PROFORMA FOR PREPARATION OF ANNUAL REPORT
(1st January 2020 to 31st December 2020)

1. GENERAL INFORMATION ABOUT THE KVK

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

Name of the KVK as per official records (MoU)	:	Thiruvarur
Address	:	ICAR-Krishi Vigyan Kendra Needamangalam Thiruvarur District PIN – 614 404
Phone	:	04367- 260666 04367- 261444
Fax	:	04367- 260666
Email	:	kvkndm@tnau.ac.in

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

Name of the Host Organization as per Official Records	:	Tamil Nadu Agricultural University
Status of the Host Organization (As per the MoU)		State Government University-AU
Address	:	Tamil Nadu Agricultural University, Coimbatore PIN - 641 003
Phone	:	0422- 2431222
Fax	:	0422-2431821
Email	:	registrar@tnau.ac.in
Name of the Chairperson	:	Dr.N.Kumar
Mobile No	:	-
Email	:	tpo@tnau.ac.in

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

Name of the Programme Coordinator	:	Dr. M.Ramasubramanian
Residential Address	:	3/11, SuseeaRenganathan Avenue, Alagaan Nagar Madurai South PIN 625003
Phone No	:	-
Mobile No	:	9486734404
Email	:	ramagriextension@gmail.com

1.4. Year of sanction of the KVK (as per Official Order): 2004
1.5. Month and year of establishment:01.08.2004

1.6.Total land with KVK (in ha) (Consolidated figure):18.66

S. No.	Item	Area (ha)
1	Under Buildings	1.22
2.	Under Demonstration Units	2
3.	Under Crops	13
4.	Orchard/Agro-forestry	1
5.	Others- Old threshing floor, ditch & fallow/not in use	1.44
	Total	**18.66**

1.6. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs in lakhs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	23.2.08	548.24	42.47	-	-	Completed
2.	Farmers Hostel	ICAR	23.2.08	353.00	27.00	-	-	Completed
3.	Staff Quarters	ICAR	23.2.08	459.00	32.00	-	-	Completed
4.	Demonstration Units							
	1. Vermi compost	ICAR-RF	31.03.07	30	-	-	-	Completed
	2.Mushroom	ICAR-RF	31.03.07	20	-	-	-	Completed
	3.Shade net	NADP	03.02.08	930	1.0	-	-	Completed
	4. Azolla production	ICAR-RF	05.07.09	120	-	-	-	Completed
	5. Slatted house goat rearing	ICAR-RF	30.11.09	24	0.15	-	-	Completed
	6. Back yard poultry	ATMA	30.11.09	36	0.50	-	-	Completed
	7. Farm pond –composite fish culture	ICAR	18.11.10	3500	2.00	-	-	-
	8.. Bio control production unit	ICAR	20.03.11	160	4.00	-	-	-
	9. Composted Coir pith	ICAR	2019					Completed

	10. Crop cafteria	ICAR	2020					Completed
	11. Integrated Farming System	ICAR	2020					Completed
	12.Roof top garden	ICAR	2013					Completed
	13. Fodder bank	ICAR	2018					Completed
5	Fencing	ICAR	23.2.08	1200 RM	5.00	-	-	-
6	Rain Water harvesting system	Govt. of TN	31.03.07	1320	0.36	-	-	-
7	Threshing and drying yard	ICAR	20.3.11	394	2.00	-	-	-
8	Farm godown	Govt. of TN	-	3 Nos	-	-	-	-
9	Vehicle and Implement shed	ICAR	20.03.11	37	3.00	-	-	-
10	Farm road	ICAR	29.3.11	2200	2.00	-	-	-
11.	Irrigation system	ICAR	18.11.10	282 RM	1.00	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms covered as on 31.12.2020	Present status
Jeep Bolero-TN 66 V 0317	2017	8,34,445	61499	Good running condition
Tractor with Trailer - Mahindra & Mahindra D1-475-40 HP	2004	4,37,607	2950 Hrs	Good running condition
Two wheeler - TVS STAR CITY	2006	39,400	48241	Good running condition
Two wheeler – Honda Activa	2009	50,000	65321	Good running condition
Power tiller – VST Sakti	2011	1,35,870	1104 Hrs	Good running condition

C) Equipment & AV aids

Name of the equipment	**Year of purchase**	**Cost (Rs.)**	**Present status**
Seagate Backpmplus slim	20.03.2019	4850	Good
Canon LBP 6230 DN printer	30.03.2019	9950	Good
HP Printer Laser Jet M 1005	03.07.2018	9900	Good
CANON LBP 2900 printer	09.10.2018	7839	Good
HP Printer Laser Jet M 1005	04.07.2018	9900	Good
Desktop Computer Acer- 2 Nos	31.03.2016	82,500	Good
Desktop Computer-HCL	25.03.2011	27403	Good
Desktop Computer- HP	31.03.2015	39480	Good
Apple IMAC Workstation	02.11.2009	56000	Good
Laptop Dell vostro	31.03.2011	48025	Good
Laptop Dell inspiron	24.03.2010	40040	Good
Laptop Sony	05.12.2011	34990	Good
Ricoh Photo copier	31.03.2016	76,800	Good
Printer-HP Laser jet 1566	25.03.2011	8750	Good
Samsung Laser Printer	31.03.2016	9700	Good
Samsung 4521 model Fax and printer	February, 2009	14,400	Good
Epson Scanner	31.03.2016	5638	Good
Video camera – Sony with accessories	March , 2011	25,000	Good

LCD projector with accessories	March , 2011	97,000	Good
Generator	March , 2011	1,35,980	Good
Public Address System	March , 2011	20,820	Good
Stand Mic, AMP DPA 770	30.03.2019	9950	Good
Speaker SR 500 DX	30.03.2019	4200	Good
Land leveler	Jan' 2011	10,000	Good
Furniture and furnishing	March , 2011	2,00,000	Good
Digital Visible Spectrophotometer	2011	37600	Good
Digital pH meter	2011	5740	Good
All Glass Single Distillation unit	2011	35000	Good
Khan Shaker	2011	20000	Good
Hot air oven	2011	17000	Good
Hot plate	2011	7650	Good
Willey mill	2011	31500	Good
Water Bath	2011	6970	Good
UP based Flame Photometer	2011	43500	Good
Digital conductivity meter	2011	10890	Good
Electronic Top loading balance	2011	6500	Good
Electronic Top loading balance	2011	19800	Good
Digestion system (Kelplus)	2011	107900	Not working
Distillation system (Kelplus)	2011	175900	Not working
Instrument table	2011	78000	Good
Wash basin, sink and exhauster fan	2011	-	Good
Titration unit	2011	2762	Not working
Vacuum pump	2011	14025	Good
1 ton AC	2011	19550	Not working
Fire extinguisher	2011	3720	Not working
Exhaust fan	2011	12240	Good
Shaker	2011	20000	Good
Water Bath	2011	6970	Good
Induction hot plate	2011	7650	Good
HP-Lazer jet printer P 1566	2011	8750	Good

Sand Path	2011	1350	Good
LG Refreigirator	2011	9890	Good
Sink Unit	2011	36770	Good
LPG Set up	2011	8075	Good
Wall Storage Cuboard	2011	15936	Good
Wall side storage Cabinet	2011	15936	Good
Storage Cabinet	2011	44837	Good
Laboratory revolving stool	2011	11730	Good
Steel rack	2011	13005	Good
Stotted Angle iron rack	2011	8670	Good
Steel Almirah	2011	44488	Good
Work Table	2011	15725	Good
Executive chair netted	2011	4930	Good
Laboratory revolving Chair	2011	5440	Good
Portable soil and water and kit	2011	27200	Good
GPS	2011	17000	Good
Vaccuam pump	2011	7200	Good
Bucket flask lit with Buchner finnel	2011	637	Good
Computer table	2011	3570	Good

1.7. A). Details SAC meeting* conducted in the year

S.No.	Date	No of Participants	Salient Recommendations
1	16.02.2021	23	Poovan variety in Banana for leaf purpose may be popularized through FLD and training
			Case study on poly house may be documented
			Awareness cum training programme on Sericulture, Fish culture and IFS may be conducted at KVK
			Buyer and Seller meet may be conducted by the KVK for FPO
			VGD1 paddy variety may be popularized through FLD and trainings
			The newly released TNAU Rice fallow cotton variety CO 17 may be introduced in Thiruvarur District
			The newly released Banana variety Kauvery Saba from NRCB, Trichy may be popularized through FLD in Thiruvarur District

			To recover from the flood, an alternate paddy variety for CR 1009 may be introduced in Thiruvarur District
			Training on Bee keeping may be conducted for Rural youth at KVK
			Training on control measures for mealy bug in fruit crops may be organized at KVK
			Training on organic cultivation of vegetable crops may be conducted at KVK for the benefits of farmers and Farm women of Thruvarur District
			A booklet on scheme implemented by the line departments may be prepared and distributed for the benefits of farming community
			Training on value addition in traditional rice may be organized at KVK
			More number of trainings related to water conservation practices for major crops may be organized by the KVK
			Trainings related to value addition in pulses and millets may be conducted at KVK
			Mushroom Cultivation and value addition related trainings may be conducted at KVK for the benefits of Rural youth
			Pre seasonal awareness programme for control measures of gall midge in paddy may be organized by the KVK
			Training on value added products of banana may be organized at KVK
			More awareness programme on organic cultivation of rice may be conducted at KVK
			Animal health camp and trainings for cattle, goat, poultry, IFS, fodder crops and other new specific technologies suitable for Thiruvarur District may be organized by the KVK

**** Attach a copy of SAC proceedings along with list of participants: Attached in***

ANNEXTURE I

2. DETAILS OF DISTRICT (2020)

2.0.Operational jurisdiction of KVKs

District	New districts governed by the KVK after division of the district, if applicable	Taluks/Tehsils and/or Mandals under the KVKs jurisdiction
Thiruvarur	-	8 Taluks and 10 Blocks

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

S. No	Farming system/enterprise
1	Rice based cropping system

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

S. No	**Agro-climatic Zone**	**Characteristics**
1	Cauvery Delta Zone	Alluvial terrain with gentle slope
	Agro ecological situation	**Characteristics**
2	Wet land eco system	Low land delta plain

2.3. Soil types

S. No	**Soil type**	**Characteristics**	**Area in ha**
1	Clay to clay loam- Old Delta	Low land	1,27,506
2	Sandy to sandy clay loam- New Delta	Light textured soil	27,048

2.4. Area, Production and Productivity of major crops cultivated in the district (or the jurisdiction as the case may be) for 2020

Kharif

S. No	**Crop**	**Area (ha)**	**Production (Qtl)**	**Productivity (Qtl /ha)**
1	Rice			
i	Kuruvai	125791		6935
Ii	Samba	22685		6935
Iii	Thaladi	9738		5860
iv	Summer	22685		
	Total	180899		
2	Sugarcane	81		
3	Groundnut	2784		
4	Sunflower	29		
5	Oilpalm	199		
6	Coconut	5715		

Rabi

S. No	**Crop**	**Area (ha)**	**Production (Qtl)**	**Productivity (Qtl /ha)**
1	Blackgram	25670		
2	Greengram	46111		

Summer

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Rice	22685		
2	Cotton	8049		
3	Sesame	850		

2.5. Weather data

Month	Rainfall (mm)	Temp		Relative Humidity
		Max	min	
Jan 2020	46.4	32.2	27.1	85
Feb	0	38.1	29.5	84
Mar	0	32.5	25.2	86
April	30.6	34.5	26.5	82
May	31.8	36.6	27.2	82
June	20	36.8	26.8	80
July	237.8	33.2	24.5	85
Aug	43.8	32.2	24.6	86
Sep	164.6	32.1	27.1	87
Oct	100.2	32.7	26.2	86
Nov	180.8	33.2	26.8	86
Dec	373.5	34.2	25.7	84
Average/total	**1229.50**	**34.0**	**24.40**	84.41

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2020)

Category	Population	Production	Productivity
Cattle			
Crossbred	154098		8.5 litres/Animal
Indigenous	46150		7 Litres / Animal
Buffalo	1212		4.5 Litres/ Animal
Sheep			
Crossbred	140		12 kg
Indigenous	453		8.5 kg
Goats	139300		15 kg / Animal
Pigs			
Crossbred	25		-
Indigenous	526		-
Rabbits	256		-
Poultry			
Hens			1.25 kg / bird
Desi			
Improved			
Ducks			
Turkey and others			

Category	Area	Production	Productivity
Fish			
Marine	47 km	623t	-
Inland	350 ha	8900 t	-

Source : Animal husbandry – Livestock census-2019

2.7. Details of Adopted Villages (2020)

S.No.	Taluk/ Mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Thiruvarur/ Needamangalam	Needamangalam	Rayapuram	2015	Rice, Pulses	25 to 28 % Yield loss due to Zinc deficiency and Poor health status of soil	INM
	Thiruvarur/ Needamangalam	Needamangalam	Rayapuram	2015	Blackgram	The newly released blackgram varieties are resistant to YMV and capable of yielding about 15% higher than the exiting cultivating variety	Varietal Introduction
	Thiruvarur/ Needamangalam	Needamangalam	Rayapuram	2015	Applicable to any crop	• The farmers often could not get their capacity built due to three important factors time, distance and cost • Monotony in training methodology and training environment • The training institutions like KVKs have been spending huge money for conducting trainings. In few occasions though all resources are available training could not be conducted	ICT Tools

	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Rice, Pulses,	25 to 28 % Yield loss due to Zinc deficiency and Poor health status of soil	INM
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Applicable to any crop	The differential effectiveness of wards of farmers in schools and colleges will reveal useful strategies to utilise the scope of the wards of farmers in transferring key technologies and facilitating the adoption	ICT Tools
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Rice	Considerable yield reduction has reported during samba & Thaladi seasons of 2018-19 & 2019-20 due to heavy infestation of BPH	IPM
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Rice	More than 1.25 lakh ha during Samba and Thaladi season coinciding with North East monsoon which favours the infestation of Gallmidge and Blast. Severe infestation of gallmidge was reported during 2019-20	IPDM
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Maize	Maize is introduced as alternate crop, which is vulnerable to Fall armyworm attack	Crop Diversification
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Bhendi	Farmers are required alternate bund crops for regular income of their livelihood apart from	Hybrid introduction

						pulse crop suitable for sandy clay loam soils	
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Cattle	Reduced energy in newly calved animal during peak lactation	Feeding Management
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Backyard poultry	Unused fish wastes in markets creating environmental pollution	Feeding Management
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Fisheries	Low weight of existing varieties	Varietal introduction
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Vegetables	• Demand for organic greens and vegetables • Lack of knowledge on macro and micro nutrients in vegetables and greens • Low per capita consumption of vegetables and greens	Nutritional garden
	Thiruvarur/ Needamangalam	Needamangalam	Keelapattu	2018	Mushroom	Lack of awareness on value addition, improved and attractive packaging, less shelf life and lack of knowledge in nutritional aspects of mushroom	Value addition
DFI villages							
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Sathanur	2018	Rice	• Wastage of Paddy straw after harvest • Long time to compost • Lack of awareness on composting	Crop Management

	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Sathanur	2018	Applicable to any crop	Despite the wards of farmers can act as information disseminators, their potential in Agricultural technology transfer is not explored fully. The differential effectiveness of wards of farmers in schools and colleges will reveal useful strategies to utilise the scope of the wards of farmers in transferring key technologies and facilitating the adoption	ICT Tools
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Sathanur	2018	Applicable to any crop	Though training evaluation is in built in all trainings of KVK, the effectiveness of such evaluation is being questioned. There exists lot of scope to improve the methodologies of evaluation of training in line with the developments which has been pointed out from recent literature	ICT Tools
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Animal Husbandry/ backyard poultry	High cost involved in backyard poultry	Feeding Management
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Animal Husbandry/Dairy animal	• Feeding of low quality roughage leads to negative energy balance. • Reduction in quality and quantity of milk.	Feeding Management

						• High cost of milk production, low economic return	
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Rice	• Low yield of ruling variety • Non adoption of ICM practices • Blast incidence in the ruling variety(BPT 5204)	Varietal introduction
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Rice	• Lodging of existing variety (30%) • Incidence of leaf folder and blast disease (32%) • Demand for fine grain variety	Varietal introduction
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Rice	Considerable yield reduction has reported during samba & Thaladi seasons of 2018-19 & 2019-20 due to heavy infestation of BPH	IPM
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Rice	More than 1.25 lakh ha during Samba and Thaladi season coinciding with North east monsoon which favours the infestation of Gallmidge and Blast. Severe infestation of gallmidge was reported during 2019-20	IPDM

	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Bhendi	Farmers are required alternate bund crops for regular income of their livelihood apart from pulse crop suitable for sandy clay loam soils.	Hybrid Introduction
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Any Enterprise including crop, animal husbandry, Fisheries	• The farmers often could not get their capacity built due to three important factors time, distance and cost • Monotony in training methodology and training environment • The training institutions like KVKs have been spending huge money for conducting trainings. In few occasions though all resources are available training could not be conducted	ICT Tools
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Animal Husbandry/Dairy animal	Reduced energy in newly calved animal during peak lactation	Livestock management
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Puthukottai	2018	Animal Husbandry/backyard poultry	Non availability of suitable breeds for backyard poultry	Varietal introduction
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Nutritional garden	• Demand for organic greens and vegetables • Lack of knowledge on macro and micro nutrients in vegetables and greens	Nutritional garden

						• Low per capita consumption of vegetables and greens	
	Thiruvarur/ Needamangalam	Needamangalam	Vaduvur Satthanur	2018	Mushroom	Lack of awareness on value addition, improved and attractive packaging, less shelf life and lack of knowledge in nutritional aspects of mushroom	Value addition

2.8. Priority/thrust areas

Crop/Enterprise	**Thrust area**
Blackgram, Vegetable cowpea, Cluster bean	Varietal evaluation
Rice	Varietal introduction, IPM, IPDM, Crop Management, INM
Maize	IPM
Bhendi	Hybrid Introduction
Banana	Varietal introduction
Any Enterprise including crop, animal husbandry, Fisheries	Information technology/ICT Tools
Animal Husbandry/Dairy animal/small ruminant backyard poultry	Fodder production, Livestock management Varietal introduction, Feeding Management Bypass fat
Vegetables	Nutritional garden
Mushroom	Value addition

3. Salient Achievements

Achievements of Mandated activities (1st January 2020 to 31st December 2020)

S.No	Activity	Target	Achievement
1.	Technologies Assessed and refined(No.)	11	11
2.	On-farm trials conducted (No.)	55	55
3.	Frontline demonstrations conducted (No.)	21	21
4.	Farmers trained (in Lakh)	0.1860	0.2973
5.	Extension Personnel trained (No.)	300	540
6.	Participants in extension activities (in Lakh)	0.07	0.31377
7.	Production and distribution of Seed (in Quintal)	300	285.24
8.	Planting material produced and distributed (in Lakh)	100000	152765
9.	Live-stock strains and finger lings produced and distributed (in Lakh)	0.0002	0.00012
10.	Soil samples tested by Mini Soil Testing Kit (No)	150	156
11.	Soil samples tested by Traditional Laboratory (No)	100	110
12.	Water, plant, manure and other samples tested (No.)	50	74
13.	Mobile agro-advisory provided to farmers (No.)	50 (750000)	70 (1160957)
14.	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	150	156
15.	No.of Soil Health Cards issued by Traditional Laboratory (No.)	100	110

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

Totally **11** OFT S and **21** FLDS were conducted in **242** farmers field during 2020-21. Through these OFTS and FLDS new varieties and new technologies were demonstrated in the farmer's field. Paddy variety ADT 54, VGD1, Kaveri kalki Banana, Traditional rice variety(Mapillai samba) with Eco friendly management were introduced. Dual purpose crossbred chicken varietiesTANUVAS Aseel and intensive culture of Jayanthi Rohu werealso introduced.New technologies like, ready to eat and ready to cook mushroom products, new vegetable hybrids like Bhendi Co 4, Nutri garden in Anganwadis were dissiminated.

- **266** soil health card was issued to 206--farmers and**74**water sample anaysed for **48**farmers.

- As mandate of KVK training programmes are being conducted regularly. Totally **3555**farmers were benefitted through **94**on campus, off campus, vocational and sponsored training programmes.

- 1190 Extension activities viz., method demonstrations Exhibition , Radio talks, diagnostic visits, Farmers visit to KVK and Field day, T.V. programmes were

conducted regularly. Totally 31377farmers were benefitted from ten blocks of Thiruvarur Districts

- Totally **4** successful farmers were formulated on Organic farming in traditional paddy - a profitable venture,New fine grain paddy variety VGD 1 for Thaladi season in Thiruvarur district for doubling the income,Demonstration of TNAU Bhendi Hybrid Co-4 and Bringing the ready to consume food for future by processing traditional rice varieties

- Technologies were disseminated through various print media *viz.,* full research article (8), Book (**3**), Popular article (9),Pamphelts (**4**), Seminars(4) and Conference papers (4) and dailies (**215**) which are predomantly reaches the farmers.

