404.61	0.87	291.82	5.46	291.82
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2012-13	191.96	3.90	428.44	0.40	620.40	1.46	188.20
2013-14 (Provisional)	192.03	0.36	432.27	0.89	624.30	0.62	2871.50

(Source: Report of Department of Animal Husbandry, Dairying and Fisheries, 2015-16)

During the recent years technological interventions have led to increase the mean national fish production levels from about 600 kg/ha to over 2,800 kg/ha. The Tamil Nadu naturally fertile and highly potential for fish seed production as well as food fish production. This land is irrigated to a larger extent by extensive canal system and also flood banks of the terrain. The Kancheepuram district is having approximately 1293.18 ha of seasonal fresh water farm pond resources. At present, there is a huge demand existing for inland fish production due to the reduced growth rate (<0.3 kg/fish), size variation among fish population, higher cost of feed, prolonged culture period (>9months) and lack of scientific knowledge on fish culture among the farmers. Therefore, the fish production per unit area is to be achieved by the moderate stocking density with realizing the production of 4 to 10 tones/ha/yr to meet the requirement fish consumption for the growing human population with the available natural resources.

Plan, Implementation and Support (KVK Intervention):

ICAR - Krishi Vigyan Kendra (KVK), Kancheepuram has taken various measures to increase the unit fish production per hectare with limited availability of land and water resources in the Kancheepuram district through the following KVK mandatory programmes in collaboration

with Government of Tamil Nadu, Department of Fisheries and ICAR - Central Institute of Brackishwater Aquaculture (ICAR-CIBA), Chennai during the recent years.

Table 2: Programme of Plan, Implementation and Support to the farmers by KVK, Kattupakkam

Name of the programme	No of intervention
Critical inputs - Fingerlings of Grass carp (0.3 Nos/M^2) and other carps (0.7 Nos/M^2) – 1500 Nos	6
FLD (0.9 Ha in 6 Demos)	1
Training programme (On-campus & Off-campus)	9
Awareness programme	4
Advisory services	1390
Scientist visit in the farmer's field	37
Technology disseminated in monthly magazine/Pamphlets	5
Broadcasting of short message services to farmers	7
Brief Radio talk	3
Guest lectures	10
Other extension programme	17

Output:

Farmer teacher of 6 Nos were developed to handle training classes on the significance of Grass carp culture in control of aquatic weed infested water bodies and other ponds have known in the Table - 3.

Table 3: List of farmer teacher developed in Kancheepuram district

Sl.No	Name of the farmer	Specialized areas	Contact Mobile No
1	Th.J.Rajendran, Sooradimangalam village	Grass carp culture in control of aquatic weed infested water bodies	9894678371
2	Th.R.Ravi, Thalampedu village	Grass carp culture in control of aquatic weed infested water bodies	9094987768
3	Th.K.Prakash, Kavanurpudhuchery village	Grass carp culture in control of aquatic weed infested water bodies	9952635652
4	Th.R.Vinayagam, Silavattam-Pakkam village	Grass carp culture in control of aquatic weed infested water bodies	9944332249
5	Th.N.Arumgam, Indalure village	Grass carp culture in control of aquatic weed infested water bodies	9047868804
6	Th.M.Saravannan, Kilativakkam village	Grass carp culture in control of aquatic weed infested water bodies	9788553001

The average fish production/yield, growth and economical impact recorded from different farmers in Kancheepuram district about Grass carp culture in control of aquatic weed infested water bodies has cultivated and given in the Table – 4.

