ANNUAL REPORT (April-2017-March-2018)

APR SUMMARY

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	47	860	528	1388
Rural youths	10	56	101	157
Extension functionaries	2	102	71	173
Sponsored Training	4	61	73	134
Vocational Training	3	15	44	59
Total	66	1094	817	1911

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds			
Pulses			
Cereals	40	16	
Vegetables	30	12	
Other crops	30	8.4	
Total			
Livestock & Fisheries			
Other enterprises	10		10
Total	110	36.4	10
Grand Total	**110**	**36.4**	**10**

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	3	15	15
Livestock			
Various enterprises	2	5	15
Total	2	20	30
Technology Refined			
Crops			
Livestock			
Various enterprises			
Total			
Grand Total	**5**	**20**	**30**

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	414	3610
Other extension activities	77	Mass coverage
Total		

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Marke-ting	Awa re-ness	Other enterprise	Total
	Text only	6			1	3		10
	Voice only							
	Voice & Text both							
	Total Messages	6			1	3		10
	Total farmers Benefitted	**10610**			**1450**	**4340**		**16400**

6. Seed & Planting Material Production

3	Quintal/Number	Value Rs.
Seed (q)		
Paddy TPS-5 seed	39.89	95736.00
Planting material (No.)		
CO-5 fodder sets	30533 Nos.	29973.00
Guinea sets	6600 Nos.	7150.00
Bio-Products (kg)		
Pseudomonas talc formulation	83 Kg.	8300.00
Mush room bed spawn	199 Nos.	9950.00
Coconut tonic	1481 Nos. (200 ml)	14810.00
Wild boar repellent	5 Lit	3100.00
Livestock Production (No.)		
Fishery production (No.)		
Others		
Tapioca tuber	35 Kg.	700.00
Paddy straw	2.5 tonnes	5000.00
Fodder grass	4375 Kg.	8750.00

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	134	13400
Water	2	100
Plant	-	-
Total	**136**	**13500**

8. HRD and Publications

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

DETAIL REPORT OF APR-2017-18

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		E mail
	Office	FAX	
ICAR-Krishi Vigyan Kendra Tamil Nadu Agricultural University Thirupathisaram – 629 901 Kanyakumari District Tamil Nadu	04652 -275758 04652 -275759	04652 -275758	kvkppi@tnau.ac.in

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

Address	Telephone		E mail
	Office	FAX	
The Registrar Tamil Nadu Agricultural University Coimbatore-641 003.	0422-2431222	0422-2431672	registrar@tnau.ac.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. K. Ramakrishnan	-	9443749759	ramki.vnr@gmail.com

1.4. Year of sanction : 2004

1.5. Staff Position (as on 30th March, 2017)

Sl. No.	Sanctioned post	Name of the incumbent	Design-ation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Perman-ent /Temp-orary	Category (SC/ST/ OBC/ Others)
1	Programme Coordinator	Dr. K. Ramakrishnan	SMS	Agrl. Extension	15600 – 39100 + 8000	31120	07.04.17	Permanent	OBC
2	Subject Matter Specialist	Dr. K. Kavitha	SMS	Plant Pathology	15600 – 39100 + 7000	26590	31.08.16	Permanent	OBC
3	Subject Matter Specialist	Dr. Cissie Theeblyn David	SMS	Food Science and Nutrition	15600 – 39100 + 7000	26590	06.04.16	Permanent	OBC
4	Subject Matter Specialist	Dr. R. Latha	SMS	Plant Breeding and Genetics	15600 – 39100 + 7000	26590	04.03.16	Permanent	OBC
5	Subject Matter Specialist	Dr. S. Santheepan	TA	Agronomy		32000	08.03.18	Temporary	SC
6	Subject Matter Specialist	Vacant							
7	Subject Matter Specialist	Vacant							
8	Programme Assistant	Tmt. K.R. Sudha	Prog. Asst. (Tech.)	Agrl. Extension	35900 – 113500	55800	04.06.07	Permanent	OBC
9	Computer Programmer	Mr. V. Sivaraman	Prog. Asst. (Comp.)	Computer Science	35900 – 113500	49600	08.12.08	Permanent	OBC
10	Farm Manager	Mr. R. Rajesh Kannan	Farm Manager	Horticulture	35900 – 113500	55800	14.05.15	Permanent	OBC
11	Accountant / Superintendent	Mr. T. Arulmuthu	Jr. Asst.		19500 – 62000	32200	30.07.14	Permanent	OBC
12	Stenographer	Mrs. R. Sumathi	Jr. Asst. cum typist		19500 – 62000	19500	22.01.18	Temporary	SC
13	Driver	Th. G. Jayasekaran	Driver		35400 – 112400	50500	01.05.04	Permanent	SC
14	Driver	Vacant							
15	Supporting staff	Tmt. R. Parvathi	PUSM		15700 - 50000	17200	10.04.15	Permanent	SC
16	Supporting staff	Tmt. R. Shanmugasundaram	PUSM		15700 - 50000	17200	10.04.15	Permanent	OBC

1.6. Total land with KVK (in ha) : 18.67 ha

S. No.	Item	Area (ha)
1	Under Buildings	606 m^2
2.	Under Demonstration Units	1.42
3.	Under Crops	7.25
4.	Orchard/Agro-forestry	0.4
5.	Others (specify)	7.01 - Building, Farm roads and pond

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	22.01.2014	606 M^2	67,50,600	-	-	-
2.	Farmers Hostel							
3.	Staff Quarters		Not yet constructed					
	1 to 6							
4.	Demonstration Units							
	1. IFS	ICAR-RF	2013-14	-	-	-	-	-
5	Fencing							
6	Rain Water harvesting system		Not yet constructed					
7	Threshing floor							
8	Farm godown							

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. run	Present status
Mahindra – Bol-ZLX	2017	7,40,478	15215	Good
Mahindra - Bolero LX/2WD	2004	4,97,141	203819	Condemned
Two wheeler - Hero Honda splendor	2009	46,193	40606	Good
Two wheeler - Honda activa	2009	47,875	27476	Good

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
RO water purification system	2017	19,500.00	Good
Horizontal Laminar air flow cabinet	2017	28,783.00	Good
Electronic Weighing Balance	2017	4,750.00	Good
1.5 KVA UPS	2017	14,500.00	Good
UPS Batteries (12V x 26A) 16 Nos.	2017	47,981.00	Good
Multi functional Digital Copier with Printer	2017	75,477.00	Good
Biometric Attendance System	2017	11,800.00	Good
LC D Projector	2017	34,000.00	Good
Public Address System	2017	34,986.00	Good
Digital Camera	2017	9,750.00	Good
Soil Testing Kit	2016	75,000.00	Good
Banana fibre extractor	2011	50,000.00	Good
Paddy Power Weeder	2011	32,531.00	Good
Fax machine	2009	15,000.00	Good
Computer	2009	31,900.00	Good
LCD Projector	2006	61,230.00	Good
Laptop	2006	38,700.00	Good
Drum seeder	2006	4,700.00	Good
Coconut climber	2006	2,500.00	Good
Cono weeder	2006	2,360.00	Good
Digital camera	2006	18,500.00	Good
HP Scanner	2005	3,237.00	Not working
Toshiba E-Studio 160 digital copier cum printer	2005	71,400.00	Not working
Spectrophotometer	2004	75,072.00	Good
Flame photometer	2004	36,720.00	Good

Physical balance	2004	1,15,000.00	Good
Water distillation Still	2004	26,118.00	Good
Kjeldahl digestion and distillation	2004	24,589.00	Good
Shaker	2004	44,077.00	Good
Refrigerator	2004	15,750.00	Good
Grinder	2004	11,582.00	Good
Khelplus	2004	1,48,086.00	Good
UPS	2004	10,250.00	Good
Soil storage cabin	2004	37,496.00	Good