- Totally **285**quintal for paddy seeds *viz.,* CR 1009 sub1 and Cotton CO 17 were produced and distributed to 74 number of farmersfor Rs 880275

- Planting materials viz. Napier grass CO 5(152765 Nos) were produced and distributed to 102 farmers with an value of Rs 183318

- Bio products like Azolla (**80** Kg), Vermicompost (**5830** Kg) and Pseudomonas (**1247** Kg) were produced with an value of Rs 209496

- **70** Numbers of mobile agro- advisory services were provided through mkisan portal alone to 1160957 numbers of farmers of Thiruvarur district.

- Totally **9** numbers of awards namely Best Popular Article Award, Best Publications 2019-2020, Best Project: NICRA 2019-20, Best Programme: Jal Shakti Abhiyan 2019-20, Best Photograph 2019-20, Best Mechanized Farmer Award, Best Paper Award(2) were received by the KVK staffs and KVK contact farmer.

- **Three** numbers of externally funded projects were operated during reporting period namely TN IAMP, NICRA and SBGF.

- **Twenty** numbers of videos on various agriculture alied technologies including Animal science were documented and uploaded in youtube for the benefits of farming community

4. TECHNICAL ACHIEVEMENTS

Details of target and achievements of mandatory activities by KVK during 2020

OFT (Technology Assessment)

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials / Replications / Beneficiaries	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
11	11	22	22	18	18	55	55

FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
21	21	36.4	36.4	187	187

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

Number of Courses			Number of Participants	
Clientele	Targets	Achievement	Targets	Achievement
Farmers and Farm Women	**39**	**82**	**1860**	2973
Rural youth	**11**	**12**	**580**	582
Extn. Functionaries	**9**	**13**	**300**	540

Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
663	1190	7000	31377

Seed Production (q)

Target	Achievement	Distributed to no. of farmers
300	285.24	74

Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
100000	152765	102

Technology Assessments (OFTs) in Detail

1.Assessment of Zinc solubilizing bacteria in Rice in Rabi season

1. Thematic area: Nutrient Management
2. Title: Assessment of Zinc solubilizing bacteria in Rice in Rabi season
3. Scientists involved: Dr.A.Anuratha, SMS (SS&AC) and Programme Coordinator
4. Details of farming situation

- Location of trial
  Mostly delta farmers cultivating the paddy crop in three season, it creates the decline in soil health. The yield of paddy crop was also declined due to deficiency of zinc nutrients in soil. Seventy percentage of soil was deficient in Zinc. Since the critical limit of Zn in terms of DTPA (pH 7.3) extractable Zn wa 1.20 mg Zn kg-1 soil and the content of DTPA (pH 7.3) extractable Zn was 0.42 – 0.65 mg Zn kg-1 in Vaduvur and Devankudi Villages.Hence, KVK conducted On farm trial to assess the Zinc solubilizing bacteria in Zinc deficient soils of Vaduvur, Devankudi of Needamangalam block during Rabi season of A2020-21
- Major cropsgrown
  Vaduvur and Devankudi Villages – Paddy under irrigated condition ,Pulses, Cotton, Gingelly .
- Season
  The main cropping systems followed by the farmers are Paddy – Paddy – Rice fallow pulses, Paddy – Paddy – Rice fallow cotton, Paddy is cultivated both kharif and rabi season of every year under irrigated condition. On farm trial sowing has taken up during August month (Rabi season) with available water source.
- Farming situation(Irrigated/Rainfed)
  Paddy and black gram was mainly cultivated in irrigated condition in both villages.

- Climatic condition during the cropperiod
  The annual rainfall of Needamangalam during 2020-2021 was 1237.7 mm. Vaduvur and Devankudi villages received an average rainfall of 43.8 mm with 3 rainy days in August, 164.6 mm of rainfall in 5 rainy days during September, 108.2 mm of rainfall in 4 rainy days in October, 180.8 mm of rainfall in 9 rainy days in November and 373.5mm rainfall in 12 rainy days during December 2020. During the crop period (August 2020 – Jan 2021), totally 917.3 mm of rainfall was receivedin34rainydays.
- Soil type and fertilitystatus

  The soil type is clay loamy with a pH of 7.2 and EC of 0.4 dSm^{-1} with a soil nutrient status of low Nitrogen (265 kg/ ha), medium Phosphorus (18.8 kg / ha) and medium Potassium (286 kg /ha). Since the critical limit of Zn in terms of DTPA (pH 7.3) extractable Zn was 1.20 mg Zn kg-1 soil and the content of DTPA (pH 7.3) extractable Zn was 0.42 – 0.65 mg Zn kg-1 in Vaduvur and Devankudi Villages. while S,Fe,Cu,Mn and B were in sufficient status.

5. Problem definition /description

- Normally farmers cultivate paddy crops in Kharif, Rabi and Summer season.
- Zinc deficiency was observed in three seasons and affects the yield of crops
- No awareness on alternative sources for zinc sulphate
- Non adoption of zinc solubilising bacteria .
- Poor grainyield.
- Less farmincome.
- The main objective of the study was to assess the Zinc solubilizing bacteria in Rice in Rabi season.

6. TechnologyAssessed

Three technologies were assessed in zinc deficient soils during rabi season.

1. Farmers practice – Non application of Zinc Sources

2. Application of Zinc solubilising bacteria - Seed treatment of ZSB @ 1 kg / ha of seed,

Root dipping of ZSB, Soil application of ZSB @ 2 kg /ha

3. Application of Zinc Sulphate – Application of Zinc Sulphate @ 25 kg / ha

7. Critical inputsgiven – ZSB was supplied by TNAU at free of cost

Name of the critical inputs	Quantity (kgs)
Zinc solubilizing bacteria	2.5 kgs per farmer

8. Results

Table : 1. Performance of the technology

Technology Option	*No.of trials*	*Yield (q/ha)*	*Gross cost (Rs/h*	*Net returns (Rs./ha)*	*B:C ratio*	*Data on Other performanc e indicators**
Farmers Practice (Non application of Zinc sources)	5	48.56	87408	42408	1.49	
Technology Option 1 (Seed treatment of ZSB @ 1 kg / ha of seed, Root dipping of ZSB, Soil application of ZSB @ 2 kg /ha)		55.13	99234	54234	1.55	
Technology Option 2 (Application of Zinc sulphate @ 25 kg /ha)		51.35	92430	46430	1.50	

Description of the results

Parameters	Farmers Practice	Technology Option 1	Technology Option 2
Plant height (cm)	112.4	115.2	114.6
Prod. till./plant	16	20	19
Panicle length(cm)	20.6	23.8	21.6
No. of grains/panicle	180	219	215
1000 grain wt (g)	20.6	23.8	22.6
Grain yield (q/ha)	48.56	55.13	51.35
Gross cost (Rs. /ha)	45000	46000	45000
Gross return (Rs. /ha)	87408	99234	92430
Net return (Rs. /ha)	42408	54234	46430
B:C ratio	1.94	2.20	2.01
Available N (kg/ha)*	167	197	182
Available P (kg/ha) *	14.8	16.8	15.6
Available K (kg/ha) *	243	276	263
Available Zn ppm) *	0.78	0.97	0.83

*Post harvest soil samples

The On farm trials were conducted in five farmers field at Vaduvur and Devankudi villages during Rabi season 2020-21. KVK offered off campus training, distributed critical inputs to the beneficiaries and demonstrations were carried out. The yield and other parameters recorded in OFT trials are presented below

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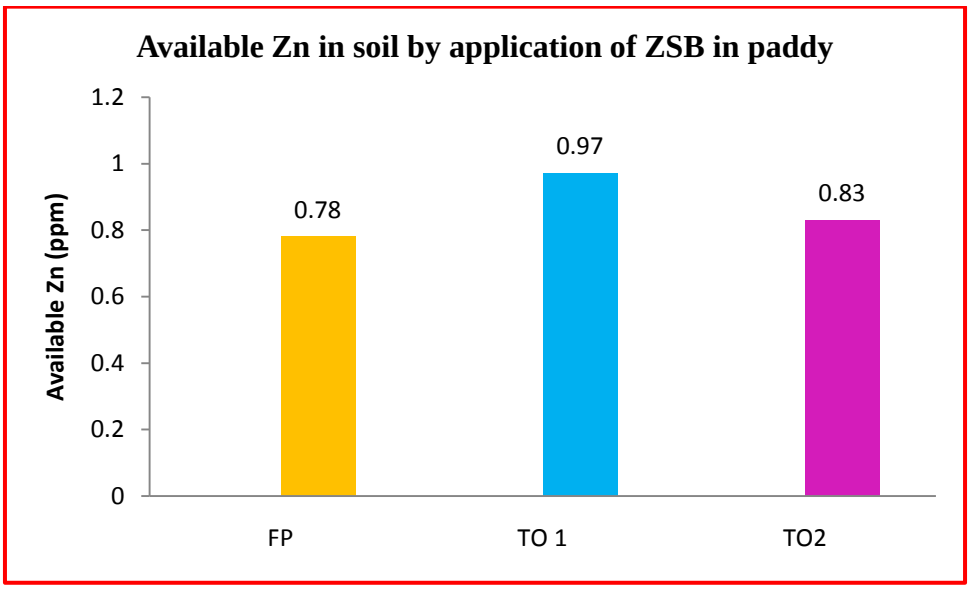

Results from OFT clearly indicated that the application of ZSB had positively influenced plant growth attributes viz., plant height(115.3cm) and number of tillers(20) as well as yield parameters such as panicle length(23.8cm), number of grains per panicle(219),

grain (5513 kg per ha) yield as compared to application of application of Znic sulphate @25 kg per ha and Farmers practices.
Economics of the study revealed that application of ZSB registered higher net returns (Rs.54,234/ha) and benefit cost ratio (2.20) followed by and Farmers practices

Results also showed the highest available zinc content in soil (0.97ppm) was observed in ZSB applied plot. Thus, the results revealed that the application of ZSB by Seed treatment (ZSB @ 1 kg / ha of seed), paddy seedling root dipping of ZSB, Soil application of ZSB @ 2 kg /ha combination along with 100% RDF was found to be efficient in enhancing growth and yield of paddy and available zinc content of soil.
Constraints faced: Availability of the Zinc solubilising bacteria is the major problem faced by the farmers

9. Feed back of the farmersinvolved

The cost of ZSB is comparatively lesser than the Zinc sulphate. Hence if the availability of the ZSB is of easy access to the farmers, adaption of the institutional ZSB will be improved.

10. Feed back to the scientist who developed thetechnology - Nil

2.Assessment of different decomposer in paddy straw composting

1	Thematic area	:	Crop Management
2	Title	:	Assessment of different decomposer in paddy straw composting
3	Scientists involved	:	Dr.M.Selvamurugan
4	Details of farming situation	:	❖ Location of trial Paddy is an important crop cultivated over 1,80,000 ha in Thiruvarur district during Kharif and Rabi season. Paddy straw generated are being left unutilized and burned causes deterioration in soil health and creates environmental pollution. Conversion of paddy straw into manure is time consuming without addition of additive like composting culture. The farmers usually burn their straw or sold to lower price. Hence, the composting of paddy straw wastes with different waste decomposers was conducted in this district for effective composting of paddy straw.

			Characteristics of the straw wastes The pH of the straw wastes was neutral (7.20). The carbon content of the straw was 33.8% and C/N ratio of the straw was 60.36. The stubbles contain 0.56% Nitrogen, 0.06% Phosphorus, 0.84% Potassium.
5	Problem definition / description: (one paragraph)	:	Paddy is an important crop cultivated over 1,80,000 ha in Thiruvarur district during Kharif and Rabi season. Paddy straw generated are being left unutilized and burned causes deterioration in soil health and creates environmental pollution and Conversion of paddy straw into manure is time consuming without addition of additive like composting culture. The farmers usually burn their straw or sold to lower price. Hence new composting strategies should be assessed in this district for the effective composting of paddy straw.
6	Technology Assessed: (give full details of technology as well as farmers practice)	:	Three technologies assessed in this OFT are i. NCOF Waste decomposer @ 50 g / 10 ton of waste ii. IIHR Arka decomposer @ 5 kg /ton of waste iii. TNAU biomineralizer 2 kg / ton of waste
7	Critical inputs given: (along with quantity as well as value)	:	TNAU biomineralizer @ 2 kg / ton of waste IIHR Arka decomposer @ 5 kg /ton of waste NCOF Waste decomposer @ 50 g / 10 ton of waste
8	Results:	:	

Composting of paddy straw wastes was carried out in heap method after shredding to 10 cm size. The changes in physico-chemical and biological parameters were recorded. All the waste decomposers with paddy straw developed remarkably higher temperature and it increased upto 30th day, declined gradually, thereafter stabilized during maturity phase. The pH of the compost increased slightly upto 30th day, thereafter decreased marginally. At the final stage of composting, all the treatments recorded neutral pH. The organic carbon content decreased during composting process and the rate of decomposition was found to be higher in NCOF Waste Decomposer, which is on par with TNAU biomonearlizer. The C/N ratio was decreased progressively with composting process. It was satisfactory in all the technology as they were within the limit of 25 after 65 days of composting. The lowest C/N ratio of 17.3 was recorded in the NCOF Waste Decomposer at the end of the composting process of 55 days. The changes in characteristics of paddy straw showed marked differences among the decomposers with respect to C/N ratio and increases in the macro nutrients viz., N, P and K. The final compost resulted in enhanced major nutrients in paddy straw wastes. The qualitative and humification tests for final compost gave favorable results for all the treatments indicating their maturity. The starch iodine test and sulphide test indicated the maturity of paddy straw compost after 65 days of composting period. The paddy straw composts were tested for its phytotoxicity and are

considered to be free from phytotoxicity. The humic acid and fulvic acid were maximum in paddy straw compost prepared with NCOF Waste Decomposer with the value of 13.3 and 10.5 per cent, respectively, which is on par with TNAU Biomineralizer (11.8 and 9.48 per cent). However, the cost required for composting is very least for NCOF Waste Decomposer

Table : Performance of the technology

Technology Option	No. of trials	Yield (q/ton of waste)	Gross (Rs./ton of waste)	Net Returns (Rs./ton of waste)	B:C ratio	Data on Other performance indicators*
Technology 1(NCOF Waste decomposer @ 50 g / 10 ton of waste)	5	4	876	1124	2.28	The compost matured on 55th day of composting
Technology 2(IIHR Arka decomposer @ 5 kg /ton of waste)		4	1365	635	1.47	The compost matured on 65th day of composting
Technology 3 (TNAU biomineralizer @ 2 kg / ton of waste)		4	966	1034	2.07	The compost matured on 59th day of composting

Table- Changes in Organic Carbon, Nitrogen and C/N ratio of paddy straw during composting period

Technology Options	Organic Carbon (%)				Nitrogen (%)				C/N ratio			
	Time interval (Days)				Time interval (Days)				Time interval (Days)			
	0	30	55	65	0	30	55	65	0	30	55	65
Technology 1 (NCOF Waste decomposer)	33.84	24.56	14.40	14.36	0.56	0.67	0.81	0.83	60.43	36.66	17.78	17.30
Technology 2 (IIHR Arka decomposer)	33.84	25.45	15.80	14.86	0.56	0.61	0.70	0.76	60.43	41.72	22.57	19.55
Technology 3 (TNAU biomineralizer)	33.84	24.90	15.30	14.50	0.56	0.64	0.75	0.80	60.43	38.91	20.40	18.13

Table - Humification parameters of compost prepared from different decomposers

Technology Options	Humic acid (%)	Fulvic acid (%)
Technology 1 (NCOF Waste decomposer)	13.30	10.50
Technology 2 (IIHR Arka decomposer)	11.80	9.48
Technology 3 (TNAU biomineralizer)	12.78	10.26

9	Constraints	:	Transporting of paddy straw into compost yard and availability of the NCOF Waste decomposer are the major problem faced by the farmers
10	Feedback of the farmers involved	:	Composting of paddy straw through decomposers provides nutrients rich organic manures for crop production. The cost of NCOF Waste decomposer is lowest than TNAU Biomineraliser and Arka Decomposer. Hence, composting through NCOF Waste decomposer is an economical one. Since the NCOF Waste decomposer is easy accessible to the farmers, adaption of this NCOF Waste decomposer will be improved.
11	Feed back to the scientist who developed the technology	:	Nil

3. **Assessment of Effectiveness of Agricultural Technology Transfer through School going Sons/Daughters of Farmers.**

1	Thematic area	:	Agricultural Extension /Evaluation of Extension method
2	Title	:	Assessment of Effectiveness of Agricultural Technology Transfer through School going Sons/Daughters of Farmers.
3	Scientists involved	:	Dr.M.Ramasubramanian. Programme Coordinator Associate Professor (Agricultural Extension)
4	Details of farming situation	:	The Experiment was conducted in Thiruvarur District which is known for its Wetland Ecosystem and stood first in rice production among other districts of TamilNadu. This district falls under Cauvery Delta zone where Rice-Rice-Rice , Rice-Rice-Pulses, Rice-Rice-Cotton, Rice-Rice-Groundnut/Gingelly are the predominant cropping pattern. Farmers used to go for rice in all seasons namely summer, kuruvai, samba, thaladi and also. Since the Experiment intended to test the Effectiveness of School Children as para Extension workers, Pulse crop was chosen purposively as it involves less number of

			technologies. Pulses namely blackgram and green gram are being grown in 35,000-45,000 acres every year. The farmers used to go for either rice fallow pulses or in Chithirai pattam coinciding the summer season. The villages which were selected for the Experiment were Muunavalkottai and Edaimelaiyur which falls under old delta where clay to clay loam and sand to sandy loam are the predominant soil types. Farmers in these villages often resorted to broadcasting of pulses seeds in either rice fallow or as pure crop in irrigated condition.
5	Problem definition / description	:	There are two important sparks as rationale for taking up this experiment. 1. Though the area under pulses has been increasing in Thiruvarur District, the productivity has been staggering around 2.5 tonnes/ha 2. The adoption of improved varieties/technologies has been found to be low which is averaging around 4.6 quintals/ha among the pulse growers of Thiruvarur District. 3. Despite the wards of farmers can act as information disseminators their potential in Agricultural technology transfer is not explored fully. The differential effectiveness of wards of farmers in lower and higher School will reveal useful strategies to utilise the scope of the wards of farmers in transferring key technologies and facilitating the adoption

6	Technology Assessed:	:	T1- Sons/Daughters of farmers pursuing 8th class to 10th class hailing from farm families given with key technologies pertaining to a crop in a season T2- Sons/Daughters of Farmers pursuing11th class to 12th class hailing from farm families given the same key technologies pertaining to a crop in a season T3- Check- Farmers who rely on regular mode of getting information from formal and Informal sources like Dept of Agriculture, Input dealers, friends and relatives • 60 students each from the category of 8th to 10th and 11th to 12th std were taken for the study as respondents. Totally 120 was the sample size for the experiment. • The respondents (sons/daughters of farmers) studying in Government High School, Munnavalkottai and Government High School Needamangalam were given with 2 sessions each on Package of Agricultural Practices for Pulses and totally eight sessions were given. The respondents were requested to disseminate the technologies to their parents • Data was collected from the parents of those respondents, once the pulse crop was cultivated from the fields. • Data was also collected from the farmers of the selected villages whose sons/daughters were not a part of this experiment. Hence these farmers have served as check for T1 and T2
7	Critical inputs given	:	As this is an Extension Experiment no inputs were given and the researcher have given **Intellectual Input in the form of Package of Agricultural Practices for Pulses**was given to the sons/daughters of Farmers. Eight sessions which includes four session each for T1 group and T2 group respectively was conducted
8	Results:	:	

Table : Performance of the technology

Experimental Treatments	No. of Trials	Mean Knowledge Index (Number of practices-12)		Mean Adoption Index (Number of practices-12)		Mean Communication Effectiveness Index (Max.score:9.0)	
		Male (n=60)	Female (n=60)	Male (n=60)	Female (n=60)	Male (n=60)	Female (n=60)
Treatment 1	4 sessions	75.22	83.21	43.42	49.74	6.2	7.1
Treatment 2	4 sessions	66.61	74.21	38.33	41.21	5.3	5.9
Treatment 3 (Check)	Not applicable	42.15		22.31		Not applicable	

Treatment 1- Sons/Daughters of farmers pursuing 8th class to 10th class hailing from farm families given with key technologies pertaining to a crop in a season

Treatment 2- Sons/Daughters of Farmers pursuing11th class to 12th class hailing from farm families given the same key technologies pertaining to a crop in a season

Treatment 3- Check- Farmers who rely on regular mode of getting information from formal and Informal sources like Dept of Agriculture, Input dealers, friends and relatives

Male- Sons of farmers taken for the Experiment; **Female**- Daughters of Farmers taken for the Experiment

Knowledge Index- $\frac{\text{Number of practices known to parents of respondents}}{\text{Number of practices taught to respondents through sessions}} \times 100$

Adoption Index- $\frac{\text{Number of practices Adopted by parents of respondents}}{\text{Number of practices taught to respondents through sessions}} \times 100$

Communication Effectiveness Index- Sum total of number of interactions between parents and their wards, Degree of Pacifying ability of respondents, following up of information by respondents. Number of Interactions between parents and wards was measured with a scoring procedure that '3' score for more than 6 interactions, '2' for 3-6 interactions and '1' for less than 3 interactions. Degree of pacifying ability was measured with a scoring procedure that '3' score for highest degree , '2' for moderate degree and '1' for lesser pacifying ability. Following up of information by respondents was measured with a scoring procedure that '3' score for highest degree of follow up , '2' for moderate degree of follow up and '1' for lesser follow up

Data on other Indicators

Experimental Treatments	Mean Information Processing by Parents (Max.Score: 6.0)		Mean Degree of Satisfaction (Max.score: 3.0)		Mean Net change in Income/ha due to the technologies transferred by the respondents (In Rs)	
	Male (n=60)	Female (n=60)	Male(n=60)	Female(n=60)	Male(n=60)	Female(n=60)
Treatment 1	3.2	3.9	1.6	2.2	8500	10500
Treatment 2	1.9	2.1	1.1	1.3	7900	8700
Treatment 3 (Check)	1.2		Not applicable		Not applicable	

Information processing by parents is the sum total of Number of times the farmer enquire about the technologies with peer group, Input dealers and number of times the

farmer enquire about technologies with Dept of agriculture, KVK. The scoring procedure followed is that maximum score of '3' was given to 'Intensive enquiry', '2' was given to 'moderate enquiry' and 1 was given to 'less enquiry' respectively

Degree of Satisfaction is the degree to which the parents of the respondents of the study felt accommodative about their wards transferring technologies to them and the quality of information. A score of 3,2 and 1 for high, moderate and low degree of satisfaction respectively

Net Change in Income/ha took into account additional income, reduced cost for the respondents due to the adoption of technologies disseminated by the respondents.

