

PROFORMA FOR PREPARATION OF ANNUAL REPORT 2019-20
(April 2019-March 2020)

APR SUMMARY

Name of the KVK: Kancheepuram

1. Technology Assessment

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	2	10	10
Livestock	2	10	15
Various enterprises			
Total			
Technology Refined			
Crops			
Livestock			
Various enterprises			
Total			
Grand Total	4	20	25

2. Frontline demonstrations

Details	No. of Farmers/Locations	Area (ha)	Units/Animals
Oilseeds			
Pulses	150	60	0
Cereals	20	6	0
Vegetables	20	4	0
Other crops	0	0	0
Total	190	70	0
Livestock & Fisheries	26	-	320
Other enterprises	20	-	20
Total	46	-	340
Grand Total	236	70	340

3. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	182	2639	4762	7401
Rural youths	46	620	1762	2382
Extension functionaries	11	278	178	456
Sponsored Training	3	73	65	138
Vocational Training	1	3	12	15
Total	243	3613	6779	10392

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	452	58325
Other extension activities	70	6246
Total	522	64571

5. Mobile Advisory Services

Message Type	Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	Total
Text only	15	37	13	0	0	57	122
Voice only	0	0	0	0	0	0	0
Voice & Text	0	0	0	0	0	0	0
Total	15	37	13	0	0	57	122

6. Seed & Planting Material Production

	Quintal/Number	Value Rs.
Seed (q)	46.08	525720
Planting material (No.)	119750	59875
Bio-Products (kg)	2856	28560
Livestock Production (No.)	3311	62071
Fishery production (No.)	21010	9700

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	227	35250
Water	44	8850
Plant	0	0
Total	271	44100

8. HRD and Publications

Sr. No.	Category	Number
1	Workshops	3
2	Conferences	2
3	Meetings	16
4	Trainings for KVK officials	5
5	Visits of KVK officials	4
6	Book published	1
7	Training Manual	1
8	Book chapters	3
9	Research papers	12
10	Lead papers	1
11	Seminar papers	33
12	Extension folder	27
13	Proceedings	1
14	Award & recognition	5
15	On going research projects	1

DETAILED PROGRESS REPORT 2019-20

1. GENERAL INFORMATION ABOUT THE KVK

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

a) Name of the KVK	:	ICAR- KVK, Kancheepuram
b) Address	:	Krishi Vigyan Kendra Kattupakkam – 603 203 Kancheepuram District
c) Landline Phone No.	:	044 – 27452371
d) Fax No.	:	-
e) Official Mobile No.	:	9790991039
f) email ID	:	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

a) Name of the Host Organization	:	Tamil Nadu Veterinary and Animal Sciences University
b) Address	:	Madhavaram Milk Colony, Chennai - 600 051.
c) Landline Phone No.	:	044 – 25551586
d) Fax No.	:	-
e) Official mobile No.	:	-
f) email ID	:	registrar@tanuvas.org.in

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

a) Name	:	Dr.P.R.Nisha,Ph.D
b) Phone - residence	:	-
c) Mobile	:	9790991039
d) email ID	:	nisha_pr@hotmail.com

1.4. Year of sanction: 1985

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

Sl. No.	Sanctioned post	Name of the incumbent	Designation(eg.SMS)	Discipline (eg.Agronomy)	Edn. Qualification (eg.M.Sc.(Agri))	Specialization (if applicable) eg.Agronomy	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent/Temporary	Category (SC/ST/OBC/ Others)
1	Programme Coordinator	Nisha,P.R.Dr.	Senior Scientist/Professor and Head	Animal Sciences	Ph.D	Veterinary and Animal Husbandry Extension	144200-218200	157600	10-Nov-99	Permanent	OBC
2	Subject Matter Specialist	Siddharth,M.Dr.	Professor/SMS(Agrl.Engg.)	Agri. Engg.	Ph.D	Agricultural Processing	144200-218200	157600	9-Oct-00	Permanent	SC
3	Subject Matter Specialist	Vimalarani,M.Dr.	Associate Professor/SMS(Home Science)	Home Science	Ph.D	Food Science and Nutrition	131400-217100	135300	10-Aug-05	Permanent	OBC
4	Subject Matter Specialist	Selvaraj,T.Dr.	Assistant Professor/SMS(Agronomy/Soil Science)	Soil Science	Ph.D	Soil Science and Agri. Chemistry	79800-211500	101100	26-May-06	Permanent	OBC
5	Subject Matter Specialist	Devaki,K.Dr.	Assistant Professor/SMS(Animal Science)	Animal Science	Ph.D	Veterinary and Animal Husbandry Extension	68900-205500	82300	12-Nov-08	Permanent	OBC
6	Subject Matter Specialist	Gayathri Subbiah,Dr.	Assistant Professor/SMS(Plant Protection)	Plant Protection	Ph.D	Plant Pathology	68900 - 205500	84800	17-Feb-12	Permanent	OBC
7	Subject Matter Specialist	Sivakumar,K.Dr.	Assistant Professor/SMS(Fisheries)	Fisheries	Ph.D	Fisheries biotechnology	57700-182400	63000	1-Dec-15	Permanent	OBC
8	Programme Assistant	Shanmugapriya,M. Tmt.	Programme Assistant					25000 Consolidated	12-Mar-19	Temporary	OBC
9	Farm Manager	Vinitha,N.Ms.	Farm Manager					25000 Consoli	10-Apr-19	Temporary	OBC

1.6. Total land with KVK (in ha) (Consolidated figure):

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 (Completed/ in progress/ to be initiated)
1.	Administrative Building	ICAR	1989	350	500000	-	-	Completed
2.	Farmers Hostel	ICAR	1998	305	1019000	-	-	Completed
3.	Staff Quarters (No.)	ICAR	1998	230	739000		-	Completed
4.	Demonstration Units (add rows if required)							
	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	-	-	-	-	-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	Seed hub Project, IIPR, Kanpur	04.03.2020	21.28m x 9.68m	50.00 Lakhs			Completed
9	Shed (Farm equipment)	-	-	-	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Bolero Jeep	11/05/2017	738966	42433	Running
Tempo Traveller	5/30/2005	750000	100731	Running
Tractor	4/6/2009	760000	4394	Running
Scooty pep	6/22/2009	50000	54159	Running
Hero honda	8/25/2009	70000	63188	Running

C) Equipment & 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
Data Projector	2007	92,800	Good condition
Colour T.V	1997	17,975	Good condition
Digital camera	2004	20000	Good condition

Generator – 2 no.	2009	90819	Good condition
Computer and Accessories			Good condition
Desktop PC with multimedia kit	2000	59117	Good condition
FAX Modem	2000	9110	Good condition
Lexmark printer	2000	8000	Good condition
Public Address system	2006	10000	Good condition
e-connectivity system provision			
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 SAC meeting(s) conducted in the year

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

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 & hydroponic 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 erection 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 term 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.

2. DETAILS OF DISTRICT (2019-20)

2.0.Operational jurisdiction of KVKs:

Kancheepuram and Chengalpattu Districts

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 in the jurisdiction

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 jurisdiction for 2019-20*Khariif*

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	12000	696000	58

Rabi

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	70322	4359964	62
2	Groundnut	12597.9	220463	17.5
3	Blackgram	3964	35676	9
4	Sugarcane	2050	2050000	1000

Summer

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Sesame	911	10021	11

Horticultural Crops

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Brinjal	368	92000	250
2	Bhendi	245	24500	100
3	Gourds	210	31500	150
4	Water Melon	5578	1115600	126
5	Mango	3155	252400	80

2.5. Weather data (April 2019 to March 2020)

Month	Rainfall (mm)	Temperature°C		Relative Humidity (%)
		Maximum	Minimum	
April	0	36.0	27.0	65
May	0	37.6	28.3	63
June	686	37.9	27.1	62

July	1678	36.9	26.4	68
Aug	1493.7	34.4	24.9	76
Sept	1252	33.5	25.4	79
Oct	3332.1	32.7	24.7	83
Nov	2044	29.9	23.3	87
Dec	1496.1	29.9	22.0	79
Jan	0	30	20.2	63
Feb	2	31.8	21.8	63
Mar	0	34.2	23.8	66

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

Category	Population	Production	Productivity
Cattle			
<i>Crossbred</i>	279.2(in '000)	104.223 (in '000Tonnes)	6.8
<i>Indigenous</i>	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)	20219
<i>Indigenous</i>	99427		99427
Goats	192242	Mutton – 15.326 (in million kgs)	192242
Pigs	2509	Pork – 0.670 (in million kgs)	2509
<i>Crossbred</i>	625		625
<i>Indigenous</i>	1884		1884
Rabbits	3028		3028
Poultry			
Hens	132949	371.386 (in lakh Nos.)	
<i>Desi</i>	115126	180.200 (in lakh Nos.)	94.660
<i>Improved</i>	17823	137.186 (in lakh Nos.)	287.620
Ducks	42747		
Turkey and others	3229 and 4992		

Category	Area	Production	Productivity
Fish			
<i>Marine</i>	87.2 km (44 Fishing Village)	23290 (tons)	-
<i>Inland</i>	15055 ha	13650 (tons)	0.9 (tons/ha)
Prawn			
Scampi	26 ha	39 (tons)	1.5 (tons/ha)
Shrimp	276 ha	1932 (tons)	7.0 (tons/ha)

2.7. Details of Adopted Villages (2019-20)

Sl.No.	Taluk/mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
		Thirukalu kundrum	Sooradima ngalam	2018-19	Paddy,vegetables, Livestock	Lack of awareness on new varieties	Crop pattern Livestock

		Thirukalukundrum	Thathalur	2019-20	Paddy,vegetables, Livestocks	Pest incidences Yield reduction Non adoption of ICM practices Waste decomposition	Crop pattern Livestock
DFI villages							
	Thirukalukundram	Thirukalukundram	Thathalur	2019-20	Paddy, Vegetables	Pest incidences Yield reduction Non adoption of ICM practices Waste decomposition	Pest Management Vegetable cultivation
		Thirukalukundrum	Sooradimangalam	2018-19	Paddy,vegetables, Livestock	Lack of awareness on new varieties	Crop pattern Livestock

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 Farm Mechanization, Post Harvest Technology and Value Addition
Dairy	Importance of Green Fodder feeding in animals Calf Management Hygienic maintenance of animals Regular Deworming and Vaccination Infertility & disease management in livestock
Sheep and Goat	Scientific disease management like Deworming and vaccination Marketing strategies
Poultry	Training on scientific management of Poultry Prevention and control of diseases Backyard poultry farming Value addition in chicken and eggs
Pig	Regular Deworming & Vaccination Proper care of piglets General management practices
Rabbit	Awareness on rabbit farming Scientific disease management Green fodder cultivation Establishment of rabbit production unit
Fisheries	Composite fish culture in farm ponds

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

S.No	Activity	Target	Achievement
1.	Technologies Assessed (No.)	-	-
2.	On-farm trials conducted (No.)	4	4
3.	Frontline demonstrations conducted (No.)	15	15
4.	Farmers trained (in Lakh)	0.08	0.07
5.	Extension Personnel trained (No.)	60	60
6.	Participants in extension activities (in Lakh)	11235	10252
7.	Production of Seed (in Quintal)	48	115
8.	Planting material produced (in Lakh)	10	10
9.	Live-stock strains and fingerlings produced (in Lakh)	0.09	0.02
10.	Soil, Water, plant, manures samples tested (in Lakh)	0.005	0.003
11.	Mobile agro-advisory provided to farmers (in Lakh)	0.1	0.099
12.	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	500	237
13.	No.of Soil Health Cards issued by Traditional Laboratory (No.)	50	27

2.10. Salient Achievements by KVK during 2019-20 (bullet points)

3. TECHNICAL ACHIEVEMENTS

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

i) OFT (Technology Assessment)

Number of technologies		Total no. of Trials	
Targets	Achievement	Targets	Achievement
4	4	20	20

ii) FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement
15	15	19	19	182	182
(CFLD)	150	60	60	150	150

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

Number of Courses			Number of Participants	
Clientele	Targets	Achievement	Targets	Achievement
Farmers	180	182	5400	7401
Rural youth	45	46	1800	2382
Extn. Functionaries	10	11	400	456
Sponsored	2	3	100	178

iv) Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
150	168	15000	16930

v) Seed Production (q)

Target	Achievement	Distributed to no. of farmers
48	115	45

vi) Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
--------	-------------	-------------------------------

400000	427500	131
--------	--------	-----

v) Livestock (Nos.)

Target	Achievement	Distributed to no. of farmers
5000	5165.25	205

vii) Bio inputs (Nos.)

Target	Achievement	Distributed to no. of farmers
40q	44.85 q	380

3.B. TECHNOLOGY ASSESSMENT

i) Summary of technologies assessed under various crops by KVKs (Add rows wherever required)

Thematic areas	Crop	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers
Integrated Nutrient Management					
Varietal Evaluation					
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management	Tuberos e	Assessment of Management modules against nematodes infestation in tuberos e	IIHR, Bengaluru 2017; NBAIR, Bengaluru, 2017	5	5
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology	Paddy	Green Manuring with Daincha@50 Kg/ha Multi variety green manuring @ 50 kg/ha (IIRR, 2016) and Farmers practice FYM @2.5t/ha	2016	5	5
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Post Harvest Technology / Value addition					
Drudgery Reduction					
Storage Technique					
Total					

ii) Summary of technologies assessed under livestock by KVKs

Thematic areas	Name of the	Name of the technology	No. of	No. of
----------------	-------------	------------------------	--------	--------

	livestock enterprise	assessed	trials	farmers
Disease Management				
Evaluation of Breeds	Fish culture	Growth evaluation of Jayanti Rohu in low saline water	5	10
Feed and Fodder management				
Nutrition Management				
Production and Management	Poultry	Assessment of suitable poultry strain for egg production under backyard rearing	5	5
Total				

iii) 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)

Soil Science

1. Thematic area: Resource conservation Technology

2. Title: Assessment of performance of Green manuring in Paddy

3. Scientists involved: Dr.T.Selvaraj

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)

Farming situation: The technology was applied to the rabi irrigated crop in paddy-CO-51 variety with a soil type of clayey loam. The Rainfall during the experimental season is 641 mm, with 29 Rainydays. The Soil is low in Nitrogen and Organic carbon; Low in Phosphorous and Medium in Potash.

5. Problem definition / description: (one paragraph). The soils of Madhuranthagam block is low in fertility status particularly in Organic matter level. As a result of that considerable amount of yield gets reduced and farmers are frequently getting less profit in cultivation of crops. So on farm testing are planned and implemented in Sitalapakkam village in Madhuranthagam block of Kancheepuram District and information provided to others about the importance of the following the technology.

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

- Green Manuring with Daincha @ 50 Kg/ha, Yield obtained is 86 q/ha
- Multi variety green manuring @ 50 kg/ha (IIRR, 2016) Yield obtained is 88.9 q/ha
- Farmers Practise-2.5t/ha- Yield obtained is 66 q/ha

7. Critical inputs given: (along with quantity as well as value)-About 200 Kg of Daincha worth of Rs 12,000 provided to farmers

8. Results:

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	5	66	125730	1:5.3	NPK-kg/ha, I ₀ - 64: 9 : 96 F- 44: 4.6 : 61
Technology 1(Mention details)		86	163830	1:6.1	I ₀ - 70.3: 8.5: 106 F- 68.5: 6.5.: 73
Technology 2(Mention details)		88.9	169356	1:6.2	I ₀ - :98 : 9.0 : 83 F- :74 : 7.1 : 75.8
Technology 3(Mention details)					

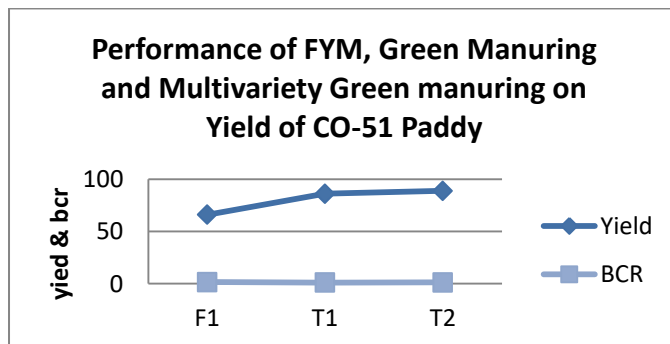
* Other performance indicators: such as pest intensity, weed population, test weight, duration etc

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

On farm testing experiments were conducted in Sitalapakkam village, Madhuranthagam block of Kancheepuram district, during the Rabi Season of the year 2019-20. The farmers of the village seldom follow the practices of Green manuring or Green leaf manuring application methods. Most of the soils are inherently less fertile and the farmers of area concurrently received loss in yield irrespective of crops cultivated. Keeping such problems in mind, the On farm testing project was planned and Implemented in that area. The following are three different types of treatment taken for evaluation.

- Green Manuring with Daincha@50 Kg/ha, Yield obtained is 86 q/ha
- Multi variety green manuring @ 50 kg/ha (IIRR, 2016), Yield obtained is 88.9 q/ha
- Farmers Practise-2.5t/ha- Yield obtained is 66 q/ha

From the Graph it has been interpreted that the treatment with Multi-variety Green manuring performed well compared to FYM application @ 12.5 t/ha, as well as Single type green manuring.



Constraints faced: Nil

The Yield and Economic analysis was made by the application of the implemented technologies.

The treatment T1 and T2 are onpar statistically, with respect to Yield and BCR, but in reality it has been observed that there is a significant increase in Nutrient content level in Multi-variety green manuring

9. Feedback of the farmers involved:

The farmers who had implemented this technology are willing to follow the same in the future also. In spite of reducing the dose of Nitrogenous fertilizers the farmers realized the higher yield due to Multi-variety green manuring practices.

10. Feed back to the scientist who developed the technology: The Scientist of this KVK applied the technology for assessment.

Plant Pathology

1. Thematic area: Crop Protection

2. Title: Assessment of Management modules against nematodes infestation in tuberose
3. Scientists involved: Dr.Gayathri Subbiah
4. Details of farming situation:

Tuberose is commercially cultivated in open field for its fragrance and loose flowers used as garlands, decoration and spike as cut flowers. Among Flower production, Tuberose cultivation contributes major share in Kancheepuram district next to Jasmine in flower markets particularly during the Rabi season where Jasmine availability is less. Prajwal variety is cultivated in irrigated condition. Soil type is clay loam in areas of cultivation with soils low in nitrogen, medium in phosphorous and potash. The seasonal rainfall is 1047mm with 126 rainy days in the OFTconducted villages.The cultivation is done along with other crops like Paddy and Vegetables.

The farmers do not adopt Integrated Crop Management practices. They, without any bulb treatment, plant and apply fertilizers and pesticides with less knowledge on pests and disease incidence levels. This usually incurred them high cost of cultivation. During field diagnostic visits and off campus training programmes it was observed that the farmers were using chemicals indiscriminately to increase production and control Nematodes, Mealy bugs, Rots, Leaf spots and Wilts.This problem was addressed during Farmer – Scientist interaction meeting.

To create awareness on Nematode management and reduce chemical applications, OFT on “Assessment of Management modules against nematodes infestation in tuberose” was proposed in Vadakal, Kondamangalam, Moolazhalani and Vinayaganallur villages. The field visits were done to address this issue. Trainingprogrammes and demonstrations were done in farmer’s field.

5. Problem definition / description:

Tuberose is major flower crop grown in 40 ha of area in Kancheepuram. The crop yields flowers mainly during Rabi season which fetches high rate as demand for the flowers are high during festive occasions. For the past 3 years, the farmers are facing problem of low yield and crop stand reduction due to Nematode infestations.Root knot nematode has been one of the limiting factors for commercial flower production resulting in 10-40% yield reduction. Infestation of nematodes makes crop susceptible to Fusarial infection. Nematode affected crops show stunting symptoms with yellowing in leaves and heavy galls in roots.

To control this, the farmersare using chemical pesticides indiscriminately without the knowledge of soil contaminations and toxicity level of pesticides. This incurred high cost of cultivation and reduced flower yield. Some farmers even removed the crop and went for vegetable cultivation.

6. Technology Assessed:

Technology I:

- Bulb treatment with *P. fluorescens* & *T.viride*@10 g/kg
- Soil application of *T.viride* or *T.harzianum* + *P. fluorescens* +*Paecilomyceslilacinus* @ 2kg/tonne of FYM
- Biopesticides enriched Neem cake application @ 100kg/acre (Source: IIHR, Bengaluru)

Technology II:

- Bulb treatment with *P. fluorescens* & *T. viride*@10 g/kg
- Application of *Pochoniachlamydospora* @ 2kg/acre along with Neem cake repeated once in three months

(Source: NBAIR, Bengaluru)

Farmers Practice:

- Application of phorate granules to the soil.
- Spraying insecticides

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

1. *Pseudomonas fluorescens*–10Kg @ Rs.120/Kg
2. *Trichodemaviride*–10 Kg @ Rs.120/Kg

3. *Paecilomyceslilacinus*– 6 Kg @ Rs.200/Kg
4. *Pochoniachlamydospora* - 6 Kg @ Rs.200/Kg

8. Results:

Performance of the technology

<i>Technology Option</i>	<i>No.of trials</i>	<i>Yield (t/ha)</i>	<i>Net Returns (Rs. in lakh./ha)</i>	<i>B:C ratio</i>	<i>Data on Other performance indicators*</i>
<i>Farmers Practice</i> <ul style="list-style-type: none"> • Soil application of Phorate granules • Farm yard manure application 	5	110.6	278800	1:2.7	32% Nematode infestation
<i>Technology 1(Mention details)</i> <ul style="list-style-type: none"> • Bulb treatment with <i>P. fluorescens</i> & <i>T.viride</i>@10 g/kg • Soil application of <i>T.viride</i> or <i>T.harzianum</i> + <i>P. fluorescens</i> + <i>Paecilomyceslilacinus</i> @ 2kg/tonne of FYM • Biopesticides enriched Neem cake application @ 100kg/acre 		140.6	383900	1:3.86	12% Nematode infestation
<i>Technology 2(Mention details)</i> <ul style="list-style-type: none"> • Bulb treatment with <i>P. fluorescens</i> & <i>T.viride</i>@10 g/kg • Application of <i>Pochoniachlamydospora</i> @ 2kg/acre along with Neem cake repeated once in three months 		132.3	416650	1:3.64	15 % Nematode infestation

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

Description of the results:

In Tuberose cultivation, the farmers faced the problem of yield reduction. The OFT programme was conducted in Vadakal, Kondamangalam, Moolazhalani and Vinayaganallur villages of Kancheepuram district in farmer's field. Off campus training programme, identification of affected plants and demonstrations of bulb treatment and soil application of biological agents were done at farmer's field.