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

Sl. No.	Date	No of Participants	Salient Recommendations
1.	30.11.2017	20	1. Impact study on non-adoption on value addition in pineapple to be given to the needy people and the impact study is to be conducted. The training has to be conducted at the Thiruvattar block (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore). 2. Officials from NABARD and Lead bank have to be invited for skill development trainings so as to explain about the schemes available in the Bank (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore). 3. Agricultural Department officials to be included in the Kumari farmers whatsApp group for sharing information on Agriculture and allied sectors (Proposed by: **Dr. H. Philip,** Director of Extension Education, TNAU, Coimbatore). 4. More number of technical messages (@ 2 / Scientist / Month) is to be given to All India Radio, Nagercoil to reach the technologies widely to the farming community (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore). 5. Include tapioca varieties released by KAU in the action plan. (Proposed by: **Mr. M. Nijamudeen**, PA (Agri) to District Collector) 6. Document the traditional varieties of fruit crops of

			Kanyakumari viz., Mango, Jack and Banana under PPV Act. (Proposed by: **Mr. Ashok Macrin**, Deputy Director of Horticulture, Nagercoil) 7. Trainings on cocoa based confectionary products to be included as part of training to impart technology to the farming society(Proposed by: **Mr. P. Pandian,** The Joint Director of Agriculture, Kanyakumari) 8. Introduce shade loving fodder crops suitable for growing in coconut garden are to be introduced (Proposed by: **Dr. S. Malmarugan**, Professor and Head, Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoi). 9. Hydroponics fodder and azolla cultivation need to be demonstrated to the farmers. (Proposed by: **Dr. S. Malmarugan**, Professor and Head, Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoi). 10. Strengthening the revolving fund by producing planting materials of horticultural crops, value added products, spawn etc. (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore). 11. Update the data base related to farmers, progressive farmers and organic farmers (Proposed by: **Dr. Y.G Prasad**, Director, ICAR-ATARI, Hyderabad) 12. Display the government schemes in KVK through posters and spread the technology through messages(Proposed by: **Dr. Y.G Prasad**, Director, ICAR-ATARI, Hyderabad)

**** Attach a copy of SAC proceedings along with list of participants***

2. DETAILS OF DISTRICT (2016-17)

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

S. No	Farming system/enterprise
1.	Coconut based farming system
2.	Paddy based farming system
3.	Horticultural crops based mixed 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.	West coast plains and Ghat region (High rainfall Zone)	Krishi Vigyan Kendra, Kanyakumari lies in 8^{o} 26' N latitude, 77^{o} 19'E longitude, Altitude 76m above MSL. Average Maximum, Minimum temperature is 31.2 and 22.3^{o} C respectively. Average rainfall ranges about 2186 mm, RH 83%.

S. No	Agro ecological situation	Characteristics
1.	The uplands	Comprising of hills and hill bases suitable for growing crops like Rubber, Cloves, Nutmeg, Pepper, Pineapple etc.
2.	The Middle	Comprising of plains and valleys fit for growing crops like Paddy, Tapioca, Banana, Coconut etc.
3.	The low lands	Comprising the coastal belt ideal for growing Coconut, Cashew etc.

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1.	Lateritic soil	Reddish brown sandy clay loam	20,033
2.	Red soils	• Red, yellowish red and yellowish brown sandy clay loam • Brown, dark gray and grayish brown sandy clay • Brown and dark brown sandy clay loam • Yellowish red sandy loam • Dark yellowish brown sandy clay loam and sandy loam • Yellowish red gravelly sandy loam	65,608
3.	Coastal alluvium	Very pale brown sand	3,830
4.	Alluvium	Brown sandy clay loam	1,590

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

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
S. No	**Crop**	**Area (ha)**	**Production (000' tons)**	**Productivity (kg /ha)**
1.	Rice	12157	49494	4071
2.	Maize	54	432	8000
3	Pulses (Blackgram)	592	385	650

4.	Coconut	23917	2871laks nuts	12004 nuts
5.	Banana	6238	188968	32250
6.	Tapioca	2887	100970	34974
7.	Cashew	1174	335	285
8.	Mango	1422	8246	5799
9.	Jack	630	14992	23797
10.	Pepper	173	26	153
11.	Rubber	27407	85117	4200
12.	Arecanut	890	1380	1550
13.	Cloves & Cinnamon	700	616	880
14.	Ginger	14	259	18500
15.	Pineapple	32	1056	33000
16	Cucumber	92	644	7000
17	Jasmine	115	885	7700

2.5. Weather data

Month	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
April ’17	31.64	32.9	25.1	70.4
May ’17	93.97	32.1	24.9	81.4
June ’17	162.48	30.0	23.6	84.6
July ’17	16.97	29.7	23.2	90.6
August ’17	69.67	29.6	23.1	83.2
September’17	**227.95**	30.3	23.4	72.5
October ’17	203.39	30.3	23.3	73.9
November ’17	**211.99**	30.5	23.1	79.1
December ’17	**285.89**	31.4	22.7	78.6
January ‘18	2.10	31.8	22.0	80.2
February ‘18	0.00	32.1	22.7	86.6
March ‘18	51.39	32.9	24.2	70.3

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

Category	Population	Production	Productivity
Cattle			
Crossbred	92250	-	-
Indigenous		-	-
Buffalo	4664	-	-
Sheep		-	-
Crossbred	609	-	-
Indigenous		-	-
Goats	117902	-	-
Pigs		-	-
Crossbred	3036	-	-
Indigenous		-	-
Rabbits	2014	-	-

Poultry	653851	-	-
Hens	-	-	-
*Desi(*Backyard *)*	-	-	-
Improved(Poultry in farm)	40818	-	-
Ducks	-	-	-
Turkey and others	-	-	-

Category	**Area**	**Production**	**Productivity**
Fish	-	-	-
Marine	-	42525.240 tonnes	-
Inland	6984.1 ha	4368.46 tonnes	1.25t/ha
Prawn	-	854.6 tonnes	-
Scampi	-	-	-
Shrimp	-	-	-

Source: Office of Deputy Director Animal Husbandry and Asst. Director of Fisheries, Nagercoil, Kanyakumari District.

2.7 Details of Adopted Villages (2017-18)

Year of adoption: Nil

2.8 Priority/thrust areas

Crop/Enterprise	**Thrust area**
Rice	Integrated Crop Management, Weed management, Clinical nutrition
Pulses	Varietal evaluation
Maize	Integrated Crop Management
Sesame	Varietal evaluation
Banana	Integrated Disease Management
Tapioca	Integrated Pest Management
Bhendi	Integrated Crop Management
Cluster bean	Integrated Crop Management
Amaranthus	Varietal evaluation
Fodder	Cropping system
Milky Mushroom	Small Scale Income Generation Enterprises
Fish	Clinical Nutrition

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2016-17

OFT (Technology Assessment)				FLD (crop/enterprise/CFLDs)			
1				2			
Number of technologies		Total no. of Trials		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
5	5	23	23	36.4	36.4	110	110

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers								
Rural youth								
Extn. Functionaries								

Seed Production (Qtl.)			Planting material (Nos.)		
5			6		
Target	Achievement	Distributed to no. of farmers	Target	Achievement	Distributed to no. of farmers
TPS 5 rice seed – 30	39.89	110	CoBN 5 Cumbu Napier fodder - 30000	37133	118

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
		Pseudomonas 50 kg	*Pseudomonas 83kg*
		Mushroom bed spawn 150 Nos.	Mushroom bed spawn 199 Nos.
		Coconut tonic 1000 Nos.	Coconut tonic 1481 Nos.