9	Constraints	:	The researcher found it difficult to trace the parents of the respondents to study the effectiveness of technology transfer. The recall method of eliciting information from the parents had the inherent disadvantages of memory and biases
10	Feedback of the farmers involved	:	Majority of the parents of the sons/daughters felt happy that atleast through this experiment they could talk about agriculture and many opined that this may be implemented as a strategy all over the state.
11	Feed back to the scientist who developed the technology	:	As it wasn't a technology developed by scientist, this experiment as a strategy can be test verified in other KVKs, locations etc.,

4. Assessment of the Effectiveness of different Training Evaluation Methods

1	Thematic area	:	Agricultural Extension /Evaluation of Training
2	Title	:	Assessment of the Effectiveness of different Training Evaluation Methods
3	Scientists involved	:	Dr.M.Ramasubramanian. Programme Coordinator Associate Professor (Agricultural Extension)
4	Details of farming situation	:	Cauvery delta is known for its rice based cropping system where the KVK, Thiruvarur is located. Rice is being grown as a predominant crop in all the three seasons namely kuruvai, samba, thaladi and summer. Besides rice, pulses is another crop which occupies major area in this district. In recent times cotton is picking up and farmers have shown lot of interest to go for cotton and as per the recent statistics, cotton is being grown in 7500 ha in Thiruvarur District. Yet another unique feature of cauvery delta is the inland fisheries which is one of the important income diversification strategy followed by farmers. Invariably most of the farmers used to have farm ponds in their farm as

			the ground water is adequate and for six months they can use the canal water from river cauvery. The trainings are very much needed by farmers in composite carp culture. In order to cater to the needs of farmers KVK, Thiruvarur has been organising trainings on composite carp culture. Another important aspect about this training is that the participants used to come with a definite goal in mind and more number of youngsters are embracing fish culture in cauvery delta in recent past. In order to understand the effectiveness of these trainings, an experiment was conducted to evaluate the training on Inland fish culture.
5	Problem definition / description	:	Though training evaluation is in built in all trainings of KVK, the effectiveness of such evaluation is being questioned. There exists lot of scope to improve the methodologies of evaluation of training in line with the developments which has been pointed out from recent literature
6	Technology Assessed:	:	T1- The respondents will be asked to identify the materials pertaining to the training and answer questions pre and post training T2- T1 + Following up at frequent intervals for a season T3- Check- Regular pre and post evaluation using questionnaire ❖ Sixty trainees in Inland Fish culture training which was conducted in KVK, Thiruvarur in September 2020 were the subjects for the experiment. Twenty each of these respondents were selected to be respondents for three treatments explained above. ❖ In the first experiment, the trainees were asked to visit the display of materials and they were asked to identify and write the answers to the questions given below. This was done prior to the training and after completion of the training. In this training the variety of carps, materials related to fish culture were displayed and the respondents were asked to identify and write answers to the questions kept in front of each of the specimen ❖ In the second experiments, along with the same procedure adopted for the first experiment the trainees were followed up for their knowledge retention and adoption of technologies after the training was over ❖ Third was the regular evaluation, wherein the trainees were tested for their knowledge prior and after the training using a questionnaire
7	Critical inputs given	:	As this is an Extension Experiment no inputs were given

8.	Results	:	

Table : Performance of the technology

Experimental Treatments	No. of Trials	Mean Difference in knowledge gain (Pre and Post) (25 items in each treatment)	Evaluation Efficiency (Max.score: 6.0)	Difficulty Index of Items
Treatment 1	One Training	19.20	4.60	0.58*
Treatment 2		21.40	5.20	0.58
Treatment 3 (Check)		14.30	3.80	0.72

* As the treatment 1 and treatment 2 are same during the training and the treatment 2 differs only after the training is over, the value for Difficulty Index is same for T1 and T2

Treatment 1- The respondents were asked to identify the materials pertaining to the training and answer questions pre and post training

Treatment 2- Treatment 1 + Following up at frequent intervals for a season

Treatment 3- Check- Regular pre and post evaluation using questionnaire

Mean Difference in Knowledge gain refers to the difference of the score obtained by participants in the evaluation conducted before and after the training

Evaluation Efficiency refers to the perceived opinion of the participants about the Evaluation procedure wherein the degree of involvement of the participants, perceived effectiveness of the treatments in terms of evaluating the outcome of the training.
The Degree of Involvement was measured using a scoring procedure wherein 3 score was given for higher involvement, 2 and 1 scores were given for moderate and lesser involvement.
Perceived effectiveness was measured using scoring procedure wherein 3, 2 and 1 were assigned for highly effective, Effective and lesser effective responses of training participants. The scores of degree of Involvement and perceived effectiveness were cumulated for each respondent in each of the treatment and mean was worked out. Here maximum score one can get was 6 and minimum was 3.

Difficulty Index is the measure of how the test takes feels about the items whether it was easy or difficult. It was worked out using the procedure of Kelly method of dichotomization wherein the respondents were arranged in descending order of the total score obtained for twenty five items and then the respondents were divided into two groups of upper 25% and lower 25%.

Difficulty Index = R.H+R.L/N.H+N.L

R.H- The respondents rightly answered in Higher group
R.L-The respondents correctly answered in lower group

N.H-Number of respondents in Higher group
N.L-Number of respondents in Lower group

Data on other Indicators

Experimental Treatments	Discrimination Index	Mean Knowledge Retention	Mean Adoption Index	Net Change in Income (In Rs)
Treatment 1	0.38**	82.20	62.50	7750
Treatment 2	0.38	91.32	81.25	12520
Treatment 3 (Check)	0.21	74.41	51.20	3450

* As the treatment 1 and treatment 2 are same during the training and the treatment 2 differs only after the training is over, the value for Discrimination Index is same for T1 and T2

Discrimination Index is the degree to which an item discriminates a knowledgeable respondent and less knowledgeable in at test. As that of Difficulty index here also the entire group is divided into higher and lower group and the Discrimination Index was worked out using the following formula

Discrimination Index = R.H-R.L/N.H or N.L

R.H- The respondents rightly answered in Higher group
R.L-The respondents correctly answered in lower group
N.H-Number of respondents in Higher group
N.L-Number of respondents in Lower group

Adoption Index in the present experiment refers to degree of adoption of practices given during the training to the participants. The participants were contacted after a reasonable time gap after the training was over and asked about how many practices they adopted. The following formula was used to find out the adoption Index

$$\textbf{Adoption Index} = \frac{\text{Number of practices Adopted by respondents}}{\text{Number of practices taught to respondents during the training}} \times 100$$

Knowledge Retention refers to the degree to which a participant of the training retain the knowledge he gained in the training after a reasonable time limit. In this Experiment the fish farmers were asked about the questions which has been asked during the training evaluation. They will be assessed whether they could retain their position in terms of the knowledge gained during the training. In otherwords, whether the participants answered correctly to the question which he/she answered correctly during the training.

$$\textbf{Knowledge Retention} = \frac{\text{Number of practices answered correctly by trainees during the training}}{\text{Number of practices answered correctly by trainees after one month of the training was over}} \times 100$$

Net Change in Income/ha took into account additional income, reduced cost for the respondents due to the adoption of technologies related to fish culture taught during the training sessions

9	Constraints	:	The researcher did find difficulty in reaching to the trainees once the training was over. Hence, data collection from the registered trainees after the training was over relying on the trainees memories was a sheer constraint which had a say on the outcome
10	Feedback of the farmers involved	:	The trainees took part in the evaluation of the training found it interesting on seeing the exhibits about the training and their involvement was also enhanced. They were of the view that such evaluations should be a part of every training. Further, reaching out to them after a time gap was really making them refresh about the training and motivated them to adopt technologies
11	Feed back to the scientist who developed the technology	:	This is a strategy tested by this experiment and the Extension Scientist should improvise doing experiments with different alternative methods of training evaluation which would not only improve the depth for the subject and for the effectiveness of the training

5.Assessment of different coating formulations to improve the shelf life of fruits and vegetables

1	Thematic area	:	Home science
2	Title	:	Assessment of different coating formulations to improve the shelf life of fruits and vegetables
3	Scientists involved	:	S.Kamalasundari SMS (FSN)
4	Details of farming situation	:	Clay loamy soil
5	Problem definition / description: (one paragraph)	:	• Poor Shelf life of fruits and vegetables because of its perishables in nature. • Lack of Post harvest facilities i.e Non availability of refrigerated transport and cold storage facilities for food manufacturers and sellers.
6	Technology Assessed: (give full details of technology as well as farmers practice) Technology 1 ICAR-IINRG, Ranchi, 2019	:	• Increases shelf life of Brinjal 17 days and Tomato 25 days also preserves moisture. • This help in long-distance tranportation of fruits and vegetables and helps in getting a wider market. • Shelf life enhancement, improved cosmetic appearance, specially gloss, mechanical strength of produce and prevent pathogenic attacks of vegetables like brinjal, and tomato

	Technology II TNAU Fruity Fresh		• Increases shelf life of Brinjal 14 days and Tomato 22 days also preserves moisture. • This help in long-distance tranportation of fruits and vegetables and helps in getting a wider market. • Shelf life enhancement, improved cosmetic appearance, specially gloss, mechanical strength of produce and prevent pathogenic attacks of vegetables like brinjal, and tomato
	Farmers Practice		No such practice and sell for desperate sales
7	Critical inputs given: (along with quantity as well as value)	:	Coating formulations for brinjal ,tomato ICAR-IINRG- 2 lts TNAU Fruity Fresh- 4 lts
8	Results:	:	To1 Increases shelf life of Brinjal 17 days and Tomato 25 days also preserves moisture. To2 Increases shelf life of Brinjal 14 days and Tomato 22 days also preserves moisture.

Table 1 : Performance of the technology

Brinjal

Technology Option	***No.of trials***	***Yield (q/ha)***	***Gross cost (Rs/ha)***	***Net (Rs./ha)***	***B:C***	***Data on Other performance indicators****
Farmers Practice *No such practice*	*05*		*90000*	*Profit* *675000* *585000*	*6.50*	
Technology 1(Mention details) ICAR-IINRG, Ranchi, 2019		*450*	*90000/hectare+ 1200*= cost of production 91200	*Profit* *675000* *583800*	*6.40*	The solution was tested at 2% and 4%, with brinjal and tomatoes dipped for 5 minutes, and with water used as the control dip for the same lengths of time.
Technology 2(Mention details) TNAU Fruity Fresh 05			*90000*	*Profit* *675000* *585000*	*6.50*	

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

Tomato

Technology Option	***No.of trials***	***Yield (q/ha)***	***Gross cost (Rs/ha)***	***Net (Rs./ha)***	***B:C***	***Data on Other performance indicators****
Farmers Practice No such practice	*05*		*95000*	*Profit 5,40,000 = 4,45,000*	*4.68*	
Technology 1(Mention details) ICAR-IINRG, Ranchi, 2019		*450*	*95000/hectare+ 1200*= cost of production 96200	*Profit 5,40,000 4,43,800*	*4.61*	The solution was tested at 2% and 4%, with brinjal and tomatoes dipped for 5 minutes, and with water used as the control dip for the same lengths of time.
Technology 2(Mention details) TNAU Fruity Fresh	05		*95000*	*Profit 5,40,000 = 4,45,000*	*4.68*	

Table2: other indicators for brinjal

Parameters for Brinjal	ICAR-IINRG, Ranchi, 2019		TNAU Fruity Fresh	
	2%	4%	2%	4%
Shelflife	14	17	12	14
% firmness	35%	45%	30%	35%
Peel colour	Changes only 14th day	Changes only 17th day	Changes only 12th day	Changes only 14th day
% cumulative weight loss Initial- final day	8.1%	5.2%	10 %	7.2%

Table3: other indicators for Tomato

Parameters for Tomato	ICAR-IINRG, Ranchi, 2019		TNAU Fruity Fresh	
	2%	4%	2%	4%
Shelflife	22	25	20	22
% firmness	45 %	50 %	40%	45%
Peel colour	Changes on 22nd day	Changes only 25th day	Changes only 20th day	Changes only 22nd day
% cumulative weight loss Initial- final day	10.1%	8.2%	10%	7.2%

9	Constraints	:	-
10	Feedback of the farmers involved	:	This technology gives better result , As they don't have storage facility for storing the harvested produce for more than three days and the traders come to farmers field and collect the produce the benefits of the technology cannot be relished by farmers.
11	Feed back to the scientist who developed the technology	:	This technology can be well practiced by FPO who are involved in sale of Fruit and vegetables rather than individual farmers because of storage facilities

6. Assessment of black soldier fly (*Hermetiaillucens*) larvae as alternate protein source in poultry feed

1. Thematic area: Feeding Management
2. Title: Assessment of black soldier fly (*Hermetiaillucens*) larvae as alternate protein source in poultry feed
3. Scientists involved: Dr.M.Sabapathi, SMS (VAS) and Programme Coordinator
4. Details of farming situation
   - ❖ Location of trial
     Mostly delta farmers rearing backyard poultry by feeding only cultivated grains and grazing. They are reluctant to purchase commercial feed due to cost.
   - ❖ Major birds
     Peruvadai, siruvadai, aseel and other native birds
   - ❖ Season
     Round the yera
   - ❖ Farming situation(Irrigated/Rainfed)
     Back yard in dela district
   - ❖ Climatic condition during the cropperiod
     The annual rainfall of Needamangalam during 2020-2021 was 1237.7 mm. Vaduvur and Devankudi villages received an average rainfall of 43.8 mm with 3 rainy days in August, 164.6 mm of rainfall in 5 rainy days during September, 108.2 mm of rainfall in 4 rainy days in October, 180.8 mm of rainfall in 9 rainy days in November and 373.5mm rainfall in 12 rainy days during December 2020. During the crop period (August 2020 – Jan 2021), totally 917.3 mm of rainfall was receivedin34rainydays.
5. Problem definition /description
   - Mostly delta farmers rearing backyard poultry by feeding only cultivated grains and grazing. They are reluctant to purchase commercial feed due to cost.
   - Poor weight gain.
   - Less farmincome.
   - The main objective of the study was to assess the feeding of commercial feed with or without black soldier fly(BSF)

6. TechnologyAssessed

Conventional formulated feed

Conventional feed substituted with 8 % BSF larvae (2% dry matter)

No protein source (Fish meal/worms)

7. Critical inputsgiven – ZSB was supplied by TNAU at free of cost

Name of the critical inputs	Quantity (kgs)
Feed, BSF larvae	10kg TANUVAS feed, 10kg larvae

8. Results

Table : 1. Performance of the technology

Technology Option	*No.of trials*	*Yield body weight(Kg/bird)*	*Gross cost (Rs/h*	*Net Returns Rs./ha)*	*B:C*	*Data on Other performance indicators**
FP:No protein source (Fish meal/worms)	10	0.75	187.5	107.5	2.3	
TO1:Conventional formulated feed		1.2	300	157.74	2.1	
TO2:Conventional feed substituted with 8 % BSF larvae (2% dry matter)		1.4	350	228.48	2.9	

Description of the results

Parameters	**Farmers Practice**	**Technology Option 1**	**Technology Option 2**
Body weight at market age	0.75	1.2	1.4
Feed intake (Kg)	3.5	3.89	4.1
FCR	4.7	3.2	2.9
Cost of production/bird	80	142.26	121.52
Profit/bird	187.5	300	350
Net return (Rs. /bird)	107.5	157.74	228.48
B:C ratio	2.3	2.1	2.9

The On farm trials were conducted in 5 farmers field at Melapovathur, Perumangalam, Avikottai, and Nadupadugai villages during Rabi season 2020-21. KVK

offered off campus training, distributed critical inputs to the beneficiaries and demonstrations were carried out. The yield and other parameters recorded in OFT trials are presented below

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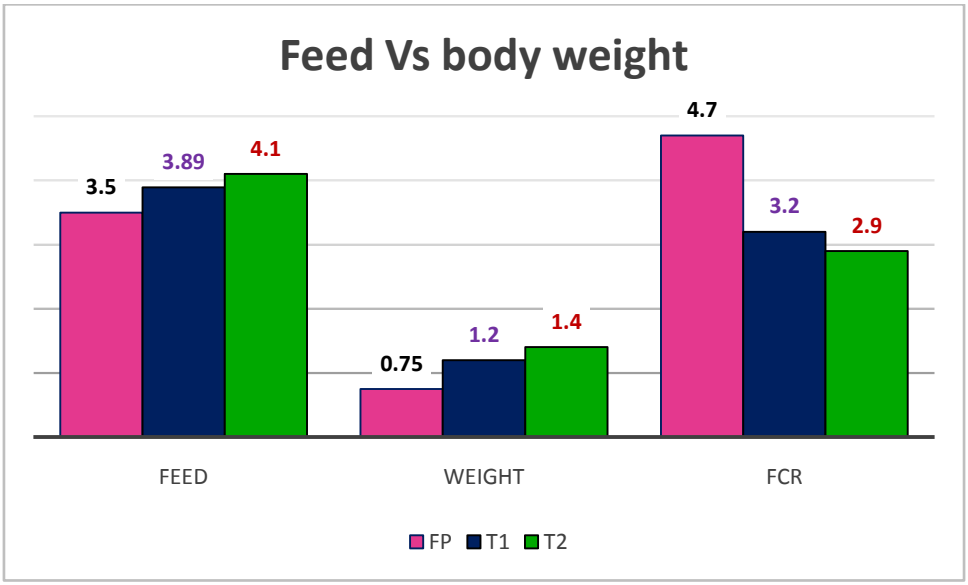


Results from OFT clearly indicated that the feeding of commercial feed with black soldier fly had positively influenced the feed intake and T2 recorded maximum feed in take of 4.1 kg followed by 3.89 and 3.5 kg respectively for T1 and FP. It is also noted that the feeding of commercial feed with black soldier fly had positively influenced bird's growth to reach maximum body weight of 1.4 kg as compared to 1.2 kg and 0.75 kg for the commercial feeding without black soldier fly(T1) and only grain feeding (FP) respectively. Lowest FCR of 2.9 was recorded for T2 where as FCR for FP and T1 were 3.2 and 4.7.

Constraints faced: Investing for commercial feed is difficult to farmers

9. Feed back of the farmersinvolved

Black soldier fly feeding improved palatability, feed intake and drastically reduced FCR.