Technology 1: Bulb treatment with *P. fluorescens* & *T. viride*@10 g/kg with Soil application of *T. viride* or *T. harzianum* + *P. fluorescens* + *Paecilomyceslilacinus* @ 2kg/tonne of FYM and Biopesticides enriched Neem cake application @ 100kg/acre recorded 12% nematode infected plants yielding 140.4 q/ha with BCR 1:3.86. Moreover, plant height of 52.8cm with spike length of 108.1cm was observed in the treatment.

Technology 2: This was on par with Technology 1, which recorded 15% nematode infected plants and flower yield of 132.3 q/ha in Bulb treatment with *P. fluorescens* & *T. viride*@10 g/kg + Application of *Pochoniachlamydospora* @ 2kg/acre along with Neem cake repeated once in three months compared with

BCR 1:3.64 to 110.6 q/ha of flower yield in Farmer's practice with 32% of nematode infested plants. Plant height of 52.6cm and spike length of 108.0cm was observed.

The major finding is that Biological control methods like Bulb treatment and soil application of bioagents effectively controlled nematodes attacking the plants. This also increased crop stand in the field, with increase in plant height and spike length.

Fig 1: Effect of treatments on Cost and returns in Tuberose Nematode management

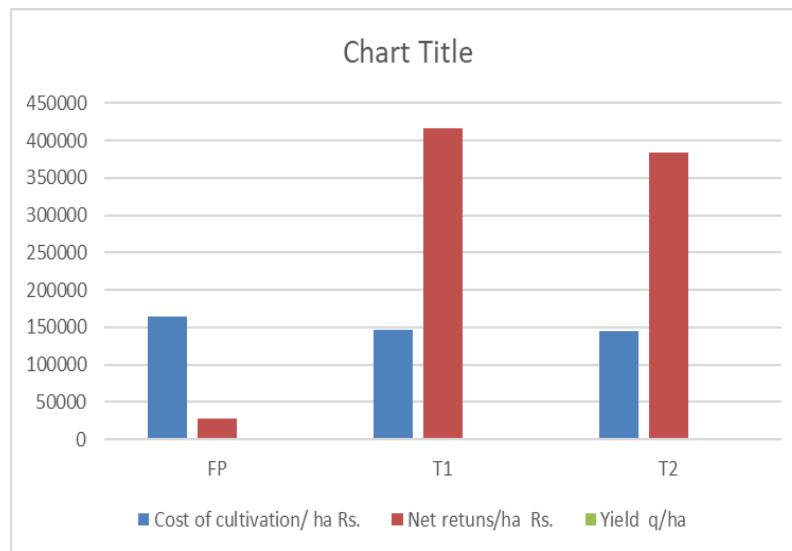
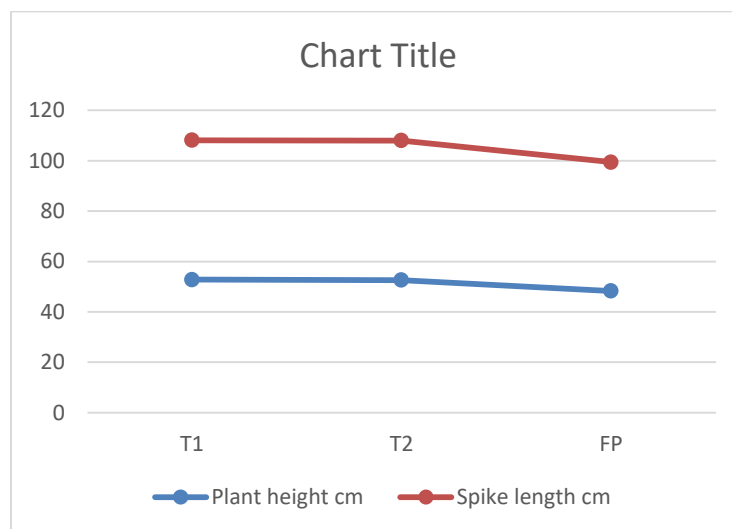


Fig2: Effect of treatments on Plant height and spike length



Constraints faced:

Bionematicides was not available in nearby Local village markets.

9. Feedback of the farmers involved:

1. Nematode infection was reduced in soil application of *T.viride* or *T.harzianum* + *P. fluorescens* + *Paecilomyces lilacinus* @ 2kg/tonne of FYM
2. Flower production was increased in this treatment – 40kg/harvest
3. Mealy bug infestation was reduced on recommended application of *Verticillium lecanii*

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

Combination effects of *Paecilomyces lilacinus* and *Pochoniachlamydospora* can be tested against the Root knot nematodes.

Animal science

1. **Thematic area:** Poultry Farming
2. **Title:** Assessment of suitable poultry strain for egg production under backyard rearing
3. **Scientists involved:** Dr.K.Devaki
4. **Details of farming situation:** (about 500 words)

Poultry is the most efficient converter of low value food into high nutritional value food for human consumption. Poultry can ensure economic and social rehabilitation of weaker sections of the society. Rural farmers can take up the free range and small scale semi commercial backyard poultry production advantageously utilizing improved birds like Gramapriya, Vanaraja etc to fight evils viz. malnutrition, unemployment etc. Rural households can derive supplementary incomes to crop production to meet their increasing financial requirement by adopting sustainable poultry production. Rural youths and farmwomen can avail acceptable and viable technology without affecting the integrated nature of backyard poultry in the socio-economic and cultural habits of rural and hilly tribes for maximum outputs from minimum inputs.

Nandanam B-3 chicken is a newly evolved poultry strain from Poultry Research Station, TANUVAS so as to improve the productivity in birds at backyard rearing. The Special features of the strain were Multi-coloured feather pattern, brown shelled eggs, meat primed with all sensory attributes, more preferred by urban and semi-urban consumers owing to the desirable flavour of meat, attains better body weight, improved FCR, good survivability under the backyard system (95% at 0-8 weeks) and good disease resistance, adaptability to substandard managemental conditions, massive appearance of adult birds, handy for the micro economic entrepreneurs and the resource poor rural women which can be further propagated in the farmers field itself by growing the same as parents. This strain of birds are popular among semi-urban farmers as backyard birds due to their attractive plumage colour.

Gramapriya chicken is a multi-colored dual purpose chicken breed. It was developed by the Directorate on Poultry Research, Hyderabad. The breed was developed as a free range breed and also for the purpose of rural backyard rearing. Gramapriya chicken has a high favourability rating among the farmers in India, and it is best suited to preparation of 'Tandoori' type dishes. Gramapriya chicken is very good for egg production and meat. The breed has been developed for backyard rearing and it is excellent for this purpose. Gramapriya chicken has promising multi-colored feature pattern and longer shanks. They have lower predator threat, moderate body weight, better dual-purpose birds and they produce brown shelled eggs. Eggs of the Gramapriya chicken is of medium size, weighting around 55-60 grams. They gain body weight between 1.2 and 1.5 kg within 12 weeks of age. Under free range condition, Gramapriya hens can lay up to 150-160 eggs per year. Gramapriya chickens are very hardy and their livability is very high. They are pretty good for eggs production and considered as a good dual-purpose breed. They are very hardy, active and alert and best suited under free-range condition. The male bird's meat is tender and suitable for tandoori type preparations. Overall performance of these birds can be further enhanced in free-range conditions with minimum supplementary feeding.

Keeping these points in mind, an OFT was performed in farmer's field to assess suitable poultry strain for egg production under backyard rearing among rural farmers. Five villages namely Tiruvadisulam, Karanai Puduchery, Peramanur, Kolapakkam and Kavithandalam were selected for the study. From each village, one farmer was selected for the demonstration. Nandanam B3 chicks – 20 Nos. and Gramapriya (day old) chicks – 20 Nos. were procured from Poultry Research Station, Madhavaram and Institute of Poultry Production, Hosur for conducting this FLD. Chicken Brooder feed -100 kg were procured from TANUVAS – CFTU, Kattupakkam. TANUVAS Aseel Chicks – 25 Nos., Chicken feeder and waterer – 1 no. each and 20 kg Chicken brooder feed were distributed to each selected farmer by KVK, Kattupakkam to conduct the study. The farmers were trained on Poultry rearing package of practices. The data on body weight (in 8 weeks), livability, Marketing weight (in 12 weeks), Feed efficiency, Age at egg production and Egg production were recorded and analysed using simple statistical tools.

5. Problem definition / discription: (one paragraph)

- Non availability of quality chicks

- Low body weight gain
- Low egg production
- Low income
- Poor marketing of eggs and birds

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

Tech :1 Native poultry birds rearing (Farmers Practice)

Tech: 2 Nandanam B-3 chicken rearing (TANUVAS, 2018)

Tech: 3 Gramapriya chicken rearing(DPR, Hyderabad)

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

- Nandanam B-3 chicks - 20 Nos./Farmer – Rs. 800
- Gramapriya chicks - 20 Nos./Farmer – Rs. 800
- Chicken brooder mash - 20 kg/ Farmer – Rs. 600
- Chicken Feeder and waterer - 1 No. each/ Farmer – Rs.200
- Display board – Rs.1000
- For 5 demos - Rs.13000

8. Results:

Table : Performance of the technology

<i>Technology Option</i>	<i>No.of trials</i>	<i>Egg yield / month (in Nos.)</i>	<i>Net (Rs.)</i>	<i>B:C</i>	<i>Data on Other performance indicators*</i>	
					<i>Livability(%)</i>	<i>Marketing weight(Kg)</i>
<i>Farmers Practice (Native poultry birds rearing)</i>	5	186	1357	1.37	69	0.880
<i>Technology1 (Nandanam B-3 chicken rearing)</i>		312	1931	2.62	90	1.6
<i>Technology2 (Gramapriya chicken rearing)</i>		420	2838	3.08	92	1.020

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

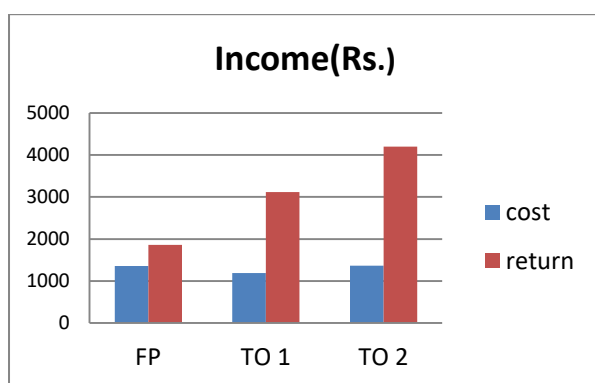
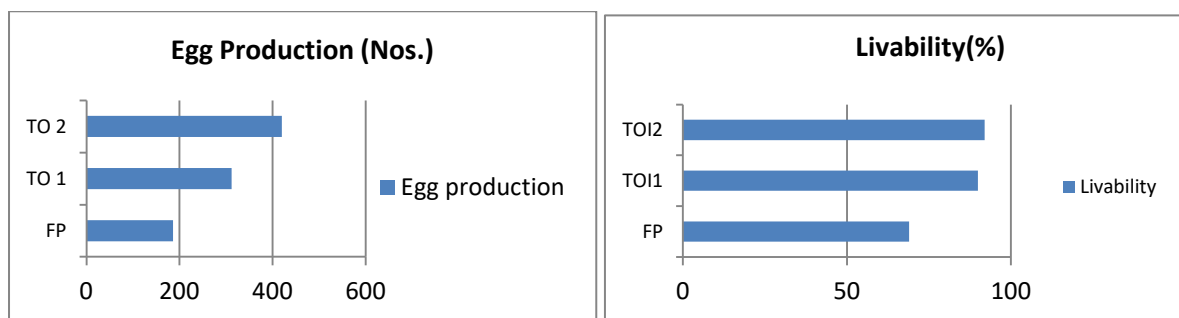
Description of the results: (one page) in addition you can use graphs also

An OFT was performed in farmer's field to assess suitable poultry strain for egg production under backyard rearing among rural farmers. Five farmers were selected from Tiruvadisulam, Karanai Puduchery, Peramanur, Kolapakkam and Kavithandalam of Kancheepuram district for the study. In this trail, the farmers were rearing local /desi birds (Farmer practice). In this trial, the parameters such as livability, marketing weight, feed efficiency, egg production and BCR were recorded. It was found that in farmers practice, livability – 69%, marketing weight - 880 gms in 12 weeks of age was achieved. Feed efficiency was found to be 3.94 with egg production per month to be 186 nos.and that BCR of 1.37 were obtained in Farmers practice trial.

In technology 1, farmers were provided with Nandanam B-3 chicks for rearing. It was found that in this technology, the livability was found to be 90%, marketing weight of 1.6 kg in 12 weeks of age and feed efficiency of 2.64. Egg production per month was found to be 312 Nos. and that BCR of 2.62 were obtained in the technology - 1trial. This clearly indicated that Nandanam B-3 chicken rearing suits backyard condition at farmers' fieldfor higher body weight in 12 weeks of age than its egg yield performance.

In technology 2, farmers were provided with Gramapriya chicks for rearing. It was found that in this technology, the livability was found to be 92%,marketing weight of 1.02 kg in 12 weeks of age and feed efficiency of 2.98. Egg production per month was found to be 420 Nos. and that BCR of 3.08 were

obtained in the technology – 2 trial. This clearly indicated that Gramapriya chicken rearing suits backyard condition at farmers' field for higher egg production per annum.



Constraints faced:

- Non- availability of chicks
- High cost of chicks
- Timely lack of veterinary aid and medicines
- Mortality due to predators
- Commercial feed cost is higher.

9. Feed back of the farmers involved:

- Creates employment generation to rural farmers.
- Provides regular income to the farmers
- Higher market demand for the eggs and the birds.
- Direct marketing fetches higher return to rural farmers.
- Gramapriya rearing fetches more egg yield which is brown shelled and have more consumer preference.
- Nandanam B3 chicks attain body weight of 1.6 Kg at marketing age (12 weeks of age).
- Backyard poultry rearing is highly profitable for rural farmers, farm women, SHGs, and small farmers for it can be taken on commercial basis with suitable marketing tie –up with retail outlets.

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

- ❖ Positive feedback given by farmers rearing improved varieties of poultry birds.
- ❖ Chick availability in time is required for continuing this enterprise.
- ❖ Feed cost reducing technologies needed.
- ❖ Farmers request Oral vaccines in poultry rearing to control infectious diseases.
- ❖ Gramapriya chicken yields more no. of eggs as compared to Nandanam B3 chicken which attain more body weight at marketing age.

Fisheries

1. Thematic area: Fish culture
2. Title: **Growth evaluation of Jayanti Rohu in low saline water**
3. Scientists involved: Dr.K.Sivakumar
4. Details of farming situation:

Kancheepuram district is situated on the Northern East Coast of Tamil Nadu. The district has a total geographical area of 4393.37 Sq.Km. and coastal line of 87.2 km sharing 8.10 per cent of the Tamil Nadu's coast line of 1076 kms. The pre-monsoon rainfall is almost uniform throughout the district. The coastal taluks get more rains rather than the interior regions. This district is mainly depending on the seasonal rains, the distress conditions prevail in the event of the failure of rains. Northeast and southwest monsoons contribute 54% and 36% respectively the total annual rainfall. During normal monsoon, the district receives a rainfall of 1200 mm. The normal annual rainfall over the district varies from 1105 mm to 1214 mm. The months between April and June are generally hot with temperatures going up to an average maximum of 36.6° C. In winter (December - January) the average minimum temperature is 19.8° C. The resources-availability of the district is as follows; i). Land resources (soil types); the following table shows the soil types in the district.

Type of soil	Places in the district
Read Loam	Kancheepuram, Uthiramerur Blocks
Lateritic Soil	Pleatus in the district
Black Soil	Spread in all Blocks
Sandy Coastal Alluviam	Some Places, Thirukazhukundram, Thiruporur, St.ThomasMount
Red Sandy Soil	Kanchipuram, Urban

ii) Mineral resources (garnet, etc) as follows like Granite, stone quarry, sand quarry, silica sand and clay are the minerals available in Kanchipuram district. The Kanchipuram District is rich in fish resources. A comparison of fish production indicates that the coastal production is higher than the inland fish production. The fish production from both inland and marine sources has increased in both quantity and value. But in the recent days inland fish culture is gaining importance and evolving as a commercial sector because of the benefits of fish culture such as fish on-growing market demand for cultured fishes, higher selling price and assures profit, etc. Apart from these, fish culture pond serves as water harvesting, units, minimal requirements of manpower, assured yield, easy marketing etc.

In Kancheepuram District there are about more than 100 active fish farmers doing fish culture spreading throughout the district. Most of the agricultural farmers fascinated towards fish culture activity as one of the integrated farm component. The potential area about 2250 ha in the district is to develop for low salinity below 10 ppt range and more particularly below 6 ppt. The fish farms are utilizing water resources from rain fed as well as irrigation. Fish seeds and feed found to be critical input for promotion of fish culture activity. Farmers needs quality suitable carps seeds at subsidized of cost. Marketing of these produce is taken up by another sector of people from small vendors to whole sale merchants or State Government fish seed farm. Among the low saline potential area of 2250 ha, the lesser area is occupied for prawn culture, but it is suitable for fish and prawn culture. The availability of brackishwater fish seeds in the district is mostly depending on the natural resources and season bounded. Therefore, it is often unable to get fish culture by the farmers in the required time. In rainy season, salinity may come below 6 ppt and it is suitable to culture salinity tolerant varieties like Jayanti Rohu fish, etc. Besides, the availability of Jayanti Rohu fish seed is sufficient in the district with lower prices in local seed fish farms as compare with brackishwater fish seed varieties. In general in the district, farmers are practicing with Indian major carps and Chinese carps. Hence it is imperative to increase the inland fish production in low saline fish ponds particularly Jayanti Rohu fish both horizontally and vertically. In order to maintain the sustainable aquaculture production in the long term perspective, expanding the fish culture area is currently need of time.

Based on these above issues/problems, this OFT was conducted in farmer's field to evaluate the growth of Jayanti Rohu in low saline water among rural farmers. Nine villages namely Kilativakkam, Vedanarayanapuram, Athur, Thiruvanaikoil, Kavanurpudhuchery, Kuppaiyanallur, Navalurnatham, Kaliyapettai and Sirunagar were selected for this study. From each village, one or more farmers were

selected for the trials. Jayanti Rohu fish fingerlings – 12,000 Nos were procured from local fish seed farmers in the district for conducting this OFT. The farmers were trained on Culturing of Jayanti rohu in low saline water package of practices. The data on recording of average body weight of fish, fish survival and fish yield were recorded and analyzed using simple statistical tools.