3.b. TECHNOLOGY ASSESSMENT

Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	No. of trials	No. of farmers
Varietal Evaluation	Blackgram	Assessment of Blackgram varieties in Kanyakumari District	5	5
	Sesame	Introduction of Sesame as an alternate crop in rice-fallow condition of Kanyakumari District	5	5
Integrated Disease Management	Banana	Assessment of *Fusarium* wilt disease management in banana	5	5
Others (Pl. specify)	Rice Clinical Nutrition	Assessment of glycemic index of traditional paddy varieties	-	10
Total			**15**	**25**

Summary of technologies assessed under livestock by KVKs - Nil

Summary of technologies assessed under various enterprises by KVKs

Thematic areas	Enterprise	Name of the technology assessed	No. of trials	No. of farmers
Small scale income generation	Milky Mushroom	Assessment of Milky Mushroom Varieties in Kanyakumari District	5	5

3.c. TECHNOLOGY ASSESSMENT IN DETAIL

OFT – 1

1	Thematic area	:	Varietal Evaluation
2	Title	:	Assessment of Blackgram varieties in Kanyakumari District
3	Scientists involved	:	Dr.R.Latha, SMS(PBG) & Dr K. Ramakrishnan Programme Coordinator
4	Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words)	:	Season : Summer Soil Type : Sandy loam Farming situation : Rice – Rice – Pulses Soil Fertility status : Low N, P and K Seasonal Rain fall (mm) : 52 No. of rainy days : 2
5	Problem definition / description: (one paragraph)	:	• Low productivity (4q /ha) • Lack of ideal variety for Kanyakumari district • KKM 1 is suitable for Rice fallow condition
6	Technology Assessed: (give full details of technology as well as farmers practice)	:	**TO1** - T 9 (Farmers practice) **TO2** - VBN (BG) 6 **TO3** - KKM 1
7	Critical inputs given: (along with quantity as well as value)	:	

S. No.	Name	Qty. (kg)	Total Cost (Rs.)
1.	Seeds- KKM 1	3	420
2.	Seeds –VBN (BG) 6	3	420
3.	Pulse wonder	2	500
4.	*Trichoderma viride*	1	120
5.	Field Board	1	300
	Total		1760

8	Results	:	Crop is in flowering stage
9.	Feed back of the farmers involved		
10.	Feed back to the scientist who developed the technology		

OFT -2

1	Thematic area	:	Cropping Systems (Introduction of new crop)
2	Title	:	Introduction of Sesame as an alternate crop in rice-fallow condition of Kanyakumari District
3	Scientists involved	:	Dr.R.Latha, SMS(PBG) & Dr K. Ramakrishnan Programme Coordinator
4	Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words)	:	Season : Summer Soil Type : Sandy loam Farming situation : Rice – Rice – Pulses Soil Fertility status : Low N, P and K Seasonal Rain fall (mm) : 52 No. of rainy days : 2
5	Problem definition / description: (one paragraph)	:	• Blackgram is the major crop grown during Rice-fallow condition (700 ha) • Vagarious nature of monsoon causing crop losses very often • Farmers need alternate crops
6	Technology Assessed: (give full details of technology as well as farmers practice)	:	**TO1** – Blackgram (Local) **TO2** – Sesame [TMV 7] **TO3** – Sesame [SVPR 1]
7	Critical inputs given: (along with quantity as well as value)	:	

S. No.	Name	Quantity	Total Cost (Rs.)
1.	TMV 7 seeds	2 kg	400
2.	Sesame SVPR 1 seeds	2 kg	400
3.	Pulse wonder	1 kg	250
4.	Seed treatment - biofertilizer		50
5.	$MnSO_4$	2 kg	60
6.	$ZnSO_4$	2 kg	100
7.	Field board	1 No.	300
	Total		**1560**

8	Results	:	Crop is sown
9.	Feed back of the farmers involved		
10.	Feed back to the scientist who developed the technology		

OFT - 3

1 Thematic area : Small Scale Income Generation Enterprises

2 Title : Assessment of Milky Mushroom Varieties in Kanyakumari District

3 Scientists involved : Dr. K.Kavitha, SMS (Pl.Path), Dr. K.Ramakrishnan PC

4 Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words) :

Season : Summer
Soil Type : Sandy loam
Farming situation : Mushroom
Soil Fertility status : -
Seasonal Rain fall (mm) : 52
No. of rainy days : 2

5 Problem definition / description: (one paragraph) :

- Low shelf life of oyster mushroom
- Not suitable for rainy season
- Poor yield and low consumer acceptance
- Muddy Taste
- Lack of knowledge on the nutritive value of mushroom

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

TO1 - Milky mushroom- APK2 (*Calocybe indica*) Source –TNAU 1998

TO2 - Milky mushroom- Bheema (*Calocybe gambosa*) Source- KAU 2015

TO3 - Milky mushroom- IIHR Ca-1(*Calocybe indica*) Source- IIHR 2015

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

Sl. No	Technology option	Critical inputs	Quantity	Value	No. of trials
1	TO1- Milky mushroom- APK2 (*Calocybe indica*)	APK2 Spawn	20 Pkts	600.00	5
		Polythene covers	1 kg	130.00	
		Formaldehyde	1 lit	70.00	
		Carbendazim	166g	103.00	
2	TO2- Milky mushroom- Bheema (*Calocybe gambosa*)	Bheema Spawn	20 Pkts	700.00	5
		Polythene covers	1 kg	130.00	
		Formaldehyde	1 lit	70.00	
		Carbendazim	166g	103.00	
3	TO3- Milky mushroom- IIHR Ca-1(*Calocybe indica*)	IIHR Ca-1 Spawn	6 kg	390.00	5
		Polythene covers	1 kg	130.00	
		Formaldehyde	1 lit	70.00	
		Carbendazim	166g	103.00	

8 Results:

Table : Performance of the technology

S.No	Name of the farmer and Village	Technology option 1			Technology option 2			Technology option 3		
		Yield (kg/ bed)	Net return	BCR	Yield (kg/ bed)	Net return	BCR	Yield (kg/ bed)	Net return	BCR
1	C.Vinotha Keezhsatuvanthoppu	1.20	168.0	3.33	1.65	258.0	4.58	1.10	148.0	3.06
2	M.K.Subramanian Vadakoor	1.00	140.0	3.33	1.70	280.0	5.67	1.20	180.0	4.00
3	S.Anto Starwin Jose Nagercoil	0.75	110.0	3.75	1.00	160.0	5.00	1.00	160.0	5.00
4	P.Suseela Asaripallam	0.90	110.0	2.57	2.00	330.0	5.71	1.10	150.0	3.14
5	S.Saran Azhaganparai	1.20	165.0	3.20	1.50	225.0	4.00	0.80	85.0	2.13
	Mean	1.01	138.6	3.24	1.57	250.6	4.99	1.04	144.6	3.47

Other performance indicators

S.No	Name of the farmer and Village	Technology option 1		Technology option 2		Technology option 3	
		No. of harvests	Mushroom weight (g)	No. of harvests	Mushroom weight (g)	No. of harvests	Mushroom weight (g)
1	C.Vinotha Keezhsatuvanthoppu	3	110	4	190	3	120
2	M.K.Subramanian Vadakoor	3	100	4	140	3	110
3	S.Anto Starwin Jose Nagercoil	2	75	4	175	4	140
4	P.Suseela Asaripallam	3	75	4	190	3	110
5	S.Saran Azhaganparai	3	80	3	180	3	100
	Mean	2.8	88	3.8	175	3.2	116

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

Among the three varieties of milky mushroom assessed, Bheema (*Calocybe gambosa*) recorded higher yield of 1.57kg/bed with individual mushroom weighting 175 g/ fruiting body. In addition more number of harvest was also observed in variety Bheema with high BCR of 4.99 followed by Milky mushroom- APK2 and Milky mushroom- IIHR Ca-1 which are on par with each other recording yield of 1.01 and 1.04kg/bed respectively.

Constraints faced:

9. Feed back of the farmers involved

Growers expressed that the taste of mushroom is good in Bheema (*Calocybe gambosa*) when compared to *Calocybe indica varieties* (APK2 and IIHR Ca-1) and individual weight of the fruiting body is higher in variety Bheema. The C. *indica* varieties taste like radish and preference of the customers is for Bheema which doen't has the radish taste

10. Feed back to the scientist who developed the technology

Availability of quality spawn on time is the demand of the growers from the scientist.