10. Feed back to the scientist who developed thetechnology – Easiest method to produce BSF

7. Assessment of Feed additives to improve milk quantity and composition in Dairy cattle

1. Thematic area: Feeding Management
2. Title: Assessment of Feed additives to improve milk quantity and composition in Dairy cattle
3. Scientists involved: Dr.M.Sabapathi, SMS (VAS) and Programme Coordinator
4. Details of farming situation
   - ❖ Location of trial
     Mostly delta farmers rearing dairy cows in paddy straw feeding with grazing or minimum use of green fodder. Milk price is fixed based on Milk fat alone on milk fat with SNF. Low milk fat is the only major factor farmers are getting low price for sale of their milk
   - ❖ Major dairy cattle: Jersey, HF and Umbalacherry
     - ❖ Season:Round the year
   - ❖ Farming situation(Irrigated/Rainfed)
     Back yard in dela district
   - ❖ Climatic condition during the cropperiod
     The annual rainfall of Needamangalam during 2020-2021 was 1237.7 mm. Vaduvur and Devankudi villages received an average rainfall of 43.8 mm with 3 rainy days in August, 164.6 mm of rainfall in 5 rainy days during September, 108.2 mm of rainfall in 4 rainy days in October, 180.8 mm of rainfall in 9 rainy days in November and 373.5mm rainfall in 12 rainy days during December 2020. During the crop period (August 2020 – Jan 2021), totally 917.3 mm of rainfall was receivedin34rainydays.
5. Problem definition /description
   - Mostly delta farmers rearing cross bred cows by feeding only paddy straw and grazing. They are reluctant to purchase commercial feed due to cost.
   - Low fat percentage in milk leads to low selling cost of milk.
   - Less farmincome.
   - The main objective of the study was to assess the feeding of 2% Sodium Bi Carbonate with or without yeast supplementation
6. TechnologyAssessed

FP-Conventional formulated feed

T1-Conventional feed with 2% Sodium Bi Carbonate

T2-Conventional feed with 2% Sodium Bi Carbonate and yeast supplementation

7. Critical inputsgiven

Name of the critical inputs	Quantity (kgs)
Technical Knowledge	-

8. Results

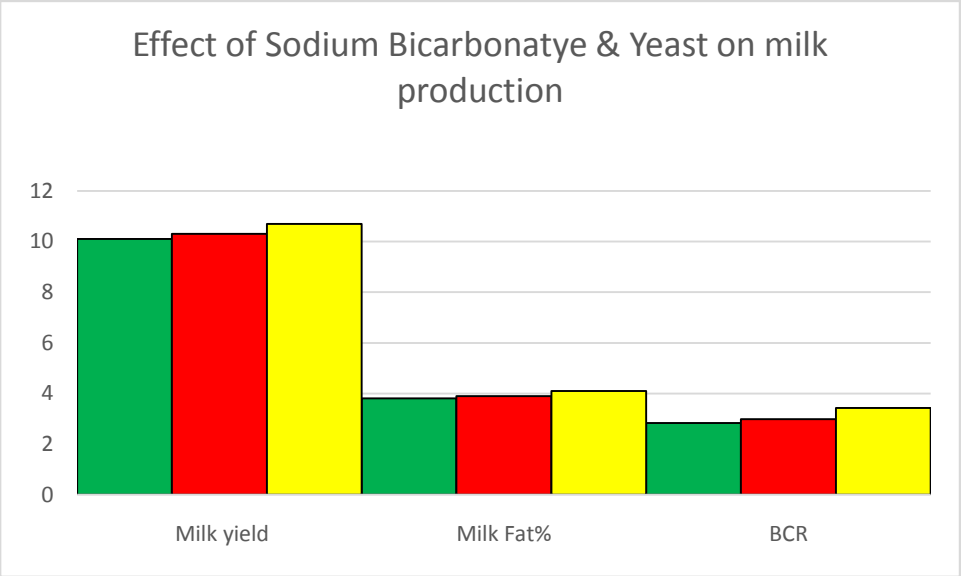
Table : 1. Performance of the technology

Technology Option	*No.of trials*	*Milk Fat Yield (Kg/cow)*	*Gross cost (Rs/co*	*Net Returns (Rs./Cow)*	*B:C ratio*	*Data on Other performance indicators**
FP-Conventional formulated feed	10	10.1	282.8	182.8	2.8	
T1-Conventional feed with 2% Sodium BiCarbonate		10.3	298.7	198.7	3	
T2-Conventional feed with 2% Sodium BiCarbonate and yeast supplementation		10.7	342.4	242.4	3.4	

Description of the results

Parameters	Farmers Practice	Technology Option 1	Technology Option 2
Milk yield	10.1	10.3	10.7
Milk fat %	3.8	3.9	4.1
Cost of production	100	100	100
Profit/Cow	182.8	198.7	241.4
Net return (Rs. /bird)	282.8	298.7	341.4
B:C ratio	2.8	3	3.4

The On farm trials were conducted in 5 farmers field at Melapovathur, Perumangalam, Sittilingam and during Rabi season 2020-21. KVK offered off campus training, distributed critical inputs to the beneficiaries and demonstrations were carried out. The yield and other parameters recorded in OFT trials are presented below



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Results from OFT clearly indicated that the feeding of commercial feed with sodium bi carbonate and Yeast had positively influenced the milk yield and T2 recorded maximum milk yield of 10.7 litters followed by 10.3 and 10.1 litters respectively for T1 and FP. It is also noted that highest milk fat parentage of 4.1 was recorded for T2 followed by 3.9 for T1 and 3.8 for FP.

Constraints faced: Investing for commercial feed is difficult to farmers

9. Feed back of the farmersinvolved:Good and easy practice

10. Feed back to the scientist who developed thetechnology Lack of awareness about concentrate feeding and feed supplements

Frontline Demonstrations in Detail

a. Follow-up of FLDs implemented during previous years

1. Technology-1

Crop/Enterprise: **Paddy**

Thematic area: **Plant protection**

Technology Demonstrated as a follow-up from OFT: -

Feed back sent to the Research System: The field water tube is easy to adopt all the farmers. It needed in-depth studies to calculate the quantum of water saved as against conventional method.

Details on the performance of the technology sent to the Extension Department: The technology was disseminated through monthly zonal workshop, regular joint field visits and Jal Sakthi Abhiyan.

Horizontal spread of the technology (No. of Villages, farmers and area in ha): Totally 6 villages were adopted this technology with an area of 29 hectares of 72 farmers.

b. Details of FLDs implemented during the reporting period

Technology 1: Demonstration of ICM for Salt affected soils of Thiruvarur District

Crop	:	Paddy
Thematic area	:	Integrated Crop Management
Technology demonstrated	:	Demonstration of ICM for Salt affected soils of Thiruvarur District
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	10
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	4
Actual area (ha)	:	4
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	Paddy variety, CSR 36 recorded more number of productive tillers per hill, higher grain yield, tolerant to saline and drought condition and performed very well compared to check variety BPT. So, the paddy variety CSR36 would be better option for saline condition
Feedback of the Scientist	:	CSR 36 performed very well in the salt affected areas. Grain type was long slender than TRY 3 and it also tolerant to drought also. Paddy grain also suitable for cooking. There are interested to grow in the forthcoming season.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	One off campus training on ICM in salt affected soils was conducted on 18.9.2020 at thiruvalanchuzhi One paper news on field visit of CSR 36 paddy variety at Thiruvalanchuzhi village in Dinathanthi 9.1.20221 Another one paper news on variety assessment for salt affected soils field at Thiruvalanchuzhi village in Dinakaran 11.1.20221

	Check	Demo
Yield (Q/ha)	47.34	52.45
Gross cost (Rs/ha)	42000	45000
Gross return (Rs/ha)	85212	94410
Net return(Rs/ha)	43212	49410
BCR	2.03	2.10

Technology2 :Demonstration of Traditional rice variety (Mapillai samba) with Eco friendly management

Crop	:	Paddy
Thematic area	:	Integrated Crop Management
Technology demonstrated	:	Demonstration of Traditional rice variety (Mapillai samba) with Eco friendly management
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	10
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	4
Actual area (ha)	:	4
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	The highest yield in check plot was 47.34q/ha whereas in demo it was 39.25q/ha. The BCR of demo plot was 2.04and control plot 1.55. Though the yield was comparatively low, market price of organic rice seed and grain were higher. This variety is tolerant to pest, disease and flooding
Feedback of the Scientist	:	
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Two off campus training on Cultivation of Traditional paddy varieties in organic farming was conducted on 18.11.2020 and 15.12.2020 at Veeramangalam and Sarabojirajapuram One field day was conducted on 05.02.2021at Sarabojirajapuram, Kudavasal block Awareness on cultivation of traditional paddy variety was published in dinakaran on 21.12.2020 Field visit on FLD was published in dinakaran on 22.11.2020

	Check	Demo
Yield (Q/ha)	47.34	39.25
Gross cost (Rs/ha)	55000	48000
Gross return (Rs/ha)	85212	98125
Net return(Rs/ha)	30212	50125
BCR	1.55	2.04

Technology-3: Demonstration of Newly released medium duration Paddy variety ADT 54 with ICM in Thiruvarur District

Crop	:	Rice
Thematic area	:	Varietal Demonstration
Technology demonstrated	:	Demonstration of Newly released medium duration Paddy variety ADT 54 with ICM in Thiruvarur District
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	10
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	4
Actual area (ha)	:	4
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	Paddy *var.* ADT 54 recorded as maximum productive tillers per hill, higher panicle length, more number of grains per panicle, and higher grain yield. This variety performs very well during Thaladi season and it can be better replacement for BPT 5204, in terms of pest and diseases. This variety performed as resistant to leaf folder and stem borer.
Feedback of the Scientist	:	ADT 54 variety recorded as maximum productive tillers per hill, higher panicle length, more number of grains per panicle, and higher grain yield. This variety performed very well during Thaladi season and it can be better replacement for BPT 5204. This variety performed as resistant to leaf folder, stem borer and blast disease. Further, the

		famers are interested to grow in the forthcoming season.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	One off campus training on ICM in Paddy Variety ADT 54 was conducted on 26.12.2020 at Salipery village One Field Day on ICM in Paddy Variety ADT 54 was conducted on 01.02.2021 at Salipery village One paper news on Off-campus training on ICM in ADT 54 conducted at Salipery village was published in Dinakaran on 04.01.2021. One more paper news on Field Day on ICM in ADT 54 conducted at Salipery village was published in Dinakaran on 10.02.2021.

	Check	Demo
Yield (Q/ha)	41.60	59.20
Gross cost (Rs/ha)	41500	43400
Net return(Rs/ha)	48647	84886
BCR	2.17	2.96

Technology -4: Demonstration of Newly released medium duration fine grain Paddy variety VGD 1 with ICM in Thiruvarur District

Crop	:	Rice
Thematic area	:	Varietal Demonstration
Technology demonstrated	:	Demonstration of Newly released medium duration fine grain Paddy variety VGD 1 with ICM in Thiruvarur District
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	10
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	4
Actual area (ha)	:	4
Justification for shortfall if any:	:	Nil

Feedback from farmers	:	Paddy variety, VGD 1 recorded as maximum productive tillers per hill and maximum yield. This variety performs very well during Thaladi season and it can be better replacement for BPT 5204, in terms of non-lodging and resistance in pest and diseases. Further, the grain of this VGD 1 is a super fine and its cooking quality also fine as Seeragasampa. It is suitable for making biryani and khushka. Therefore, sale of this variety grains yield more income.
Feedback of the Scientist	:	Paddy *var.* VGD 1 performed very well during Thaladi season and it can be better replacement for BPT 5204. Further, it is also an alternative to Seeragasampa, traditional rice variety. This variety performed very well and it withstand under heavy rainy season because of its semi dwarf and non-lodging nature. Paddy grain also suitable for cooking as Seeragasampa. It is suitable for making biryani and khushka. Therefore, the market value of this variety grain is slightly higher than check. The famers are interested to grow in the forthcoming season.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	One off campus training on ICM in Paddy Variety VGD 1 was conducted on 18.12.2020 at Vaduvur- Pudukkottai. One Field Day on ICM in Paddy Variety VGD 1 was organized on 25.01.2021 at Melavasal village, in which The Director of Extension Education, TNAU and The Director (TRRI) were participated. Two paper news on field visit of VGD 1 paddy variety at Vaduvur- Pudukkottai village was published in Dinakaran and Dinathanthi on 22.12.2020.

	Check	Demo
Yield (Q/ha)	41.80	56.00
Gross cost (Rs/ha)	41500	44400
Net return(Rs/ha)	49039	95600
BCR	2.18	3.15

Technology5 :Demonstration of IPM modules and use of Field water tube for the management of BPH in Paddy

Crop	:	Paddy
Thematic area	:	Plant Protection
Technology demonstrated	:	Demonstration of IPM modules and use of Field water tube for the management of BPH in Paddy
Season and year	:	Samba & 2021
Farming situation	:	Wetland
Source of fund	:	ICAR - KVK
No of locations (Villages):	:	Vaduvur - Saathanur
No. of demonstrations (replications/farmers/beneficiaries):	:	10 Nos.
No of SC/ST Farmers and women farmers:	:	2 Nos.
Area proposed (ha):	:	4 ha
Actual area (ha)	:	4 ha
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	It is very easy to install in the field and affordable to all the farming community.
Feedback of the Scientist	:	Farmers are using this technology during the crop period and it can be incorporated in the Tamil Nadu Government schemes.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Farmers Training: 3 Nos. Media Coverage : 7 nos. Extension Functionaries: 2 Nos.

	Check	Demo
Yield (Q/ha)	56.68	66.19
Gross cost (Rs/ha)	90042	121279
Net return(Rs/ha)	48699	81279
BCR	1.54	1.67

Technology6 :Demonstration of IPDM for Gall midge and Blast in paddy

Crop	:	Paddy
Thematic area	:	Plant Protection
Technology demonstrated	:	Demonstration of IPDM for Gall midge and Blast in paddy
Season and year	:	Samba & 2021
Farming situation	:	Wetland
Source of fund	:	ICAR - KVK

No of locations (Villages):	:	Sithanvaalur
No. of demonstrations (replications/farmers/beneficiaries):	:	10 Nos.
No of SC/ST Farmers and women farmers:	:	2 Nos.
Area proposed (ha):	:	4 ha
Actual area (ha)	:	4 ha
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	The insecticide and fungicides reduces the pest and disease load.
Feedback of the Scientist	:	The demonstration may be extended in all the villages of the district, since, the gall midge problem was persistent every year.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Farmers Training: 2 Nos. Media Coverage : 7 nos. Extension Functionaries: 2 Nos.

	Check	Demo
Yield (Q/ha)	43.77	56.45
Gross cost (Rs/ha)	64,895	83,759
Net return(Rs/ha)	31,202	53,679
BCR	1.48	1.64

Technology 7:Demonstration of Bhendi as bund crop in paddy field under Thiruvarur District

Crop	:	Bhendi
Thematic area	:	Crop Management
Technology demonstrated	:	Demonstration of Bhendi as bund crop in paddy field under Thiruvarur District
Season and year	:	Kharif, 2020
Farming situation	:	Irrigated condition
Source of fund	:	ICAR-Main
No of locations (Villages):	:	3
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	3
Area proposed (ha):	:	10
Actual area (ha)	:	10
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	It is a one of the potential and alternate bund crop under paddy field in terms of

		income from the bund crop.
Feedback of the Scientist	:	When compared to other bund crops such as black gram and green gram, it is a potential bund crop under paddy field for continuous and regular, additional and supporting income source of the farmers and also effective utilization of the field bunds.
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Field Days-1 Farmers trainings-2

	Check (Black gram-VBN8)	Demo (Bhendi CO-4 Hybrid)
Yield (Q/ha)	1.14 Q/ha	12.37 Q/ha
Gross cost (Rs/ha)	6840	12370
Net return(Rs/ha)	4960	10211
BCR	1:1.73	1:1.83

Technology 8 : Demonstration of Android based mobile app Rice Expert System

Crop	:	Paddy
Thematic area	:	Agricultural Extension-Demonstration of Mobile app
Technology demonstrated	:	Demonstration of Android based mobile app Rice Expert System
Season and year	:	Kharif 2020
Farming situation	:	Wet land based Paddy- Paddy-Pulses system
Source of fund	:	KVK-Main
No of locations (Villages):	:	3 villages namely Akkaraikottagam, Sithanvalur and Karuvakurichi
No. of demonstrations	:	Three participatory workshops were held in three villages and 10 farmers each and totally 30 farmers were called for the workshop. The selection hinges on the possession of android smart mobile by the farmers. The Rice Expert System was installed in the mobile phones of the farmers and they were demonstrated about the three domains of Rice Expert System
No of SC/ST Farmers and women farmers:	:	5 SC/ST farmers and 5 women farmers were included
Area proposed (ha):	:	Not applicable
Actual area (ha)	:	Not applicable
Justification for shortfall if any:	:	Not applicable
Feedback from farmers	:	The mobile app was very useful and handy. The farmers reported that in the absence of Extension

		worker and Scientist, this app would be very much helpful. This may be further upscaled to large number of farmers
Feedback of the Scientist	:	In future years, more awareness should be created among paddy farmers about this app
Extension activities on the FLD	:	Three participatory workshops were conducted in villages

	Test Group (n=30)	**Control Group (n=30)**
Mean Knowledge gain	39.20	22.50
Mean Skill gain	3.92	1.26
Mean adoption of technologies	7.10	4.20
Mean Utility Index of three domains of Paddy Expert System	3.22	Not applicable
Degree of Information Exchange among farmers	2.91	Not applicable
Mean cost saved	Rs. 1560-2500	Not applicable
Mean Time Saved	10 hrs-15 hrs	Not applicable
Yield	5.4 tonnes/ha	3.9 tonnes/ha
Net Income	Rs.42500	Rs.31250

Mean Knowledge gain- Twenty five questions related to paddy cultivation was asked to both respondents of test and control group. Correct answers were given with two scores. Cumulative score was obtained and mean was worked out

Mean Skill gain- Questions pertaining to Five skills which were given as videos in Paddy Expert System were asked to both test and control group respondents. One score was given for correct response. Responses were cumulated and mean was worked out

Mean adoption -Responses about the adoption of ten important technologies by both test and control group were cumulated and mean was worked out

Mean Utility Index- The data related to the utility of three domains of Paddy Expert system was collected on five point continumm namely Very high Utility, High Utility, Average utility, Low utility and Very Low Utility which were scored as 5, 4, 3, 2 and 1 respectively. The scores were cumulated and mean was calculated

Degree of Information Exchange- The extent of information sharing was calculated using three point continumn namely High, Medium and low which were scored with 3, 2 and 1 score respectively. Cumulative score was obtained and mean was worked out

Mean Cost Saved: This is the figure arrived at by asking the respondents about how much was the cost saved due to the usage of Rice Expert System in terms of correct identification of problem, correct chemical purchase and correct application in the field thereby reducing cost and increasing income

Mean time saved: This refers to the assumptive saving of time had the respondent visited ADA office, KVK or any other formal and Informal sources of information

Technology 9: **Demonstration of the Effectiveness of Virtual Training on Goat Rearing**

Crop	:	Veterinary science
Thematic area	:	Agricultural Extension-E-Extension Initiatives
Technology demonstrated	:	Demonstration of the Effectiveness of Virtual Training on Goat Rearing
Season and year	:	Rabi 2020
Farming situation	:	Wet land based Paddy- Paddy-Pulses system
Source of fund	:	KVK-Main
No of locations (Villages):	:	The Virtual training was conducted at KVK, Thiruvarur connecting the farmers on line
No. of demonstrations	:	Five virtual trainings were conducted at KVK, Thiruvarur on Backyard poultry, Coconut Production technologies, Vermicomposting, Pest and Diseases of Paddy, Pest and Diseases of Cotton **Only Goat rearing online training was taken for Experiment**
No of SC/ST Farmers and women farmers:	:	15 SC/ST farmers and 25 women farmers were included
Area proposed (ha):	:	Not applicable
Actual area (ha)	:	Not applicable
Justification for shortfall if any:	:	Not applicable
Feedback from farmers	:	The virtual mode of connecting to scientists has been very useful, resourceful and it could cut the barriers of time, place and cost involved in meeting scientists physically. Though it cannot replace physical trainings
Feedback of the Scientist	:	Tools are to be developed to find out the real impact of the online trainings.
Extension activities on the FLD	:	Five online trainings were conducted for which announcements were made in Karaikal FM

	Test Group (n=30)	**Control Group* (n=30)**
Mean Knowledge gain	31.28	28.34
Mean adoption of technologies	24.50	22.15
Communicative ability	2.35	2.22
Intensity of Farmer to Farmer Communication	2.46	1.96
Mean cost saved	Rs.650	NA
Mean Time Saved	15 hrs	NA
Percentage increase in yield	12%	NA
Percentage increase in Income	15%	NA

NA-Not Applicable

*** Thirty respondents who have attended physical training on Goat rearing training offered by KVK, Thiruvarur before lockdown due to COVID 19 were selected as control group. They were contacted over phone for collection of data presented in the above table**

Mean Knowledge gain- Twenty questions related to Goat rearing was asked to both respondents of test and control group. Correct answers were given with two scores. Cumulative score was obtained and mean was worked out

Mean adoption -Responses about the adoption of twenty important technologies on Goat Rearing by both test and control group were collected which were given 2 score for adoption and 1 score for non adoption. The scores were cumulated and mean was worked out

Communicative Ability- This refers to the degree to which the mode of training impact on the cognitive and affective domains of participants. This was measured through three point continuum wherein 3, 2 and 1 scores were given for the High, Medium and low communicative ability. The scores were cumulated and mean was worked out