5. Problem definition / description:

- Poor in knowledge on fish varieties suitable for low saline water (4-6ppt)
- Lack of awareness on scientific knowledge in fish culture
- Attaining less yield (<2000kg/Ha)
- Poor income status of the farmers

6. Technology Assessed:

FP: Carp culture (Farmer practices)

TO1: Culturing of Jayanti rohu in fresh water (ICAR-CIFA, Bhubaneswar - 2013)

TO2: Culturing of Jayanti rohu in low saline water (ICAR-CIFA, Bhubaneswar - 2017)

7. Critical inputs given:

Fingerlings of Jayanti Rohu fish (1.0 Nos/M ²)	2400 Nos/0.24 Ha	Rs. 4800/-
Display board	1 No	Rs. 1000/-
No of trials	5 Nos (10 farmers)	Total value: Rs. 25,000/-

8. Results:

Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (t/ha)</i>	<i>Net Returns (Rs. in</i>	<i>B:C</i>	<i>Data on Other performance indicators*</i>	
					<i>Average weight per fish (Kg)</i>	<i>Survival (%)</i>
<i>Farmers Practice (Carp culture)</i>	5	2.678	75382	1.54	0.36	74.4
<i>Technology 1(Culturing of Jayanti rohu in fresh water)</i>		3.762	162269	2.17	0.45	83.6
<i>Technology 2(Culturing of Jayanti rohu in low saline water)</i>		4.315	206297	2.49	0.50	86.3

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

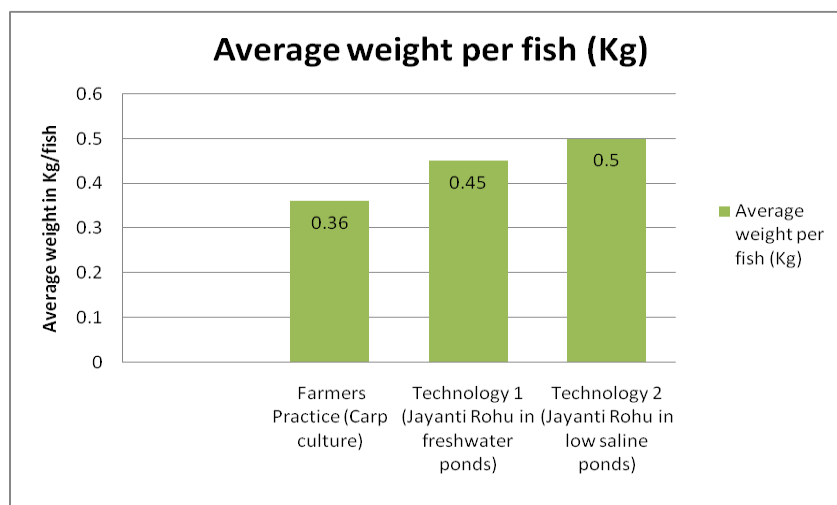
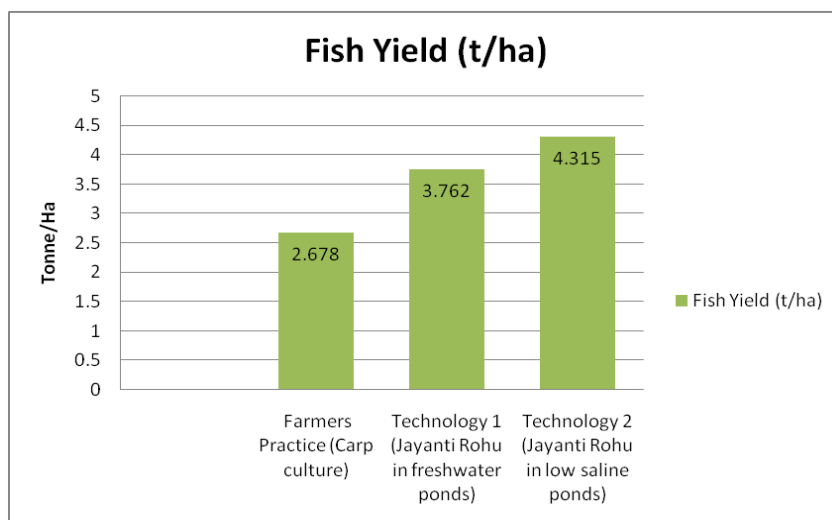
Description of the results:

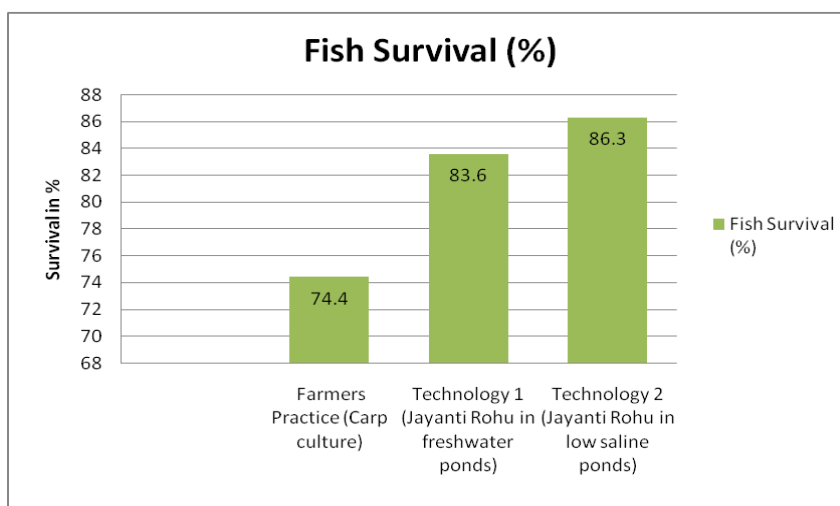
It was found in farmers' practices that the farmers did not stock any particular variety of fish. It was stocked with varieties of minor and major carps. Totally ten farmers with total pond area of 1.2 Ha were selected at Kilativakkam, Vedanarayanapuram, Thiruvanaikoil, Kavanurpudhuchery, Kuppaiyanallur, Navalurnatham, Kaliyapettai, Sirunagar and Athur of the Kancheepuram district for this study. In this trail, the farmers followed different type of feeds and the parameters such as fish yield (Kg/Ha), average body of per fish (Kg/fish) and survival (%) were recorded. Also, the water quality parameters were also monitored. It was found that in farmers practice, they have not followed the feeding schedule, recording of average body of fish and fish survival during the fish culture including the natural plankton productivity of the pond.

In technology 1, the Jayanti rohu fishes were stocked in fresh water ponds at the rate of 1200 Nos in 0.12 with stocking density of 1.0 Nos/M². 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 performed regularly after 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 and pH were estimated regularly. The fish pond was maintained with the total culture period of 6 months and recorded with the following parameters at the end of harvest fish yield – 3762 kg/ha, average weight per fish – 0.45 Kg and survival – 83.6 %.

In technology 2, the Jayanti rohu fishes were stocked in low saline water ponds at the rate of 1200 Nos in 0.12 with stocking density of 1.0 Nos/M². The organic manures such as cow dung, poultry manure were used during the pond preparation and till the end of culture period. But during the culture period poultry manure was used in higher ration. 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 and pH were estimated regularly. The fish pond was maintained with the total culture period of 6 months and recorded with the following parameters at the end of harvest fish yield - 4315 kg/ha, average weight per fish – 0.50 Kg and survival – 86.3 %.

It was found that in technology-2, the improved fish yield and other parameters were recorded at the end of harvest than others; The results showed as fish yield – 4315 kg/ha, average weight per fish – 0.50 Kg and survival – 86.3 %. Hence, it can be proved that ICAR-CIFA, Bhubaneswar's technology - Culturing of Jayanti rohu in low saline water is effective in low saline fish ponds. Hence this technology can be popularized among rural fish farmers to get better fish production and to improve their income status and also Jayanti Rohu will also help to utilize the low saline fish ponds while not getting other brackishwater fish seeds.





8. Constraints faced:

- Non-availability of fish fingerlings
- Unavailability of sufficient quantity of poultry manure
- Handling of freshwater fish varieties in low saline water about farmers
- Higher cost of commercial available formulated feed

9. Feedback of the farmers involved:

- The farmers are more satisfied about this technology due to higher growth and fish yield.
- The fish variety accepted different type of feeds was given during the culture. It was helped to reduce the cost of production.
- It showed alternative way to utilize the low saline water. This culture method was made simple and viable practice.
- 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 - 4315 kg/ha, average weight per fish – 0.50 Kg and survival – 86.3 % in the low saline fish ponds.
- It proved that Jayanti Rohu fish the different kinds of feed which were provided during the trials. Therefore, it aided to decrease the feed cost.
- It is encouraged to stock Jayanti rohu fish in low saline fish ponds especially in rainy seasons.
- 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-CO51	Demonstration of Variety	ICM Practices	Training, Field Visit and Telephonic advice	3	54	123
2	Groundnut variety Dharani-13	Demonstration of Variety	ICM Practices	Training, Field Visit and Telephonic advice	7	285	438

b. Details of FLDs (Information is to be furnished in the following tables category wise 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	Demonstration of Paddy Variety ADT 53 with ICM Practices	Rabi	ICAR	4	4	2	8	10	-
2	NA	ICM	Demonstration of NCOF Decomposer in Vernicompost Production	-	-	-	-	5	15	20	-
3	Blackgram	ICM	CFLD-Demonstration of ICM Practices in Blackgram(Kharif-CO-6)	Kharif		10	10	1	24	25	-
4	Blackgram	ICM	CFLD-Demonstration of ICM Practices in Blackgram (Rabi-VBN-8)	Rabi		40	40	-	-	100	-
5	Greengram	ICM	CFLD-Demonstration of ICM Practices in Greengram(Rabi-VBN-3)	Rabi		10	10	-	25	25	-
	Paddy	Crop Protection	Demonstration of Wild Boar Management in Kancheepuram district	Rabi, 2019	ICAR	2	2	3	7	10	
	Vegetables	Crop Protection	Demonstration of eco-friendly	Rabi, 2019	ICAR	2	2	1	9	10	

			IPDM practices in polyhouse vegetable cultivation								
	French bean	ICM	Demonstration of French Bean variety ArkaSuvida	Rabi, 2019	ICAR	2	2	2	8	10	

c. Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Paddy	Rabi	Irrigated	Scl	L	L	M	Pulses	10.10.19	19.02.20	641	29
NA	-	NA	-	L	L	M	-	-	-	641	
Blackgram	Khari	Irrigated	Scl	L	L	M	Paddy	22.7.19	03.10.19	425.8	19
Blackgram	Rabi	Irrigated	Scl	L	L	M	Paddy	12.12.19	24.02.20	641	23
Greengram	Rabi	Irrigated	Scl	L	L	M	Paddy	09.12.19	22.02.20	641	27
Paddy	Rabi, 2019	Irrigated	Clay Loam	M	M	M	Paddy	13.09.2019	12.01.2020	1021.3	60
Vegetables	Rabi, 2019	Irrigated	Clay Loam	L	M	M	Vegetable	22.08.2019	21.11.2019, 16.03.2020	847.9	65
French bean	Rabi, 2019	Irrigated	Clay Loam	L	M	L	Paddy	18.01.2020	26.03.2020	847.9	65

d. Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	The variety is non-lodging and provided high quality and yield.
2	The decomposition period of Waste is less compared other mineralizers
3	The YMV incidence was low
4	The yield and quality was high
5	The YMV incidence was low
6	Pig oil + Sulphur smeared coconut ropes controlled the boars for two weeks compared to Niwar ropes soaked in kerosene (8 days).
7	Yield recorded – Cucumber 110kg/ha, Capsicum 80kg/harvest. Incidence of sucking pests like aphids, thrips and mealy bugs reduced considerably Nematode attack was not seen in areas treated with Bionematicides
8	Yield recorded in ArkaSuvida French bean was 28kg/harvest compared to local variety. The Quality of the beans satisfied the consumers.

e. Farmers' reactions on specific technologies

S. No	Feed Back
1	The farmers shown interest for seed production
2	The farmers are willing to propagate the technology to other farmers
3	The Yield obtained was higher compared to other local varieties
4	The quality of the newly introduced variety is best
5	The Pest and disease incidence is less than 5%
6	Use of Pig oil + Sulphur smeared coconut ropes to control the boars was economically feasible for the farmers.
7	Farmers were able to identify nematodes in crops and apply the control measures
8	Seed treatment techniques and application of Vegetable mixture increased the production

f. Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	3	06.09.19, 21.11.2019 06.02.2020, 16.03.2020, 8.05.20	124	-
2	Farmers Training	3	04.07.19, 22.11.19, 26.09.19, 07.08.2019, 22.08.2019, 06.12.2019, 12.12.2019,30.12.2019, 7.1.2020	209	-
3	Media coverage	-	-	-	-
4	Training for extension functionaries	2	30.05.19, 31.05.2019, 12.06.19, 19.09.2019	164	-

g. Performance of Frontline demonstrations

i) Frontline demonstrations on crops

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Pulses																			
Oilseeds																			
Cereals	ICM	Demonstration ADT-53 high yielding variety, application of Paddy MN mixtures; Soil application of Azophos, Soil application of Pseudomonas	ADT-53	ADT-49	10	4	85	65	75	59	27	4500	1878	1428	1:4.18	4130	1536	1123	1:3.72

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	BC R (R/C)	Gross Cost	Gross Return	Net Return	BC R (R/C)
							High	Low	Average										
Paddy	Crop Protection	Demonstration of Wild Boar Management in Kancheepuram district	CO 51	CO 51	10	2	52.00	44.00	48.40	39.20	23.0	40750	60500	19750	1:1.48	44378	49000	7900	1:1.18
Commercial crops																			
Millets																			
Vegetables																			
Poly House Vegetable	Crop Protection	Demonstration of eco-friendly IPDM practices in polyhouse vegetable cultivation	Multi star	Multi star	10	2	414	396	405	400	1.0	498750	716250	217500	1:1.44	517500	682500	165000	1:1.32
French bean	ICM	Demonstration of French Bean variety ArkaSuvida	ArkaSuvida	Local	10	2	74.5	65.5	70	62.5	12	600000	168000	108000	1:2.8	65000	125000	60000	1:1.92

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)			
			Demo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
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

ii) Frontline demonstrations on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units (Animal/Poultry/Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)					
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)		
Cattle					Milk yield(in litres)			Disease incidence in (%)											
	Dairy	Demonstration of Ethno Veterinary Herbal medicine for the prevention of bloat in cattle (DFI Village)	10	50	20.6	12.1	70	10	60	200	565	365	2.83	225	302.5	77.5	1.34		

Buffalo																	
Dairy																	
Poultry					Hatchability (%)			No. of eggs laid in 1 st clutch (No.)									
	Budgerigars	Demonstration of ornamental birds rearing among farmers for improved income	5	20	53	30	77	32	20	292	800	508	2.74	255	400	145	1.57
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

iii) Frontline demonstrations on Fisheries

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)
Fisheries	Inland Fish culture	Demonstration of Pangasius catfish for short seasonal fish culture	5	5	5267	3733	41.00	0.42	0.34	168710	368690	199980	2.19	172514	261310	88796	1.51

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

** BCR= GROSS RETURN/GROSS COST

iv) Frontline demonstrations 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																	
Maize Sheller																	
Value Addition																	
Vermi Compost	Demonstration of NCOF Decomposer in Vermicompost Production.	20	20	0.61	0.41	48.78	-	-	4000	14000	10000	1:3.5	4000	9000	5000	1:2.25	
	Demonstration of Vermicomposting using fish waste	25	5	2480 kg/year	2200 kg/year	12.73	1:25 (C:N ratio)	1:35 (C:N ratio)	11400	24800	13400	2.18	12000	22000	10000	1.83	

v) Frontline demonstrations on Women Empowerment

Vermi Compost	Demonstration of NCOF Decomposer in Vermicompost Production.	20	20	0.61	0.41	48.78	-	-	4000	14000	10000	1:3.5	4000	9000	5000	1:2.25
----------------------	--	----	----	------	------	-------	---	---	------	-------	-------	-------	------	------	------	--------

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

i) Other Source funded FLDS in CROPS

Crop	Source of fund	Thematic Area	technology demonstrated	Name of the Variety/Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
				Demo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
								High	Low	Average										
PULSE S-Blackgram Kharif	ICAR	ICM	CFLD-Demonstration of ICM Practices in Blackgram(Kharif)	C0-6	VBN-5	25	10	8.20	6.00	7.33	6.1	20	29895	66130	36235	1:2.21	27322	46176	18854	1:1.69
PULSE S-Blackgram Rabi	ICAR	ICM	CFLD-Demonstration of ICM Practices in Blackgram	VBN-8	VBN-5	100	40	8.10	2.10	10	6.34	58	30150	68385	38235	1:2.27	26855	46800	19945	1:1.74
PULSE S-Greengram Rabi	ICAR	ICM	CFLD-Demonstration of ICM Practices in Greengram	VBN-3	Local	25	10	4.25	1.98	6.25	5.1	23	24550	51420	26870	1:2.09	24870	43970	19100	1:1.77

4. TRAINING PROGRAMMES

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems										
Crop Diversification	6	48	19	67	1		1	49	19	68
Integrated Farming										
Micro Irrigation/irrigation										
Seed production										
Nursery management										
Integrated Crop Management	8	25	9	34			0	25	9	34
Soil & water conservatioin										
Integrated nutrient management										
Production of organic inputs	3	46		46	7	1	8	53	1	54
Others (pl specify)										
Total	17	119	28	147	8	1	9	127	29	156
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops										
Off-season vegetables										
Nursery raising										
Exotic vegetables										
Export potential vegetables										
Grading and standardization										
Protective	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
Processing and value addition										
Others (pl specify)										
Total (d)										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
Others (pl specify)										
Total (e)										
f) Spices										
Production and Management technology										
Processing and value addition										
Others (pl specify)										
Total (f)										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
Others (pl specify)										
Total (g)										
GT (a-g)	2	4	0	4	0	0	0	4	0	4
III Soil Health and Fertility Management										
Soil fertility management	1	5		5			0	5	0	5
Integrated water management				0			0	0	0	0
Integrated Nutrient Management				0			0	0	0	0
Production and use of organic				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
low/minimum cost diet										
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing	1	5	1	6	1	1	2	6	2	8
Processing and cooking	3	6	11	17	11	2	13	17	13	30
Gender mainstreaming through SHGs				0			0	0	0	0
Storage loss minimization techniques				0			0	0	0	0
Value addition	4	46	21	67	6	7	13	52	28	80
Women empowerment	1	0	11	11	0	6	6	0	17	17
Location specific drudgery reduction technologies										
Rural Crafts										
Women and child care										
Others (pl specify)										
Total	9	57	44	101	18	16	34	75	60	135
VI Agril. Engineering										
Farm Machinery and its maintenance	2	46	4	50	3	1	4	49	5	54
Installation and maintenance of micro irrigation systems	2	26	6	32	4	2	6	30	8	38
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	2	42	2	44	8	1	9	50	3	53
Small scale processing and	2	32	38	70	18	16	34	50	54	104

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
value addition										
Post Harvest Technology	2	34	14	48	16	3	19	50	17	67
Others (pl specify)										
Farm Ponds	1	12	4	16	8	2	10	20	6	26
Solar Farm Devices	1	14	2	16	10	4	14	24	6	30
Total	12	206	70	276	67	29	96	273	99	372
VII Plant Protection										
Integrated Pest Management	3	13	0	13	0	0	0	13	0	13
Integrated Disease Management	0	0	0	0	3	0	3	3	0	3
Bio-control of pests and diseases	1	3	0	3	1	0	1	4	0	4
Production of bio control agents and bio pesticides	0	0	0	0	0	0	0	0	0	0
Mushroom Cultivation	3	70	19	89	8	1	9	78	20	98
Azolla Cultivation	1	10	2	12	0	0	0	10	2	12
Bee Keeping	2	41	10	51	0	0	0	41	10	51
Storage pest management	0	0	0	0	0	0	0	0	0	0
Seed Treatment Techniques	0	0	0	0	0	0	0	0	0	0
Organic manures production	0	0	0	0	0	0	0	0	0	0
Vermi-compost production	1	9	3	12	0	0	0	9	3	12
Others										
Total	11	146	34	180	12	1	13	158	35	193
VIII Fisheries										
Integrated fish farming	2	41	13	54	2	1	3	43	14	57
Carp breeding and hatchery management	1	17	2	19	2	0	2	19	2	21
Carp fry and fingerling rearing	1	26	1	27	1	0	1	27	1	28
Composite fish culture	1	13	1	14	2	1	3	15	2	17
Hatchery management and culture of	1	19	1	20	4	1	5	23	2	25

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
fertilizers										
Soil and Water Testing										
Others (pl specify)										
Total	2	37	8	45	0	0	0	37	8	45
IV Livestock Production and Management										
Dairy Management	6	19	105	124	0	60	60	19	165	184
Poultry Management	3	0	584	584	0	766	766	0	1350	1350
Piggery Management										
Rabbit Management										
Animal Nutrition Management										
Disease Management										
Feed & fodder technology										
Production of quality animal products										
Others (pl specify) Goat Management	26	0	821	821	0	775	775	0	1596	1596
Total	35	19	1510	1529	0	1601	1601	19	3111	3130
V Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening	5	197	177	374	15	21	36	212	198	410
Design and development of low/minimum cost diet	3	37	40	77	0	8	8	37	48	85
Designing and development for high nutrient efficiency diet	2	40	49	89	11	16	27	51	65	116
Minimization of nutrient loss in processing	1	24	0	24	6	0	6	30	0	30

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										
Post harvest technology and value addition										
Others (pl specify)										
Total (g)										
GT (a-g)										
III Soil Health and Fertility Management										
Soil fertility management										
Integrated water management										
Integrated Nutrient Management										
Production and use of organic inputs										
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient Use Efficiency										
Balance use of fertilizers										
Soil and Water Testing										
Others (pl specify)										
Total										
IV Livestock Production and Management										
Dairy Management	8	42	108	150	5	60	65	47	168	215
Poultry Management	6	149	597	746	10	773	783	159	1370	1529
Piggery	2	19	2	21	5	0	5	24	2	26

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
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	32	572	460	1032	94	165	259	666	625	1291
VI Agril. Engineering										
Farm Machinery and its maintenance	5	74	41	115	19	19	38	93	60	153
Installation and maintenance of micro irrigation systems	4	58	30	88	31	30	61	89	60	149
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements	3	64	40	104	42	17	59	106	57	163
Small scale processing and value addition	4	66	110	176	30	29	59	96	139	235
Post Harvest Technology	4	72	78	150	32	27	59	104	105	209
Farm Ponds	3	36	32	68	23	21	44	59	53	112
Solar Farm Devices	3	45	27	72	29	32	61	74	59	133
Total	26	415	358	773	206	175	381	621	533	1154
VII Plant Protection										
Integrated Pest Management	9	79	43	122	6	3	9	85	46	131
Integrated Disease Management	5	107	15	122	3	0	3	110	15	125
Bio-control of pests and diseases	1	3	0	3	1	0	1	4	0	4
Production of bio control agents and bio pesticides										
Others (pl specify) Seed treatment techniques	1	0	19	19	0	1	1	0	20	20
Storage pest	1	24	0	24	1	0	1	25	0	25

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
Mushroom Production	3	70	19	89	8	1	9	78	20	98
Apiculture	2	41	10	51	0	0	0	41	10	51
Others (pl specify) Azolla cultivation	1	10	2	12	0	0	0	10	2	12
Total	10	153	117	270	8	26	34	161	143	304
X Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
WTO and IPR issues										
Others (pl specify)										
Total										
XI Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
Others (pl specify)										
Total										
GRAND	182	2231	2743	4974	408	2019	2427	2639	4762	7401

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
TOTAL										

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

4.5

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									
Training and pruning of orchards										
Protected cultivation of vegetable crops										
Commercial fruit production										
Integrated farming										
Seed production										
Production of organic inputs										
Planting material production										
Vermi-culture										
Mushroom Production										
Bee-keeping										
Sericulture										
Repair and maintenance of farm machinery and implements										
Value addition	2	35	12	47	39	21	60	74	33	107
Small scale processing	1	0	8	8	0	5	5	0	13	13
Post Harvest Technology	1	7	2	9	0	0	0	7	2	9
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	1	15	10	25	0	0	0	15	10	25
Dairying	2	18	36	54	3	8	11	21	44	65
Sheep and goat rearing	1	63	3	66	6	1	7	69	4	73
Quail farming	1	3	10	13	0	14	14	3	24	27
Piggery	1	11	1	12	1	0	1	12	1	13
Rabbit farming	1	26	3	29	3	0	3	29	3	32