Table 4: Average fish yield and economic parameters recorded in demo plot from Kancheepuram district during 2018-19

Parameters	Check	Demo
Fish Yield (kg/ha)	2743.2	3914.6
Average growth of fish (kg/fish)	0.36	0.46
Survival (%)	76.2	85.1
Gross cost Rs.	152400	149841
Gross return Rs.	219456	313168

Net return Rs.	67056	163327
BCR	1.44	2.09

Farmers Feedback: Grass carp culture in control of aquatic weed infested water bodies has aided to obtain average higher fish yield of 3914.6 kg/ha. It is a simple and viable practice of fish culture and also harvested fishes fetched for the higher market price of Rs.80/kg

Outcome:

After implementation of KVK's various activities especially demonstration, awareness programme, training, advisory services, guest lecture, issuing of pamphlets and field visits the adoption of fish culture method in ponds is given in the Table – 5.

Table 5: For adoption level of freshwater fish culture in ponds - funds released under CSS and CS Schemes on Department of Fisheries in Tamil Nadu during 12th Plan

(Rs. in lakhs)

Name of Schemes	Funds released during 12th Plan		
	2012-13	2013-14	2014-15
Development of Inland Fisheries & Aquaculture	50.00	0.00	0.00
Development of Marine Fisheries, Infrastructure & Post Harvest Operations.	800.00	1909.87	2043.50
National Scheme of Welfare of Fishermen.	186.77	450.00	1850.44
Strengthening of Database & Geographic Information System of Fisheries Sector.	0.00	0.00	0.00
National Fisheries Development Board (NFDB)	1756.58	900.87	1226.06

(Source: Report of Department of Animal Husbandry, Dairying and Fisheries, 2015-16)

Impact:

KVK involvement had lead to effective improvement in Grass carp culture in control of aquatic weed infested water bodies among the fish cultivating farmers in the Kancheepuram district. Presently, there is about more than 100 active fish farmers doing fish culture spreading throughout the district. Further, now most of the agricultural farmers fascinated towards fish culture activity as one of the integrated farm component.

12.FARMERS FIELD SCHOOL – CARP FARMING PRACTICES IN FARM POND

Background:

Farmers Field School Programme (FFS) on Carp farming practices in farm pond was conducted in Kavanurpudhuchery village, Uthiramerur block of Kancheepuram district. Carp farming is the major cultivating practices in the Kancheepuram District in the ponds like tanks/temple tanks, seasonal ponds, village ponds, irrigating ponds, reservoir, lake and other aquaculture ponds including the farm ponds. It was expressed by the farmers that Carp varieties like Catla, Rohu, Mrigal, Silver carp, Grass carp and Common carp which are resulted lower fish yield, under-utilization of resources and high cost of production in cultivation along with incidence of diseases. Among the measures discussed to reduce the cost of production and increase productivity; it was proposed to conducts FFS programme on Carp farming practices in farm pond. The farmers were briefed about the recommended practices. The farmer's practice on carp fish

cultivation was studied and based on that recommendations were suggested. A group of 25 Nos carp fish cultivating farmers in this region was selected for the programme.

Intervention:

Farmers Field School Programme on Carp farming practices in farm pond along with all cultural practices given in form of training and demonstration.

Intervention process:

FFS programme has conducted in the fish farm of Mr.S.Gandhi, Kavanurpudhuchery village in 0.15 Hectare area. The classes were scheduled as follows:

Sl. No.	Topic	Events
1.	Importance of FFS programme and Problem Identification	Group discussion
2.	Inauguration – Carp culture in farm ponds – Water and Soil sample collection	Training and Demonstration
3.	Pond preparation- manuring- water culture, Stocking of fish fingerings - Algal culture, natural and supplementary feeds	Training and Demonstration
4.	Application and uses of organic manures and inorganic manures, management of water quality parameters	Training and Demonstration
5.	Model fish sampling & measuring of growth of fish, Juvenile transfer technology, Feed management	Training and Demonstration
6.	Fish sampling and fish feeding practices, Population of fishes & measuring of fish growth	Training and Demonstration
7.	Health management in fish pond, Disease management in fishes,	Training and Demonstration
8.	Recent advances in carp culture/ farming, farmers practices in carp farming	Training and Demonstration
9.	Fish sampling-Check tray & evaluation of fish growth, partial harvesting, fish sampling – Growth of fishes	Training and Demonstration
10.	Harvest and Field Day Ceremony	Feed back