OFT - 4

1	Thematic area	:	Integrated Disease Management
2	Title	:	Assessment of *Fusarium* wilt disease management in banana
3	Scientists involved		Dr. K.Kavitha, SMS (PL.Path) Dr.R.Latha, SMS (PBG) Dr. K.Ramakrishnan PC
4	Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words)	:	Season : Summer Soil Type : Sandy loam Farming situation : Irrigated Soil Fertility status : Seasonal Rain fall (mm) : 1015 No. of rainy days :
5	Problem definition / description: (one paragraph)	:	• Sudden Plant mortality • Lack of awareness on the use of bio-control agents in disease management • Indiscriminate use of fungicides • Improper soil health management • Yield reduction
6	Technology Assessed: (give full details of technology as well as farmers practice)	:	**TO1** - Farmers' practice-Uprooting and cutting of infected mother plants and allowing side sucker to grow **TO2** - *P. fluorescens* liquid formulation @ 4 lit ha at 2nd, 4th and 6th MAP. Apply press mud 5kg/plant (TNAU, 2013) **TO3** - Soil application of talc formulation *T.viride* NRCB 1+ *Penicillium* sps. @ each 10 g/plant basal + 2, 4, 6th month (NRCB 2010.)

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

Sl. No	Technology option	Critical inputs	Quantity	Value	No. of trials
1	TO1	-	-	-	
2	TO2	*P. fluorescens* liquid formulation	2.5 lit	750.00	5
3	TO3	*T.viride* NRCB 1	5 kg	750.00	5
		Penicillium sps.	5 kg	750.00	

8 Results:

Table : Performance of the technology

The crop is under bunch formation stage

Sl. No	Name of the farmer and Village	Wilt incidence (%)		
		Technology option 1	Technology option 2	Technology option 3
1	N.Russel,Moolachal	15	8	4.0
2	T. Johnrose, Moolachal	12	7	6.0
3	N. Jeganraj, Moolachal	12	6	3.0
4	V. Russel, Moolachal	18	7	2.0
5	V.Kumaresan, Moolahal	15	6	4.0
	Mean	14.4	6.8	5.0

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

Constraints faced:

Soil application of talc formulation *T.viride* NRCB 1+ *Penicillium* sps. @ each 10 g/plant basal + 2, 4, 6th month recorded the less incidence of wilt disease (5%) followed by soil application of *P. fluorescens* liquid formulation @ 4 lit ha at 2nd, 4th and 6th MAP (6.8%). Presently, the crop is under bunch formation stage and yield data will be recorded after the hardest.

9. Feed back of the farmers involved

Farmers expressed that soil application of *T.viride* NRCB 1+ *Penicillium* sps at the time of planting and on 2, 4, 6th month after planting improved the general health of the plant with dark green luxure to the plants when compared to other treatment options

10. Feed back to the scientist who developed the technology

Virulent strains of the biocontrol agents with enhanced shelf life is required.

OFT - 5

1	Thematic area	:	Clinical nutrition
2	Title	:	Assessment of glycemic index of traditional paddy varieties
3	Scientists involved	:	Dr. Cissie Theeblyn David, SMS (FSN), Dr. K.Ramakrishnan Programme Coordinator
4	Details of farming situation: Describe the farming situation including Season, Farming situation (RF/Irrigated), Soil type, fertility Status, Seasonal rainfall (mm) No. of rainy days etc (about 500 words)	:	--
5	Problem definition / description: (one paragraph)	:	• Under utilization of traditional rice varieties • Therapeutic properties of traditional rice varieties not known
6	Technology Assessed: (give full details of technology as well as farmers practice)	:	**TO1** - TPS3/CR1009 sub 1/CR1009 **TO2** - Kattisamba **TO3** - Kochisamba
7	Critical inputs given: (along with quantity as well as value)	:	

Sl.No	Technology option	Critical inputs	Quantity	Value	No. of trials
1	TO1 – TPS3	Rice flakes	75g	333	3
		Estimate for available Carbohydrate	3 Samples	300	
		Gluocometer and straps for Gluocmeter	1 No	4400	
2	TO2 – Kattisamba	Rice flakes	75g	333	3
		Estimate for available Carbohydrate	3 Samples	300	
		Gluocometer and straps for Gluocmeter	1 No	4400	
3	TO3 – Kochisamba	Rice flakes	75g	333	3
		Estimate for available Carbohydrate	3 Samples	300	
		Gluocometer and straps for Gluocmeter	1 No	4400	

8 Results:

Table : Performance of the technology

SNo	Name and Village	Technology option 1 (TPS3)					Technology option 2 (Kattisamba)					Technology option 3 (Kochisamba)				
		CPT	SE	PPPBGL (g/dl)	RF (%)	BCR	CPT	SE	PPPGL (g/dl)	RF (%)	BCR	CPT	SE	PPPGL (g/dl)	RF (%)	BCR
1	k. Gopallakrihnan, Pilacode	4	15	80	51.85	1.11	1	23	75g/dl	55.5 %	1.23	2	18	88	48.14	1.05
2	K. Neelakantapillai, Pilacode	3	15	82	51.85	1.11	1	22	75	55.5	1.23	2	19	87	48.14	1.05
3	C. Maria Anthony, Pattarivilai	2	14	81	51.85	1.11	1	21	75	55.5	1.23	2	17	89	48.14	1.05
4	Y. Yesu Maryai	2	13	82	51.85	1.11	1	21	75	55.5	1.23	2	17	89	48.14	1.05
5	S. Carmel Mary, Thallakulam	3	13	81	51.85	1.11	1	23	75	55.5	1.23	2	19	88	48.14	1.05
6.	N. Divya Shri, Vendalikodu	4	14	80	51.85	1.11	1	22	75	55.5	1.23	2	18	87	48.14	1.05
7.	P. Ajitha,Vendalikodu	4	15	82	51.85	1.11	1	23	75	55.5	1.23	2	17	88	48.14	1.05
8.	M. Subha, Vendalikodu	3	14	81	51.85	1.11	1	22	75	55.5	1.23	2	18	89	48.14	1.05
9.	P. Sumathi, Thirupathisaram	2	13	80	51.85	1.11	1	21	75	55.5	1.23	2	17	87	48.14	1.05
10.	S. Uma Sundari, Thirupathisaram	3	15	82	51.85	1.11	1	23	75	55.5	1.23	2	18	88	48.14	1.05
	Mean	**3**	**15**	**82**	**51.85**	**1.11**	**1**	**23**	**75**	**55.5**	**1.23**	**2**	**18**	**89**	**48.14**	**1.05**

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

Among the three varieties assesed for glycemic index the Consumer preference test score was maximum for TO2 followed by T01 and minimum for TO3. With respect to sensory evaluation maximum score was given to TO2 followed by T01 and minimum for TO3. Blood glucose level (pre and post prandial) was minimum in TO2 followed by T01 and TO3. The recovery of flakes (%) was maximum in T01 followed by T01 and minimum recovery (%) in T03. BCR was maximum in TO2 followed by T01 and minimum in TO3

9. Feed back of the farmers involved

Consumer preference for TO2 was good when compared to others due to better rehydration ratio and better score for taste and colour and appearance. However the preference for TO3 was minimum due to bland taste and poor rehydration per centage.

10. Feed back to the scientist who developed the technology

Lack of availability of traditional rice varieties and adulteration inn the flaked paddy varieties are the problems recorded by the farmers and food processors.