Poultry production	3	149	13	162	10	7	17	159	20	179
Ornamental fisheries	2	5	4	9	0	0	0	5	4	9
Composite fish culture	1	43	7	50	0	0	0	43	7	50
Freshwater prawn culture	1	2	3	5	0	0	0	2	3	5
Shrimp farming	2	4	2	6	0	0	0	4	2	6
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	20	381	114	495	62	56	118	443	170	613

4.6 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										
Training and pruning of orchards										
Protected cultivation of vegetable crops										
Commercial fruit production										
Integrated farming										
Seed production										
Production of organic inputs										
Planting material production										
Vermi-culture										
Mushroom Production										
Bee-keeping										
Sericulture										
Repair and maintenance of farm machinery and implements	2	26	12	38	14	4	18	40	16	56
Value addition	2	24	10	34	3	4	7	27	14	41
Small scale processing	2	59	33	92	7	2	9	66	35	101
Post Harvest Technology	2	2	51	53	2	3	5	4	54	58

Mushroom Production										
Bee-keeping										
Sericulture										
Repair and maintenance of farm machinery and implements										
Value addition	4	59	22	81	42	25	67	101	47	148
Small scale processing	3	59	41	100	7	7	14	66	48	114
Post Harvest Technology	3	9	53	63	2	3	5	11	56	67
Tailoring and Stitching	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	2	15	10	25	0	25	25	15	35	50
Dairying	5	31	110	141	3	43	46	34	153	187
Sheep and goat rearing	9	63	266	329	6	240	246	69	506	575
Quail farming	1	3	10	13	0	14	14	3	24	27
Piggery	1	11	1	12	1	0	1	12	1	13
Rabbit farming	1	26	3	29	3	0	3	29	3	32
Poultry production	5	149	397	546	10	423	433	159	820	979
Ornamental fisheries	2	5	4	9	0	0	0	5	4	9
Composite fish culture	1	43	7	50	0	0	0	43	7	50
Freshwater prawn culture	1	2	3	5	0	0	0	2	3	5
Shrimp farming	2	4	2	6	0	0	0	4	2	6
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	3	6	37	43	0	0	0	6	37	43
Fry and fingerling rearing	1	18	0	18	3	0	3	21	0	21
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	46	529	978	1507	91	784	875	620	1762	2382

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	1	47	0	47			0	47	0	47
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	1	30	1	31	0	0	0	30	1	31
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	1	0	45	45	0	0	0	0	45	45
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
Drip and Fertigation Tecnology in Paddy Production	0	0	0	0	0	0	0	0	0	0
Any other (pl.specify)										
Training on cattle & fish feed preparation for FPO (Farmer Producers Organisation) representatives	1	36	14	50	0	0	0	36	14	50
Bankable projects in a agriculture and allied discipline	4	60	52	112	7	4	11	67	56	123
Bankable Project in Agriculture	1	42	19	61	0	0	0	42	19	61
TOTAL	9	215	131	346	7	4	11	222	135	357

4.8 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	1	36	28	64	0	0	0	36	28	64
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
Drip and Fertigation Tecnology in Paddy Production	1	20	15	35	0	0	0	20	15	35
Any other (pl.specify)	0	0	0	0	0	0	0	0	0	0
TOTAL	2	56	43	99	0	0	0	56	43	99

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	0	0	0	0	0	0	0	0	0	0
Integrated Pest Management	1	47	0	47			0	47	0	47
Integrated Nutrient management	1	36	28	64	0	0	0	36	28	64
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	1	30	1	31	0	0	0	30	1	31
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	1	0	45	45	0	0	0	0	45	45
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
Drip and Fertigation Tecnology in Paddy Production	1	20	15	35	0	0	0	20	15	35
Any other (pl.specify)										
Training on cattle & fish feed preparation for FPO (Farmer Producers Organisation) representatives	1	36	14	50	0	0	0	36	14	50
Bankable projects in a agriculture and allied discipline	4	60	52	112	7	4	11	67	56	123
Bankable Project in Agriculture	1	42	19	61	0	0	0	42	19	61
TOTAL	11	271	174	445	7	4	11	278	178	456

and implements										
Rural Crafts	1	1	12	13	2	0	2	3	12	15
Seed production										
Sericulture										
Mushroom cultivation										
Nursery, grafting etc.										
Tailoring, stitching, embroidery, dyeing etc.										
Agril. para-workers, para-vet training										
Others (pl. specify)										
Total	1	1	12	13	2	0	2	3	12	15
Agricultural Extension										
Capacity building and group dynamics										
Others (pl. specify)										
Total										
Grand Total	1	1	12	13	2	0	2	3	12	15

5. EXTENSION PROGRAMMES

5.1 Extension programmes conducted

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	23	34561	50	34611
Diagnostic visits	65	132	32	164
Field Day	9	103	2	105
Group discussions	31	1005	11	1016
Kisan Ghosthi	1	1036	17	1053
Film Show	45	1087	8	1095
Self -help groups	2	42	4	46
Kisan Mela	0	0	0	0
Exhibition	10	2620	18	2638
Scientists' visit to farmers field	96	423	17	440
Plant/animal health camps	1	38	162	200
Farm Science Club	1	27	0	27
Ex-trainees Sammelan	0	0	0	0
Farmers' seminar/workshop	2	1086	24	1110
Method Demonstrations	59	2219	33	2252
Celebration of important days	14	3685	75	3760
Special day celebration	10	1759	28	1787
Exposure visits	40	1449	44	1493
Awareness programme	29	3668	24	3692
Vidieo lessons	14	2825	11	2836
Total	452	57765	560	58325

5.2 Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	0
Extension Literature	19
News paper coverage	8
Popular articles	38

Radio Talks	35
TV Talks	1
Animal health amps (Number of animals treated)	150
Others (pl. specify)	
Total	251

6. MOBILE ADVISORY SERVICES

6.1. No of registered farmers on m-kisan portal: 623

6.2 Details of messages sent through m-kisan portal

Types of Messages	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	15	9345	37	23051							1	623	53	33019
Voice only														
Voice & Text														
Total	15	9345	37	23051							1	623	53	33019

6.3 MOBILE ADVISORY SERVICES THROUGH OTHERS

No of registered farmers:

Types of Messages	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only			13	546							57	5700	70	6246
Voice only														
Voice & Text														
Total			13	546							57	5700	70	6246

	Cattle											
Goat and Sheep	Goat											
	Goat											
	Goat											
	Sheep											
	Sheep											
	Sheep											
	Lamb											
	Lamb											
	Other goat/sheep (Specify)											
	Total goat and sheep											
Poultry	Desi bird											
	Desi bird											
	Desi bird chicks											
	Desi bird chicks											
	Broiler											
	Layer	Gramapriya	18	36 90	0	0	0	18	8	36 90	0	0
	Dual purpose birds	Gramapriya / Vanaraja/ Tanuvasaseel	111 6	45 66 0	200	10	13 25 0	111 6	19	45 66 0	0	0
	Japanese Quail											
	Turkey											
	Emu											
	Ducks											
	Desi bird egg											
	Broiler hybrid egg											
	Layer egg (breeding)											
	Egg (Commercial)	Gramapriya	216 9	10 84 5	0	0	0	216 9	26	10 84 5	0	0
Quail egg (breeding)												
Quail egg (commercial)												
Others under poultry	Pekin	8	18 76	0	0	0	8	3	18 76	0	0	

	(specify)- Ducks											
	Total poultry		331 1	62 07 1	200	10	13 25 0	331 1	56	62 07 1	0	0
PIG GER Y	<i>Pigs adults</i>											
	<i>Piglets</i>											
	<i>Pork</i>											
	<i>Others related to piggery)</i>											
	Total Piggery											
FIS HER Y	Fingerlings of Fish type (specify)	Ornamental fishes	176 4	49 00	0	0	0	176 4	49	49 00	0	0
	Fish meat (kg)	Carps and Tilapia, Secchi disk	90.2 5	16 11 0	3	3	18 00	8	8	48 00	0	0
	Total Fishery	1854.25	210 10	0	0	0	0	0	0	0	0	0
	Grand Total Livestock and fishery											

9. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples/ SHC	No. of Samples		No. of Farmers	No. of Villages	Amount realized (Rs.)
	Using Mini Soil Testing Lab	Through Traditional Lab			
Soil samples	200	27	95	20	35250
Soil Health Cards (SHC)	200	27	95	20	

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Water	44	23	9	8850
Plant	-	-	-	-
Manure	-	-	-	-
Others (pl.specify)	-	-	-	-
Total	44	23	9	8850

10. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
08.02.2019	17

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

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

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

- 7) Training programme to be conducted in Fish rearing through Tribal sub plan scheme and infrastructure may be created.

- 8) Business incubation work can be jointly organized with CIBA for the benefit of farmers in Kancheepuram District
- 9) DFI Technologies to be supplemented to the adopted village farmers in Kancheepuram district
- 10) More number of training programmes may be conducted related to peri-urban area to enhance economic independence
- 11) Technologies suitable for making Packaging materials from the Agricultural waste materials like Banana, Jute, betel nut products for income generation to the farmers
- 12) 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

- 5) Training and Interaction may be organized on unconventional feeding materials for the dairy farmers
- 6) Training programme on Breeding management in Goat and Dairy may be organized for free Goat and Dairy Scheme beneficiaries.
- 7) Disease management Training to be given to livestock farmers at field
- 8) Azolla & hydroponic fodder cultivation may be promoted as cost effective technique in livestock farming

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

- 9) 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
- 10) Organic methods and package of practices are required for pest and disease management suitable for urban areas
- 11) Training on Protected cultivation 4 structures suitable for Kancheepuram district may be popularized
- 12) Vertical gardening technology may be promoted among urban farmers
- 13) Commercial production technologies of cucumber with new varieties may be popularized
- 14) Crop diversification in fruit crops and new varieties like Dragon fruit may be popularized
- 15) TNAU released papaya varieties need to be popularized since Red lady variety seeds are not available in required quantity.
- 16) Taro cultivation training programmes may be organized for profitable vegetable production

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

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

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

- 2) 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

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

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

- 5) Training on Irrigation management in paddy (paddy cultivation through drip irrigation) have to be organized for effective utilization of water resources

- 6) Management of livestock during summer need to be given
 - 7) Production of Organic inputs and awareness on organic farming training programme need to be conducted
 - 8) Maintenance and servicing of Agricultural Implements training need to be given to the farmers.
- IX. Dr.S.T.Selvan, Professor and Head, PGRIAS, Kattupakkam**
- 4) More number of IFS training programme have to be conducted
 - 5) Training on farm economics and livestock farm management have to be organized
 - 6) Training on farm waste management have to be organized
- X. Dr.A.Baskaran, Principal Scientist, ATARI, Hyderabad**
- 5) Government subsidy schemes should be informed to all the beneficiaries in the District by collecting from all line departments.
 - 6) Bankable projects should be prepared and given to the farmers for availing financial aids from financing institution
 - 7) Awareness programme on Organic registration procedures have to be conducted for the willing farmers
 - 8) 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**
- 5) Integrated farming system (IFS) training and a model farm with successful farmer may be developed
 - 6) Training programme may be included about fish feeds and fish marketing like live fish marketing/ harvested fishes to be promoted through hands on training
 - 7) Cage culture of fish farming have to be demonstrated with training
 - 8) Training on fish waste utilization and decomposition technologies need to be conducted
- XII. Tmt.K.Banumathi, Project Officer, CDPO, ICTR Block, Kancheepuram**
- 3) Nutrition gardens should be developed in Anganwadi centers of all block in the District.
 - 4) 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)**
- 3) Developmental activities may be carried along with other Line Departments in DFI Village.
 - 4) 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**
- 9) Documentation of Technologies to be done.
 - 10) Price fixation for Pulses to be done for Seed Hub Project.
 - 11) Mushroom mother spawn production training to be given to farmers.
 - 12) Research article to be published by staff members.
 - 13) Farm machineries exhibition need to be conducted.
 - 14) Successful farmers to be called as Co-trainers for training programme to motivate participants
 - 15) Training on Balanced nutrition for children and women need to be conducted.
 - 16) ATMA Exposure visit have to organize for the benefit of farmers
- XV Dr.D.Ramasamy, DEE i/c, TANUVAS**
- 3) Percentage of adoption of KVK technologies among farmers should be assessed.
 - 4) Programmes on Agricultural Tourism for city people to rural area need to be arranged.
- XVI Dr.Y.G.Prasad, Director, ICAR-ATARI, Hyderabad**
- 5) KVK is to be operated as single window delivery system
 - 6) Each subject matter specialist should produce impact assessment on source of technologies (TNAU / CIBA/TANUVAS).
 - 7) Physical Expenditure and outcome need to be submitted for the programme conducted (Outcome based budgeting & expenditure)
 - 8) Survey and impact analysis have to be done with successful farmers
- XVII Dr.C.Balachandran, Vice-Chancellor, TANUVAS**

- 8) Technologies suitable for short term & long term condition in the fields of Animals Husbandry and Agriculture need to be given emphasize
- 9) Alternate farming technologies like lotus cultivation trainings need to be arranged
- 10) Farmer producer organizations (FPOs) are to be utilized for transferring newer technologies
- 11) FPOs may be used for data collection in percentage of technology adoption
- 12) Proposals related to Peri urban areas need to be concentrated
- 13) Database creation to be made
- 14) Weather data have to be given to the farmers & weather forecast for farming system need to be done.

11. PUBLICATIONS

Publications in journals

S. No	Authors	Year	Title	Journal
1	K. Devaki P.Mathialagan P.Kumaravel and S.M.K.Karthickeyan	2019	Validation study on Ethno Veterinary medicines used for wound treatment in backyard poultry	International Journal of Science, Environment and Technology Vol.8(6):1241-1245
2	K.Devaki, K.Senthil kumar and P.R.Nisha	2019	Performance of Pekin ducks and Desi ducks under integrated farming system at kancheepuram district in Tamilnadu	Journal of Krishi Vigyan Vol.8(1): 217-220
3	K. Devaki P.Mathialagan P.Kumaravel and S.M.K.Karthickeyan	2019	Pros and Cons encountered by the farmers in adopting the Animal Husbandry Traditional Practices and Ethno veterinary medicines	Indian Journal of SocialResearch Vol.60(6):847-853
4	K.Devaki, K.Senthil kumar and P.R.Nisha	2019	Impact of Front Line Demonstration (FLD) on the Yield of Japanese Quails at Kancheepuram district, Tamil Nadu	International Journal of Current Microbiology and Applied Sciences Vol.8(12) :250-254.
5	K.Devaki, P.Mathialagan, P.Kumaravel and S.M.K.Karthickeyan	2020	Scientific Rationale of Ethno Veterinary Medicine for curing Skin diseases in Dairy Animals	National AgroForestry Symposium 2020 Compendium with ISBN No.: 978-93-5406-115-8.on “ Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam. PP.53-55.
6	K.Devaki and P.R.Nisha	2020	Demonstration of Ethno Veterinary Herbal medicine for the prevention of Ranikhet disease in backyard Poultry	National AgroForestry Symposium 2020 Compendium with ISBN No.: 978-93-5406-115-8.on “ Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring

				Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam. PP.86-87.
7	Vimalarani.M. Thenmozhi.P.G and Velmurugan .K	April 2019	Study on Post Harves processing to Enhance milling Quality of Little Millet (Paniumsumatrense)	International Journal of Agricultural Sciences 2019, April Vol.I Issue 7 8201-8203
8	Thenmozhi.P.GVim alarani.M. And S.Senthurkumaran	2019, June	“Entrepreneurship Development programme on Sivimilk mixture-A ready to Eat products from Ragi and Bajra	International Seminar on “Innovative Extension Management for uplifting Livelihood of farmers-status, Initiatives and way Forward” (2019),228-231, ISBN No.978-93-85418-56-3
9	B.R.Nivetha, K. Sudha, Rita Narayan and M.Vimalarani	August20 19	Development and sensory Evaluation of meat Analog	International Journal of Current Microbiology and Applied Sciences(2019) Vol.8(8) Pg.No.1283-1288 - ISSN 2319 -7706
10	Vimalarani M and Nisha P. R	March 2020	Study on development of underutilized tamarind seed kernel powder incorporated cookies	National AgroForestry Symposium 2020 on “ Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam. NAFS 2020Compendium, PP:178-179, ISBN No.: 978-93-5406-115-8.
11	Vimalarani M and Nisha P. R	March’20 20,	Study on development and evaluation of tamarind products to increase the livelihood of the farm women	National AgroForestry Symposium 2020 on “ Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam, NAFS 2020Compendium, PP:327, ISBN No.: 978- 93-5406-115-8.
12	Vimalarani M and Nisha P. R	March’20 20,	Development of mango seed kernel incorporated wheat flour to increase the nutritional	National AgroForestry Symposium 2020 on “ Climate Resilient Agroforestry systems to

			Quality	Augment Livestock Productivity Ensuring Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam ISBN No.: 978-93-5406-115-8. PP:328
--	--	--	---------	---

Other publications

S.No	Item	Year	Authors	Title	Publisher
1	Books	2020	Vimalarani M and Nisha P. R	Masala powders preparation	KVK, Kattupakkam
2	Book chapters / manuals	2019	Vimalarani M	Development of Functional foods fortified with spirulina	CFDT, TANUVA S, Koduvalli, Chennai
		2020	Sivakumar K In: Nisha PR, Devaki K,	Composite fish culture	(Eds.), Training manual on Integrated Livestock farming, KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2020	Sivakumar K In: S.Soundararajan & R.Gopi	Scientific strategies for feeding and water quality management in IFS pond	(Eds.), Training manual on Livestock and Fish based Integrated farming system, TANUVAS, DEE, FTC, Enathur, Kancheepuram, Tamil Nadu, India
		2020	Sivakumar K In: S.Soundararajan & R.Gopi	Fish disease and its management in Integrated Fish farming	(Eds.), Training manual on Livestock and Fish based Integrated farming system, TANUVAS, DEE, FTC, Enathur, Kancheepuram, Tamil Nadu, India
3	Training manuals	2020	Dr.P.R.Nisha and Dr.K Devaki	Integrated Livestock farming	KVK, KPM

4	Conference, proceedings papers, popular articles, Bulletins, Short communications	2019	Dr.T.Selvaraj	Waste Generation Potential and its management options in India	Sathyabama University-National Workshop on agricultural Waste Utilization for sustainable Environment
		2019	Dr.T.Selvaraj	Green house gas emission influence on climate change - its present status of management in india	Plenary Lecture-Lead speaker National Conference on Biotechnological Advances in Biomedical, Environmental and Agricultural Technology- Proceedings of Hindusthan University-BEAT 2K19
		2019	Dr.T.Selvaraj	Extraction and characterization of Humic acid from coal for differential application	Proceedings of C-Farm Centre for Flyash Research and Management-National Conference
		2020	Dr.T.Selvaraj	Global warming due to greenhouse gases and its impacts on change in area and production of agricultural crops	International Conference on "Livestock, Food security and Food safety - Challenges, Opportunities and strategies" held at MVC, Chennai
		2019	Dr.Gayathri Subbiah	Agriculture Waste utilization for Sustainable development	Sathyabama University-National Workshop on agricultural Waste Utilization for sustainable Environment
		2019	Dr.Gayathri Subbiah	Eco-friendly approaches in Coconut rhinoceros beetle management	Proceeding in International Conference on

					“Environmental Sciences and Climate change: Accomplishments, Plans and Challenges”
		2019	Dr.Gayathri Subbiah	Wild boar management	Pachaaibhoomi
		2019	Dr.Gayathri Subbiah	Whiteflies management techniques	Pachaaibhoomi
		2020	Dr.Gayathri Subbiah and Dr.P.R.Nisha	Impact on adoption of Integrated Pest and Disease Management Practices in Crops in Kancheepuram district of Tamil Nadu	Proceeding in National Seminar on "Emerging Technologies and Enabling Tools in Diagnosis and Management of Plant Diseases" ETDMPD 2020
		June 2019	Vimalarani.M. Thenmozhi.P.G and Velmurugan .K	Abstract on Entrepreneurship Development programme on value addition of millets products for the higher Income Generation of SHG	International Seminar on “Innovative Extension Management for uplifting Livelihood of farmers-status, Initiatives and way Forward” (2019), 521-522, ISBN No.978-93-85418-56-3
		January 2020	Vimalarani M and Nisha P. R	Abstract on Development and evaluation of quail egg pickle product to ensure food and nutrition security	International Conference on “Livestock, Food security and Food safety - Challenges, Opportunities and strategies" held at MVC, Chennai, Proceedings , p.58
		2019	Sivakumar K & Velmurugan K	Culturing of fishes in irrigated ponds	Krishi Jagran
		2019	Sivakumar K & Velmurugan K	Silver catfish culture	Pachai Boomi
		2019	Sivakumar K & Velmurugan K	Incoming providing ornamental fishes	Pachai Boomi
		2019	Sivakumar K & Velmurugan K	Fish polyculture in periphyton enhanced system using sugarcane bagasse	ICAR-ATARI Annual Review meeting 2018-19 Hyderabad
		2019	Sivakumar K	Live feed cultivation technology in ornamental fishes	SRM Community Radio Station, Potheri

		2019	Sivakumar K	Freshwater ornamental fish culture technologies	SRM Community Radio Station, Potheri
		2018	Sivakumar K, Kannappan S In: S.Felix, V. Rani, T.Umamaheswari, S. Aknash Dani Angela, P. Jawahar, K. Karlmarx	Antagonistic activity of marine algae against <i>Vibrio harveyi</i> bacteria	(Eds.) Fisheries Resource management, Agricultural Scientific Tamil Society, New Delhi, India
		2019	Sivakumar K	Genetically Improved Farmed Tilapia (GIFT) fish culture	PachaiBoomi
		2020	Sivakumar K & Nisha PR	Jayanti Rohu fish culture	Kaalnadai Velanmai
		2020	Sivakumar K, Kannappan S	Phytochemical analysis of marine red seaweed <i>Kappaphycus alvarezii</i> for its nutritional potential	Compendium on National Agro Forestry Symposium 2020 (NAFS 2020) on “Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” held at TANUVAS, IAN, Kattupakkam, Tamil Nadu, India on 05.03.2020 & 06.03.2020
		2020	Sivakumar K & Nisha PR	Fish polyculture in periphyton enhanced system using sugarcane bagasse	KVK's Naional Conference 2019, New Delhi
Conference and Proceeding papers					
1	Confere nce, proceedi ng papers	2019	K. Devaki P.Mathialagan P.Kumaravel and K.Senthil kumar	EVM technologies to treat wound in Poultry birds	International Tamil Conference Compendium on “Role of Veterinary science in farmers Livelihood” held at MVC, Chennai-7 on 22.2.2019

					&23.02.2019.
2		2019	M.Mohanapriya, D.Balasubramanyam, K.Senthilkumar, K.Devaki,C.Jothika and S.T.Selvan	Marketing Pattern prevailing among the pig farmers of Tamil Nadu	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.0 6.2019.
3		2019	D.Balasubramanyam, C.Jothika, K.Devaki, K.Senthilkumar, M.Mohanapriya and S.T.Selvan	Socio Economic status of pig farmers of Tamil Nadu	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.0 6.2019.
4		2019	C.Jothika, D.Balasubramanyam, M.Mohanapriya, K.Devaki, K.Senthilkumar and S.T.Selvan	Feeding practices adopted by pig farmers of Tamil Nadu	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.0 6.2019.
5		2019	K.Senthilkumar, D.Balasubramanyam, M.Mohanapriya, K.Devaki, C.Jothika and S.T.Selvan	Adoption of healthcare practices among the pig farmers of TN	International Seminar Compendium on “Innovative Extension Management for uplifting

					livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.06.2019.
6		2019	K.Devaki, D.Balasubramanyam, M.Mohanapriya, C.Jothika K.Senthilkumar and S.T.Selvan	Piglet management practices adopted by farmers of TamilNadu	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.06.2019.
7		2019	K.Devaki, P.R.Nisha,K.Senthil kumar and K.Velmurugan	Assessment on the performance of Pekin ducks in IFS model through bO(OFT)n farm testing	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.06.2019.
8		2019	K.Devaki, P.R.Nisha,K.Senthil kumar and K.Velmurugan	Impact of frontline demonstrations on growth performance of Nandanam IITurkey birds in existing IFS model	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.06.2019.