Critical inputs were supplied as follows:

- Carp Fish fingerlings/seeds of Catla, Rohu, Mrigal, Silver carp, Grass carp and Common carp
- Lime
- Method demonstration – Pond ploughing
- Mahua oil cake
- In organic manures – Urea and Triple super phosphate
- Fish feeds – Groundnut oil cake and Rice bran
- Training material - Cap
- Book let (Training manual)
- Fish cage materials

During the Farmers Field School Programme the lectures, training and demonstrations were conducted as per recommended practices as follows;

Practices	**Existing practices**	**Recommended practices**
Pond preparation	Repair of inlets	Soil sampling, Reconstruction/repairs of dyke & Inlets/Outlets, Desilting of existing pond

Pond management I.Pre-stocking	Sun drying the pond	Removal of unwanted weeds, removal of unwanted fishes by mahua oil cake @2500kg/Ha, Sun drying pond bed, liming - 200 to 250 kg/Ha & Ploughing
II. Fertilisation / Manuring	Water culture by applying cow dung without quantification	Water culture by applying of Organic manure – Cow dung @ 5000 kg/Ha, Poultry, sheep manure. Inorganic fertiliser; Urea - 30 to 60 kg/Ha/month & Triple super phosphate -15 to 30kg/Ha/month
III. Stocking	Stocking of carps fingerlings 5000 - 8000 Nos/Ha directly to grow-out ponds	Fingerlings of Indian major carps and exotic carps in Nursery pond @10,000 Nos/Ha & later Juvenile transfer to grow-out pond @ 8000 to 10,000 Nos/Ha
IV.Post-stocking	Not measuring water quality parameters, only filling water if level reduced, fixed quantity of supplementary feed, rarely doing model fish sampling (kg/fish), not applying manures regularly	**Water quality managemen**t by Dissolved oxygen 4-5ppm, pH – 7.5 to 8.5, Turbidity – 30 to 45 cm **Model fish sampling** for recording average body weight (kg/fish/month) **Supplementary feeding** daily @ 3 - 5 % of the body weight **Manuring** - Organic manuring @1000 kg/Ha & Inorganic manure application @ monthly intervals depends on pond productivity **Disease management** – measures for parasite and bacterial diseases
V. Harvesting	Not based on body weight	Fishes attain average weight of 0.7 to 1.0 kg including partial harvesting

Impact:

Through the FFS programme

- Farmers were able to take the right carp fish cultivation management decisions at every stage of the carp fish farming.
- Farmers developed a regular habit of visiting their field and monitoring carp fish farming methods/practices.
- It was known that exact method of pond preparation and better/proper utilization of organic manures like cow dung, poultry manure, duck manure, pig manure, goat manure are available locally.
- The farmers were known the correct level/percentage of stocking of carp fish varieties in the fish ponds.
- Understand and learned the Nursery fish pond cultivation and Juvenile transfer technology to the Grow-out fish pond.
- Most of the farmers were able to differentiate the healthy and unhealthy/diseased fishes during the culture and realized/taught the remedial measures.
- The farmers were practiced well about farm made/available fish feeds like fodder crop - Cumbu Napier Hybrid grass of CO-3, CO-4 and CO-5, groundnut oil cake, rice bran, wheat

bran, maize bran including feeding schedule including the commercially available pellet fish feeds.

- Few indigenous technical knowledge like utilization of locally available vegetable waste to feed the fish ponds, which was enabled to reduce the cost of feed; it was recorded and the same was replicated in FFS farmer's field.
- Also provided the knowledge on model fish sampling, measuring of fish population, evaluation of water quality parameters in the fish ponds; partial and final harvesting stages.
- Farmer's queries were cleared during the sessions; then and there by frequent contact between farmers and facilitators were formed.