- CPT - Consumer preference test
- SE - Sensory evaluation(%)
- PPPBGL - pre and post prandial Blood glucose level (g/dl)
- RF - Recovery of flakes(%)

3.d. FRONT LINE DEMONSTRATION

a. Follow-up of FLDs implemented during previous years

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha
1	Banana	Integrated pest management	Demonstration of Pseudostem weevil management in banana	• Swabing cut surface of banana pseudostem with 20g of *Beauveria bassiana* • Pseudo-stem injection (150 ml of Monocrotophos with 350 ml of water) and injection @ 4 ml in the Pseudostem at monthly interval from 5th to 8th month	28	755	1500
2	Bhendi	Integrated pest and disease management	Integrated Pest and disease management for Bhendi	• Seed treatment & soil application with *T. viride* & *P. fluorescens* • Soil application with Neem cake @ 250kg/ha • Yellow sticky trap & pheromone trap @12/ha • Need based Spraying of insecticides	12	53	20

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

b. Details of FLDs implemented during the current year (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**.)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
1	Rice	Integrated crop management	Demonstration of ICM practices in puddled transplanted rice	Kharif 2017	ICAR	4	4	0	10	10	-
2	Rice	Weed Management in Dry seeded rainfed rice	Demonstration of ICM practices in Dry seeded rainfed rice	Kharif 2017	ICAR	4	4	0	10	10	
3	Rice	ICM	Demonstration of organic cultivation practices for traditional rice variety - Kattisamba	Kharif 2017	ICAR	4	4	-	10	10	-
4	Maize	ICM	Demonstration of TNAU Maize Hybrid CO 6 with improved crop production technologies	Kharif 2017	ICAR	4	4	-	10	10	-
5	Tapioca-FLD	Horticulture	Demonstration of short duration tapioca variety Hraswa	Kharif 2017	ICAR	1	1	0	10	10	-
6	Tapioca	Integrated pest management	Demonstration of package of practice for spiralling white fly management in tapioca	Kharif 2017	ICAR	4	4	0	10	10	-
7	Amaranthus-FLD	Horticulture	Demonstration on PLR-1 Amaranthus in Banana based cropping system	Kharif 2017	ICAR	1	1	2	10	10	-
8	Bhendi	Integrated crop management	Demonstration of ICM in Bhendi hybrid Co-4	Kharif 2017	ICAR	4	4	0	10	10	-
9	Cluster bean	Integrated crop management	Demonstration of ICM in	Kharif 2017	ICAR	4	4	0	10	10	-
10	Fodder crops	Green fodder crops as intercrop coconut garden	Demonstration of Mixed fodder under Coconut gardens	Rabi 2017	ICAR	0.4	0.4	0	10	10	
11	Fish	Clinical nutrition	Demonstration of Iron and Calcium fortified fish soup for addressing	-	ICAR	-	-		10	10	-

			micronutrient malnutrition							

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Rice	Kharif	Irrigated	Sandy Clay loam	185 – 258	6.8 – 9.5	124 – 209	Pulses	07.07.2017	06.11.2017	729.97	80
Rice	Kharif	Irrigated	Sandy Clay loam	179 – 224	8.9 – 12.2	124 - 158	Blackgram	02.07.2017	17.11.2017	729.97	
Rice	Kharif	Irrigated	Clay loam	184.5 – 220.5	6.34 – 9.83	86.54 – 143.3	Blackgram	04.07.2017	20.11.2017	729.97	
Maize	Kharif	Irrigated	Sandy loam	156.8 – 209.2	7.63 – 9.83	98.3 – 123.9	Blackgram	01.09.2017	05.11.2017	643.33	
Tapioca	Rabi	Rainfed	Sandy loam	175 – 228	6.7 – 8.6	93 - 119	Banana	11.092017	03.04.2018	1015.86	
Tapioca	Kharif	Rainfed	Sandy loam	150 – 217	5.6 – 8.2	87 - 109	Tapioca	22.06.2017	02.03.2018	1216	80
Amaranthus	Rabi	Irrigated	Sandy loam	193 – 225	8.3 – 10.2	106 - 124	Banana/Tapioca	04.09.2017	29.09.2017		
Bhendi	Kharif	Irrigated	Sandy loam	164 – 207	7.8 – 10.3	117 - 134	Chilli	07.08.2017	15.09.2017 onwards	726	45
Cluster bean	Kharif	Irrigated	Sandy loam	174 – 199	6.6 – 8.9	99 - 117	Brinjal	16.08.2017	28.09.2017 onwards	726	45
Fodder crops	Rabi	Irrigated	Sandy loam	161 – 208	10.1 – 13	107 - 136	Fallow	05.10.2017	January 2018 onwards		
Fish	-	--	-	-	-	-	-	-	-	-	-

Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	• TPS 5 variety – Higher yield (12.16%) when compared to the ASD16 • Application of Pre-emergence herbicide (Pretilachlor) reduced the cost of hand weeding @ Rs.4500/ac • Time bound fertilizer recommendation led to increase the number of productive tillers • Release of the egg parasitoid, *Trichogramma japonicum* and Use of pheromone trap reduced the stem borer infestation • Seed treatment, seedling rot dip and foliar spray of *P. fluorescens* generally improved the crop vigour
2	• Application of Pre-emergence herbicide Pedimethalin reduced weed infestation (75.27%) • Time bound fertilizer recommendation led to increase the number of productive tillers
3	• Seed treatment with *Pseudomonas fluorescence* increased the germination and vigorous seedlings were obtained. • Soil application of Azophos provided the major nutrients N and P • Foliar spray of Panchakavya enhanced the productivity of crop
4	• Seed treatment with *Pseudomonas fluorescence* increased the germination and vigorous seedlings were obtained. • Foliar spray of Maize maxim increased the cob size and yield • Timely application of fertilizers and earthing up operations enhanced the productivity
5	• Hraswa variety had greater yield potential (9.255q/ha) with 2 harvests per year with income of Rs. 2,52,160/year
6	• Installation of yellow sticky trap, Spraying of Neem formulation and fish oil rosin soap 25 g/l and foliar spray of *Verticillium lecanni* @ 10 gm/lit reduced the incidence of whitefly incidence (77.35%) when compared to check where application of pesticides increased the whitefly and mealy bug incidence
7	• Introduction of PLR1 yield potentiallity was far less (64 .9 kg/month) when compared to the check with less consumer preference with reference to tasted and flavour and less societal preference for the variety
8	• Bhendi hybrid Co 4 – Higher yield (47.88%) when compared to the local varieties • Foliar application of vegetable special reduced the flower drop 15 % • Time bound fertilizer recommendation led to increase the yield and finger quality viz. colour and length • Release of the egg parasitoid, *Trichogramma chilois* reduced the stem borer infestation
9	• MDU 1 Cluster bean – Higher yield (28.66%) when compared to the local varieties • Foliar application of palse wounder to reduced the flower drop 12 %
10	• Intercropping in coconut garden was preferred since sole cropping of fodder is not preferred by the famers in Kanyakumari District. • It also reduces weed growth in coconut garden • Natural green fodder to cattle led to high milk yield
11	• Supplementation of fish soup proved to have better impact when compared to the control with a potential of increasing the heamoglobin level by 8.75% against the check which was 28.75% on feeding for 30 days with BCR of 1.28 against the check which was 1.087

Farmers' reactions on specific technologies

S. No	Feed Back
1	Requirement of rice TPS 5 variety seed material is the need of the hour and motivated the farmers to take up seed production and sell the seeds to fellow farmers for the spread of the variety among the other farmers. Presently apart from Kanyakumari District, the demand for TPS5 seed is very high in other district as this is a replacement to the old variety ASD16
2	Weed infestation was reduced because of the application of herbicide which in turn reduced cost of cultivation
3	Germination of seed is high due to the treatment with *Pseudomonas fluorescence* The seedlings were vigorous and tillering was increased due to the application of Azophos Stem borer incidence was reduced due to the installation of pheromone traps Additional yield was obtained due to foliar spray of Panchakavya
4	The seedlings of COHM 6 were more vigorous than Varieties The cobs were bigger than the varieties Application of Maize maxim increased the yield Additional income was obtained from green fodder
5	Consumer preference for cooking quality and eye appeal was found to be very good when compared to the local variety though the tuber size was small when compared to other local varieties
6	The IPM technology is effective in the management of spiraling whitefly, but high incidence of mealy bug was noticed. The timely availability of egg parasitoid *Acerophogus papayae* is required for its control at local level
7	Colour and taste preference was not that acceptable when compared to the local varieties
8	All the farmer have expressed their happiness on the performance of Bhendi Hybrid Co-4 over the existing local variety and shoot and fruit borer incident very low
9	All the farmer have expressed their happiness on the performed o f MDU-1 high yielding cluster bean variety over the existing local variety. It has a cluster bearing nature (6-8 fruits/node) with long attractive green colored fruits measuring. 12-13 cm. Plant
10	Intercropping in coconut reduces weed growth in coconut garden Natural green fodder to cattle led to high milk yield
11	Taste preference was highly acceptable than the control