					6.2019.
9		2019	K. Devaki P.Mathialagan P.Kumaravel and VE.Sabarathinam	Traditional sheep and Goat farming practices of livestock farmers of Tamil Nadu.	International Seminar Compendium on “Innovative Extension Management for uplifting livelihood of farmers – Status, Initiatives and way forward” held at MVC,Chennai-7 on 27.06.2019&28.0 6.2019.
10		2020	Dr.K.Devaki and Dr.P.R.Nisha	Impact of FLD on popularization of Newzealand white rabbit for ensuring food security and sustainable Nutrition	International Conference Proceeding on “Livestock, Food security and Food safety - Challenges, Opportunities and strategies from 28.01.2020 to 29.01.2020
11		2020	Dr.P.R.Nisha and Dr.K.Devaki	Income generation and Nutrition security through sheep based integrated farming system model in Chengalpattu, Tamil Nadu	International Conference proceeding on “Livestock, Food security and Food safety - Challenges, Opportunities and strategies from 28.01.2020 to 29.01.2020

Popular Articles

1	Popular Articles	Apr 2019	Dr. K.Devaki & Dr.K.Velmurugan	Lamb Management	Pacchai Bhoomi
2		May 2019	Dr.K.Senthil kumar, Dr. K.Devaki & Dr.S.T.Selvan	Mastitis in Dairy animals- An Overview	Velaan Vaniga Ulagam
3		Aug 2019	Dr. K.Devaki, Dr.K.Senthil kumar & Dr.S.T.Selvan	Integrated Poultry farming	Velaan Vaniga Ulagam
4		Oct 2019	Dr.K.Devaki	Winter management in livestock farming	Pasumai Vikatan
5		Nov 2019	Dr.K.Devaki	Importance of vaccination in livestock farming	Kalai kathir
6		Dec 2019	Dr.K.Devaki	Mineral mixture feeding in dairy animals	Vaniga Kathir

7		Jan 2020	Dr.K.Devaki, Dr.K. Senthilkumar & Dr.P.R.Nisha	Duck farming	Vaniga Kathir
8		Feb 2020	Dr.K.Devaki & Dr.P.R.Nisha	Integrated Dairy farming	Vaniga Kathir
9		Mar 2020	Dr.K.Devaki & Dr.P.R.Nisha	Scientific Management practices to improve production in dairy animals	Vaniga Kathir
10		April 2019	Vimalarani.M. and Velmurugan .K	Value added Duck products	Vanigamanipp 54-56
11		April 2019	Vimalarani.M. and Velmurugan .K	Medicinal properties of Turmeric	PachaiBhoomi pp31
12		May 2019	Vimalarani.M. and Velmurugan .K	Food for summer season	Vanigamanipp 34-36
13		June 2019	Vimalarani.M. and Velmurugan .K	Medicinal properties of Grapes	Vanigamanipp 34-36
14		August 2019	Vimalarani.M. and Velmurugan .K	Medicinal uses of Sabja seeds	Vanigamanipp 36-37
15		Sep 2019	Dr.M.Vimalarani&Dr .S.SendurKumaran	Nutritious products from moringa leaves	Vanigamani Pp44-46
16		Oct 2019	Dr.M.Vimalarani&Dr .P.R.Nisha	Value added Thuthuvalai products	Vanigamani Pp64-66
17		Nov 2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Value added Pirandai products	Vanigamani Pp26-28
18		Dec 2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Value added watermelon products	Vanigamani Pp56-58
19		Jan 2020	Dr.M.Vimalarani& Dr. P.R.Nisha	Healthy Pongal	Vanigamani 24- 26
20		Feb 2020	Dr.M.Vimalarani& Dr. P.R.Nisha	Medicinal Properties and Value addition of Rose	Vanigamani 54- 56
21		March 2020	Dr.M.Vimalarani& Dr. P.R.Nisha	Balanced Nutrition for Women	Vanigamani 52- 54
Technical bulletin/ Folders		2019	All Staff	Drip Irrigation Maintenance of Drip Irrigation System	KVK
Technical bulletin/ Folders					
		2019	All Staff	Drip Irrigation	KVK,Kattupakka m
		2019	All Staff	Maintenance of Drip Irrigation System	KVK,Kattupakka m
		2019	Dr.K.Devaki & Dr.P.R.Nisha	FMD and Brucellosis	KVK,Kattupakka m
		2019	All KVK staff	JSA – Integrated Dairy farming	KVK,Kattupakka m
		2019	All KVK staff	JSA – Vermicompost production	KVK,Kattupakka m
		2019	All KVK staff	JSA – Drip Irrigation	KVK,Kattupakka m
		2019	All KVK staff	JSA – Value addition	KVK,Kattupakka m
		2019	Dr.K.Devaki &	Backyard Poultry farming	KVK,Kattupakka

			Dr.P.R.Nisha		m
		2019	Dr.K.Devaki & Dr.P.R.Nisha	Ornamental pet birds rearing	KVK,Kattupakka m
		2019	Dr.K.Devaki & Dr.P.R.Nisha	TANUVAS Aseel rearing	KVK,Kattupakka m
		2019	Dr.K.Devaki & Dr.P.R.Nisha	EVM to prevent bloat in dairy animals	KVK,Kattupakka m
		2019	All KVK staff	Agromet weather based farming advisories	KVK,Kattupakka m
		2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Value added watermelon Fruit and Rind products	Pamphlets
		2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Nutrition Gardening for Nutrition security	Pamphlets
		2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Value added Thuthuvalai products	Pamphlets
		2019	Dr.M.Vimalarani& Dr. P.R.Nisha	Value added Pirandai products	Pamphlets
		2020	Dr.M.Vimalarani& Dr. P.R.Nisha	Nutrition for Children	Pamphlets
		2020	Dr.M.Vimalarani& Dr. P.R.Nisha	Balanced Diet for Adults	Pamphlets
		2019	Sivakumar K and Sendur Kumaran S	Ornamental fish culture	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2019	Sivakumar K and Sendur Kumaran S	Catfish culture	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2019	Sivakumar K & Nisha PR	Vermicompost production using fish waste	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2019	Sivakumar K & Nisha PR	Dry fish production methods	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2019	Sivakumar K & Nisha PR	Grass carp fish culture	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2020	Gangatharan S, Devaki K, Nisha PR, Gayathri Subbiah, Selvaraj T, Vimalarani M, Siddharth M & Sivakumar K	Weather wise otherwise not wise	KVK, TANUVAS, Kattupakkam, Tamilnadu, India
		2020	Gangatharan S, Devaki K, Nisha PR, Gayathri Subbiah, Selvaraj T, Vimalarani M, Siddharth M &	Importance of weather in Agriculture and weather based agro advisory services and its application in agriculture	KVK, TANUVAS, Kattupakkam, Tamilnadu, India

			Sivakumar K		
6	Reports	2020	Sivakumar K	Work done particulars of Fisheries discipline for 2019-20	22nd Scientific Advisory Committee (SAC) meeting held at TANUVAS, KVK, Kattupakkam-603 203, Kancheepuram District, Tamil Nadu, India
7	others	2019	Sivakumar K	Live feed cultivation technology in ornamental fishes	SRM Community Radio Station, Potheri
		2019	Sivakumar K	Freshwater ornamental fish culture technologies	SRM Community Radio Station, Potheri
		2019	Sivakumar K	TANUVAS Technologies in YouTube channel – Fish culture methods	ICAR - TANUVAS, DEE Office success story
		2019	Sivakumar K	Jayanti Rohu fish culture	SRM Community Radio Station, Potheri
		2019	Sivakumar K	Azolla cultivation and Used of Azolla in fish culture practices	SRM Community Radio Station, Potheri
		2019	Sivakumar K	Backyard ornamental fish culture	SRM Community Radio Station, Potheri
		2019	Sivakumar K	Catfish culture	SRM Community Radio Station, Potheri
		2019	Sivakumar K	Brackishwater prawn culture	SRM Community Radio Station, Potheri
		2020	Sivakumar K	Scientific carp farming	SRM Community Radio Station, Potheri
		2020	Sivakumar K	Scientific catfish farming	SRM Community Radio Station, Potheri
		2020	Sivakumar K	Murrel fish culture	SRM Community Radio Station, Potheri

Newsletter/Magazine

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

12. 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 T.Selvaraj	Hydroponics Trainer Training Programme	05.07.2019	1 Day	URF-TANUVAS
Dr T.Selvaraj	PKVY Training	21.08.2019	1 Day	ATAR-Hyderabad
Dr T.Selvaraj	Biogas Training	26 sep to 29 Sep	4 Day	TNAU-Coimbatore
Dr.Gayathri Subbiah	Workshop on Fall Armyworm Management and Nematode control in Vegetable crops	22.07.2019 to 23.07.2019	2 days	TNAU, Coimbatore
Dr.Gayathri Subbiah	Training programme on Production protocol for Entomopathogenic nematodes	24.02.2020 to 28.02.2020	5 days	NIPHM, Hyderabad
Dr.Gayathri Subbiah	International Conference on “Environmental Sciences and Climate change: Accomplishments, Plans and Challenges”	11.11.2019 to 15.11.2019	5days	Madras University, Chennai
Dr.Gayathri Subbiah	National Seminar on "Emerging Technologies and Enabling Tools in Diagnosis and Management of Plant Diseases" ETDMPD 2020	08.01.2020 to 09.01.2020	2 days	Annamalai University, Chidambaram
Dr.Gayathri Subbiah	International Conference on “Pulses as the Climate Smart Crops : Challenges and Opportunities”	10.02.2020 to 12.02.2020	3 days	IIPR, Kanpur
Dr.K.Devaki	International Conference on “Livestock, Food security and Food safety - Challenges, Opportunities and strategies	28.01.2020 and 29.01.2020	2 days	MVC, Chennai-7
Dr.K.Devaki	National Agro Forestry Symposium 2020(NAFS 2020) on “Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” held at IAN, Kattupakkam on 05.03.2020 & 06.03.2020	05.03.2020 and 06.03.2020	2 days	IAN, Kattupakkam
Dr.M.Vimalarani	International Seminar on “Innovative Extension Management for uplifting Livelihood of farmers-status, Initiatives and way Farward”	27.06.19 to 28.06.19	2 days	Madras Veterinary College, Chennai

Dr.M.Vimalarani	ICAR short course on Entrepreneurship Development through Agro/food processing centres	12.12.19 to 21.12.19	10 days	ICAR,CIAE center Coimbatore
Dr.M.Vimalarani	International Conference on ICFS 2020	28.01.20 to 29.01.20	2 days	Madras Veterinary College, Chennai
Dr.M.Vimalarani	National Agro Forestry Symposium 2020(NAFS 2020) on “Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” held at IAN, Kattupakkam on 05.03.2020 & 06.03.2020	05.03.2020 and 06.03.2020	2 days	IAN,Kattupakkam
Dr.K.Sivakumar	Winter school on “Mariculture Technologies: Principles and practices to augment the seafood production in India”	06.11.2019 to 26.11.2019	21 days	ICAR – Mandapam Regional Centre of Central Marine Fisheries Research Institute, Mandapam, Ramanathapuram – District, Tamil Nadu
Dr.K.Sivakumar	National Agro Forestry Symposium 2020 (NAFS 2020) on “Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity”	05.03.2020 & 06.03.2020	2 days	TANUVAS, IAN, Kattupakkam, Tamil Nadu, India

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

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

14. 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
Dairy/Goat/Poultry/Pig/Rabbit farming	51	3716
Total	51	3716

Animal health camps organised

Number of camps	No.of animals	No.of farmers
1	150	38
Total	150	38

Seed distribution in drought hit states

Crops	Quantity (qtl)	Coverage of area (ha)	Number of farmers
Nil			
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
AS	14	3685	1	1036	1	12	0	0	4	1236	21	777
PP	4	110	0	00	4	40	0	0	2	92	13	1331
Total	18	3795	1	1036	5	52	0	0	6	1328	34	2108

15. Awards/rewards received by KVK and staff

Recognitions & Awards/Special attainments and Achievements of Practical Importance				
Recognitions & Awards (Team Award/individual)				
Item of Recognition	Year	Awarding Organization National / International / Professional; Society	Individual/ collaborative	
Best Worker Award	2020	Chengalpattu District Collector	Individual	
Award of Appreciation	2019	JD-TAWDEVA	Individual	
Best Oral Presentation	2020	National Seminar organized by Annamalai University, Chidambaram	Dr.Gayathri Subbiah	
Received Best paper presentation Award	June 2019	International Seminar on “Innovative Extension Management for uplifting Livelihood of farmers-status, Initiatives and way Forward”, organized by Dept.of Veterinary and Animal Husbandry Education, MVC,Chennai ,TANUVAS and MANAGE, Hyderabad	Dr.M.Vimalarani	
Received Best paper presentation Award	March 2020	National AgroForestry Symposium 2020 on “ Climate Resilient Agroforestry systems to Augment Livestock Productivity Ensuring Environmental Biodiversity” 05.03.2020 to 06.03.2020 at IAN, Kattupakkam	Dr.M.Vimalarani	
Special Attainments & Achievements of Practical Importance(patents, technologies, varieties, products, concepts, methodologies etc.)				
Category	Title	Year	Individual/ Collaborative	Additional Details/Information
-	-	-	-	-

16. Details of sponsored projects/programmes implemented by KVK

S. No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Jal Shakthi Abhiyan	ICAR, New Delhi	Awareness on Water Conservation	2 days 03.09.2019 17.10.2010	300000
2	Webcasting of NADCP and NAIP by PM of India at Mathura	ICAR, New Delhi	Awareness to be created among farmers on FMD, Brucellosis and AI in dairy animals	1 day 11.09.2019	15000
3	Fertilizer Application Awareness Program-Report	ICAR, New Delhi	Awareness of effective Fertilizer Application	1 day 22.11.2019	50000
4	Environmental Awareness Programme	ICAR, New Delhi	Importance of tree plantation	1 day 17.09.2019	10000
5	Integrated livestock farming	Paid training programme	Income generation through Integrated farming	1 day 12.02.2020	14850
6	Capacity Building of farmers for Disaster Management Planning	DEE, TANUVAS	Drought management techniques in livestock management	1 day 13.02.2020	15000

Please attach detailed report of each project/programme separately

1.Jal Shakthi Abhiyan – Kisan Mela : Two programmes

Jal Shakthi Abhiyan awareness programme - 1 cum Kisan mela was conducted on 03/09/2019 at Crescent University, Kancheepuram jointly organized by KVK and Agriculture department, Kancheepuram with a motto on “Working on war footing to save water”. In this grand mela, totally 1020 farmers and public participated in this programme. The important events organized during the programme viz., Seminar, Exhibition, Demonstration, Farmers interaction with Prabhari officer, Special lectures, Taking Pledge, Seeds, Pamphlet distribution.

Th.P.Ponniah, IAS, District Collector, Th.A.Kulothungan, IAS, Assistant Secretary, Dept.of Mines, GOI, Prabhari Officer, JDA. PD-DRDA, Registrar, Crescent University, DD-Agriculture, and horticulture department were participated and felicitated the programme. The series lectures and demonstration made by faculties by KVK were

- Jal Shakti Abhiyan, the need for it
- Water Conservation Technologies.
- Soil Health Management.
- Fall Army Worm Management.

Jal Shakthi Abhiyan awareness programme - 2 cum Kisan mela was conducted on 17.10.2019 at Kammavarpalayam, Walajabad block. Totally 1036 farmers, officials and public participated in this programme. The important events organized during the programme were seminar, Exhibition, Demonstration, Farmers interaction, Special lectures, taking pledge and pamphlet distribution.

Dr.Asokan, JDAgriculture and Project Director, DRDA, DD-Agriculture, and AD, horticulture department were participated and felicitated the programme. The series lectures and demonstration made by faculties by KVK were

- Jal Shakti Abhiyan, the need for it
- Water Conservation Technologies.
- Soil Health Management.

2.Webcasting of NADCP and NAIP by PM of India at Mathura

KVK, Kancheepuram organised webcasting of "Launch of NADCP for FMD & Brucellosis and National Artificial Insemination Programme by the Hon'ble Prime Minister of India" on 11th September 2019. A workshop was conducted on the importance of artificial insemination, and the need for disease control programme. Around 51 farmers participated. A poster on FMD and Brucellosis were exhibited for the farmers display. On the eve of this occasion, an Animal Health camp was organised at Ninnakarai village, Kattankolathur block in coordination with Animal Husbandry department of Kancheepuram district. Animal Disease Investigation unit of Kancheepuram district and local veterinary assistant surgeons participated in the event. In this programme artificial insemination were done to 6 animals and FMD vaccination were given to 50 animals. Around 35 farmers were benefited. Pamphlets on FMD and Brucellosis were distributed to the livestock owners.

3.Fertilizer Application Awareness Program-Report

“Fertilizer Application Awareness Program” was conducted on 22 October 2019 at Sreenivasa Mahal, Uthiramerur village of Kancheepuram district. The Programme was jointly organized by KVK and Agriculture department, Kancheepuram with an aim of “Economy of fertilizer application to increase the Farm Profits of the Rural communities”. In this programme 205 farmers and nine officials participated. The following lectures were given during the programme:

- Importance of soil testing in soil health improvement and crop nutrition
- Integrated use of fertilizers and manures for improving efficiency of nutrients
- Advantages of integrating legume crops in cropping systems / crop planning
- How to use bio-fertilizers effectively
- Increased fertilizer use efficiency through drip & fertigation

Live telecast of the Address by Hon'ble Minister of Agriculture & FW on DD Kisan was displayed to the farmers. Question and answer session was done after the lectures and clarifications were given by the experts during the programme. Demonstration on the bio fertilizer production was done along with an exhibition were products and services of the different government departments and KVK were displayed. Pamphlets on fertilizer application were distributed to the farmers.

Th.A.Asokan, JD (Agr) participated and felicitated the programme. The other officials participated viz., DD-ATMA, ADA and other Agricultural officers of Uthirameur Block. As a part of the Programme Fertilizer usage survey had been conducted to the Marginal and as well as the Progressive farmers.

4.Environmental Awareness Programme

KVK, Kancheepuram conducted Environmental Awareness Programme on 17.09.2019 in the campus with the participation of Farmers and Public. This programme was particularly aimed for promotion of tree cultivation, environmental protection by abatement of plastic pollution in this district. . Awareness was created on the following objectives,

- ❖ Environmental awareness among the rural and public, regarding tree cultivation in farm and homesteads.
- ❖ Awareness about the pollution due to usage of single use plastics.
- ❖ Importance in conservation of soil and water to maintain bio-diversity.

Environmental awareness programmes conducted with a guest lecture by Deputy Director of Horticulture and Assistant director Agriculture. Tree were planted by the special guests. Technical session by Senior scientist and Head, Soil scientist and Agricultural Engineer, Tree saplings were distributed to farmers and public by the guests. Plastic eradication awareness campaign and Soil Moisture Meter demonstration was done by Soil Scientist. Tree seedlings of Jamun, Lemon and Amla were distributed to 230 persons.

5. Paid training Programme on Integrated Livestock Farming :

A Paid training programme on “Integrated Livestock Farming” was conducted by Krishi Vigyan Kendra, Kattupakkam on 12.02.2020 during the year 2019-20 for the beneficiaries of Kancheepuram district. The training fee amount of Rs. 330/- per person was collected for the training programme. Forty five beneficiaries of Kancheepuram district were benefitted by this paid training programme. Dr.P.R.Nisha, Professor and Head, KVK, Kattupakkam welcomed the gathering and explained the activities of KVK and delivered guest lecture on “Importance of Integrated Farming System to boost the income of farmers and economics of IFS model” to the participated beneficiaries. Besides, guest lecture on “Integration of Agriculture and Horticulture in IFS models” was delivered by Dr.M.Siddharth, Professor, Agricultural Engineering, KVK, Kattupakkam, Dr.K.Devaki, Assistant Professor, Animal Science, KVK, Kattupakkam delivered guest lecture on “Integrated Livestock Farming”, Dr.K.Sivakumar, Assistant Professor, Fisheries, KVK, Kattupakkam delivered lecture on “Fish culture and fish pond maintenance in IFS model”, Dr.M.Vimalarani, Associate Professor, Home Science, KVK, Kattupakkam delivered lecture on “Value added milk and meat products”, Dr.T.Selvaraj, Associate Professor, Agronomy, KVK, Kattupakkam delivered lecture on “Farm waste utilization and Vermicompost production” and Dr.S.Gangadharan, SMS, Agrometeorology, KVK, Kattupakkam delivered lecture on “Azolla and Bee keeping”. Trainees were exposed to practical demonstration on Azolla and Vermicomposting techniques and Integrated farming system model demo unit visit by Selvi.N.Vinitha, Farm Manager, KVK, Kattupakkam. Video shows on livestock farming were displayed to the trainees. At the end of training session, interaction was done with trainees and feedback collected. Training certificates and booklets were issued to the trainees at the valedictory session.