15. B. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year – Nil

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Dairy and Goat	Leaves of the pomegranate or tender sapota	To cure Diarrhoea
2	Poultry	Pepper,cumin seeds, turmeric, onion,garlic, keezhanelli leaves and salt	To prevent Ranikhet disease in poultry
3	Dairy and Goat	Sesame oil, lard and banana are mixed thoroughly and fed orally to cattle for the treatment of FMD.	To cure FMD wounds
4	Dairy and Goat	Jaggery, garlic and ginger are mixed with domestic grinder. This power id mixed with sufficient quantity of water.	To cure Bloat condition
5	Dairy	Betel leaf and pepper mixed with cocount oil	To cure Indigestion
6	Dairy, Goat and Poultry	Egg and black gram (*Vigna mungo*) are ground and applied in the fractured place and bamboo stick is tied around the fractured bone.	To cure bone fracture
7	Dairy and goat	Guava leaves	To cure enteritis

16. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Assessment of the effectiveness of Prosync-NC in oestrus synchronizationin dairy cattle	158	40	4500	7200
Demonstration of Mastiguard efficacy in Clean Milk Production	388	44	27000	43200
Demonstration of EVM for prevention of Ranikhet disease in	160	46	2400	4600

Poultry				
Demonstration of Nano dermal cream to accelerate wound healing in Dairy cows	50	36	3500	8000
Popularisation of Grama priya chicken as a backyard venture among rural farmers	168	48	2700	4800
Popularisation of backyard rabbit rearing among rural youth to enhance the livelihood status	50	35	1850	3300
Processing and Value addition	126	10	10,000/	25,000/
Rural craft	38	2	-	5,000/-

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

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

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

Impact of training Programmes : New livestock farms started				
S.No.	**Name of the Farm**	**Name and Address**	**Contact No.**	**Farm size (No. of animals/ Birds)**
1	Quail farm	Th.G.Munusamy, Selaiyur	7401099374	200
2	Goat farm	Th.Palani, Perungudi	9789079274	20
3	Poultry farm	Tmt.S.Subha lakshmi, Manapakkam	8056178292	50
4	Turkey farm	Th.M.Venkadesan, Palayasevaram	9994087608	60
5	Goat farm	Th.V.Rangasamy,Karapakkam	9566284389	20
6	Dairy farm	Th.D.Rajkamal,Poonamallee	9884109366	05
7	Dairy farm	Th.M.R.Saravanan,Perungalathur	8056100309	12
8	Poultry farm	Th.M.Pavithran,Kattankolathur	8056115387	75
9	Pig farm	Th.K.Prabakaran,Ayapakkam	9840495854	30
10	Poultry farm	Th.T.S.Gopi,Ninnakkarai	9884118130	150
11	Poultry farm	Tmt.K.Kavitha, Madurantagam	9444542903	200
12	Goat farm	Th.B.Senthil kumar, Tambaram	9841072377	40
13	Goat farm	Th.P.M.Anil,Kamarajapuram	9841084997	40
14	Goat farm	Th.G.Nagaraj,MMNagar	9840689900	20
15	Goat farm	Th.A.Shanmugam,Sempedu	9789929924	100
16	Poultry farm & Goat farm	Tmt.S.Indhumathi,Melpakkam	9884729815	200 & 5
17	Poultry farm	Th.E.Loganathan,Chinna vippedu	9688062600	100
18	Dairy farm	Th.Raghavan,Aadhanur	9789036887	5
19	Dairy farm	Th.R.Srinivasan,Chennai	9382149944	5
20	Poultry farm	Th.R.Thirumalai,Mannivakkam	8056161191	30
21	Goat farm	Th.U.Raja,Nelvoi	9789514705	30
22	Dairy farm	Th.D.Rakesh,Chrompet	9916913131	23
23	Dairy & Poultry farm	Th.J.Booto,Potheri	9952812420	4+110
24	Goat farm	Th.V.R.V.Prasad, Kayarambedu	9940105733	18
25	Goat farm & Poultry farm	Th.S.Baskar, Dasarikuppam	9444988041	18+50
26	Poultry farm	Tmt.K.Kavitha, Vedavakkam	6380046883	350
27	Rabbit farm	Th.V.Raghuraman,Urapakkam	9176708781	5
28	Quail farm	Th.Muthu murugan,Sembakkam	9884735255	5000
29	Goat & Poultry farm	Th.J.Madhan farm,Sirumaiyalur	9840728475	100 + 600
30	Poultry farm	Th.S.Shivasankar,Chenglepet	9524536773	100
31	Dairy farm	Th.P.Lurthu Nathan, Kelambakkam	9884431257	5