Intensity of Farmer to Farmer Communication- This refers to the degree of triggering of farmer to farmer communication by the online trainings. A scoring procedure of 3,2 and 1 was assigned for high, medium and low intensity of Farmer to Farmer Communication

Mean Cost Saved: This is the figure arrived at by asking the respondents about how much was the cost saved due to attending online training when compared to physical training. Further, how much was the cost saved due to technologies

Mean time saved: This refers to the assumptive saving of time had the respondent visited Veterinary Dispensary, KVK or any other formal and Informal sources of information

Percentage increase in yield: This refers to the percentage increase in yield experienced by the respondents of online training after having adopted important technologies delivered during the training

Percentage increase in income: This refers to the percentage increase in income realised by the respondents of online training after having adopted important technologies related to Goat Rearing during the training

Technology10: **Demonstrating the Efficiency of Whatsapp in dissemination of technologies related to Pulses Cultivation**

Crop	:	Blackgram
Thematic area	:	Agricultural Extension-E-Extension Initiatives
Technology demonstrated	:	Demonstrating the Efficiency of Whatsapp in dissemination of technologies related to Pulses Cultivation
Season and year	:	Kharif 2020
Farming situation	:	Wet land based Paddy- Paddy-Pulses system
Source of fund	:	KVK-Main
No of locations	:	Three villages namely Pullavarayankudikadu,

(Villages):		Vaduvur Melpathi and Vaduvur Pudhukottai were selected
No. of demonstrations	:	Three participatory workshops were conducted in three villages wherein 15 pulse growing young farmers were sensitised about the experiment. Totally 45 farmers were selected. A whatsapp group namely 'KVK Pulses group' was initiated and 15 farmers have been enrolled in the group. Messages with video, pictures and text messages related to Pulse cultivation was given through the whatsapp and data was collected after the season was over.
No of SC/ST Farmers and women farmers:	:	5 SC/ST farmers
Area proposed (ha):	:	Not applicable
Actual area (ha)	:	Not applicable
Justification for shortfall if any:	:	Not applicable
Feedback from farmers	:	Farmers told that this is a new experience for them and they were appreciate of the whatsapp platform through which they can get their problems solved without visiting any places.
Feedback of the Scientist	:	More data or information needed to be collected for the impact of whatsapp platform in transferring Agriculture/allied technologies to farmers.
Extension activities on the FLD	:	Three participatory workshops were conducted in three selected villages

	Test Group (n=45)	**Control Group* (n=45)**
Mean Knowledge gain	35.80	27.30
Mean adoption of technologies	8.10	5.20
Mean Communication Efficiency Index	7.48	NA
Mean cost saved	Rs. 2560	NA
Mean Yield	8.7 q/ha	5.4 q/ha
Mean Net Income	Rs.43100	Rs. 29000

NA- Not applicable

Mean Knowledge gain- Twenty questions related to blackgram cultivation was asked to both respondents of test and control group. Correct answers were given with two scores. Cumulative score was obtained and mean was worked out

Mean adoption -Responses about the adoption of ten important technologies on Blackgram cultivation by both test and control group were collected which were given 2 score for adoption and 1 score for non adoption. The scores were cumulated and mean was worked out

Mean Communication Efficiency Index- This refers to the degree to which whatsapp has effectively communicated information to the participants. This has

been measured by three domains namely content adequacy, understandability and Interactivity. These three domains were measured using the scoring of 3, 2 and 1 for high, medium and low for respective domains. Hence, a score of 9 will be the maximum to be obtained by a participant.

Mean Cost Saved: This is the figure arrived at by asking the respondents about how much was the cost saved due to Pulse production technologies that they have adopted which were given through Whatsapp

Mean yield: This refers to the increase in yield experienced by the respondents due to the adoption of improved pulse production technologies delivered through Whatsapp

Mean Net income: This refers to the increase in income realised by the respondents after
having adopted the improved pulse production technologies delivered through Whatsapp

Technology 11:Demonstration of Nutritional garden in Anganwadis in Thiruvarur district

Crop	:	Home Science
Thematic area	:	Nutritional Security
Technology demonstrated	:	Demonstration of Nutritional garden in Anganwadis in Thiruvarur district
Season and year	:	Vegetables
Farming situation	:	NA
Source of fund	:	KVK Main
No of locations (Villages):	:	05
No. of demonstrations (replications/farmers/beneficiaries):	:	05
No of SC/ST Farmers and women farmers:	:	-
Area proposed (ha):	:	2 cents
Actual area (ha)	:	2 cents
Justification for shortfall if any:	:	-
Feedback from anganwadi workers	:	Supply of quality fresh vegetables to anganwadi beneficiaries
Feedback of the Scientist	:	Good and can be implemented in many anganwadi centers If provision for fencing is given this will be the best
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Farmers Training: 3 No of participants 107 Extension Functionary training : 8 No of participants 424 Virtual programme :3 Total participants : 531

Date	Title	To whom offered	No. of participants		Total
			Male	Female	
11.09.20	Demonstration of Roof top garden	Farmers & farm womens	32	8	40
17.09.20	Training program on nutrisensitive agriculture	Extn workers ,Farm women	0	85	85
10.11.20	Zonal meeting Nutrition garden establishment	AO, AAO	25	15	40
18.09.2020	Establishment of nutrition garden using farm pond at Thiruvazhanchuly	Farmer	32	-	32
23.09.2020	Establishment of Nutrition Garden at Rani thoppu maiyam	Anganwadi workers	-	-	16
24.09.2020	Establishment of Nutrition Garden at Chitheri Alangottai, Maruvankadu	Anganwadi workers	-	-	50
29.08.2020	Creating Awareness on Garden for improving nutritional security	Anganwdi workers	31	2	33
03.09.2020	Demonstraion of Nutri Garden	Anganwdi workers	34	46	80
23.09.2020	Demonstration of Nutrition Garden for Needamangalam block	Anganwdi workers			50
01.10.20	Demonstration of Nutrition Garden for mannargudi block	Anganwdi workers			77
	10 programmes	Total			531

	Check	Demo
Yield (kg/2 cent)	-	645
Gross cost (Rs/ 2 cent)	-	7800
Expenses	-	1375
BCR	-	1:1.18

Crop& Duration	No. of plants	Economics of demonstration (Rs.)				
		Yield	Gross Cost	Gross Return	Expenses	BCR (R/C)
Bhendi 90 days	15	54	@rs 25 /kg	1350	170	7.94
Brinjal 7 months	20	120	@rs 20 /kg	2400	400	8.00

Chilli 120 days	10	30	@rs 10 /kg	300	100	3.00
Cluster bean 120 days	10	5	@rs 20 /kg	100	40	2.50
Greens	5 harvest/25 days once	55	@rs 10 /kg	550	85	6.40
Lab lab bush type 120 days	10	35 kg	@rs 20 /kg	700	80	8.75
Tomato 150 days 20 plants	20	110	@rs 10 /kg	1100	250	4.40
Bitter gourd/ridge gourd/pumpkin 3 plant	3plant	25 kg	rs 20 /kg	500	100	5.0
Radish 30 d ays		40	rs 20 /kg	800	150	5.33
		645 kg		7800	1375	5.67

Technology 12:Demonstration of Ready to eat and ready to Cook Mushroom products

Crop	:	Home Science
Thematic area	:	Value addition
Technology demonstrated	:	Demonstration of Ready to eat and ready to Cook Mushroom products
Season and year	:	-
Farming situation	:	Farmers selling mushroom as it is without any value addition which earns less income.
Source of fund	:	KVK Main
No of locations (Villages):	:	05
No. of demonstrations (replications/farmers/beneficiaries):	:	05
No of SC/ST Farmers and women farmers:	:	-
Area proposed (ha):	:	05
Actual area (ha)	:	05
Justification for shortfall if any:	:	-
Feedback from farmers	:	Technologies for preparation of products like mushroom pickle and mushroom soup mix ,mushroom papad, mushroom processing , mushroom bajji bonda mix was popularized through demonstration.
Feedback of the Scientist	:	Improved and attractive packaging,

		labeling, licensing and marketing techniques was facilitated through this demonstration. This created four entrepreneurs with good market preference, demand and earns good return as small mushroom growers 1.Mrs Sujatha of Ariyalur prepares mushroom pickle, dehydrated mushroom, mushroom idli powder, mushroom soup powder 2.Mr.Sudakar prepares Mushroom soup mix 3.Mrs Selvalaksmi prepares mushroom pickle, dehydrated mushroom, mushroom idli powder, mushroom soup powder dehydrated mushroom, mushroom soup powder $.Mrs Kalpana prepares mushroom pickle, BCR for mushroom pickle 1:1.6, mushroom soup powder, BCR 1:2.5
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Trainings : 4 Participants : 136

Date	**Title**	**To whom offered**	**No. of participants**		**Total**
22.12.2020	Preparation of value added products from mushroom	Rural youth of mushroom growers.	20	10	30
12.02.2021	Paid training on Processing and preservation techniques and value addition of mushroom	Rural youth of mushroom growers	24	12	36
30.12.2020	Paid training-Edible Mushroom cultivation	Rural youth			35
05.02.2021	Paid training-Edible Mushroom cultivation	Rural youth			35
					136

Table 1 Mushroom Pickle

	Check Ordinary pickle	Demo Mushroom
Yield	1 kg	1 kg
Gross cost (Rs/Kg)	150	250
Net return(Rs/Kg)	250	450
BCR	1: 2.67	1:2.8

Table 2 Mushroom Soup powder

	Check	Demo
Yield	1 kg	1 kg
Gross cost (Rs/Kg)	200	500
Net return(Rs/Kg)	400	1250
BCR	1:3.0	1:3.50

Technology 11 :**Popularization of TANUVAS Aseel under backyard condition**

Crop	:	Poultry
Thematic area	:	Backyard poultry
Technology demonstrated	:	Popularization of TANUVAS Aseel under backyard condition
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	4
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	-
Actual area (ha)	:	-
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	Framers are rearing non descriptive desi birds
Feedback of the Scientist	:	TANUVAS Aseel performed well in delta district under backyard condtion
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	On campus paid training on "Desi Chicken Management" conducted

	Check	TANUVAS aseel
Body weight (kg)	0.825	1.555
Feed intake (Kg)	3.29	4.75
FCR	3.99	3.05
Gross cost (Rs/Bird)	121.86	171.75
Gross return (Rs/Bird)	206.25	388.75
Net return(Rs/Bird)	84.39	217.42
BCR	1.69	2.26

Technology 12 :Demonstration of rumen bypass fat to meet out the early energy deficiency in CBJ and CBHF

Crop	:	Dairy cow (CBHF)
Thematic area	:	Bypass fat
Technology demonstrated	:	Demonstration of rumen bypass fat to meet out the early energy deficiency in CBJ and CBHF
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	5
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	-
Actual area (ha)	:	-
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	Lack of awareness and availability,
Feedback of the Scientist	:	Farmers are interested to make themselves own
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Two off campus training on **Demonstration of rumen bypass fat to meet out the early energy deficiency in CBJ and CBHFat Perumanagalam** **Two on campus training conducted on "Dairy Cattle management"**

	Check	Demo
Milk yield /cow/day)	12.45	13.45
Gross cost (Rs/Cow/day)	100	108
Gross return (Rs/cow/day)	361.05	390.05
Net return(Rs/cow/day)	261.05	282.05
BCR	3.6	3.6

Technology13 :Demonstration of Fish silage as feed to backyard poultry farmers

Crop	:	Poultry
Thematic area	:	Fish silsge
Technology demonstrated	:	Demonstration of Fish silage as feed to backyard poultry farmers
Season and year	:	Rabi, 2020-2021
Farming situation	:	Irrigated
Source of fund	:	ICAR
No of locations (Villages):	:	5
No. of demonstrations (replications/farmers/beneficiaries):	:	10
No of SC/ST Farmers and women farmers:	:	2
Area proposed (ha):	:	-
Actual area (ha)	:	-
Justification for shortfall if any:	:	Nil
Feedback from farmers	:	Very profitable, but acid smell is realized, very pasty in nature, Good palatability but Lack of awareness and availability,
Feedback of the Scientist	:	Fast drying with this technology can improve the use
Extension activities on the FLD (Field days, Farmers training, media coverage, training to Extension Functionaries)	:	Two off campus awareness programme on **Demonstration of Fish silage as feed to backyard poultry farmers"**

	Check	Demo
Body weight/Bird (kg)	0.8	1.05
Feed intake /bird(kg)	3	3
FCR	3.75	2.86
Gross cost (Rs/Bird)	102	112
Gross return (Rs/bird)	200	262.5
Net return(Rs/bird)	98	150.5
BCR	1.96	1.74

Technology Week Celebrations : Nil

Training/workshops/seminars etc. 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.A. Anuratha	On line Training on Advances in Rice Research for Food Security and Environmental Sustainability	13.08.2020	1 day	TRRI, Aduthurai
Dr.A. Anuratha	2nd National conference of Society of Krishi Vigyan on Advances in sustainable Agriculture (Web conference)	26.09.2020 to 28.09.2020	3 days	Society of Krishi Vigyan
Dr.A. Anuratha	Attended online 5th National Conference on Agricultural Scientific Tamil conducted by TNAU	09.10.2020 to 10.10.2020	2 days	Velan Areeveyal tamil eyakkam, Puthudelhi
Dr.A. Anuratha	Attended online 6th *National Conference on Agricultural Scientific Tamil* conducted by Agricultural Scientific Tamil Society, New delhi jointly with M S Swaminathan Research Foundation Campus, Taramani, Chennai	21.12.2020 to 22.12.2020	2 days	Velan Areeveyal tamil eyakkam, Puthudelhi
Dr.M.Selvamurugan	On line Training on Advances in Rice Research for Food Security and Environmental Sustainability	13.08.2020	1 day	TRRI, Aduthurai
Dr.M.Selvamurugan	Urban Forestry and Air quality	10.09.2020	1 day	Forest College &Research Institute, Mettuppalayam, Coimbatore dt.
Dr.M.Selvamurugan	Attended online 5th National Conference on Agricultural Scientific Tamil conducted by TNAU	09.10.2020 to 10.10.2020	2 days	Velan Areeveyal tamil eyakkam, Puthudelhi

Dr.M.Selvamurugan	5-days online training on 'Production Protocol for Biofertilizers'	04.01.2021 to 08.01.2021	5 days	National Institute of Plant Health Management, Hyderabad
Dr. R. Jagadeesan	Advances in Rice Researches for Food Security and Environmental Sustainability	13.08.2020	1 day	Tamil Nadu Rice Research Institute, Aduthurai, Thanjavur dt.
Dr. R. Jagadeesan	Urban Forestry and Air quality	10.09.2020	1 day	Forest College &Research Institute, Mettuppalayam, Coimbatore dt.
Dr.S.Kamalasundari	Post Harvest Management & Storage Techniques'	07/09/20 – 11/9/20	5 days	National Institute of Plant Health Management, Hyderabad
Dr.S.Kamalasundari	Promoting Nutrition Sensitive Agriculture among Field level Women Extension Officers in Southern India	16.03.21 to 20.03.21	5 days	Extension Education Instiute , Hyderabad
Dr.S.Kamalasundari	6th National Conference on Agricultural Scientific Tamil at International Institute of Tamil Studies, M S Swaminathan Research Foundation Campus, Taramani, Chennai	21.12.2020 to 22.12.2020	2 days	Velan Areeveyal tamil eyakkam, Puthudelhi
Dr.S.Kamalasundari	2nd National Conference of Advances in sustainable agriculture	26 and 28th September 2020	3 days	Society of Krishi Vigyan Krishi Vigyan
Dr.S.Kamalasundari	National webinar on Sustaining Pulse Production for Self Sufficiency and Nutritional Security''	February 9-11, 202	3 days	Indian Institute of Pulses Research and Development ,ICAR, Kanpur
Dr.V. Radhakrishnan	On line Training on Advances in Rice Research for Food Security and Environmental Sustainability	13.08.2020	1day	TRRI, Aduthurai
Dr.V. Radhakrishnan	On line Training on Stored grain pest Detection, Identification and Management	05.10.2020 to 09.10.2020	5 days	National Institute of Plant Health Management, Hyderabad

Details of sponsored projects/programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1.	NICRA	ICAR	Introduction of Climate resistant varieties – flood tolerant varieties CR 1009 sub1 and Swarna Sub1 Natural Resourses management	April 2020-March 2021	11.00
2.	"Revival of Millets in Cauvery Delta through Capacity Building on Improved production Technologies and Value Addition in Millets"	SBGF	• The prime objective is to bring back millets in the Cauvery Delta as the cultivation of millets was in vogue during 4-5 decades back. • The project envisages increasing the per capita income of the resource poor farmers on hand and ensuring better nutrient security to them. • The project aims to reduce the poverty through generation of employment opportunities by adoption of millets processing and value addition activities there by increasing the income status.	2015- 2020	16.15
3.	ICAR- Cluster Frontline Demonstration on Pulses 2020–21 Under NFFSM	NFSM	• To Implement the CFLD on pulses (Black gram and Green gram) for the year 2020-21 for improving the productivity of the pulse crops like Black gram and Green gram in Thiruvarur District. • To increase the area under Pulse crops viz., Black and Green gram in Thiruvarur district through Cluster approach and thus increase the farmers income	April 2020-March 2021	3.60
4.	DAMUs- Setting up of District Agro-met Unit	IMD Sponsored and ICAR-ATARI-	• To establish District Agro-Met (DAMU) at KVK, Needamangalam • To record and maintain the weather related observations at KVK and share the same to the ICAR	Continuous project from 2020-21	1.2 lakhs

		Zone-X-Hyderabad sanctioned	&imd As per the MoU • To generate specific advisories for agricultural management and disseminate the same to the farming community.		

Please attach detailed report of each project/programme separately

1.NATIONAL INNOVATIONS ON CLIMATE RESELIENT AGRICULTUE (NICRA)

Background

Climate change has become an important area of concern for India to ensure food and nutritional security for growing population. The impacts of climate change are global, but countries like India are more vulnerable in view of the high population depending on agriculture.

Technology Demonstration

The technology demonstration component deals with demonstrating proven technologies for adaptation of crop and livestock production systems to climate variability. Several interventions in the village panchayats are finalized following a participatory approach through the Village Climate Risk Management Committee (VCRMC), after the PRA to assess the climate related problems in the village and baseline survey.

Early Outcome:

The project has made significant initial impact and was well received in most of the districts. Technologies such as on-farm water harvesting in ponds, supplemental irrigation, introduction of early maturing drought tolerant varieties, paddy varieties tolerant to sub-mergence in flood prone districts, improved drainage in water logged areas, recharging techniques for tube wells, site specific nutrient management and management of sodic soils, mulching, use of zero till drills were enthusiastically implemented by the farmers in NICRA villages across the country.

Overall, the project has generated high enthusiasm among farmers and raised hopes that by combining technology solutions with community mobilization, we can help small and marginal farmers to cope with current climate variability, to some extent.

2. Revival of Millets in Cauvery Delta through Capacity Building on Improved production Technologies and Value Addition in Millets"

Progress of activity

Initiation was taken to cultivate millets and extend the area of cultivation in the Koradacherry ,and Mannargudi block

- purchase and installation of millet processing machienes *viz.*, Destoner cum grader , Dehuller, Pulveriser, Flour sifter, baking oven and installed at SHG unit at Vishwanathapuram
- Training was imparted to the SHG members on value added products in millets
- Purchased seeds of Kudiraivali (MDU 1, CO1, CO2) from Millet Research Station, Athiyanthal and distributed to farmers and SHG group
- Bio inputs like Vermicompost,Composed coir pith and pseudomonas was distributed to farmers.
- Value added products using millets viz., health mix, cookies was distributed.

- Completedfive trainings entitled Integrated crop management and value addition in millets at ADA office(05.11.2020), Uthurankudi (11.11.2020), Ettayur (19.11.2020) of Koradachery block
- Technology delivered includes importance and ruling varieties of millets
- Nutrient and Therapeutic properties of millets
- Integrated crop management in millets
- Processing techniques and Value addition of millets
- Hands on training on millets cookies preparation
- Distribution of Booklets and Pamplets on millets
- Total number of beneficiaries -300 farmers
- Conducted five field days at panicle stage, tillering stage and harvest stage

SUCCESS STORIES

1.Organic farming in traditional paddy - a profitable venture

1.Situation analysis/Problem statement:

Mr.R.Mayilvaganum is a 50 years old farmer residing at Veeramangalam, Valangaiman block of Thiruvarur district. He is involved in the farming activity for the past 20 years. Earlier, he grows a medium duration BPT paddy variety under inorganic cultivation. Pest and disease incidence was higher in this variety which in turn reduced the yield and Soil health was declined. Often severely affected by drought and floodings and crop was damaged due to these incidences. Market price of the variety was less when compare to organic rice.

He has impressed by speech of Namayzavar and Nel jayaraman and he want to cultivate the paddy under organic farming.