6. Sponsored Training Programme on Livestock Drought Management :

A training programme on “Capacity building training programme of farmers for disaster management planning” under Livestock Draught Management was conducted by Krishi Vigyan Kendra, Kattupakkam on 13.02.2020 during the year 2019-20 for the beneficiaries of Kancheepuram district. This training programme was sponsored by the Directorate of Extension Education, TANUVAS for the benefit of farmers of Kancheepuram district for the year 2019-20. Forty beneficiaries of Kancheepuram district were benefitted by this training programme. Dr.P.R.Nisha, Professor and Head, KVK, Kattupakkam welcomed the gathering and guest lecture on “Hydroponic fodder production” and “Ten cent model fodder plot for sustainable fodder production” was delivered. Besides Dr.K.Devaki, Assistant Professor, Animal Science, KVK, Kattupakkam delivered guest lecture on “Vermicompost and Azolla as alternative feed for livestock” under Livestock Drought

Management Programme. Training kit, lunch, tea and travelling expenses were provided to 40 farmers. Trainees were exposed to practical demonstration on Azolla, Hydroponics and Vermicompost and Green fodder cultivation techniques along with KVK model demo unit visit. Video shows on livestock farming were displayed to the trainees. At the end of training session, Interaction done with trainees and feedback collected. Training booklets were issued to the trainees at the valedictory session.

17. SUCCESS STORIES

Success story – 1: Agronomy

Introduction of Paddy ADT-53

Problem Statement

Govindavadi a Village in Kancheepuram District, where farmers cultivate Paddy in Rabi season of every year. The block receives more than 25 cm rainfall for about 8 to 10 days in a month during North east monsoon. Though the water source is sufficient for Paddy cultivation, climatic condition during the season and unscientific cultivation method are the reasons for getting lower yield. Also the farmers regularly face problem of lodging of paddy and low yield by cultivating the local varieties.

Rabi Season is the Main season for cultivation of Paddy. The deviation of rainfall is narrow compared to previous years. Highest rainfall received during cropping period is of having its highest impacts in the promotion of yield. The farmers who cultivated local varieties severe losses in Yield due to crop lodging. The farmers who received the advice and Project from KVK cultivated ADT53 Paddy successful in realising higher yield.

Plan:

By conducting survey in different blocks of Kancheepuram district, the intensity of problem was ascertained. PRA and training was conducted in selected Village in Kancheepuram District. To alleviate the problem, elite ADT-53 seeds which are resistant crop lodging and pest and diseases, were supplied to farmers of Govindavadi through Front Line Demonstration project 2019 – 20. Elite variety of ADT-53 seeds distributed to 10 farmers of the village to cultivate the same in 1 acre each in the specified fields. Frequent farm visit was made and advisories given 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 Evaluation
Elite Seed Distribution	1	Two blocks covered
SRI	1	Demonstration
Seed Treatment	1	Demonstration
Crop Stand Evaluation	2	Yield Assessment

Output:

By Introduction of this elite ADT-53 variety under Front Line Demonstration project, farmers have all got disease and pest free harvest. On an average farmers, obtained a BCR of 1.4 by cultivating this variety following the specified technologies such as SRI, seed treatment with Bio fertilizers and Bio pesticides. The introduction of Integrated Pest Management and Integrated Crop Management methods considerably reduced the external application of critical inputs.

Outcome:

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

Impact:

Right now the cultivation of ADT-53 PADDY increased from 20 ha to 85 ha, within a year because of its resistance to crop lodging and also incidence of Pest and Diseases

Success Story – 2 :Plant Pathology

Demonstration of eco-friendly IPDM practices in polyhouse vegetable cultivation - FLD

Problem Statement

Vegetable Cultivation is major occupation of farmers in Kancheepuram district. Poly house vegetable cultivation comprises of cucumbers and capsicum. The yield under poly house cultivation is 4-8 times higher than open field cultivation. The returns are good as crop is grown throughout the year and quality of the produce is also quite satisfactory. To increase production farmers are applying a large quantity of pesticides and fungicides thereby increasing their cost of cultivation. Moreover incidence of sucking pests like Thrips, Whiteflies, Mites and Rots and Wilts are major problems faced by the farmers which results in 20-30% yield losses despite of huge investments. During field visits and farmers interaction meetings, these issues were put forth and appropriate recommendations were given to the farmers.

Plan

Training programmes were conducted at village level along with the Department of Horticulture, Kancheepuram for the farmers of vegetable growers on need based application of pesticides and fungicides. Demonstrations on seed treatment techniques, soil application of bioagents, usage of traps and organic inputs were recommended under poly house cultivation. In order to implement package of practices, FLD programme on IPDM practices in environmentally friendly approach was conducted in villages where poly house cultivation are being done. Demonstration conducted by supplying critical inputs like *Trichoderma viride*, *Pseudomonas fluorescens*, *Paecilomyces*, Pongam oil and *Verticillium lecanii*. Soil application of microbial bio agents *Trichoderma*, *Pseudomonas* and *Paecilomyces* (2kg each) with neem cake (200kg) per acre, Use of Neem seed kernel extracts for thrips control, Spraying of Pongamia oil 5ml/litre for mites and aphids and Use of bio pesticides *Verticillium* was recommended and techniques demonstrated during field visits.

Interventions	Number of Programmes
Farmers meetings	5
Training programmes	3
Demonstrations	4
Field visits and Data collection	11
Field days	2

Output

Soil application of bioagents effectively reduced the occurrence of rots (1%) and wilts (2%) caused by Fungus and Nematodes. This increased plant stands and growth in the poly house. Foliar spray of Neem seed kernel extracts and pongam oil monitored the sucking pest in the crops. This reduced the pest incidences. *Verticillium* spray controlled mealy bugs. These treatments reduced the cost of chemical pesticides nearly about Rs.18750 per ha. Yield increase observed to be 1% with net return of Rs.165000/- per annum.

Fig 1. Effect of treatments on Cost

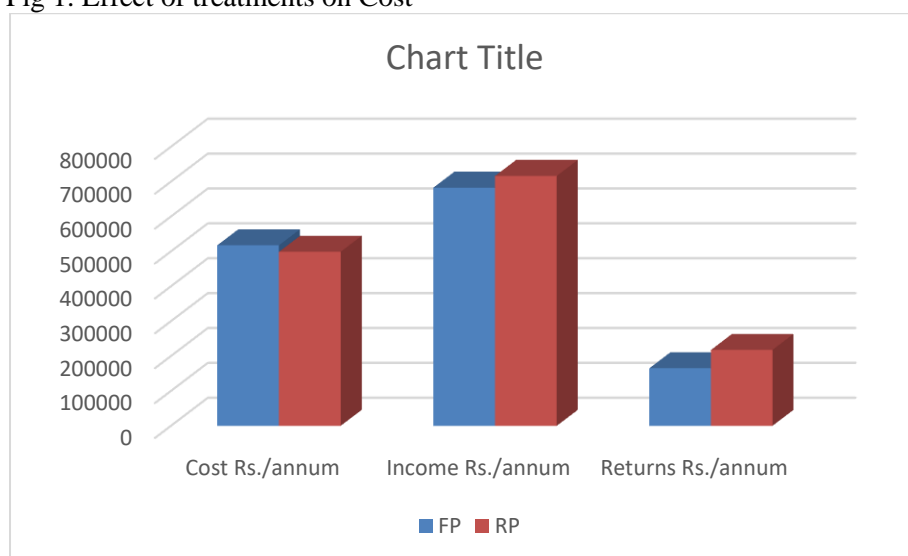
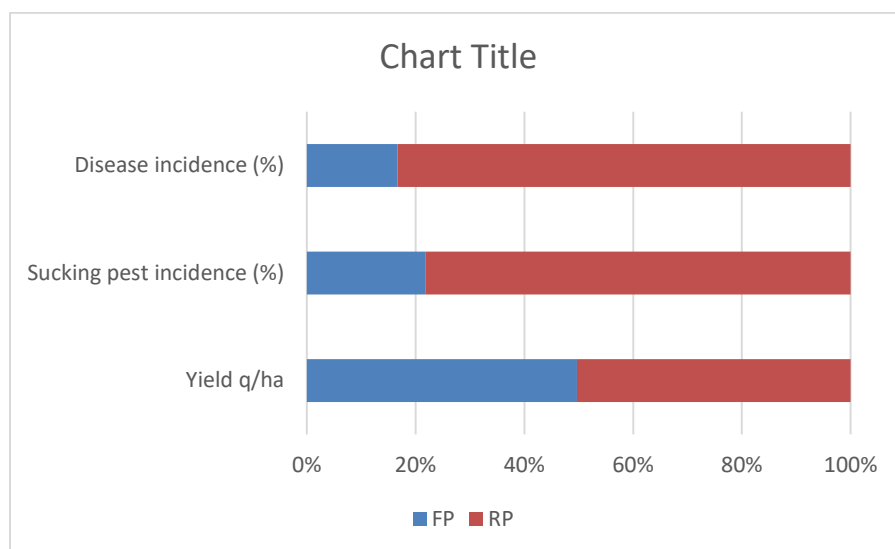


Fig 2. Effect of treatment on Pest and Disease occurrence



Outcome

During field visits, the villagers from nearby places were greatly influenced by the performance of pest management tools like soil application of bioagents, use of NSKE and biopesticide against sucking pests. The farmers were able to identify the damage symptoms and note the incidence of adult pests. The role of Crop pest defenders were also explained during field visits.

Impact

By adopting eco-friendly approaches farmers were highly satisfied as it reduced their cost of pesticide application to about Rs.18,750 per year and this also increased their awareness on environmental safety and healthy living of farmers.

Success Story – 3 :Animal science:

Situation analysis / problem Statement:

Backyard poultry, a traditional system of poultry keeping is a part of livestock rearing practiced by rural folks since time immemorial. It is a type of organic farming with no harmful residue in egg and meat. It is an eco-friendly approach. Further, these are very active in pest control, provide manure and required for special festivals and traditional ceremonies. Backyard poultry is advantageous as it provides supplementary income in shortest possible time with very minimum capital investment, simple in operation and ensures availability of egg and meat even in remote rural areas. As the local birds are used mostly, they have better adaptability and protect themselves from predators and diseases. Backyard poultry, due to its least demanding nature in terms of infrastructure has been widely accepted by the rural poor. Backyard poultry in India is characterized by small flock size consisting of 5-10 predominantly non-descript birds maintained in extensive system under zero or low input venture. It is characterized by indigenous night shelter, scavenging system with little supplementary feeding and natural hatching of chicks because of which this the system auto-regenerates. Mainly local birds are reared which are specific or specialized indigenous breeds in some areas. These breeds represent a rich source of disease resistant germplasm.

The native chicken varieties adopted in free-range backyard conditions for centuries contribute about 11% of total egg production in India. In most of the cases, eggs produced are for home consumption or for limited trade within the village. Backyard poultry production plays a vital role in rapid growth of economy. It provides livelihood security and availability of food to the family. Unemployed youth and women can also earn an income through poultry farming. Besides income generation, rural backyard poultry provides the demand of nutrition supplementation in the form of valuable animal protein through meat and eggs to the rural families. It has also been noticed that the demand for rural backyard poultry is quite high in tribal areas.

Backyard 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 weaker sectors. Extensive range poultry production aids in soil fertility, a major motivation and producers are able to take advantage of the poultry manure to improve their pastures for ruminants.

Backyard poultry farming plays an important role in providing income and protein to local rural people with minimal resource input. Although several organizations such as NGO's, KVK's, SAU's has initiated to popularize the traditional Backyard poultry farming, it needs a lot more to be done to overcome its constraints so that backyard farming can be undertaken by each and every family of villages for their upliftment as far as possible. The eggs and meat of birds reared in the backyard farming fetches higher premium due to high consumer acceptability even in the urban sectors where plenty of eggs and poultry meat from commercial units are available. Besides stable supply of high-quality animal food, backyard poultry production promotes income opportunities particularly for the weaker sections in the tribal areas. The backyard farming will certainly improve the economic status of a majority of rural/tribal families from lower socio-economic groups in the rural/tribal areas. Backyard farming fulfill a wide range of functions e.g. the provision of meat and eggs, food for special festivals, chicken for traditional ceremonies, pest control and petty cash, utilizing minimum inputs, minimum human attention, and causing less environmental pollution.

Constraints faced in traditional backyard poultry farming

- Lack of technical knowledge.
- Lack of suitable germplasm.
- Decrease in availability of natural resources of feed.
- Inadequate Veterinary support.

In rural areas, chicken reared are mostly desi type with low egg and meat production and there is need of introduction of improved dual purpose bird having capacity to lay more eggs and gain higher body weight than the local or desi birds. Realizing the importance of backyard rural poultry farming (RPF) in India, several research organizations developed different backyard chicken varieties for higher egg and meat production.

Plan, Implementation and Support :

Interventions :

Th. V. Jothi, S/o Varadhan, works in a private concern, resides at Annasalai, Karanaikattur, Chengelpet, Kancheepuram district was interested in backyard poultry farming for additional income. 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. He 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, chick feeder and waterer 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 the poultry farm is given in the table below:

Parameters	Farm details
Total No of Birds	150 Nos.
Number of eggs produced per day	95 Nos.
Number of eggs produced per month	2850 Nos.
Rate per Egg	Rs. 10
No. of eggs sold for table purpose	2000 Nos.
No. of eggs for hatching purpose	850 Nos.
No. of chicks hatched	580 Nos.
Rate/ chick	Rs. 40/chick
No. of chicks sold	400 Nos.

Amount spent for production	Rs. 28000
Total Output/Gains per month	Rs. 54000
Net Profit per month	Rs. 26000

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/ procure chicks and sell 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 supply the needy farmers of Kancheepuram district. He has also motivated his village farmers for adoption of backyard poultry by providing hatching eggs and chicks. Under his guidance, eight 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.
- Provides nutritional security to the farmers
- Round the year income potential
- Improved farmer status and livelihood
- Alleviates protein malnutrition in vulnerable groups viz. expectant women, feeding mothers and children.
- It integrates well with other agricultural operations, so extra or in additional land is not required.
- Aids in enhancing the soil fertility in backyards (15 chickens produce 1- 1.2 kg of manure/ day).
- Produce of rural poultry farming fetches high price compared to those produced from intensive poultry farming.
- Waste material (insects, ants, fallen grains, green grass, kitchen waste, vegetable waste etc.) can be efficiently converted in to egg and chicken meat for human consumption.

Action Pictures





Success Story – 4 :Animal science

Ornamental Pet Bird rearing to enhance the farmers income

Situation analysis/Problem statement:

Backyard pet bird rearing business is a great income opportunity that can produce a great return either as a part-time or full-time venture for rural and urban youth and women residing at or near town areas. The top choices for pet bird breeders are parakeets, cockatiels, Zebra finches and lovebirds with parakeets the most popular. As these types of birds will breed twelve months out of the year, under the correct breeding conditions, monthly income is regular and steady which contributes to start backyard pet bird business. When the farmers understand the breeding cycle, (the birds reach sexual maturity between four and eight months and can be breed between three and ten years) they develop a regular cycle of breeding for selling the birds.

Added to this, the average clutch will number between four and six eggs and that a producing pair of birds will have between four and six clutches per year and that the chicks can be sold as early as six to twelve weeks of age, there is potential scope for improved and regular income for the farmers by rearing the pet birds. As each breeding pair raises their own young, pet farmers essentially need nesting boxes, food sources and temperature control in order to launch a backyard bird business. Pet farmers can use a storeroom or spare space is sufficient during the initial start up phase. This opens up a huge market for small bird breeding operations.

The majority of pet stores in the nation are supplied with pet birds by small local or regional breeders and this means farmers can also get into the action. The profit margin is great as the birds they breed would be sold when they are still very young. There is no specific climate that is required as the breeding rooms would be in a temperature controlled environment created in a room or other indoor space. Pet farmers need to ensure steady sales somewhere near a major town/ cities/airport etc., since many of pet bird sales will not be to customers but to pet stores or bird owners in locations situated at a distance where the pet birds have to be transported. For an easy and enriching part-time or full-time opportunity that takes little time and allows a lot of freedom and generates a good income, starting a backyard bird business could be the right choice.

The landless families having no option for alternative livelihood, used to migrate to city areas and particularly the womenfolk work as maidservant. Although pet bird farming is in primitive stage as far as Tamil Nadu is concerned, several farmers in rural areas are willing to take up this venture as an option for getting more output with less input. In this context, Mrs. R.Gayathri W/o Rajendran, Pondur started her pet bird farming with 5 pairs in 2017 which has not laid eggs and died after 2 months and was a great failure due to lack of knowledge on the scientific aspects of pet bird rearing. She disowned this venture and concentrated on other works such as tailoring, private company works etc.

Plan, Implement and Support:

Krishi Vigyan Kendra, Kancheepuram district has been promoting pet bird farming for the past few years through OFT, FLD, trainings, etc. In this context, Mrs.R.Gayathri, from Pondur village, Kattankulathur (Taluk) of Kancheepuram district was interested to venture this enterprise once again for alternative source of income to support her family. She had consulted KVK scientists and participated in different animal husbandry training programmes for enhancing her income. After the training programme, she has started a small backyard pet bird unit with 3 pairs of budgerigars which is more suited to Kancheepuram district for sale. She is practicing this farming, which

comprises of adult males, semi adult females and chicks. She fed the birds with thinai and millets along with coriander leaves and green fodders and vegetable wastes such as greens, cabbage leaves and cauliflower leaves collected from local markets. KVK, Kattupakkam identified her as one of the beneficiary under TANUVAS FLD and had given training on scientific package of practices of pet bird farming and provided 2 pairs of pet birds along with feed, cage and accessories such as shell grit, breeding pots, pet bird feeder and waterer as base stock. This provoked her interest in pet bird farming and bought three pairs of pet birds along with the birds given by KVK, Kattupakkam. She started rearing budgerigar pet birds and now she is having 26 birds. In order to save the labour cost, all the works are being performed by her and her family members. Every day morning she cleans all the cages and observes the pet birds for any disease incidences. She found that cleaning and disinfection would reduce the disease incidences. The pet birds were provided with B-complex vitamins daily through drinking water.

Output:

The recorded pet bird parameters such as average no. of eggs laid in 1st clutch, mortality rate, hatchability, No. of chicks hatched out in 1st clutch, No. of pet birds sold in 1st Clutch and economic parameters were tabulated and given in Table-1 and Table-2.

Table : 1 Pet bird economic parameters

Parameters	Check	Demo
Average no. of eggs laid (Nos. in 1 st Clutch)	20	32
Mortality rate (%)	60	3.6
Hatchability (%)	30	53
No. of chicks hatched out in 1st clutch (Nos.)	5	16
No. of pet birds sold in 1 st Clutch (Nos.)	2	10

Table : 2 Economics of pet bird farm

Parameters	Farm details
No. of Pet birds	10 pairs
No. of chicks hatched out	26 Nos.
Chick mortality	4 Nos.
Sale price of pet birds	Rs. 300
No. of pet birds sold per month	22 Nos.
Expenditure incurred	Rs. 1200
Total Output/Gains per month	Rs. 6600
Net Profit per month	Rs. 5400

It was found that pet birds under backyard rearing had laid 32 no. of eggs in 1st clutch, with 3.6% mortality rate and 53% hatchability. Besides 16 no. of chicks were hatched out in 1st clutch and around 10 no. of pet birds sold in 1st Clutch. Marketing for pet birds were done through whatsapp and SMS to other farmers and sold at the farm gate to the pet lovers and farmers and interested new entrepreneurs. As the pair of birds increase, the income would be increased in the successive clutches. The economic parameters in Table-2 revealed that pet bird rearing provide a great income opportunity to rural youth and farm women with less or no investment that can produce a great return either as a part-time or full-time venture.

Outcome:

Horizontal spread

She motivated her village farmers for adoption of pet bird farming to improve their livelihood status. She share her experiences with the fellow farmers who are all visiting the farm and promote pet bird farming. Four of them had ventured into pet bird farming on her advice and they regularly market their birds in nearby pet shops and through whatsapp group members. KVK also created a market channel for sale of birds to farmers by linking with popular pet shops in the city. Being a progressive pet bird farmer, she is being invited to KVK during training programmes to share her experiences to the trainees.

Impact:

Mrs. R. Gayathri, is a successful pet bird farmer. The reason for her success in this enterprise was that she does not depend on external inputs for her farm. Everything is sourced from her place

itself and that she regularly market the pet birds in the nearby pet shop at Guduvancheri and entire family is involved in the work so that she need not spend anything extra charge on labourers. The new enterprise offers the potential of contributing to more resilient and diverse rural economies by fetching a steady income for the rural family. Hence backyard pet bird farming

- Provides regular income to the farmers
- Creates employment generation
- Higher market demand in urban areas
- Direct marketing fetches higher return to farmers
- Pet bird rearing is profitable for rural women and landless and small farmers and rural youth and graduates to serve as supplementary income source and can be taken on commercial basis with suitable marketing tie –up with pet breeders, pet shops and retail outlets.