32	Poultry farm	Th.Bagawan Doss, Kattankolathur	7397468886	200
33	Quail farm	Tmt.Thilagavathy,Urapakkam	9840841635	500
34	Poultry farm	Th.Francis.F,Chrompet	9884058222	50
35	Dairy farm	Th.M.Padmanabhan,Naduveerapattu	9791174074	12
36	Rabbit and Poultry farm	Th.E.Prabakaran, Acharapakkam		20/300
37	Poultry farm	Th.R.Sivaji,Guruvanmedu	7690917646	200
38	Dairy farm	Th.Radhakrishnan,Thoothuvilampattu	9790917646	6
39	Dairy+Goat+ Poultry	Th.E.Chandrasekar, Hanumanthapuram	9444931414	15/20/50
40	Pig farm	Th.V.P.Natarajan,Velichaai	9444350905	34
41	Goat farm	Th.R.Elumalai,Budur	9840502578	36
42	Goat farm	Th.D.Devaraj, Kondamangalam	9942346068	15
43	Poultry-Kadaknath farm	Th.Senthil.K, Chennai	9444109598	150
44	Poultry farm	Th.L.Sridhar, Unamancheri	7448362777	100
45	Goat farm	Th.M.Sudhakar, Malayambakkam	9025598989	80
46	Poultry farm	Th.S.Muniyandi, Cheyyur	9962124328	200
47	Poultry farm	Th.K.Arjunan, Siruvathur	9840948855	300
48	Rabbit farm	Tmt.R.Tamilselvi, Kannivakkam	9840123073	50
49	Goat farm	Th.R.Bharathi kannan, Marudheri	7010125869	30
50	Goat farm	Th.Ravi,Guduvancheri	8682863014	30
51	Goat & Dairy farm	Th.R.Gautam, Mullikolathur	9750329407	21+8
52	Goat farm	Th.M.Mahesh, Thiruporur	7904496625	60
53	Dairy farm	Th.P.Sathish kumar, Iyyencheri	8667436216	10
54	Goat farm	Th.E.Manicam,Nariambakkam	8220643565	30
55	Goat & Poultry farm	Th.Gowtham, Mullikolathur	9750329407	21 & 500
56	Poultry farm	Tmt.G.Sumithra, Potheri	9840132443	300
57	Native chicken farm	Th.R.Madhan kumar, Madurantagam	7010826917	50
58	Rabbit farm	Th.Antony,Korukkanthangal	9884047174	40

Sl No.	Type of Farm Unit	Name and Address of the Farmer	Farm Size (No. of Animals / Birds)	Contact No.	Taluk	PIN Code
1.	Pickles unit	Th.R.Krishna Seliyur, Tambaram	100kg/month	Mobile-7299002381	Tambaram	600044
2.	Herbal products	Th.Gopi No. 1 Ramamurthy street, Chrompet Chennai-600044	20kg/month	Mobile-8939932115	Chrompet	-
3.	Herbal products	Mrs. Rahini Kolapakkam, Vandalur	30kg/month	Mobile-9486752449	Vandalur	-
4.	Milk products	Th.Chandrasekhar Dasarikuppam Anumanthapuram post Singaperumal kovil, Chengelpet TK	300kg/month	Mobile-9444931414	Chengelpet TK	-
5.	Organic Food products	Mrs. Anuradha ARB Organics No. 143, 23rd st, Poompuhar Nagar Kolathur, Chennai-600 099	50kg/month	Mobile-9940542355	Kolathur	600 099