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1)	**Demonstration of ICM practices in puddled transplanted rice**				
1	Field days	1	06.11.2017	23	ICM in transplanted Rice
2	Farmers Training	3	20.10.2017 15.09.2017 24.01.2018	22 22 22	On campus-Integrated crop management in rice Off campus- ICM in puddled transplanted rice Off campus- Integrated pest management in Rice
3	Media coverage	5	22.07.2017 24.10.2017 06.02.2018 28.12.2017 16.12.2017 15.12.2017 24.09.2017 22.08.2017 22.03.2018	1439 1436 Mass Mass Mass Mass Mass Mass Mass	KMAS-Rice mite Management KMAS-Rice leaf folder Management AIR message-Post Harvest Technology in rice AIR message-Rice blast Management AIR message-Biocontrol agents and Biopesticides AIR message-Weed Management in Rice AIR message-Rice stem borer and grain discolouration management AIR message-Pseudomonas foliar spray for disease management in rice Doordharsan - Integrated Pest and Disease Management in rice
4	Training for extension functionaries	1	08.08.2017	32	Integrated disease management in Rice (Zonal message)
2)	**Demonstration of ICM practices in Dry seeded rainfed rice**				
1	Field days	1	17.11.2017	20	Demonstration of ICM practices in Dry seeded rainfed rice
2	Farmers Training	3	04.07.2017 11.10.2017 15.02.2018	20 21 25	Off campus training- IWM in direct sown rice On campus training- INM in dry seeded rainfed rice Off campus training- IPDM in dry seeded rainfed rice
3	Media coverage	2	23.09.2017 15.03.2018	Mass Mass	Radio message – Rice variety TPS 5 in direct sowing TV programme – TPS 5 –A new short duration variety suitable for Kanyakumari
4	Training for extension functionaries	--			
3)	**Demonstration of organic cultivation practices for traditional rice variety - Kattisamba**				
1	Field days	1	20.11.2017	20	
2	Farmers Training	3	01.08.2018 13.09.2017 19.10.2017	25 19 22	On campus Off campus Off campus
3	Media coverage	1	01.08.2018		AIR live programme of rice varieties

4	Training for extension functionaries		08.08.2017	32	ICM in rice
4)	**Demonstration of TNAU Maize Hybrid COHM 6 with improved crop production technologies**				
1	Field days	-			
2	Farmers Training	2	04.10.2017 02.01.2018	22 25	Off campus On campus
3	Media coverage				
4	Training for extension functionaries				
5)	**Demonstration short duration variety Hraswa**				
1	Field days	1	03.04.2018	18	
2	Farmers Training	3	01.08.2017 05.01.2018 02.03.2018	26 23 26	On campus Off campus Off campus
3	Media coverage	-			
4	Training for extension functionaries	-			
6)	**Demonstration of package of practice for spiralling white fly management in tapioca**				
1	Field days	-			
2	Farmers Training	3	01.08.2017 02.03.2018	26 26	On campus- Integrated crop management in tapioca Off campus- Integrated crop management in tapioca
3	Media coverage	3	28.08.2017 01.09.2017 22.08.2017 16.05.2017 13.09.2017	1436 Mass Mass Mass Mass	KMAS- Tapioca mealy bug management AIR message-Tapioca mealy bug management AIR message-Tapioca mealy bug management AIR message-Bio control agents in disease management Newspaper- Tapioca mealy bug management (Tamil). Dinamalar
4	Training for extension functionaries	2	20.12.2017 09.01.2018	25 74	Use of Light trap in plant protection (Zonal message) Safe and judicious use of pesticides
7)	**Demonstration of PLR-1 Amaranthus in Banana based cropping system**				
1	Field days	-			
2	Farmers Training	1	11.01.2018	40	Of f campus
3	Media coverage	-			
4	Training for extension functionaries	-			
8)	**Demonstration of ICM in Bhendi hybrid Co-4**				
1	Field days	-			
2	Farmers Training	-			
3	Media coverage	-			

4	Training for extension functionaries	-			
9)	**Demonstration of ICM in Cluster bean**				
1	Field days	-			
2	Farmers Training	-			
3	Media coverage	-			
4	Training for extension functionaries	-			
10)	**Demonstration of Mixed fodder under Coconut gardens**				
1	Field days	--			
2	Farmers Training	2	05.10.2017 28.03.2018	30 26	Off campus training- Cultivation of mixed fodder in coconut garden On campus training- Fodder production and feed management in livestock
3	Media coverage	1	09.03.2018	Mass	TV programme – Cultivation of Forage crop varieties under coconut garden
4	Training for extension functionaries	--			
11)	**Iron and Calcium fortified fish soup for addressing micronutrient malnutrition**				
1	Field days				
2	Farmers Training	2	02.08.2017 08.08.2017	36 26	On campus On campus
3	Media coverage	-			
4	Training for extension functionaries	-			

Performance of Frontline demonstrations

Frontline demonstrations on crops

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Cereals																			
Rice	Integrated crop management	Demonstration of ICM practices in puddled transplanted rice	TPS5`	ASD16	10	4	75	70	73	64	14.06	37800	108900	71100	2.88	38200	95250	57050	2.49
Rice	Weed Management in Dry seeded rainfed rice	Demonstration of ICM practices in Dry seeded rainfed rice	TPS5	ASD16	10	4	63	52	56.2	49.6	13.31	37500	89300	51800	2.38	45000	78900	33900	1.75
Rice	Integrated crop management	Demonstration of organic cultivation practices for traditional rice variety - Kattisamba	Kattisamba(with ICM)	Kattisamba (Farmers Practice)	10	4	28.0	25.3	26.7	24.5	8.98	31500	82420	50920	2.62	34000	76045	42045	2.24
Mazie	Integrated crop management	Demonstration of TNAU Maize Hybrid CO 6 with improved crop production technologies	COHM 6	Local variety	10	4	33.2	28.6	32.6	27.8	17.27	35120	116400	81280	3.30	31500	95600	64100	2.03
Commercial crops																			
Tapioca	Evaluation of new short duration varieties	Demonstration of short duration tapioca variety Hraswa	Hraswa	Local	10	1	10.25	8.25	9.25	9	0.25	22000	185100	163100	8.41	22000	180100	158000	8.18

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Tapioca	Integrated pest management	Demonstration of package of practice for spiralling white fly management in tapioca	Local	Local	10	4	220	300	260	228	14.03	75145	260000	184866	3.46	75145	228000	152866	3.03
Vegetables																			
	Intagrated crop management	Demonstration of ICM in Bhendi	COBH-4	Local	10	4	215	205	210	142	47.88	95300	235500	140200	2.47	90300	159242	68942	1.76
	Intagrated crop management i	Demonstration of ICM in cluster bean	MDU-1	Local	10	4	105	88	96.5	75	28.66	40400	92620	52220	2.29	39320	71984	32664	1.83
	Evaluation of new varieties	Demonstration on PLR-1 Amaranthus in Banana based cropping system	PLR-1	Local	10	1	13.0	12.0	12.5	12.5	.583	16225	52050	35825	3.20	17440	12500	107560	7.16
others																			
Fodder crops	Green fodder crops as intercrop coconut garden	Demonstration of Mixed fodder under Coconut gardens	Cumbu Napier CO(BN) 5 + Guineagrass COGG 3 + Vallimasal	Cumbu Napier CO(CN) 4	10	0.4	1660	1340	1500	1230	21.95	152000	300000	148000	1.97	140000	246000	106000	1.76
Fish	Clinical nutrition	Demonstration of Iron and Calcium fortified fish soup for addressing micronutrient malnutrition	CIFT	Control without supplementation	10	-	10.5	7.5	8.0	7.7	26.75	6000	-	-	1.28	3000	-	-	1.08

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

** BCR= GROSS RETURN/GROSS COST

FLD on Livestock - Nil

FLD on Fisheries - Nil

FLD on Other enterprises - Nil

FLD on Women Empowerment - Nil

FLD on Farm Implements and Machinery - Nil

FLD on Other Enterprise: Kitchen Gardening - Nil

FLD on Demonstration details on crop hybrids *(Details of Hybrid FLDs implemented during 2016-17)- Nil*