He discussed with the scientists from ICAR - KVK, Needamangalam regarding the new technologies for cultivating traditional paddy variety. Based on the idea received from ICAR - KVK, Needamangalam he started to cultivate the traditional paddy varieties like Mapillai Samba, Seeraga Samba, Salem Channa, Karuppu Kavini, Kitchlil Samba and Poongar with guidance of Nel jayaraman. He is cultivating 8 acres of land in traditional paddy variety under organic farming. He is having 4 country cows and 20 poultry birds. He has cultivated the traditional paddy varieties with organic inputs from seed to harvest.

2. Plan, Implement and Support:

He approached the ICAR - KVK, Needamangalam for getting guidance for the intensive cultivation of Traditional paddy varieties. Moreover, he attended the useful training related to modern techniques for cultivating the organic farming like Vermicomposting technology, Preparation of composted coir pith, Preparation of waste decomposer and Ecofriendly management of pest and diseases. He started to cultivate the Traditional paddy varieties with new technologies since 2010 with the advice received from the ICAR - KVK, Needamangalam. He adopted the following recent technologies in the traditional cultivation of paddy varieties under organic farming:

- ❖ Application of Farm yard manures @ 4 ton per acre to enhance microorganism content of soil

- Multiple crops was incorporated a few days ahead of the final ploughing Multiple crops cultivation means cultivation of four crops of cereals, pulses, oilseeds, aromatic crops, green manure crops in rice field. Totally 20 kg of seeds of the above crops were broadcasted and in-situ ploughing was done at 40th day. Then it was inundated in water for decomposition. After the decomposition of these crops, rice seedlings were transplanted.
- "He grew medium-duration (140 days) traditional varieties. The seeds were treated with *Panchakavya,* and the nursery was treated with organic amendments.
- Three rounds of spray with 3 per cent solution of Panchakavya was given 15 day after transplanting. On the 30th day, a combination of coconut milk and butter milk, mixed in equal volume was sprayed in the ratio of 1:10 (0ne part spray mixture and ten part water) on the crop to promote active plant growth and tillering. On the 60th day, another round of spray with *Panchakavya* (3 per cent solution using high volume sprayer) was given. A bio-insect repellent was sprayed on the 45th day of transplantation.

3. Output:

- He was getting 5350 kg/ha in conventional planted rice. After converting to organic farming rice he got 4500 kg/ha. Though the yield was comparatively low, market price of organic rice seed and grain were higher. When he sold as organic rice seed, he got Rs 55,000/ha- and when he sold as organic rice grain, he got Rs 1,25,000/ha. Finally benefit cost ratio of organic farming was 1:2.22 for seed and 1:2.77 for grain. No symptoms of pest and diseases are seen in the field gradually after the practice of organic farming. It reduces the cost of pesticides.
- Yield of around 1500 -1800 kg of paddy are obtained in an acre roughly from all the varieties.
- Most of the organic inputs were produced by locally available materials
- These varieties are tolerant to drought and flooding

4. Outcome

- The organic rice was sold at the rate of Rs. 30 per kg, and it made organic rice cultivation more rewarding economical as well health promoting
- High quality straw for his cattle was assured.
- This made way for sustainable agriculture, using locally available natural resources with compost, vermin-compost and local seed materials. By adopting this method of organic farming, it was able to achieve better crop productivity per acre of land under scanty rainfall conditions.
- If other farmers follow the organic farming method he has practised all these years, it will greatly benefit them in maintaining sustainable agriculture and getting remunerative income from agriculture operations under uncertain and unpredictable rain fed conditions.
- This enabled me to produce 200 LIT of Panchakaviya every year. With these organic product, it was able to produce sustainable crops that are naturally better than those produced through inorganic farming practices. Every day, a minimum of 5 lit of bio repellents were produced; 100 kg of neem seed kernel with the seeds collected from 8 neem trees.

- ❖ Success story on Traditional paddy variety of Mr.Mayilvaganum was published in Pasumai vikadan and Success story on Traditional paddy variety was broadcasted in Makkal TV
- ❖ He was received Namazhavar Award at National Paddy Festival at 2012 and Successful farmers award in organic farming at Conclave of farmers programme conducted by KVK, Thiruvarur.

5. Impact:

Area under organic farming in this district was expanded from 20 ha in 2009-10 to 500 ha in 2020-21. The number of organic paddy growers also increased from 20 to 250. The unimaginable Traditional paddy production from 300 t to 2887 t is due to expanded area under organic farming and technological improvement coupled with adoption by farmers.

2.New fine grain paddy variety VGD 1 for Thaladi season in Thiruvarur district for doubling the income

1. Situation analysis/Problem statement:

Mr.Gubendran is an ardent agriculturist and he is residing at Vaduvur- Pudukkottai, Needamangalam block of Thiruvarur district. He is involved in the farming activity for the past 40 years. Earlier, he grows a medium duration BPT paddy variety under inorganic cultivation. Pest and disease incidence was higher in this variety which in turn reduced the yield and Soil health was declined. Often severely affected by drought and floodings and crop was damaged due to these incidences. Market price of this variety was also least. So an alternate variety is required with good marketing value. Under these circumstances, he visited and discussed with the scientists from ICAR - KVK, Needamangalam regarding the new varieties developed for cultivating in Thaladi season. Based on the idea received from ICAR - KVK, Needamangalam, he cultivated a new variety, VGD 1 for one acre, which having good market value.

2. Plan, Implement and Support:

He approached the ICAR - KVK, Needamangalam for getting guidance to cultivate the variety, which having high market value. Further, he attended various trainings on eco-friendly technologies for pest and disease management, soil health management, seed production technologies, etc. Consequently, ICAR KVK has supplied various inputs like good quality VGD 1 seeds, biofertilizers and other inputs, and conducted a front line demonstration on "Demonstration of Newly released medium duration fine grain Paddy variety VGD 1 with ICM in Thiruvarur District" in one acres of land at the farm of Mr.Gubendran. All technical guidance has been given to the farmer with frequent field visit. As per the technical advice, he adopted all Integrated Crop Management practices like seed treatment, integrated nutrient and water management, integrated pest management, etc.

3. Output:

The farmer harvested the VGD 1 about 130 days of duration, which is earlier compared to BPT (145 days). He opined that the pest and disease incidence also least and hence,

the cost of plant protection measures was reduced.Further, this variety performed very well and it withstand under heavy rainy season because of its semi dwarf and non-lodging in nature. He has obtained higher grain yield of 5600 kg/ha for the variety VGD 1. This VGD 1 grain is suitable for cooking of biryani and khushka as Seeragasampa. Therefore, the market value of this variety grain is higher than BPT. Through selling of grains he has earned Rs. 95,600/ ha with BCR of 3.15. When he sold BPT grains, he got only Rs. 49,039/ha with BCR of 2.18.

4. Outcome

- ❖ The variety, VGD 1 grain was sold at the rate of Rs. 30 per kg, and it made cultivation this variety as more economical rewarding.
- ❖ If other farmers follow the cultivation of VGD 1 he has practised, it will greatly benefit them through the doubling of farm income

5. Impact:

Area under VGD 1 cultivation in this district is 10 ha in 2020-21. Large numbers of farmers of Thiruvarur district are interested to cultivate this variety in the forthcoming season. By this process it is expected to extend from 100 to 200 ha in the forthcoming season.

3. **Demonstration of TNAU Bhendi Hybrid Co-4**

1.Situation analysis/Problem statement:

Mr.KR.Rajendran S/o Th.Kuthaperumal is a 59 years old farmer residing at Melanagai,Needamangalam block of Thiruvarur district. His qualification is SSLC. He is involved in the farming activity for the past 40 years. Earlier, his father adopted the traditional method of cultivating vegetables. He marketed the produce in the local market and earned a handsome profit to run the family without any savings. He owned around 8 acres of land for the cultivation.

He wants to uplift the farming activities in his own land of 8 acres. He discussed with the scientists from ICAR - KVK, Needamangalam regarding the new technologies for cultivating vegetables and other crops regularly. The problems identified are

- Limited water for vegetable cultivation
- Low yield in conventional method and variety
- Micronutrient deficiency

Based on the idea received from ICAR - KVK, Needamangalam he started to cultivating the vegetables like brinjal, chillies, tomato, bhendi, ribbed gourd, bottle gouard, snake gourd, bitter gourd and pumkin.

2. Plan, Implement and Support:

He approached the ICAR - KVK, Needamangalam for getting guidance for the intensive cultivation of vegetables. Moreover, he attended the useful training related to modern techniques for cultivating the vegetables like Pro-tray nursery, irrigation through Drip irrigation Systems. He is involved in the demonstration of IIHR vegetable special in the field.

He started to cultivating the vegetables with new technologies since 2010 with the advice received from the ICAR - KVK, Needamangalam. He raised the seedlings like brinjal, chillies and tomato through pro-tray nursery. He transplanted the pro-tray nursery

seedlings in his field. In the main field, he installed a drip irrigation unit for the transplanted vegetable crops. He adopted the following recent technologies in the vegetable cultivation:

- Use of high yielding varieties/hybrids,
- Seed treatment with *Trichodermaviride* (4 g/kg) and *Pseudomonas* (10 g/kg of seed)
- Drenching the seedlings with *Pseudomonas fluorescens* @ 10 g per litre of water
- Foliar spray of *Pseudomonas fluorescens* @ 2 ml/litre of water
- Spraying of IIHR vegetable special @ 0.5% (7.5kg/ha – three times spary at 20 days interval – starting at flowering stage)
- Application of Neem Seed Kernel Extract (NSKE) @ 0.5% or Imidacloprid @ 0.5ml/litre of water based on the need to control sucking pests

Keeping of pheromone traps (12 Nos./ha) and Yellow sticky traps (12 Nos./ha) to control the insects in his field which are eco-friendly in nature.

1. **Output**:

He earned Rs.5, 00,000/- as a net return from one hectare of land by cultivating a brinjal in 6 months period by investing Rs.1, 12,500/- during the year 2018. By adopting the above technology he earned 16.6 % more yield than conventional method

Sl. No.	Particulars	Conventional method	IIHR Vegetable spray and precision farming
1.	Yield (q/ha)	525	612.5
2.	Cost of cultivation (Rs./ha)	112500	112500
3.	Average fruit weight (g)	40 - 50	60 -70
4.	Number of fruits /plant	40 - 50	65 - 70
5.	Average market price (Rs./kg)	10	10
6.	Gross Return (Rs./ha)	525000	612500
7.	Net Return (Rs./ha)	412500	500000
8.	BC Ratio	1:4.67	1:5.44

4. Outcome

Additionally, he purchased around 6.0 acres of agricultural land and constructed one own house in the recent years by getting the income only from vegetable cultivation. At present, he is established the Pro-tray nursery unit, Drip irrigation unit, Motor with pump set and other spraying accessories which are very much essential for the intensive cultivation of vegetables. Moreover, he is having one acre of coconut garden, cattle's and goat.

Since, he is a progressive farmer in Needamangalam block of Thiruvarur district; Thiruvarur district farmers can make a visit to his farm by the adoption of latest technologies for cultivating the vegetables. So far, nearly 200 farmers from nearby areas visited his field and gained knowledge from him.

He generated regular employment for 3 persons. He also generated employment for minimum 10 persons during season at least for 30 days.

5. Impact:

Area under precision farming in this district was expanded from 20 ha in 2007-08 to 475 ha in 2019-20. The number of vegetable growers also increased from 20 to 125. The unimaginable vegetable production from 300 t to 2887 t is due to expanded area under precision farming and technological improvement coupled with adoption by farmers.

4. Bringing the ready to consume food for future by processing traditional rice varieties

C.Paramasivam
S/oChidambaram
Overkudi(Post)
Needamangalam taluk, Thiruvarur district
Pin : 614 703
Cell:9943384204

Situation analysis/Problem statement:

He is involved in the farming activity for the past 20 years. Earlier, he was growing a medium duration BPT paddy variety under inorganic cultivation. Often severely affected by water clogging and floodings he wanted a remedial measure for the same.He was impressed by speech of G.Nammalvar and Nel Jayaraman. Approached scientists of ICAR - KVK, Needamangalam to understand the holistic property of the traditional varieties and obtained suggestions to cultivate the traditional flood tolerant paddy varieties. Based on the idea received from them in the year 2010 he started to cultivate the traditional paddy varieties like MapillaiSamba, Kitchlil Samba and Kattuyanam using organic inputs from seed to harvest.

Plan, Implement and Support:

To enhance the benefit cost ratio as per the suggestion of SMS (Food Science). KVK advised to go for primary and secondary processing. The details on processing methods of rice and the machineries preparing Flaked and Puffed rice was guided. He started processing of paddy and started selling products *viz* Parboiled Rice, Raw rice and Flaked rice (Aval) and started to sell in the name of Sivam Organic Foods

Output:

He faced hurdles in processing techniques and slowly improved his method and became expertise in standardizing the right sstage for processing of flaked rice. Apart from it he also sells the brown rice of traditional varieties and he processs the same

Outcome:

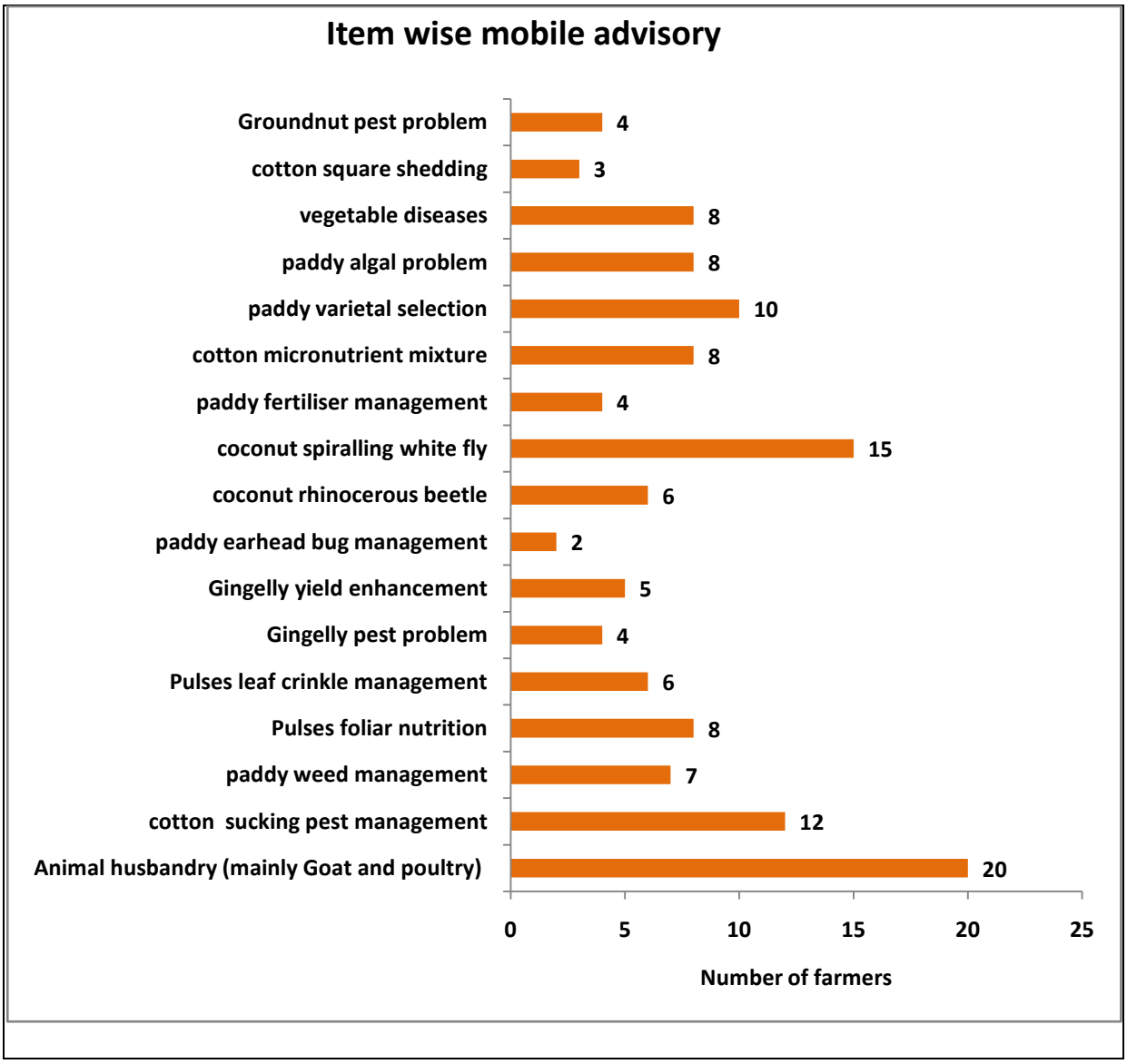
He produces flaked rice of 120 kg /month and sells at a cost of Rs 28,800. The cost of expenditure is Rs 10,000. Two people are given regular employment for processing. He earns around Rs 18,800 with a BC ratio of 1: 2.88

Impact:
A farmer can transform himself as an entrepreneur by adopting primary and secondary processing. He was awarded the best successful entrepreneur by KVK

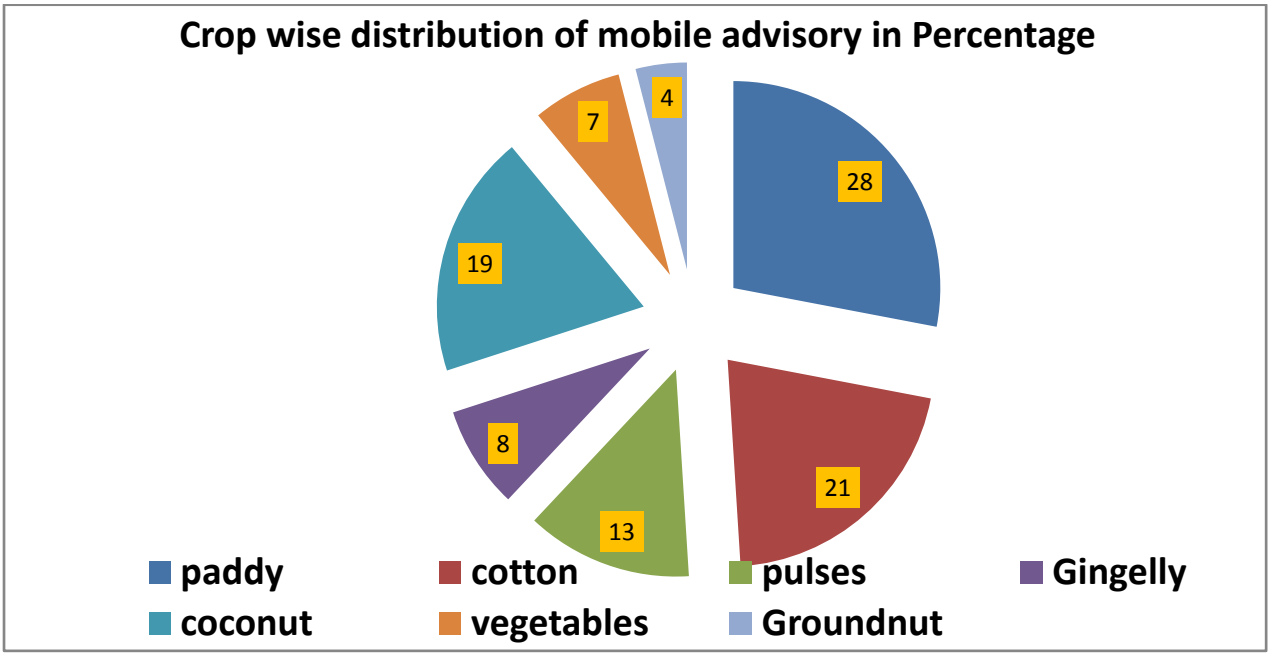
Details of innovative methodology, innovative technology and transfer of Technology developed and used during the year by the KVK

Mobile Advisory services of scientists of KVK, Thiruvarur during lock down period

The scientists of KVK, Thiruvarur have been on their feet to reach out to farmers through mobile phones during the lock down period. The linkage that the KVK, Thiruvarur developed over years came in handy to reach the farmers in such a precarious situation. Farmers of Thiruvarur district are adept in using mobile for getting their field problems solved. From the figure given, the following salient points could be arised.