6.	Mushroom Products	Mrs.Yashoda No.298, TKM Road Melaripakkam Koot Road Thirukalukundrum Road	100kg/month	9965434604	Thirukalukundrum	-
7.	Masala powders	A.Sivasankaran No.29 D Anbalagan street Anna Nagar Thiruvallur District	50kg/month	7667584602	Thiruvallur	602002

Fisheries- (i) New fish farms started/established – 21

Sl. No	Month & Year	Type of Farm unit	Name and Address	Farm size /Support provided
1	April, 2018	Fish pond	Mr. K.S.Rameshkumar, Kaliyapettai, Uthiramerur-TK, Kancheepuram-Dt, Pincode: 603 106	0.2 Ha, 2000 Nos of carps stocked
2	May, 2018	Fish pond	Mr.Loganathan, Vayalur village, Cheyyur-TK, Kancheepuram-Dt, Pincode: 603 310	0.065 Ha, 700 Nos of Carp fishes stocked
3	June, 2018	Fish farming	Mr.R.Karthikeyan, Kovilampakkam, Tambaram, Chennai – 600 117, Kancheepuram– District	0.1 Ha, 1000 Nos of carps fishes stocked
4	July, 2018	Fish farm	Mr.T.Anbalagan, Thimmasamudram, Kancheepuram–631 502	Advisories, fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction
5	July, 2018	Fish farm	Mr.Loganathan, Veliyoore, Kancheepuram – 631 502	Advisories, fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction
6	August, 2018	Fish farm	Mr.D.Truman, Mappedu-post, Kasapuram, Chennai-600 126	Advisories, fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction
7	August, 2018	Fish farm	Mr.K.Marimuthu, Madavidhi, Thiruvelankadu, Kancheepuram – District	Advisories, fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction
8	September, 2018	Fish culture	Mr.K.Charles, Vedanthangal, Kancheepuram-Dt	Fish pond construction, seed stocking, feed & health management, Harvest, Nursery &Pond construction, Advisories
9	September, 2018	Fish farm	Mr.V.Deivasigamani, Desimugipettai, Thirukalukundrum-TK , Kancheepuram-Dt	Fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction, Advisories
10	September, 2018	Fish farm	Mr.N.Sriraman, Kaliyakudi, Thiruvarur-Dt	Fish pond construction, seed stocking, feed & health management, Harvest, Nursery & Pond construction, Advisories
9	October, 2018	Fish pond	Mr.T.Balamurugan, Mabagaman village, Thiruvanamalai-Dt	Pond construction and culture methods, etc
8	October, 2018	Fish pond	Mr.P.S.Chidambaram, Thakollam, Vellore-Dt	Pond construction and culture methods, etc
9	October, 2018	Fish pond	Mr.N.Udhayakumar, Paandoore, Kancheepuram-Dt	Pond construction and culture methods, etc
10	November, 2018	Fish farm	Mr.C.Faisal Ahmed, Pernambut-635 810 Vellore-Dt	Advisories, pond construction and culture methods