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

FLD on Livestock - Nil

FLD on Fisheries - Nil

FLD on Other enterprises - Nil

FLD on Women Empowerment - Nil

FLD on Farm Implements and Machinery - Nil

4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Cropping Systems	1	4	16	20	0	0	0	4	16	20
Crop Diversification	1	6	15	21	0	4	4	6	19	25
Integrated Crop Management	1	9	18	27	0	3	3	9	21	30
Integrated nutrient management	1	5	14	19	0	2	2	5	16	21
Production of organic inputs	1	18	7	25	0	0	0	18	7	25
Others (pl specify)										
Total	**5**	**42**	**70**	**112**	**0**	**9**	**9**	**42**	**79**	**121**
II Horticulture										
a) Vegetable Crops										
Total (a)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
b) Fruits										
Total (b)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
c) Ornamental Plants										
Total (c)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Plantation crops										
Production and Management technology	1	4	16	20	0	0	0	4	16	20
Total (d)	**1**	**4**	**16**	**20**	**0**	**0**	**0**	**4**	**16**	**20**
e) Tuber crops										
Production and Management technology	1	26	0	26	0	0	0	26	0	26
Total (e)	**1**	**26**	**0**	**26**	**0**	**0**	**0**	**26**	**0**	**26**
f) Spices										
Total (f)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
g) Medicinal and Aromatic Plants										
Total (g)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GT (a-g)	**2**	**30**	**16**	**46**	**0**	**0**	**0**	**30**	**16**	**46**
III Soil Health and Fertility Management										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
IV Livestock Production and Management										
Feed & fodder technology	1	15	11	26	0	0	0	15	11	26
Total	**1**	**15**	**11**	**26**	**0**	**0**	**0**	**15**	**11**	**26**
V Home Science/Women empowerment										
Designing and development	1	5	13	18	2	6	8	7	19	26

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
for high nutrient efficiency diet										
Total	**1**	**5**	**13**	**18**	**2**	**6**	**8**	**7**	**19**	**26**
VI Agril. Engineering										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
VII Plant Protection										
Integrated Disease Management	1	39	6	45	0	0	0	39	6	45
Production of bio control agents and bio pesticides	1	19	36	55	0	0	0	19	36	55
Others (pl specify)										
Total	**2**	**58**	**42**	**100**	**0**	**0**	**0**	**58**	**42**	**100**
VIII Fisheries										
Fish processing and value addition	1	5	26	31	0	5	5	5	31	36
Others (pl specify)										
Total	**1**	**5**	**26**	**31**	**0**	**5**	**5**	**5**	**31**	**36**
IX Production of Inputs at site										
Apiculture	1	14	16	30	0	0	0	14	16	30
Others (pl specify)										
Total	**1**	**14**	**16**	**30**	**0**	**0**	**0**	**14**	**16**	**30**
X Capacity Building and Group Dynamics										
WTO and IPR issues	1	53	45	98	1	1	2	54	46	100
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRAND TOTAL	**14**	**222**	**239**	**461**	**3**	**21**	**24**	**225**	**260**	**485**

Farmers' Training including sponsored training programmes (off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	2	25	21	46	0	0	0	25	21	46
Resource Conservation Technologies	1	20	0	20	0	0	0	20	0	20
Crop Diversification	1	13	6	19	1	0	1	14	6	20
Seed production	10	280	0	280	20	0	20	300	0	300
Integrated Crop Management	2	34	7	41	0	0	0	34	7	41
Production of organic inputs	1	16	0	16	0	0	0	16	0	16
Others (pl specify)										
Total	**17**	**388**	**34**	**422**	**21**	**0**	**21**	**409**	**34**	**443**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	1	15	25	40	0	0	0	15	25	40

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Off-season vegetables										
Total (a)	**1**	**15**	**25**	**40**	**0**	**0**	**0**	**15**	**25**	**40**
b) Fruits										
Total (b)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
c) Ornamental Plants										
Total (c)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Plantation crops										
Production and Management technology	2	21	0	21	14	15	29	35	15	50
Processing and value addition										
Total (d)	**2**	**21**	**0**	**21**	**14**	**15**	**29**	**35**	**15**	**50**
e) Tuber crops										
Production and Management technology	2	43	6	49	0	0	0	43	6	49
Processing and value addition	1	13	28	41	0	0	0	13	28	41
Total (e)	**3**	**56**	**34**	**90**	**0**	**0**	**0**	**56**	**34**	**90**
f) Spices										
Total (f)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
g) Medicinal and Aromatic Plants										
Total (g)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GT (a-g)	**6**	**92**	**59**	**151**	**14**	**15**	**29**	**106**	**74**	**180**
III Soil Health and Fertility Management										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
IV Livestock Production and Management										
Animal Nutrition Management	1	22	8	30	0	0	0	22	8	30
Disease Management										
Total	**1**	**22**	**8**	**30**	**0**	**0**	**0**	**22**	**8**	**30**
V Home Science/Women empowerment										
Design and development of low/minimum cost diet	1	1	20	21	0	0	0	1	20	21
Processing and cooking	1	6	11	17	0	0	0	6	11	17
Value addition	1	1	8	9	0	3	3	1	11	12
Women empowerment										
Total	**3**	**8**	**39**	**47**	**0**	**3**	**3**	**8**	**42**	**50**
VI Agril. Engineering										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
VII Plant Protection										
Integrated Pest Management	1	22	30	52	2	0	2	24	30	54
Integrated Disease Management	2	30	6	36	0	9	9	30	15	45
Bio-control of pests and	1	16	1	17	5	0	5	21	1	22

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
diseases										
Total	**4**	**68**	**37**	**105**	**7**	**9**	**16**	**75**	**46**	**121**
VIII Fisheries										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
IX Production of Inputs at site										
Production of Fish feed										
Mushroom Production	2	15	64	79	0	0	0	15	64	79
Total	**2**	**15**	**64**	**79**	**0**	**0**	**0**	**15**	**64**	**79**
X Capacity Building and Group Dynamics										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
XI Agro-forestry										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRAND TOTAL	**33**	**593**	**241**	**834**	**42**	**27**	**69**	**635**	**268**	**903**

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

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	2	25	21	46	0	0	0	25	21	46
Resource Conservation Technologies	1	20	0	20	0	0	0	20	0	20
Cropping Systems	1	4	16	20	0	0	0	4	16	20
Crop Diversification	2	19	21	40	1	4	5	20	25	45
Seed production	10	280	0	280	20	0	20	300	0	300
Integrated Crop Management	3	43	25	68	0	3	3	43	28	71
Integrated nutrient management	1	5	14	19	0	2	2	5	16	21
Production of organic inputs	2	34	7	41	0	0	0	34	7	41
Others (pl specify)										
Total	**22**	**430**	**104**	**534**	**21**	**9**	**30**	**451**	**113**	**564**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	1	15	25	40	0	0	0	15	25	40
Total (a)	**1**	**15**	**25**	**40**	**0**	**0**	**0**	**15**	**25**	**40**
b) Fruits										
Total (b)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
c) Ornamental Plants										
Total (c)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
d) Plantation crops										
Production and Management	3	25	16	41	14	15	29	39	31	70