130 farmers were given solutions to their crop/animal husbandry related problems over mobile phones during the lock down period which has started from 25.03.2020 to 28.04.2020

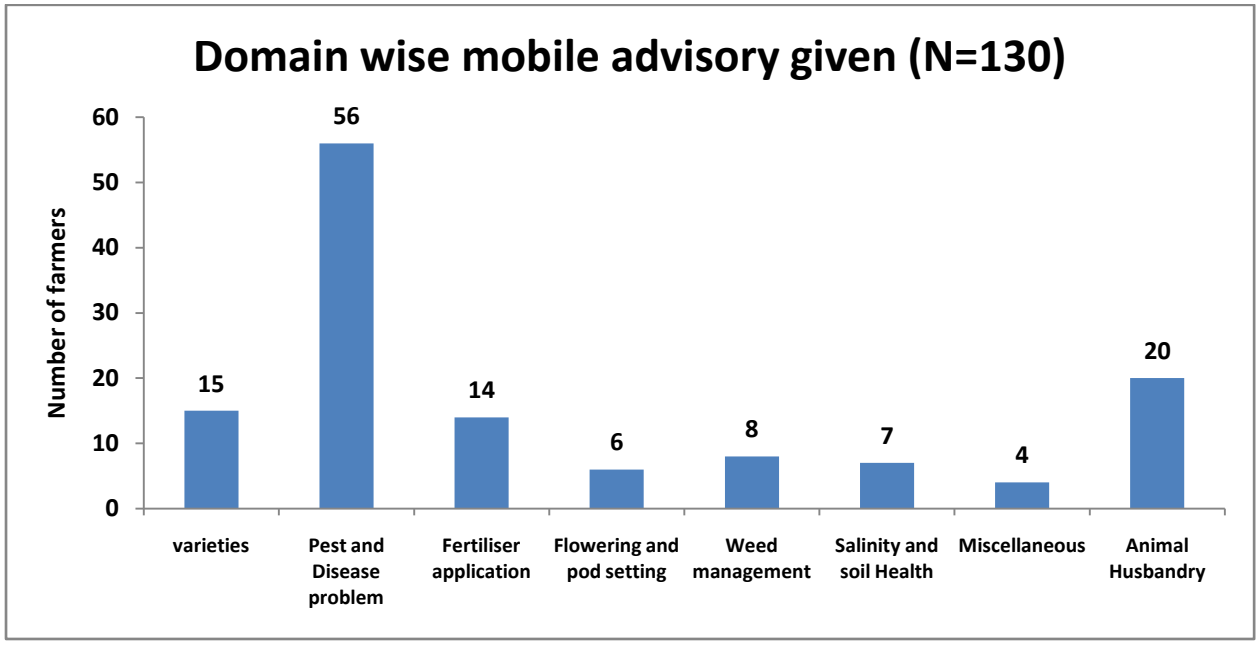


Cotton sucking pest management, Coconut Rugose Spiralling white fly were the predominant problems raised by farmers while significant number of farmers queried about animal husbandry related problems also. Goats and Poultry dominated the animal husbandry related mobile advisories.

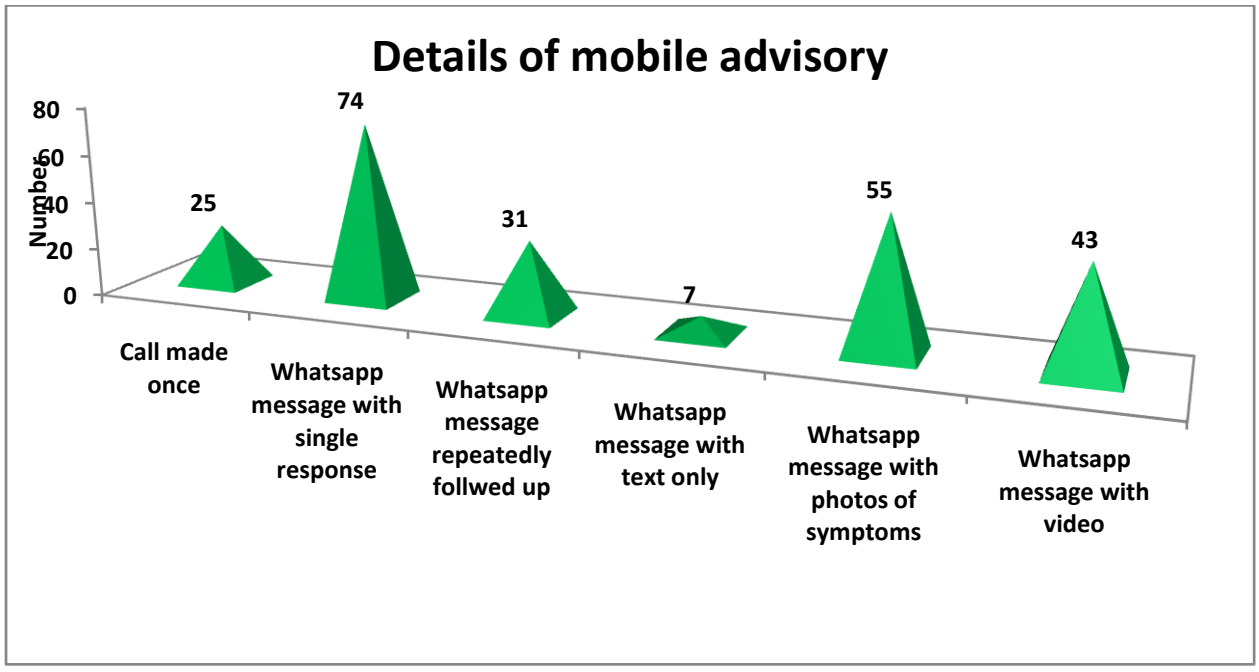
In rice, most of the farmers asked about varieties suitable for the season, weed management and algal problem which are common during this season. Gingelly, Pulses, Vegetables were the other crops about which farmers have raised queries and get their problems solved.

The data was further analysed to get to understand the cropwise advisories given by the scientists of KVK, Thiruvarur. From the figure given, the following things have become very clear.

Nearly fifty percentage of farmers were raising their problems related to rice and cotton which are at present in the fields of farmers of Thiruvarur District. Hence, the farmers have raised doubts about standing crops in their field. Among them, rice was the crop for which majority of the calls were made (28 %) followed by Cotton (21%). Significant number of Coconut (19%) and pulse (13%) also gave whatsapp with photos and videos. In coconut most of the farmers were asking the recommendation for Coconut Rugose Spiralling Whitefly whereas in pulses most of the farmers were raising the issue of Yellow Mosaic Virus and how to reduce the flower loss in pulses.



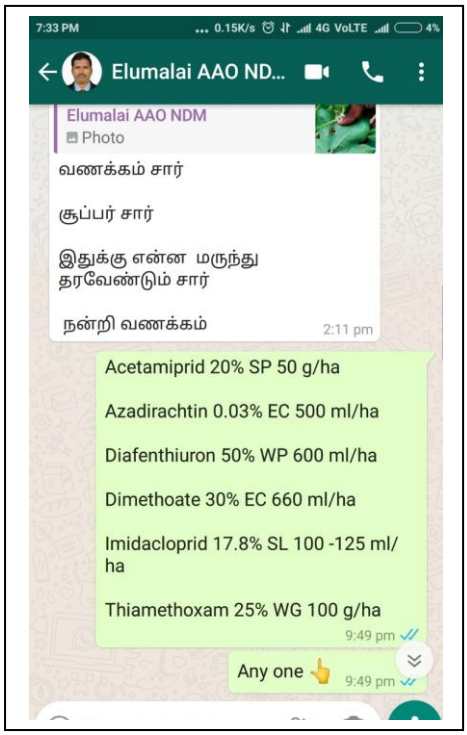
The domain wise mobile advisory was assessed and they were classified and given in the figure. From the figure it is clear that during the lock down period started on 25th March 2020, most of the whatsapp messages and calls were pertaining to pest and disease problems in major crops of Thiruvurar District namely Rice, Pulses, Cotton, Coconut and Gingelly which are at present in the field. This was followed by advisories pertaining to Animal Husbandary activities, which was confined mostly to the management of Goats and Poultry. There were numerous queries about the availability of seed and the paddy varieties suitable for the ensuing season. There were queries about soil salinity and fertiliser, weeding in rice crop.

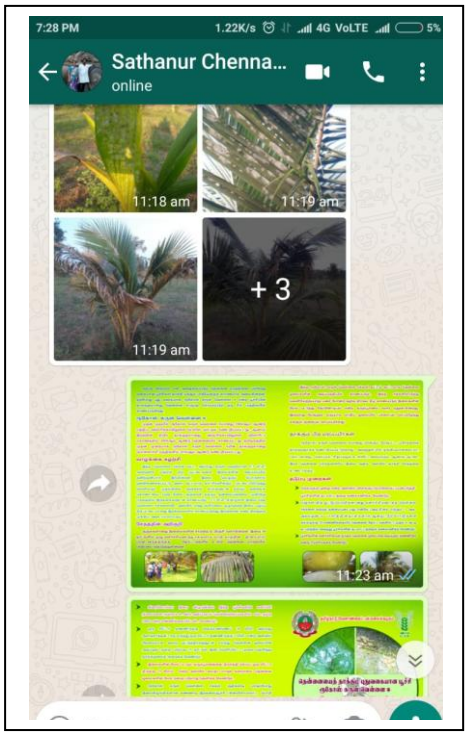


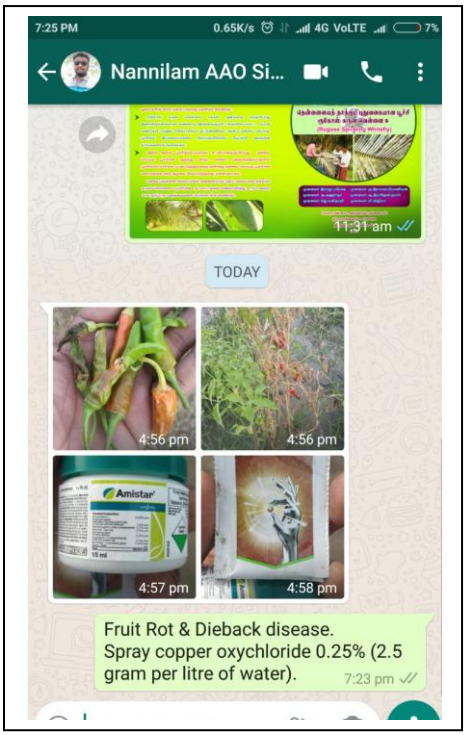
All the mobile advisory including voice calls and whatsapp messages were analysed to get an idea of how farmers used mobile phones for getting their problems solved. This analysis revealed interesting facts. Majority (74 farmers) have confined themselves with getting single reply from scientist and there was no sequel whatsapp

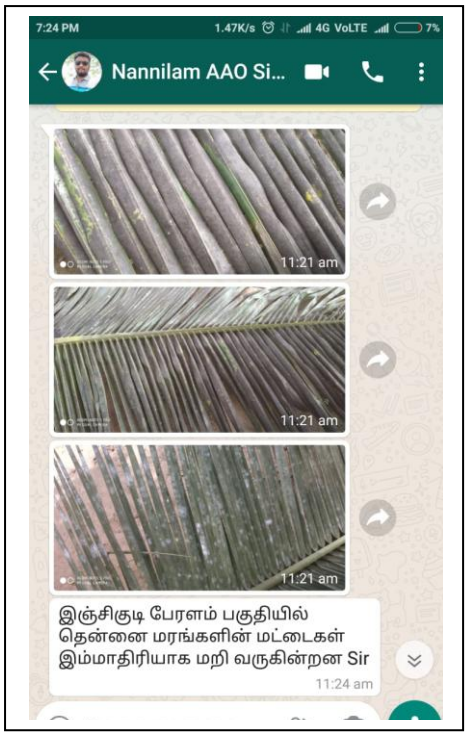
message from them whereas 31 out of 130 farmers have repeatedly followed up the whatsapp message with the scientist and shared the results with the scientists also. It is noteworthy to mention that out of 130 farmers 55 of them sent photos of symptoms whereas 43 of them sent videos to get their problems solved. Incresingly the farmers have been accustomed to send photos and videos to get their field problem solved is a welcome sign. This was there before lock down also but there is a phonominal increase of e- technology transfer during this lock down period which has been evidenced from number of whatsapp messages and voice calls.

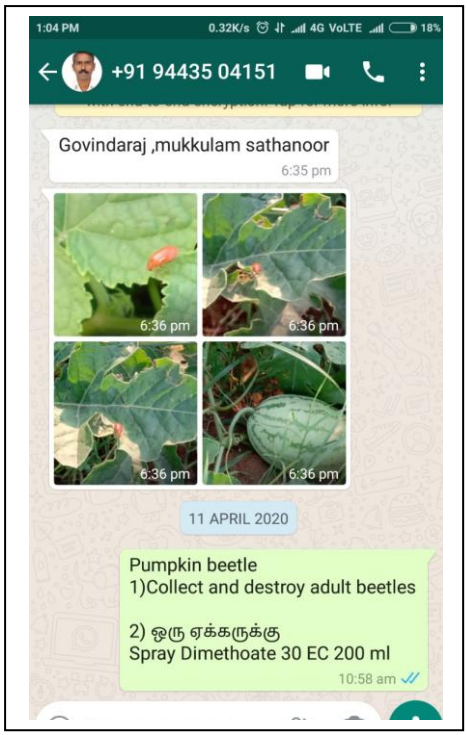
Snapshots of Whatsapp messages transferred between farmers, Extension workers and KVK Scientists during the lockdown period

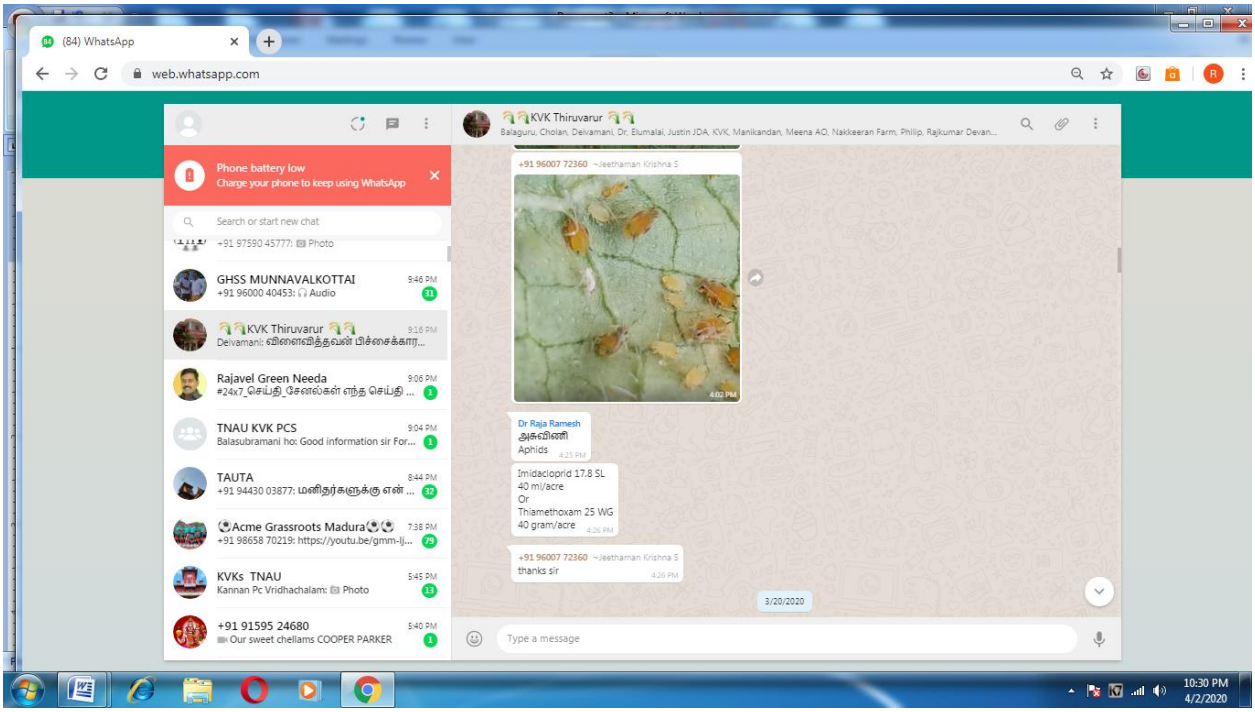











(84) WhatsApp
web.whatsapp.com
Phone battery low
Charge your phone to keep using WhatsApp
Search or start new chat
GHSS MUNNAVALKOTTAI
+91 96000 40453: Audio
KVK Thiruvarur
Rajavel Green Needa
TNAU KVK PCS
TAUTA
Acme Grassroots Madura
KVKs TNAU
+91 91595 24680
Dr Raja Ramesh
அசுவினி
Aphids
Imidacloprid 17.8 SL
40 ml/acre
Or
Thiamethoxam 25 WG
40 gram/acre
thanks sir
3/20/2020
Type a message
10:30 PM
4/2/2020


9:46 PM
0.00K/s
4G VoLTE
23%
+91 87542 69368
8:10 am
இது minor problem தான்.
Spray Chlorpyrifos 20 EC 500 ml ஒரு ஏக்கருக்கு
11:19 am
ok...sir...THANK YOU...
7:40 pm
உங்கள் பெயர் ஊர்
8:17 pm
D.pandiyan
1/84 thanner pandhal
street.karrakotai
(Main road,eda-melaiyur)..
8:35 pm
Type a message

2. **KVK on the Move" an innovative Programme was organized by Team, KVK, Needamangalam**

The Coronovirus pandemic has affected the activity of KVK in terms of its contact with farmers which are very essential for dissemination of technologies. Neither farmers could visit KVK due to restrictions which have been imposed nor could they enjoy the benefit of various extension programmes which the KVK sare mandated to do. In such a situation, in order to reach farmers the scientists in KVK, Needamangalam in Thiruvarur District has contemplated a novel approach of reaching the farmers in their respective blocks through a platform which has been named as "KVK on the Move", which mean the KVK is moving to the places where the farmers are dwellingand solvingtheir field problems. Starting from April 2020 and upto June 2020 five "KVK on the Move" programmes were organized in five blocks of Thiruvarur District. The sixth edition of KVK on the Move has been organized in Nannilam block on 24.08.2020. A total of Forty Four (44) farmers participated in the event among which Thirty Eight were farmers and six were farm women. The entire team of KVK comprising of Programme Coordinator, Dr.M.Ramasubramanian, Dr. A. Anuratha, Asst.Professor (Soil Science), Dr. V. Radhakrishnan, Asst.Professor (Agrl.Entomology), Dr. R. Jagadeesan, Asst.Professor (Horticulture), Dr. M. Selvamurugan, Asst.Professor (Environmental Sciences) and Dr.M.Kamalasundari, Asst.Professor (Food Science and Nutrition) participated in the event and answered volley of questions raised by farmers. The symptoms brought by farmerswere diagnosed and recommendationswere given

During September month, 7th and 8th „KVK on the Move" programmes were organized in two blocks namely Thiruvarur and Mannargudi on 02.09.2020 and 10.09.2020 respectively. The entire team of KVK headed by the Programme Coordinator, Dr.M.Ramasubramanian took part in the event and answered to the quiries and field problems of farmers. Forty five and Thirty Eight farmers in each of the block participated in the event and got their field problems solved. During these events pest and disease in rice and coconut were diagnosed and recommendations were given. Queries related to Suitable rice varieties for ensuing season were answered. Queries related to waste decomposition, honey bee rearing and organic inputs preparation were addressed. Two Researchable issues were identified during the discussion and to be fed back to Research system. They were since,most of the rice varieties are lodging, lodging resistant dwarf variety should be evolved. The second one is that the rice transplanters should be designed in a way that spacing between the rows couldbe changed.