Action pictures



Success Story – 5 : Fisheries

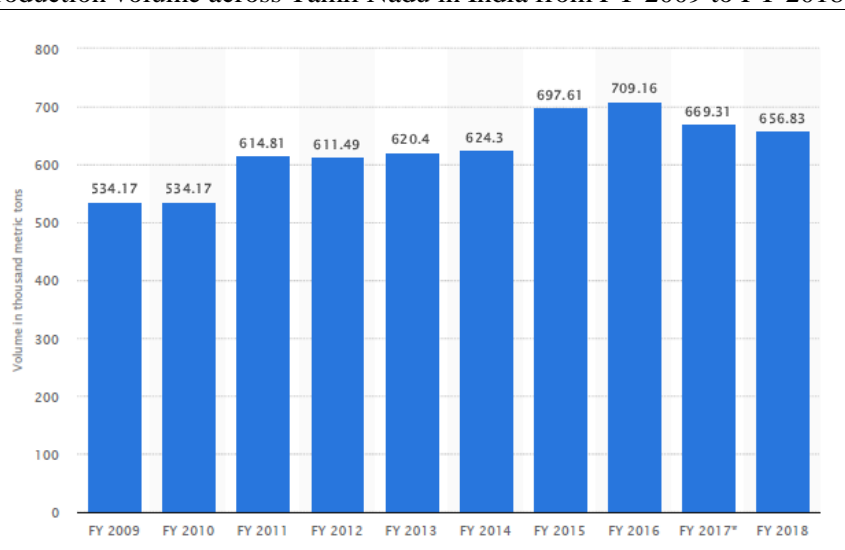
Demonstration of Pangasius catfish for short seasonal fish culture

Situation analysis/ Problem statement:

Farming of freshwater fish varieties 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 Kancheepuram district possessed, while 59.18% are consisting short seasonal water bodies. The exotic freshwater catfish *Pangasius sutchi* was first introduced into India in the year 1995-96 in the state of West Bengal from Thailand through Bangladesh. Initially farming was carried in limited area in the states of West Bengal and Andhra Pradesh. But since 2004 the farming of Pangasius has spread due to the commercial importance and by 2008 it is estimated that Pangasius is being farmed in about 40,000 ha with an expected production of 1.80 to 2.20 lakh tons. There is a growing interest among the farming community in other states as well to take up Pangasius culture in a larger extent, thus paving way for demand for its seed and for establishment of commercial scale hatcheries. Pangasius is farmed under monoculture or polyculture with carps. Although Pangasius 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.

Figure 1: Fish production volume across Tamil Nadu in India from FY 2009 to FY 2018



(Source: <https://www.statista.com/statistics/735959/fish-production-volume-tamil-nadu-india/>)

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 short seasonal fresh water farm pond resources. At present, there is a huge demand existing for inland fish production due to the low productivity of fish production per unit area of hectare and attempting other problems such as slow growth rate, poor income status of farmers and lack of knowledge on fish varieties suitable for short seasonal farm ponds. 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, lagoons and reservoirs, brackish water areas especially low saline waters. Pangasius catfish can be cultured in ponds, seasonal tanks/ponds, abandoned shrimp ponds, fish pens/cages, canals, reservoirs and other deep landlocked water bodies. This technology 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.

Owing to above said considerations, this FLD - Demonstration of Pangasius catfish for short seasonal fish culture has decided to conduct in the farmers field about 5 villages like Kavanurpudhuchery, Indalur, Sooradimangalam, Thandarai and Veeliyur. Culturing of Pangasius catfish in short seasonal water bodies can help to the farmers and improve their income status.

Pangasius catfish culture is the most useful and viable fish farming technology developed by Tamil Nadu Dr.J.Jayalithaa Fisheries University (TNJFU), Nagapattinam, may greatly enhance among fish farmers' livelihood status in various district of Tamil Nadu where is doing fish farming.

Plan, Implementation and Support (KVK Intervention):

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 State Department of Fisheries during the recent years.

Table 1: Programme of Plan, Implementation and Support to the farmers by KVK, Kattupakkam

Name of the programme	No of intervention
Critical inputs - Pangasius catfish fingerlingsissued	7500
FLD (0.75 Ha in 5 Demos)	1
Training programme (On-campus and Off-campus)	8
Awareness programme	4
Advisory services	1396
Scientist visit in the farmer's field	60
Technology dissemination	5
Broadcasting of short message services to farmers	6
Brief Radio talk	2
Guest lectures	6
Other extension programme	19

Output:

Five Farmer teacher were developed to handle training classes on the significance of Pangasius catfish culture technology practices in short seasonal farm ponds and other water bodies have known in the Table – 2.

Table 2: List of farmer teacher developed in Kancheepuram district

Sl.No	Name of the farmer	Specialized areas	Contact Mobile No
1	Th.K.Durai, Kavanurpudhuchery village	Pangasius catfish culture	9176565287
2	Th.N.Arumugam, Indalur village	Pangasius catfish culture	9047868804
3	Th.R.Poologam, Thandarai village	Pangasius catfish culture	9626197925
4	Th.J.Rajendran, Sooradimangalam village	Pangasius catfish culture	9894678371
5	Th.M.Babu, Veeliyur village	Pangasius catfish culture	8220373688

The average Pangasius catfish culture production/yield, survival, growth and economical impact recorded from different farmers in Kancheepuram district about Pangasius catfish has cultivated in the farm ponds and given in the Table – 3.

Table 3: Average fish yield and economic parameters recorded in demo plot from Kancheepuram district during 2019-20.

Parameters	Check	Demo
Fish Yield (kg/ha)	3733	5267
Average growth of fish (kg/fish)	0.34	0.42
Survival (%)	73.2	83.6
Gross cost Rs.	172514	168710
Gross return Rs.	261310	368690
Net return Rs.	88796	199980
BCR	1.51	2.19

Farmers Feedback: Culturing of Pangasius catfish in farm ponds has aided to obtain average higher fish yield of 5267 kg/ha. It is a simple and viable practice of fish culture and also harvested fishes fetched for the higher market price of Rs.70/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 Pangasius catfish culture method in ponds have increased.

Impact:

KVK involvement had lead to effective improvement in culturing Pangasius catfish culture in farm ponds among the fish cultivating farmers in the Kancheepuram district. Presently, there are more than 100 active fish farmers doing fish culture spreading throughout the district and currently 31 farmers with adoption level of 46% are cultivating Pangasius catfish variety. Further, now most of the agricultural farmers are fascinated towards fish culture activity as one of the integrated farm component.

Success Story – 6 : Fisheries

Demonstration of Vermicomposting using fish waste

Situation analysis/Problem statement:

Fish is a broad term that includes any aquatic organisms harvested for commercial purposes, whether caught in wild fisheries or harvested from aquaculture or fish farming. The term fish (whether of freshwater, estuarine/brackish water or marine/ salt water) include finfish, crustaceans (cray fish, crab, prawn/shrimp, lobster) and mollusks (bivalves such as mussel, oyster, scallop and univalves like abalone, snail, conch and cephalopods such as squid cuttlefish, octopus). Seafood, synonymously used for marine fish, generally refers to a group of biologically divergent edible animals (excluding mammals) consisting not only of fish (finfish), whether of freshwater, estuarine, or marine habitats, but also of shellfish. It seafood includes a diverse range of aquatic animals and therefore the non-edible part generated varies greatly in composition and amount. In 2015, fish accounted for about 17 percent of animal protein, and 7 percent of all proteins, consumed by the global population. Fish provide 3.2 billion people with almost 20 percent of their average per capita intake of animal protein (SOFIA, 2018). Globally fish and fish products provide an average of 34 calories per capita per day. Fish has also significant dietary contribution in terms of high quality, easily digested proteins especially in fighting micronutrient deficiencies.

Generally the yield calculated by the fish processing industry is based on a gutted fish with head-on, that is typically 40% on an average. Fish processing generates 35-40% edible meat and the remaining non-edible tissues are bones, skin/scales, swim bladders, intestines, roes, liver, blood etc. The demand for RTE and other value added product that requires skinless, boneless fillets further increases the amount of waste generated. Many species are inadvertently caught while harvesting fish and crustaceans and that are not processed for human consumption also adds to the waste. Processing of finfishes generates 10–50% of the total weight as non-edible parts, which includes head, gut (viscera), skin, bone, and flesh remaining on the bone. Shellfishes, especially crustaceans, generate up to 85% of raw material as non-edible parts, which include head, shell (carapace), viscera, and appendages. Fish processing discards usually accounts for 3/4th of total weight of catch. Discards are generally dumped in-land or hauled into the ocean. Meal and silage has also the potential of waste utilization. Recently, the focus is on the potential utilization of tongue, cheek, stomach, liver, fish skin, chitinous material, carotenoid pigments, flavourants, gut enzymes, anti-freezing proteins etc. Filleting generates discards up to 75%. Entire offals from cod fishery may be used as a feed component, silage or fish meal. Protein value of offals is usually estimated by protein efficiency ratio (PER) and Amino Acid Score. It was found that the quality of shrimp proteins (PER value 2.79-2.88) to be superior to that of crab shells (PER value, 2.30-2.42).

Large portion of these by-products are underutilized or wasted or discarded. Dumping of these byproducts not only results in loss of large amount of bioactive rich materials but also leadsto pollution problems. Recycling of these by-products into marketable products can be a solid waste management strategy. Treated fish waste can have multiple applications such as ingredient in animal feed, for the production of biodiesel/biogas, cosmetics (collagen), enzyme isolation and soil fertilizer.

Fish waste (byproduct) can be utilized for human consumption (e.g. mince, roe, fish heads, nutraceuticals), agricultural or allied uses (fish hydrolysate, fertilizer, compost) and non-nutritional uses (biodiesel and fuel, chitin and chitosan, carotenoids pigments, leather and gelatin).

Very recently, biotechnological processes such as biocatalytic and fermentation processes have emerged as an integral part of seafood processing; they serve not only as an attractive alternative to chemical, physical, and mechanical methods in the processing of seafood by-products, but also as tools for recovering various valuable components. Biotechnological processes are well recognized as eco-friendly processes which provide a possibility to recover additional useful components other than the target component from the raw materials. Vermicomposting is a simple biotechnological process of composting in which certain species of earthworms are used to enhance the process of wastes conversion and produce a better end product. In this process, the earthworms act as bioreactor to biodegrade organic wastes to humus. Vermicomposting technology application helps in cost effective and efficient recycling of animal wastes, agriculture residues and industrial wastes. It is also an appropriate technique for the safe treatment and reuse of non-toxic wastes by natural biodegradation. Vermicomposting is an “economically viable”, “environmentally sustainable” and “socially acceptable” technology in which the important plant nutrients such as nitrogen, potassium, phosphorus and calcium present in feed material are converted into forms that are much more soluble and available to the plants than those in the parent substrate.

Earthworms are also known to contribute several kinds of nutrients in the form of nitrogenous wastes to the soil. Vermitechnology represents a relatively new and environmentally sound approach in the management of several types of refuses and solid wastes. The fly ash wastes generated from the thermal power plants are converted into useful organic manure by *Eisenia fetida* when mixed with different ratio of plant materials. Researchers have enormous data supporting the viability of vermiculture as a source of soil fertility as a means of waste management, disease suppression and bioremediation. Vermicompost is usually divided peat like material possessing excellent structure, porosity, aeration, drainage and water holding capacity. The practice of vermiculture is at least a century old but has received worldwide attention with diverse ecological objectives such as waste management, soil detoxification, regeneration and sustainable agriculture. The contribution of composting literature to each of these areas of interest is vast, but the scope for the literature is very limited to an industrial waste particularly seafood industrial waste and hence, the present study was planned to establish a suitable methodology for vermicomposting seafood waste which is mixed with different agro-industrial wastes in different proportions. The results obtained from the different treatments were analyzed compared numerically as well as statistically.

With this background, this FLD - Demonstration of Vermicomposting using fish waste has decided to conduct in the fishers/farmers field as SHGs about 5 villages like Semmencherykuppam, Kovalam, Thathalur, Vayalur and Satraskuppam. Vermicomposting using fish waste can help to the fishers/farmers and improve their income status. Fish value addition/waste management as vermicomposting using fish waste is the most useful and viable technology developed by Tamil Nadu Agricultural University (TNAU), Coimbatore, may greatly improve among fishers/farmers' livelihood status in various district of Tamil Nadu where is doing vermicomposting using fish waste.

Plan, Implementation and Support (KVK Intervention):

Krishi Vigyan Kendra (KVK), Kancheepuram has put many efforts to uplift of the poor fishers & farmers 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 State Department of Fisheries and ICAR - Central Institute of Brackishwater Aquaculture (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 – Vermicompost bed with roof (with demonstration materials)	5
FLD in 5 Demos (5 SHGs with 25 Nos)	1
Training programme (On-campus and Off-campus)	7
Awareness programme	4
Advisory services	1479

Scientist visit in the farmer's field	60
Technology dissemination	4
Broadcasting of short message services to farmers	5
Brief Radio talk	2
Guest lectures	4
Other extension programme	19

Output:

Farmer teacher of 5 SHGs (with 25 Nos) about fish value addition in vermicomposting among fishers/farmers were developed to handle training classes on the significance of vermicomposting using fish waste technology practices have known in the Table – 2.

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

Sl.No	Name of the fishers/farmers	Specialized areas	Contact Mobile No
1	Th.M.Kanniyappan, (Leader of SHGs) Thathalur village	Vermicomposting fish waste	9566477272
2	Tmt.G.Kalpana, (Leader of SHGs) Kovalem village	Vermicomposting fish waste	8056269715
3	Tmt.S.Valli, (Leader of SHGs) Satraskuppam village	Vermicomposting fish waste	9445794944
4	Tmt.K.Meenatchi, (Leader of SHGs) Vayalur village	Vermicomposting fish waste	9500299883
5	Tmt.Bhavani, (Leader of SHGs) Semmencherikuppam village	Vermicomposting fish waste	9566237200

The results of average production/yield of vermicompost, quality parameters and economical impact recorded from different fisher-folks/farmers in Kancheepuram district about vermicomposting using fish waste demonstration has given in the Table – 3.

Table 3: Average yield of vermicompost, other parameter and economic parameters recorded in various demo plots from Kancheepuram district during 2019-20

Parameters	Check	Demo
Yield (Kg/year)	2200	2480
Yield in (%)	55	62
Quality parameter (C:N ratio)	1:35	1:25
Gross cost Rs.	12000	11400
Gross return Rs.	22000	24800
Net return Rs.	10000	13400
BCR	1.83	2.18

Fisher-folks/farmers Feedback: It has aided to get in average higher vermicompost yield of 2480 kg/year or 62%. It is a simple and viable method in preparation of vermicomposting using fish waste. The yielded vermicompost was sold for the higher market price of Rs.10/kg.

Outcome:

After implementation of various activities of 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 vermicompost production using fish waste in Tamil Nadu including Kancheepuram district had consistently increased.

Impact:

KVK contribution had directed to effective improvement in preparation of fish value added products especially vermicompost production using fish waste among the fishers/farmers of the Kancheepuram district. Presently, there is about more than 50 active fisher-folks and farmers involving preparation of vermicompost production using fish waste 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.

Success Story – 7 :Home Science

Value added Watermelon Products for Income Generation of SHG women

Watermelon is an important cucurbitaceous vegetables in India. It is an excellent desert fruit and its juice contain 92% water along with proteins, minerals and carbohydrates including lycopene and vitamin C. Watermelon is a sweet, commonly consumed fruit of summer, usually as fresh slices, diced in mixed fruit salads, or as juice. Watermelon juice can be blended with other fruit juices or made into wine. Watermelon rinds may be eaten, but their unappealing flavor may be overcome by pickling, sometimes eaten as a vegetable, stir-fried or stewed.

It provides hydration and also essential nutrients, including vitamins, minerals, and antioxidants. These substances can help remove molecules known as free radicals, or reactive species, from the body. The body produces free radicals during natural processes, such as metabolism.

Watermelons should be harvested at full maturity to ensure that good quality fruit are delivered to the market. The fruit do not develop internal color or increase in sugar content after being removed from the vine. Harvesting usually begins 3-4 months after planting. Maturity is sometimes difficult to determine. Watermelon flesh represents approximately 68%, the rind approximately 30%, and the seeds approximately 2% of the total weight. Generally, the rind is discarded, applied to feeds or used as fertilizer. Utilization of the rind as an ingredient has been studied in products including pickle, candy and cheese. Watermelon rind has 95% of water content that making it susceptible to deterioration. Thus, it is important to reduce the moisture content in order to produce shelf stable products from watermelon rind.

Major problem faced by watermelon Farmers includes

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

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 Watermelon products for Income generation of farm women”
- Conduct of Training programmes (On and off campus)
- Standardization of new watermelon flesh and rind 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 Watermelon production among Farm women and SHG women through Trainings and Demonstrations.

Therefore, with value added strategies and appropriate processing technologies, the watermelon can be processed in a better way to improve the marketing of watermelon 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.

- Conduct of Front Line demonstration on “Demonstration of watermelon products for Income generation of farm women”

Demonstration was conducted in the Thathalur village (DFI village) of Thirukalukundrum Block of Kancheepuram District.

Name of the Villages selected- Thathalur

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

No. of Groups-One farmwomen group (10 members)

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

Products demonstrated include:

- Squash
- Watermelon flesh and rind Jam
- Watermelon rind pickle
- Watermelon rind candy

Sensory quality

The ultimate aim of any food item is not only to provide nutrients but also to give sense of delight to consumers by virtue of desired colour, flavour, 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 watermelon rind pickle was liked by most of the panelist since rind is underutilized product and pickle was tasty and can go well with all products when compared with other products.

TABLE I
Mean Sensory Profile of Watermelon products*

Attributes	Watermelon rind pickle	watermelon Jam	Watermelon Squash	Watermelon Candy
Colour and Appearance	4.81	4.79	4.71	4.6
Taste	4.73	4.68	4.74	4.4
Texture	4.62	4.70	4.6	4.5
Flavour	4.58	4.60	4.5	4.5
Over all acceptability	4.74	4.61	4.61	4.59
Mean total Score	23.48	23.38	23.23	22.59
Acceptability Index	93.92	93.52	92.92	90.36

*Five point Hedonic scale

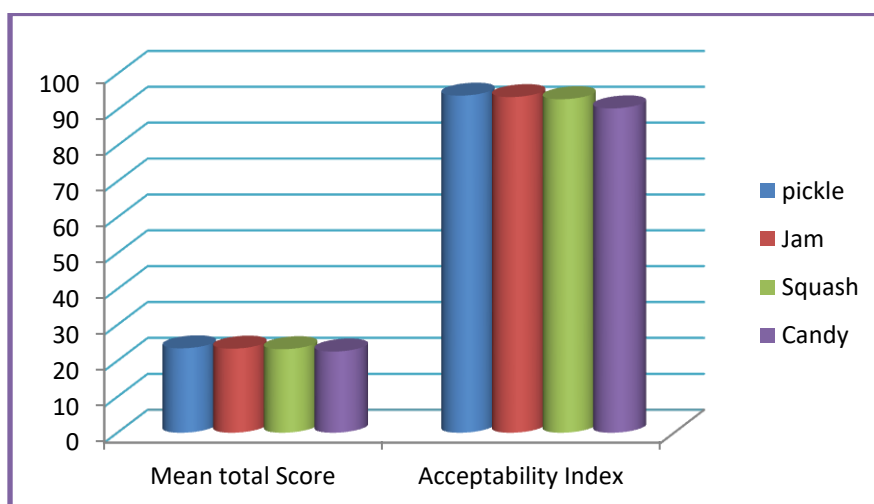


Figure 1 Mean sensory profile of Watermelon products

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

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

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

Watermelon squash: Stored in glass bottles with addition of preservatives for upto six months.

Watermelon candy: Stored in Glass bottles and pouches upto six months with addition of preservatives.

Outcome:

Popularization of Watermelon production among Farm women and SHG women

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

Horizontal spread- SHG/Farm women who turned as successful Entrepreneurs had their success stories published in local magazines, Daily Newspapers and also through. All India Radio and community Radios motivating other groups to follow it.

Literature Published

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

Economics and Cost Analysis

Watermelon Rind pickle-

For 1 kg of pickle

Production cost		Rs. 200/-
Sale price		Rs.300/-
Net return		Rs.100/-
Cost Benefit Ratio		1:1.67

Watermelon flesh and Rind Jam-

For 1 kg of Jam

Production cost		Rs. 80/-
Sale price		Rs.200/-
Net return		Rs.120/-
Cost Benefit Ratio		1:7.1

Watermelon squash -

For 1 kg of squash

Production cost		Rs. 50/-
Sale price		Rs.150/-
Net return		Rs.100/-
Cost Benefit Ratio		1:2.1

Watermelon rind candy -

For 1 kg of candy

Production cost		Rs. 75/-
Sale price		Rs.200/-
Net return		Rs.125/-
Cost Benefit Ratio		1:2.1

5. Impact:

Processing and value added watermelon 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. These trainings help farmers and farm women in gaining technical skill and knowledge to start the 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 on packing, licensing and marketing of the final products.

The lectures and Hands on Demonstration include the following topics.

- ❖ Lecture on processing and value addition of watermelon
- ❖ Demonstration of Novel watermelon products including rind pickle

Farmer Field School on Integrated Crop Management in Maize Production

Component	Package of Practices
Name of the farm school village	Malaivaiyavur Madhuranthagam Block of Kancheepuram District
Critical inputs supplied	Maize Seeds Variety-CO-6
No. of farmers	25
No. of classes	13
Topics covered	<ol style="list-style-type: none"> 1. Soil Sampling methods. 2. Soil fertility Improvement. 3. Selection of Seeds, varieties for maize production. 4. Seed treatment Methods 5. Land Preparation for Maize Production. 6. Sowing Methods for Maize Production. 7. Nutrient Management methods in maize production. 8. Pest and disease Management in Maize Production. 9. Agricultural Implements in Maize Production, 10. Value added Maize Products. 11. Methods of field evaluation. 12. Mechanical Harvesting and processing methods in Maize Production. 13. Final Evaluation in maize production
Results	The recommended package of practices were handled in the classes as lectures and method demonstration. Soil suitability for Maize Production was assessed. The seed treatment was demonstrated. Nutrient Management for maize Production, Pest and disease Management in Maize Production was explained. Agricultural Implement was demonstrated for separating the seeds. Yield obtained was 6.4 t/ha at irrigated condition and green matter Yield was 24 t/ha. The farmers obtained a profit of Rs 35000/ha
Conclusions	Farmers were satisfied with recommended practices handled in Cultivation of High Yielding Co-6 Maize variety. This variety is suited both for Human and Poultry consumption.