11	November, 2018	Fish farm	Mr.K.Arumugam, Alathur, Thiruvanamalai-Dt	Advisories, pond construction and culture methods
12	November, 2018	Fish farm	Mr.V.Saravanakumar, Vissur village, Uthiramerur, Kancheepuram-Dt	Advisories, pond construction and culture methods
13	December, 2018	Fish farm	Mr.K.S.Rameshkumar, Kaliyapettai village, Uthiramerur, Kancheepuram-Dt	Advisories, training, pond construction and culture methods, etc
14	December, 2018	Fish pond	Mr.C.Suresh, Aavadi, Thiruvallur-Dt	Advisories, training, pond construction and culture methods, etc
15	January, 2019	Fish pond	Mr.U.Murugan, Authur, Kancheepuram –Dt. 603101	Advisories, training, pond construction and culture methods, etc
16	January, 2019	Fish pond	Mr.N.Arumugam, Indalur, Kancheepuram-Dt. 603 301	Advisories, training, pond construction and culture methods, etc
17	February, 2019	Fish pond	Mr.Sathyamoorthy, Arasanimangalam, Kancheepuram-Dt.	Advisories, training, pond construction and culture methods, etc
18	February, 2019	Fish pond	Mr.JhonRose, Tambaram, Kancheepuram –Dt.	Advisories, training, pond construction and culture methods, etc
19	March, 2019	Fish pond	Mr.K.Suresh, Vanthavasi, Thiruvanamalai-Dt.	Advisories, training, pond construction and culture methods, etc
20	March, 2019	Prawn culture	Mr.N.Nijalingam, Nerumpore, Kancheepuram – Dt.	Advisories, training, pond construction and culture methods, etc
21	March, 2019	Fish pond	G.Yuvaraj, Kaliyapettai, Kancheepuram-Dt.	Advisories, training, pond construction and culture methods, etc

(ii) Status of development if any in the existing farm after the training in fisheries – 6

Sl. No	Month & Year	Name of the Farm	Name and Address	Farm size (No of animals/Birds)	
				Before training	After training
1	April, 2018	Fish farm	Mr.G.Ravikumar, Kavanurpudhucherry, Kancheepuram-Dt	650 Nos of fishes stocked	1200 Nos of fishes stocked
2	May, 2018	Fish farm	Mr.L.Dillibabu,Pallur, Chengalpattu, Kancheepuram-Dt	0.125 Ha 800 Nos of carp fishes stocked	0.125 Ha 1000 Nos of carps & 1000 Nos of prawns
3	June, 2018	Fish farm	Mrs.V.Saravanakumar, Manampathy, Uthiramerur–TK, Kancheepuram-Dt	400 Nos of carps cultured	Carps – 500 Nos, Catfish – 200 Nos& Freshwater Prawn 300 Nosstocked

17. LINKAGES

17.A. Functional linkage with different organizations

Name of organization	Nature of linkage
State Department of Animal Husbandry	Participation in meetings, conducting training programmes, demonstration, etc.
State Department of Agriculture	
State Department of Horticulture	
State Department of Fisheries	
KTDCMPU, Chennai	
State Department of Agricultural Engineering	

National Seeds Corporation	For implementing FLD programme
Tamil Nadu Fisheries Development Corporation	For conducting training programmes and demonstration
State Institute for Rural Development (SIRD)	
DRDA, Kancheepuram	
Women Development Corporation, Chennai	
State Bank of India, Chennai Division	
Zonal Research Centre, TNAU,Coimbatore	For supply critical inputs and farm implements for demonstrations
TNAU, Coimbatore	
Central Institute of Agrl. Engg., Coimbatore.	
Ministry of food processing Industries	For conducting training and demonstrations
NABARD, Chennai	
National Horticulture Board	
Central Institute of Brackish water Aquaculture, Chennai	
Tamil Nadu Dr.J.Jayalalitha Fisheries University, Nagapattinam	
Non-Governmental Organizations	
Nehru Yuva Kendra, Sriperumpudur	For conducting training and demonstrations
DHAN Foundation, Chengalpattu	
Unorganised Workers Federation, Chennai	
Hand in Hand, Kancheepuram	

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

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Farmers Orientation training cum workshop for rural dairy farmers.	07.09.2018 & 18.12.2018 (2018-19)	Tamil Nadu Livestock Development Agency, Chennai	117648

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