Nine number of Pre seasonal training programme was - conducted by KVK as KVK on the Move in ten blocks of Thiruvarur district during COVID 19 period as detail below

Date	Block	No of participants
19.05.2020	Valangaiman	45
29.05.2020	Thiruthuraipoondi	54
06.06.2020	Koradachery	28

18.06.2020	Kodavasal	10
19.06.2020	Kottur	52
26.08.2020	Nannilam	44
02.09.2020	Thiruvarur	21
10.09.2020	Mannagudi	24
15.10.2020	Needamangalam	26
	Total	**304**

Details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

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)**

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

Impact of five select technologies assessed/demonstrated/popularized by the KVK in the district (in QRT format)

1.Intervention/ activity : GM-SRI-Pulses

Parameter	**Demo**	**Check**
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	2600	-
Productivity (in q/ha) in demo	56.45	43.77
Additional yield over check (in q/ha)	12.68	-
% increase in yield over check	28.97	-
Gross returns (in Rs/ha)	83759.09	64895.45
Net Returns (Rs / ha)	53679.55	31202.27

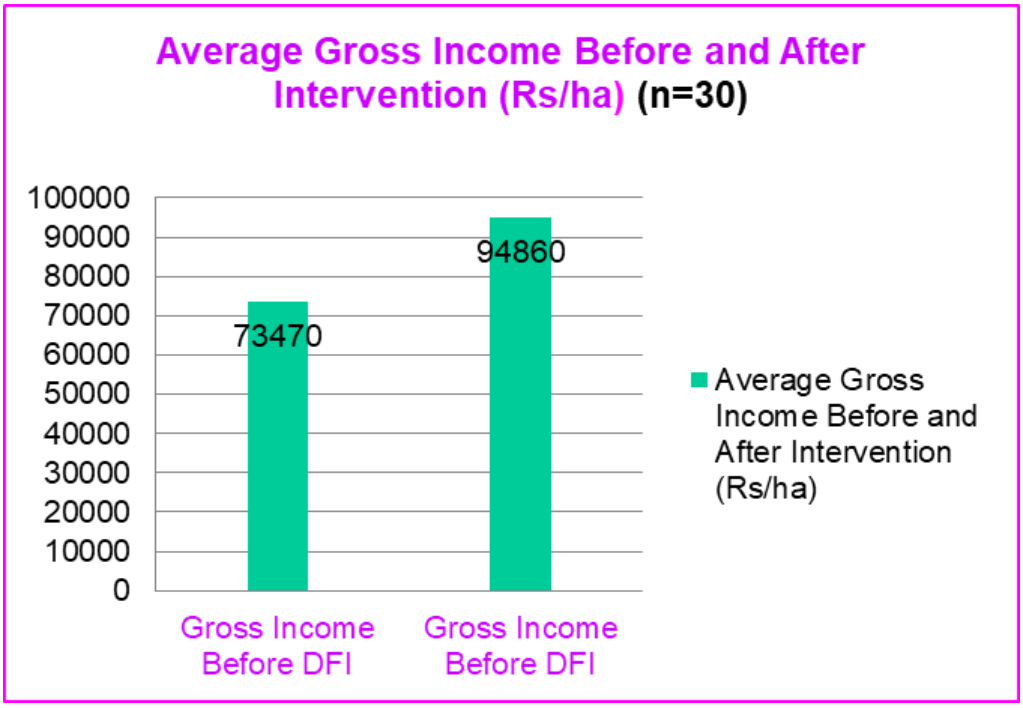
Additional Net Returns in demo (demo –check)	22477.3	-
B:C ratio	2.79	1.93

Outcome	
Area covered, spread in adopted villages (ha)	62.5
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	1404831.3
Area spread in district through convergence (ha)	192.5

2. The Cropping Pattern of Green Manure-System of Rice Intensification (SRI)-Pulses Upscaled from 2017 Onwards in DFI village

Indicators	**Before DFI Intervention**	**After intervention**
Gross Income (Rs/ha)	73470	94860
Saving due to reduced Input use	-	4250
No. of Productive tillers in Paddy	21	30
Amount of water used (mm)	1200	947
No.of Pods / plant in pulses	20	27
% increase over conventional method	-	29.21

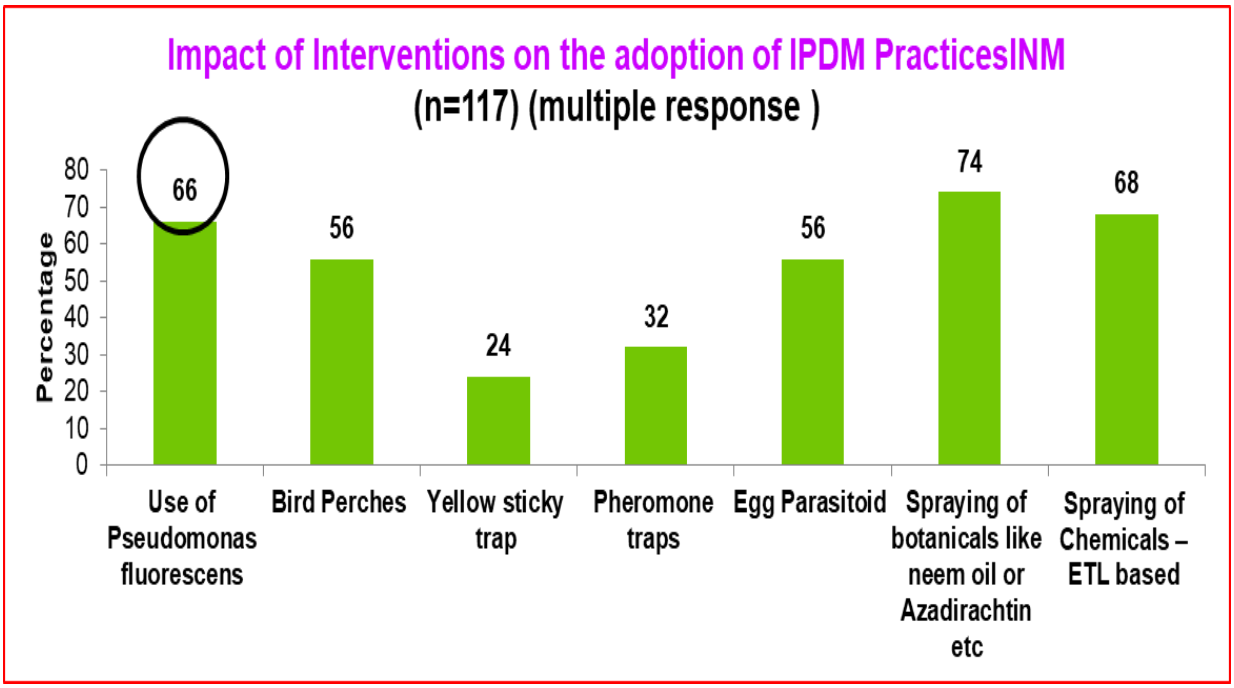
Cropping Pattern	
Before	Paddy-Paddy-Pulses
After	Green Manure- SRI Paddy- Pulses



3.Intervention/ activity : Integrated Pest and Disease Management

Parameter	**Demo**	**Check**
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	3450	-
Productivity (in q/ha) in demo	53.68	44.20
Additional yield over check (in q/ha)	9.48	-
% increase in yield over check	21.45	-
Gross returns (in Rs/ha)	70752	52540
Net Returns (Rs / ha)	46380	27151
Additional Net Returns in demo (demo – check)	19229	-
B:C ratio	2.90	2.07

Outcome	
Area covered, spread in adopted villages (ha)	395.20
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	7599301
Area spread in district through convergence (ha)	584.00



Items of IPDM in paddy	Knowledge		Adoption	
	No	Percent	No	Percent
Use of Pseudomonas fluorescens	38	76	33	66
Bird Perches	40	80	28	56
Yellow sticky trap	29	85	12	24
Pheromone traps	22	44	16	32
Egg Parasitoid	31	62	28	56
Spraying of botanicals like neem oil or Azadirachtin etc	42	84	37	74
Spraying of Chemicals – ETL based	45	90	34	68

4.Intervention/ activity – Demonstration of TNAU pulse wonder in black gram and green gram

Problem / issue identified & magnitude:

- Yield reduction due to flower dropping (25%)
- Major (N & K) and Micro nutrient (Zn,Cu & B deficiency)
- Non adoption of fertilizers for rice fallow pulses

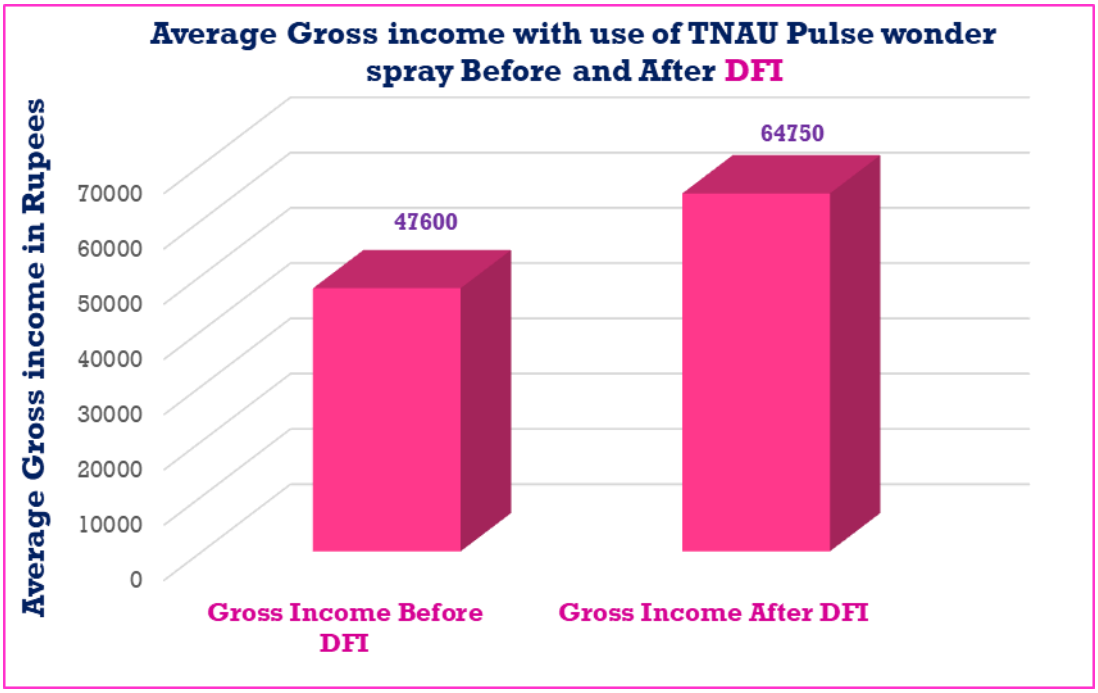
Parameter	**Demo**	**Check**
Output		
Additional cost (+) of intervention in demo (Rs) over check	1500	
Productivity (in q/ha) in demo	9.38	7.20
Additional yield over check (in q/ha)	2.18	
% increase in yield over check	23.24	
Gross returns (in Rs/ha)	84420	64800
Net Returns (Rs / ha)	60445	44230
Additional Net Returns in demo (demo – check)	16215	
B:C ratio	3.52	2.87

Outcome	
Area covered, spread in adopted villages (ha)	1517
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	24,598,155
Area spread in district through convergence (ha)	5029

Feedback: Application of TNAU pulse wonder improved the pod yield and solubility of pulse wonder was easier than DAP

Upscaling of TNAU Pulse wonder spray from 2017-2019 in DFI village

Indicators	**Before Pulse wonder spray**	**After Pulse wonder spray**
Average Yield (Kg/ha)	680	925
No. of Pods/ plant	26.3	38.5
Gross Income (Rs/ha)	47600	64750
BC ratio (Rs/ha)	1.98	2.95
% increase over conventional method	-	28.5



Cases of large scale adoption/impactof specific technologies: -

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

1. Marketing Facilitation of KVK, Thiruvarur buoyed Karikalan Pulse Farmer Producer Company to the Pinnacle of Glory during COVID 19 lock down period

Karikalan Pulse Farmer Producer Company which is situated in Vaduvur in Thiruvarur District has been continuously facilitated by team of Scientists in KVK, Thiruvarur in terms of technical guidance to its shareholders. The members of the company who have been involved in farming in Mannargudi and its surrounding villages have been served by the KVK scientists through its various mandatory activities like training, demonstration, campaigns etc., In recent past, they have become ambassadors of KVK and their skill in various agricultural operations has been enhanced manifold.

The Facilitation of KVK, Thiruvarur during the COVID 19 Lock down period

The scientists of KVK, Thiruvarur saw a huge opportunity for Karikalan Pulse Farmer Producer Company during this COVID 19 lock down period to show case its strategic strength to serve to the common public and to increase its economic status as well.

1. The FPC was facilitated to come up with a mobile Vegetable Vehicle to reach to the public with quality vegetables
2. To procure and market the blackgram to their own shareholders to a lesser price
3. Facilitated with a business plan of having variety of vegetable packs for small, medium and large families with Rs. 100, Rs.150 and Rs.200 respectively
4. Facilitated them to start a whatsapp group to reach the needy customers in time
5. Gave an idea to the FPC members to give vegetables to Unique personalities like District Collector people representatives like MP, MLAs in order to come to limelight

The ideation process facilitated by KVK, Thiruvarur yielded its fruits of success to the Karikalan Pulse Farmer Producer Company and they embarked on the following activities

1. The FPC could able to reach not only the Mannargudi public but also the entire district with a **Mobile vegetable Van** and everyday they could sell 1 tonne of vegetables in varied bags which were sold for Rs. 100, Rs.150 and Rs.200 respectively
2. Taking a cue from the advice of KVK scientists, they have been selling blackgram to their own stakeholders with Rs.2 lesser price than the market price
3. A whatsapp namely **'Veedu Thedi Kaaikari'** was started and through this it has reached to many farmer's whatsapp groups
4. The selling of Vegetables to VIPs resulted in passing on the information to many and this initiative was becoming popular.

Impact of the Initiative

- The primary impact of this initiative is that the common public in Thiruvarur district could get quality vegetables for lesser price.
- The indirect impact is that the other vegetable traders in the market could not sell the vegetables beyond the price fixed by this FPC. This is the indirect benefit that consumers enjoy due to this initiative.
- The third important benefit is the selling of vegetables at the doorstep of consumers which has drastically reduced the movement of the public and ensured social distancing which has been advocated by the Government thereby the infection rate in Thiruvarur district was abysmally low.
- The FPC could sell approximately 1 ton vegetables everyday through which they could earn Rs.2 lakhs so far to the company. Besides through selling blackgram to their members they could earn Rs.25000 for the company
- This small initiative has resulted in Government took cognisance of this, and offered Rs.10.00 lakhs as special grant with lesser interest to Karikalan Pulse Farmer Producer Company to upscale their activity during this COVID 19 period. Now the FPC has plans to add grocery also along with vegetables to be supplied to consumers

Visit of PC to Vegetable Sorting centre of the FPC and have interaction

Distribution of Vegetable Packs to Consumers by PC

The Chairman of the FPC receiving Cheque for Rs.10 lakhs from APC

2. Impact of soil health card in increasing the yield of paddy

Introduction

Paddy is one of the most important cereal crop in Thiruvarur district. It is cultivated to an extent of 1,80,000 ha in Thiruvarur district with a total productivity of 3745 kg/ha. It is mostly cultivated in Kharif and Rabi season in all the blocks except Thiruthuraipoondi and Muthupettai blocks where paddy is cultivated in rabi season only. In kharif, Co 51 , ADT 53 varieties and CR 1009 SUB 1, CR 1009, Swarna sub 1, ADT 49 ADT 51, BPT varieties in rabi season were mostly cultivated by the farmers. The SHC helps the farmers to get a well monitored report about the soil and they are guided by the experts to improve soil health. It also helps the farmers to get crop-wise recommendations of nutrients and fertilizers required in each type of soil. This can help in increasing the Paddy yield

Problems

Continuous cropping without soil test based fertilizer recommendation leads to the widespread nutrient deficiency in the soil and reduction in yield of crops. As per results of soil, Thiruvarur district soil is neutral in pH,non-saline, medium in OC, low, high and medium in available N,P and K respectively; with respect to available S and micronutrients, Zn was predominately deficient . Pest & disease occurrence and poor withstanding capacity under flood,drought condition might be associated with nutrient deficiency and thus leads to 20-25% reduction in yield of crops.

Intervention

To address the above problems, KVK, Thiruvarur has issued soil health card in NICRA schemes at Rayapuram and Keezhapattu villages of Needamagalam block in 2019 and 2020 with Swarna sub 1 and CR 1009 sub 1 paddy varieties. The following interventions were included with SHC.

- Soil application of biofertilizers
- Soil test based macro and micro nutrient application
- Insitu ploughing of green leaf manures

Result

The nutrient status infarmer's field was low in available nitrogen, high in available phosphorus and medium in availablepotassium. The recommendation as per farmers practice for rice crop was 161:58:75 kg NPK per ha, but,recommendation of fertilizer based on soil test was 188:50:50. With this, there is reduction in cost ofcultivation up to Rs 785 ha^{-1}, also maintained the balanced nutrition and increased the productivity of ricewithadditionalreturnsof1107kgha^{-1}.

Output

If the soil test based fertilizer recommendation is adopted intotal cultivated area under rice (1,80,000 ha) in Thiruvarurdistrict. Then we can reduce considerable cost on fertilizersand provide balancenutrition to crop. It can be concludedthat,thegeospatialtechnologieshelpsinpreparingsoilnutrientstatusmapswhichfacilitatesmanagementofnutrients.

Out come

The technology more viable in increasing the yield of Paddy and hence farmers are being continuously adopted this technology Since 2018. The success of this technology being popularized in KVK routine training, regular advisories, farmers group meetings and extension functionariesprogramme.

Comparisonsbetweengeneralrecommendationandsoiltestbasedfertilizerrecommendation

Crop	Farmerspractice–recommendation (NPKkgha^{-1})	Basedonsoiltest (NPKkg ha^{-1})	Yield(kg/ha)	Netreturns(Rs.)	BCratio
Rice	----	188:50:50.	5975	63615	2.83
	161:58:75	----	4868	48285	2.53

Comparison betweenquantityand costoffertilizerundergeneral recommendation and soil test based fertilizerrecommendation

Fertilizers	Rice	
	Farmerspractice	Soiltestbasedfertilizerrecommendation
Urea(kg)	2100	2555
DAP(kg)	3125	2725
MOP(kg)	2500	1660
TotalCost(Rs)	7725	6940

Linkages

Functional linkage with different organizations

Name of organization	Nature of linkage
NABARD	Participation in Meeting and conduct of Training on crop production, CAT programme and precision technology of Agricultural and allied sectors.
SPGF	Project: Revival of Millets in Cauvery Delta through Capacity Building on Improved Production Technologies and Value Addition in Millets
Department of Agriculture	Monthly Zonal Workshop, Field survey , Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of mandatory crops of Agricultural crops.
Department of Horticulture	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of Horticultural crops.
Department of Agriculture Engineering	Participation in Meeting and conduct of Training on crop production and precision technology of Agricultural and Horticultural crops.
Department of Animal Husbandry	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of Cattle, Goat and Poultry.
Department of Fishery	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on Fishery technology.

Department of Forestry	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on trees
Department of Sericulture	Field survey, Diagnostic Visit, Participation in Meeting and conduct of Training on mulberry and silkworm.
Department of Agricultural Marketing and Agriculture Business	Participation in Meeting and conduct of Training on regulated market committee and storage.
District Administration – Thiruvarur	Technological backstopping during Farmers grievance day of every third Thursday of the month.
Indian Institute of Food Processing and Technology, Thanjavur	Training to farmers, Rural Youth and data analysis for value addition, post harvest and processing.

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
SBGF – Revival of millets in Cauvery Delta	Feb 2015-July 2020	State Planning Commission – SPGF	10.58
TNIAMP- Tamil Nadu Irrigated Agriculture Modernization Project	April, 2019-March 2021	World Bank through Govt of Tamil Nadu	45.08

Important Visitors to KVKs during 2020 (with photographs)

S.No	Date	Important Visitors	Purpose
1	06.03.2020	Dr.M.Jawaharlal Director of Extension Education, TNAU, Coimbatore	• To review the KVK activities • Suggested to improve the mandated activities of KVK as well as demo units establishment
2	07.03.2020	Dr. R. Rajendran, Dean, AC&RI, Thanjavur	To participate in the Scientific Advisory Committee Meeting
3	07.03.2020	Th.V.Balakrishnan, IPS, DIG of Trichy region	Visited KVK and participate as a special guest
4	07.03.2020	Dr.M.Jawaharlal Director of Extension Education, TNAU, Coimbatore	To participate in the Scientific Advisory Committee Meeting Technical inputs were given and suggested to include in the Action Plan
5	08.03.2020	Dr.M.Jawaharlal Director of Extension	• To participate in the second state level farmers conference at

		Education, TNAU, Coimbatore	Mannargudi along with Honourable Vice Chancellor, TNAU • To make field visit of progressive farmer who cultivates cucumber under polyhouse fields at Rajappanchavadi
6	08.03.2020	Dr.N.Kumar Honourable Vice Chancelor, TNAU,Coimbatore	• To participate in the second state level farmers conference at Mannargudi • To make field visit of progressive farmer who cultivates cucumber under polyhouse fields at Rajappanchavadi
7	29.09.2020	Dr.A.Velayutham, Dean, AC&RI, Thanjavur	To participate in the Disaster management training programme
8	27.11.2020	Mr.C.Ponnaiyan Honourable vice chairman of state development policy council. Tamil Nadu Government	To Review the SBGF activities
9	27.11.2020	Tmt. V.Santha,IAS, District Collector, Thiruvarur	To visit KVK farm and to accomany Honourable vice chairman of state development policy council
10	27.11.2020	Dr. V.Ambedgar Director, TRRI,Aduthurai	To visit KVK farm and to accomany Honourable vice chairman of state development policy council
11	05.12.2020	Th.Senthamilsevan, Chairman, Needamangalam	To participate in the World Soil day

Dr.A.Velayutham,Dean, AC&RI, Thanjavur-29.09.2020

Honourable Vice Chancellor, DEE, Director TRRI-08.03.2020

Mr.C.Ponnaiyan ,Honourable vice chairman of state development policy council-27.11.2020

Honourabe Vice Chancellor, TNAU-08.03.2020

Honourabe Vice Chancellor, TNAU-08.03.2020

Dr.M.Jawaharlal,DEE,TNAU and Th.V.Balakrishnan, IPS,
DIG of Trichy region-07.03.2020

PHOTOS

-Attached separately

Sd/xxx

Programme Coordinator