Entrepreneurship Development Programme

Entrepreneurship development programme on “Herbal food Products for Income Generation of SHG Women”

Introduction

Entrepreneurship is a critical tool for socio-economic development and facilitating rural economic development, which is becoming increasingly needed to respond to the growing impacts of accelerating climate change on rural women's livelihoods in less developed countries. Entrepreneurs identify innovative approach to seize an opportunity, mobilize money and management skills, and take calculated risks to open markets for new products, processes and services. 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. 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

Entrepreneurship development (ED) refers to the process of enhancing entrepreneurial skills and knowledge through structured training and institution-building programmes. According to Global Entrepreneurship Monitor, women are key to the development of entrepreneurship in any given society. They also help to eliminate some societal problems through their entrepreneurial activities in informal sectors.

Thus, entrepreneurship development helps in alleviating poverty when employment opportunities are created through new entrepreneurial venture start-up or the growth of existing ones. This eventually result in boosting social wealth through the emergence of new market, new industries, new institutional form, new technology and increase in income which result in enhanced living standards for the populace

Since ancient times, herbs have been used as natural remedies for curing many physiological disorders. Traditional medicinal literature appreciated their value as nature's gift to mankind for the healing of illnesses. Some of the herbs have also been used for culinary purposes, and few of them have been used in cheese manufacture both as coagulating agents and flavour ingredients. Due to its numerous health benefits, Aloe vera is extensively used as a functional ingredient in several health foods .

Cissus quadrangularis is well known herb from India and the herb is invariably used in fracture healing it is called pirandai in Tamil. The *Cissus quadrangularis* plant has been used to treat a variety of ailments for centuries. Some studies show it may have powerful medicinal properties, including supporting bone health, reducing joint pain, and helping prevent metabolic syndrome. It is also used for conditions such as diabetes, high cholesterol, hemorrhoids, and many others. Pirandai can be used as food by processing into various tasty and healthy food products.

Solanum trilobatum is an herb that can be consumed by mildly frying it in oil or ghee and then grinding it. The plant is full of thorns, including the leaves, much-branched, straggling shrub or climbing plant with stems that are usually slightly woody at the base. It is called thuthuvalai in Tamil. *Solanum trilobatum* is an extensively used Indian traditional medicine to cure various human ailments. It was distributed throughout the southern parts of India. *S. trilobatum* is reported to cure numerous diseases viz., tuberculosis, respiratory problems and bronchial asthma. The herb can be stored in powdered form by drying the leaves and as pickles.

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

Background :

Women group from Hasthinapuram area of Kattankolathur, St. Thomas Mount Block, Kancheepuram District were selected for the EDP training. SHG women group includes the following members

1. Mrs. Fathima Banumathi
2. Mrs. A. Sheela
3. Mrs. A. Nimali
4. Mrs. S. Roslin
5. Mrs. Belsina Joesph
6. Mrs. Kanikkai Marry
7. Mrs. M. Belly.

8. Mrs. R.Sumathi
9. Mrs.A.Elizabeth Rani
10. Mrs. E.Clara

Selected SHG women were from lower middle class families and from 40 to 60 years of age. Before intervention most of the members were house wives and few of them were doing small business like sale of clothes. 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 wellplanned ten classes for the entire period. The lectures and Hands on Demonstration includes the following topics.

- ❖ Lecture on processing and value addition of Herbals
- ❖ Demonstration of *Solanumtrilobatum* and *Cissus quadrangularis* based products in the commercial form
- ❖ Demonstration of new products from these two herbs
- ❖ Powder
- ❖ Pickle
- ❖ Vathal
- ❖ Soup

Inputs supplied to the EDP group

- Hand operated Packaging Machine
- Packaging pouches
- Demonstration materials

Shelf Life, Packing and Labelling

- Tomato ketchup is one of the most popular commerciallyavailable 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 commerciallyavailable 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.

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 Herbal products*

Attributes	Pirandai pickle	Thuthuvalai powder	Thuthuvalai pickle	Thuthuvalai soup
Colour and Appearance	4.7	4.5	4.5	4.3
Taste	4.8	4.4	4.7	4.2
Texture	4.6	4.6	4.6	4.1
Flavour	4.8	4.3	4.2	4.2
Over all acceptability	4.8	4.4	4.2	4.3
Mean total Score	23.7	22.2	22.2	21.2
Acceptability	95.0	88.8	88.8	84.8

Index				
--------------	--	--	--	--

*Five point Hedonic scale

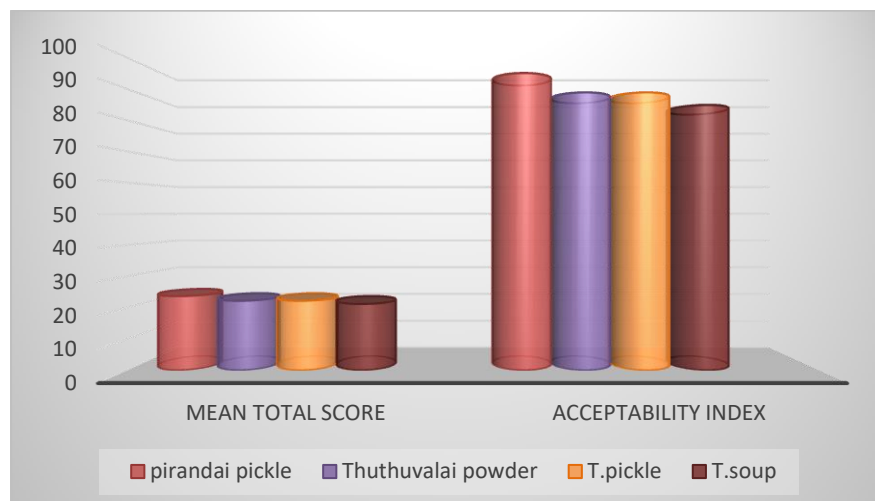


Figure 1 Mean sensory profile of Herbal products

Economics and Cost Analysis

Pirandai pickle

For 1 kg

Production cost	Rs. 230/-
Sale price	Rs.375/-
Net return	Rs.145 /-
Cost Benefit Ratio	1:1.9

Thuthuvalai powder

For 1 kg

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

Thuthuvalai pickle

For 1 kg

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

Thuthuvalai soup

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

5. Impact:

Processing and value added herbal 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. These trainings help farmers and farm women in gaining technical skill and knowledge to start the enterprise for self employment and improving the existing practices of herbal processing like pickles, soup, powder and other products. They were also provided technical information on packing, licensing and marketing of the final products.

The lectures and Hands on Demonstration include the following topics.

- ❖ Lecture on processing and value addition of herbals especially *Solanum trilobatum* and *Cissus quadrangularis*
- ❖ Demonstration of Novel herbal food products including ready to cook foods and ready to eat snack foods.

The successful entrepreneurial process encompasses developing opportunities, assembly of necessary assets, financial resources, human capital and managing and building operations with the ultimate objective of value creation. EDP group members were provided with all technical supports includes training, demonstration, packing, branding, licensing and marketing. Now they have applied for FSSAI certificate in order to market their products. KVK trained SHG women to produce value added products and market them in a profitable manner.

Thus, entrepreneurship development helps in alleviating poverty when employment opportunities are created through new entrepreneurial venture start-up or the growth of existing ones. This eventually result in boosting social wealth through the emergence of new market, new industries, new institutional form, new technology and increase in income which result in enhanced living standards for the populace

18. CASE STUDIES

If any

3 to 4 pages, detailed, describing previous experiences, problems identified, details of solution(s) identified and implemented etc.

19. INNOVATIVE METHODOLOGY OR TRANSFER OF TECHNOLOGY DEVELOPED AND USED DURING THE YEAR

NIL

20. ITKs

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	Jaggery, garlic and ginger are mixed with domestic grinder. This power id mixed with sufficient quantity of water.	To cure Bloat condition.
2	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.
3	Poultry	Pepper, cumin seeds, turmeric, onion, garlic, keezhanelli leaves and salt	To prevent Ranikhet disease in poultry.
4	Dairy	Aloe vera, turmeric and lime paste applied on the affected inflamed udder daily thrice for 5-7 days	To cure Lumpy skin disease in dairy animals.
5	Dairy	Neem, turmeric and kuppaimeni paste applied on the affected part daily thrice for 3-5 days.	To cure Lumpy skin disease in dairy animals.

6	Dairy	Feed raddish- 2,Aloevera-250 gms,Moringa leaves-400 gms,Adamant creeper stem-400gms and curry leaves- 400 gms along with jaggery – 200gms for 4 days each	To cure repeat breeders in dairy animals.
7	Hygiene	Neem leaves extract and turmeric	Acts as sanitizer
8	Processing	Mutton is covered in papaya leaves before cooking	Proper cooking
9	Health	Drumstick seeds are added in water	Water purification
10	Packaging	Teak leaves are used to prepare cups and plates	Hygienic way of Food serving
11	Fish culture	Turmeric powder/paste is applied in fish pond water for alternative days about a week period	To disinfect the fish pond during disease outbreak
12	Fish culture	Bamboo logs are fixed to the fish pond bottom.	To manage fish louse and thereby control of the infestation
13	Shrimp culture	Garlic paste is applied in feed @daily doses in evening feeding time for 4-5 days	To act as antibacterial activity and to increase feeding efficiency

21. 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)
ICM in Groundnut Variety Seed Production	285	15	190960	270000
Demonstration of EVM for prevention of Bloat in dairy animals	180	48	2700	4500
Demonstration of pet birds rearing among urban farmers	45	36	3500	7500
Popularisation of Grama priya chicken as a backyard venture among rural farmers	356	52	2800	4900
Popularisation of TANUVAS Aseel rearing among rural youth to enhance the livelihood status	280	46	1900	3600
Demonstration of value added millets products	74	44	2500	4200
Demonstration of value added watermelon products	25	34	2700	3900
Demonstration of value added Herbal products	93	56	3000	6900
Demonstration of value added milk products	480	36	2200	3900
Demonstration of value added Vegetable products	127	32	1800	2900
Demonstration of Jayanti Rohu in integrated fish ponds	52	44	80548	152783
Demonstration of Polyculture in periphyton enhanced system using sugarcane Bagasse	33	38	95172	155046
Demonstration of Pangasius catfish culture for short seasonal farm ponds	31	46	64463	188147
Indian major carps culture using stunted fingerlings	32	58	52072	145232

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

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

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

Impact of training Programmes : 55 New livestock farms started				
S.No.	Name of the Farm	Name and Address	Contact No.	Farm size (No.of animals/ Birds)
1	Poultry farm	Th.R.Goutham,Mullikolathur	9750329407	500
2	Poultry farm	Tmt. A.Yasmin, Kandigai	8667898392	100
3	Poultry farm	Th.S.Selvam,Kundrathur	9626816799	500
4	Poultry farm	Th.Madan kumar, Madurantagam	7010826917	48
5	Kadakhnath Poultry farm	Th.N.Muralidaran,S.P.Koil	9444580991	50
6	Poultry farm	Th.S.Dinesh,Mambakkam	9597510383	100
7	Goat farm	Th.S.Ganesh,Tambaram	9884868387	110
8	Dairy farm	Tmt.K.Radha,Ulaginimeni	9443639118	5
9	Dairy farm	Th.S.Jaganathan,Arumpuliyur	9842770169	25
10	Goat farm	Th.P.Suresh, Maraimalai nagar	8754552963	10
11	Dairy farm	Th.D.Antony Raj,Kovur	9003956665	6
12	Rabbit farm	Th.Krishna Raj, Kovur	9962400854	7
13	Poultry farm	Tmt.S.Kamala,Kannivakkam	9962519970	100
14	Goat farm	Th.Sukumar,Nellikuppam	9710702444	10
15	IFS-Dairy+ Poultry+fish	Th.V.Dhanasekar, Reddipalayam	9940919116	100
16	Poultry farm	Th.G.Raja,Karanai puducherry	8754775913	50
17	Poultry farm	Th.V.Jothi,Karanai kattur	9789944185	50
18	Dairy farm	Th.K.Govindaraj,chrompet	8610749158	15
19	Goat farm	Th.D.Ravikumar, Periyavippedu	8608573737	20
20	Goat	Th.K.S.Francis,Chettimedu	7397004930	30
21	Poultry farm	Th.V.Jeyaraj,Periyatham	9751278150	200
22	Poultry farm	Th.Antonysamy,Perungalathur	9840194250	100
23	Poultry farm	Th.C.Janardanan,Kalpakkam	9566557891	150
24	Dairy farm	Th.R.Rajendran,Venbakkam	8098696116	6
25	Goat farm	Th.S.Vanamalai,Thozhupedu	9894289354	10
26	Dairy farm	Tmt.S.Sheela,Konathi	8190098010	5
27	Poultry farm	Th.N.Venkadesan,Arungundram	8523918300	200
28	Poultry farm+ kadakhnath	Th.M.Veeramani,Esur	8489080103	500+150
29	Poultry	Th.K.Balachandran, Kankeyankuppam	8248903522	50
30	Dairy farm	Tmt.Kavitha, Nanganallur	7358385666	50
31	Goat farm	Tmt.J.Sangeetha,Sattamangalam	8056141717	35
32	Poultry farm	Th.K.Santhakumar, Tambaram	9444001908	25

33	Poultry farm	Th.K.Purushothaman,Meleri	9865118982	100
34	Poultry farm	Tmt.K.Radha,Mulagenimeni	9443639118	100
35	Poultry farm	Th.A.N.Selvaraj,Chengalpet	8015389242	200
36	Poultry farm (Kadaknath farm)	Th.R.Boologam,Madurantagam	9626197925	100
37	Quail farm	Th.A.Ellappan, MMNagar	9514168261	150
38	Poultry Farm	Th.R.Nagaraj,Thiruthaveli	9566156685	50
39	Poultry farm	Th.S.Suresh,Thiruthaveli	9003968105	100
40	Poultry farm	Th.M.Malayappan,Chengalpet	8939737835	200
41	Poultry farm	Th.Sudarshan, Mulagenimeni	7868005462	100
42	Goat farm	Tmt.S.Hemalatha,Urapakkam	9941227931	15
43	Poultry farm	Th.Bharath,Mambakkam	9841213148	200
44	Goat farm	Th.K.Paneerselvam,Kanchipuram	9360314400	15
45	Poultry farm	Th.M.Paramasivam,Ayyampettai	9150631532	2000
46	Poultry farm	Th.P.Suresh,Sirupinayur	9551017184	180
47	Poultry farm	Th.V.Paneerselvam,Thirukalukundram	9994213728	60
48	Goat+Poultry	Th.V.Murali,Venbakkam	8056208024	10+500
49	Goat	Th.P.Vigneshkumar,Vallipuram	8754539253	40
50	Poultry farm	Th.B.Jayakumar,Pondur	9500645486	100
51	Poultry farm	Tmt.Mahalakshmi,Sogandi	9499965611	50
52	Poultry farm	Tmt.Saraswathi,Sogandi	9585847219	30
53	Poultry farm	Tmt.O.Poongodi,Sogandi	9786668436	50
54	Dairy+Poultry farm	Th.O.Murugan,Sogandi	9444583372	10+100
55	Dairy+Goat farm	Th.P.Sreedhar,Kudiperumbakkam	9840031277	10+45

Home science - Impact of training programme - New farms started – 24 Nos.

1	Millets products	Tmt.Karpagam, Arumbakkam	9941852534	50
2	Paneer	Th.Pavithran,Kattankolathur	8056115387	30
3	Millets products	Tmt.Amudhavalli	9841891168	100
4	Terrace garden	Tmt.Vijaya, Padapai	7339567934	40 bags
5	Masala powder	Tmt.Vijaya, Vandalur	9941223002	10
6	Groundnut products	Th.P.Velayudam,Thondama nallur	9952323855	100
7	Milk products	Tmt.Kavitha, Thathalur	9566511392	5
8	Milk products	Tmt .Amudha, Thathalur	8870022691	5
9	Milk products	TmtAnnapoorni, Thathalur	9791674448	5
10	Milk products	TmtSaritha, Thathalur	9384722742	5
11	Milk products	TmtParipurnam, Thathalur	9597837653	5
12	Milk products	TmtAmudha, Thathalur	9600031006	5
13	Milk products	TmtJayalakshmi, Thathalur	8220319197	5

14	Milk products	TmtPuspa, Thathalur	9750457344	5
15	Milk products	TmtSavithri, Thathalur	8940372525	5
16	Milk products	Tmt Surya, Thathalur	7708974818	5
17	Herbal products	Tmt.Banumathi, Chrompet	9884058806	10
18	Amla products	Th.Noor Mohamed, Chengelpet	9791581666	200
19	Millets products	Th.Thiruvenkadam, Kamsalapuram	9843729166	50
20	Watermelon products	Tmt.Umashankari, Venpakkam	9282420154	20
21	Herbal products	Tmt.Antonsheela, hasthinapuram	7904354648	10
22	Mushroom products	Tmt.Yashoda, Malalinatham	9965434604	20
23	Herbal products	Tmt.A.Nimali,Hasthinapuram	9445201562	5
24	Herbal products	Tmt.R.Sumathi, Chrompet	9791119224	5

Impact of training programme - New fish farms started – 13 Nos

Sl. No	Month & Year	Type of Farm	Name and Address	Support provided
1	April, 2019	Fish pond	Mr.C.Suresh, Aavadi, Tiruvallur – Dt	Fish pond construction, fish seed stocking and advisories
2	April, 2019	Fish pond	Mr.V.P.Natarajan, Velichai village, Kancheepuram – District	Fish pond construction, fish seed stocking and advisories
3	May, 2019	Fish pond	Mr.K.Arumugam, Echangu, Cheyyar-TK, Thiruvanamalai –Dt	Fish pond construction, advisories, fish seed stocking and advisories
4	May, 2019	Fish pond	Mr.T.Ashokkumar, Rajampettai, Chengalpattu, Kancheepuram-Dt	Fish pond construction, advisories, fish seed stocking and advisories
5	June, 2019	Fish pond	Mr.S.Rajeshkumar, Kilativakkam, Madhuranthagam -TK , Kancheepuram-Dt	Fish pond construction, advisories, fish seed stocking and advisories
6	June, 2019	Fish pond	Mr.E.Annamalai, Paiyanur, Kancheepuram-Dt	Fish pond construction, advisories, fish seed stocking and advisories
7	July, 2019	Fish pond	Mr. M.Thandavamoorthy, Kottai – Post, Thiruvanamalai –Dt.	Advisories, Pond construction and fish stocking, etc.
8	July, 2019	Fish pond	Mr.William Charles, Chengalpet, Kancheepuram – Dt	Advisories, Pond construction and fish stocking, etc.
9	August, 2019	Fish pond	Mr.Mahesh, Uzhalur, Kancheepuram– Dt	Advisories, Pond construction, field visit and fish stocking, etc.
10	August, 2019	Fish pond	Mr. Basker, Thindivanam, Villupuram – Dt	Advisories, Pond construction, field visit and fish stocking, etc.
11	September, 2019	Fish pond	Mr. E.Saravanan, Anampakkam, Kancheepuram– District	Advisories, Pond construction, stocking of fish fingerlings, etc.
12	September, 2019	Fish pond	Mr. Sekar, Thimmavaram, Kancheepuram-Dt,	Advisories, Pond construction, stocking of fish fingerlings, etc.
13	October, 2019	Fish pond	Mr. P.A.Ragupathy, Sirunagar, Cheyyur-TK, Kancheepuram-Dt	Advisories, Pond construction, etc.
14	November, 2019	Fish pond	Mr. S.Rajaram, Nnemeli, Chengalpattu, Kancheepuram-Dt, Pincod: 600 303	Advisories, Training, etc.

15	November, 2019	Fish pond	Mr.S.Selvaraj, Aalvarampoondi, Uthiramerur, Kancheepuram-Dt,	Advisories, Training, etc.
16	December, 2019	Fish pond	Mr.P.Gazhapathi, Rettamangalam, Uthiramerur - TK, Kancheepuram– District	Advisories, Training, pond construction, fish stocking, etc
17	December, 2019	Fish pond	Mr.S.Kumaravel, Mettupakkam, Melkathirpur – Post, Kancheepuram – Dt	Advisories, Training, pond construction, fish stocking, etc
18	January, 2020	Fish pond	Mr.R.Punniyamoorthy, Kilmampattu, Villupuram-Dt	Advisories, Training, pond construction, fish stocking, etc
19	January, 2020	Fish pond	Mr.R.Moneshkumar, Kolathur, Chennai – 600 099	Advisories, Training, pond construction, fish stocking, etc
20	February, 2020	Fish pond	Mr.P.Kajawathi, Rettamangalam, Uthiramerur-Tk, Kancheepuram-Dt	Advisories, Training, pond construction, fish stocking, etc
21	February, 2020	Fish pond	Mr.S.Ramesh, Vallenchery village, Kancheepuram-Dt	Advisories, Training, pond construction, fish stocking, etc
22	March, 2020	Fish pond	Mr.Eswaran, Murkkampakkam, Kancheepuram –Dt	Advisories, Training, pond construction, fish stocking, etc
23	March, 2020	Fish pond	Mr.V.Balakrishnan, Nelli village, Kancheepuram –Dt	Advisories, Training, pond construction, fish stocking, etc

22. 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	For supply critical inputs and farm implements for demonstrations
Zonal Research Centre, TNAU, Coimbatore	
TNAU, Coimbatore	
Central Institute of Agrl. Engg., Coimbatore.	For conducting training and demonstrations
Ministry of food processing Industries	
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

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.)
-	-	-	-