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
technology										
Total (d)	**3**	**25**	**16**	**41**	**14**	**15**	**29**	**39**	**31**	**70**
e) Tuber crops										
Production and Management technology	3	69	6	75	0	0	0	69	6	75
Processing and value addition	1	13	28	41	0	0	0	13	28	41
Others (pl specify)										
Total (e)	**4**	**82**	**34**	**116**	**0**	**0**	**0**	**82**	**34**	**116**
f) Spices										
Total (f)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
g) Medicinal and Aromatic Plants										
Total (g)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GT (a-g)	**8**	**122**	**75**	**197**	**14**	**15**	**29**	**136**	**90**	**226**
III Soil Health and Fertility Management										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
IV Livestock Production and Management										
Animal Nutrition Management	1	22	8	30	0	0	0	22	8	30
Disease Management										
Feed & fodder technology	1	15	11	26	0	0	0	15	11	26
Total	**2**	**37**	**19**	**56**	**0**	**0**	**0**	**37**	**19**	**56**
V Home Science/Women empowerment										
Design and development of low/minimum cost diet	1	1	20	21	0	0	0	1	20	21
Designing and development for high nutrient efficiency diet	1	5	13	18	2	6	8	7	19	26
Value addition	1	1	8	9	0	3	3	1	11	12
Total	**4**	**13**	**52**	**65**	**2**	**9**	**11**	**15**	**61**	**76**
VI Agril. Engineering										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
VII Plant Protection										
Integrated Pest Management	1	22	30	52	2	0	2	24	30	54
Integrated Disease Management	3	69	12	81	0	9	9	69	21	90
Bio-control of pests and diseases	1	16	1	17	5	0	5	21	1	22
Production of bio control agents and bio pesticides	1	19	36	55	0	0	0	19	36	55
Others (pl specify)										
Total	**6**	**126**	**79**	**205**	**7**	**9**	**16**	**133**	**88**	**221**
VIII Fisheries										
Fish processing and value	1	5	26	31	0	5	5	5	31	36

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
addition										
Others (pl specify)										
Total	**1**	**5**	**26**	**31**	**0**	**5**	**5**	**5**	**31**	**36**
IX Production of Inputs at site										
Mushroom Production	2	15	64	79	0	0	0	15	64	79
Apiculture	1	14	16	30	0	0	0	14	16	30
Others (pl specify)										
Total	**3**	**29**	**80**	**109**	**0**	**0**	**0**	**29**	**80**	**109**
X Capacity Building and Group Dynamics										
WTO and IPR issues	1	53	45	98	0	0	2	54	46	100
Others (pl specify)										
Total	**1**	**53**	**45**	**98**	**0**	**0**	**2**	**54**	**46**	**100**
XI Agro-forestry										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRAND TOTAL	**47**	**815**	**480**	**1295**	**44**	**47**	**93**	**860**	**528**	**1388**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Mushroom Production	4	12	26	38	5	8	13	17	34	51
TOTAL	**4**	**12**	**26**	**38**	**5**	**8**	**13**	**17**	**34**	**51**

Training for Rural Youth including sponsored training programmes (Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Mushroom Production	2	9	34	43	2	6	8	11	40	51
Value addition	1	21	0	21	0	0	0	21	0	21
Small scale processing	1	4	5	9	0	0	0	4	5	9
Post Harvest Technology	1	3	8	11	0	0	0	3	8	11
Tailoring and Stitching										
Rural Crafts	1	0	14	14	0	0	0	0	14	14
TOTAL	**6**	**37**	**61**	**98**	**2**	**6**	**8**	**39**	**67**	**106**

Training for Rural Youths including sponsored training programmes – CONSOLIDATED

(On + Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Mushroom Production	6	21	60	81	7	14	21	28	74	102
Value addition	1	21	0	21	0	0	0	21	0	21

Small scale processing	1	4	5	9	0	0	0	4	5	9
Post Harvest Technology	1	3	8	11	0	0	0	3	8	11
Rural Crafts	1	0	14	14	0	0	0	0	14	14
TOTAL	**10**	**49**	**87**	**136**	**7**	**14**	**21**	**56**	**101**	**157**

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Integrated Pest Management	1	36	35	71	1	2	3	37	37	74
Capacity building for ICT application	1	65	34	99	0	0	0	65	34	99
TOTAL	**2**	**101**	**69**	**170**	**1**	**2**	**3**	**102**	**71**	**173**

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

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops										
Integrated Pest Management	1	36	35	71	1	2	3	37	37	74
Capacity building for ICT application	1	65	34	99	0	0	0	65	34	99
TOTAL	**2**	**101**	**69**	**170**	**1**	**2**	**3**	**102**	**71**	**173**

Table. Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Production and value addition										
Others (**(PPV&FRA)**)	1	53	45	98	1	1	2	54	46	100
Total										
Post harvest technology and value addition										
Processing and value addition	2	7	13	20	0	0	0	7	13	20
Others (pl. specify)										
Total										
Farm machinery										
Total										
Livestock and fisheries										
Total										
Home Science										

Economic empowerment of women	1	0	14	14	0	0	0	0	14	14
Total										
Agricultural Extension										
Total										
GRAND TOTAL	**4**	**60**	**72**	**132**	**1**	**1**	**2**	**61**	**73**	**134**

Name of sponsoring agencies involved

1) ARYA- ICAR

2) PPV& FRA- GOI

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

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Post harvest technology and value addition										
Livestock and fisheries										
Income generation activities										
Production of bio-agents, bio-pesticides,	1	11	8	19	0	0	0	11	8	19
Rural Crafts	1	1	16	17	0	0	0	1	16	17
Seed production	1	3	15	18	0	5	5	3	20	23
Agricultural Extension										
Grand Total	**3**	**15**	**39**	**54**	**0**	**5**	**5**	**15**	**44**	**59**

5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	TOTAL
Advisory Services	252	273	0	273
Diagnostic visits	14	56	3	59
Field Day	3	81	2	83
Group discussions	--	--	--	--
KisanGhosthi	--	--	--	--
Film Show	24	749	577	1326
Self -help groups	--	--	--	--
Kisan Mela	1	422	33	455
Exhibition	9	104	28	132
Scientists' visit to farmers field	69	231	0	231
Plant/animal health camps	1	44	0	44
Farm Science Club	--	--	--	--
Ex-trainees Sammelan	--	--	--	--
Farmers' seminar/workshop	--	--	--	--
Method Demonstrations	32	613	3	616
Celebration of important days	2	96	38	134
Special day celebration	3	168	0	168
Exposure visits	4	89	0	89
Others (pl. specify)	--	--	--	--
Total	**414**	**2926**	**684**	**3610**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	--
Extension Literature	3
News paper coverage	18
Popular articles	1
Radio Talks	22
TV Talks	34
Animal health amps (Number of animals treated)	--
Others (pl. specify)	--
Total	**78**

Messages sent

MOBILE ADVISORY SERVICES THROUGH MKISAN PORTAL

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

No of registered farmers:

Types of	Type of messages													
Messages	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	6	10610					1	1450	3	4340				
Voice only														
Voice & Text both														
Total Messages	**6**						**1**		**3**					
Total farmers Benefitted		**10610**						**1450**		**4340**				

MOBILE ADVISORY SERVICES THROUGH OTHERS - Nil

6. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS

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

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

Crop	Name of the crop	Name of the variety /hybrid	Quantity of seed produced (q)	Value (Rs)	Seed supplied to farmers		Supplied to other agencies (q)
					Quantity (q)	No of farmers	
Cereals							
	Paddy	TPS-5 Variety	39.89 q	95736.00	39.89 q	110. Nos.	--
Total							

Production of planting materials by the KVKs

Crop	Name of the crop	Name of the variety / hybrid	Number	Value (Rs.)	Planting material supplied to farmers		Supplied to other agencies (No)
					No	No of farmers	
Fodder crop saplings							
	Cumbu napier	Co-5 Variety	30533	29973	30533	85	--
	Guniea grass	Variety	6600	7150	6600	33	--
Others							
	Tapioca tuber	Variety	35 Kg	700	35 kg	10	--
	Paddy starw	--	2 ton	5000	2 ton	1	--
	Fodder grass	--	4375 Kg	8750	4375 Kg	30	--
Total							

Production of Bio-Products

Bio Products	Name of the bio-product	Quantity Kg	Value (Rs.)	Supplied to farmers		Supplied to other agencies
				kg	No of farmers	kg
Bio-fungicide						
	Pseudomonas	83	8300	83	51	--
Bio Agents						
	Mushroom bed spawn	199 Nos.	9950	199 Nos.	48	-
	Wild boar reppalent	5 Lit.	3100	5Lit.	5	--
	Coconut tonic	1481	14810	1481	135	--
Total						

Production of livestock materials - Nil

8. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Soil	134	132	25	13400.00
Water	2	2	2	100.00
Plant	--	--	--	--
Manure	--	--	--	--
Others (pl.specify)	--	--	--	--
				--
Total	**136**	**134**	**27**	**13500.00**

9. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
30.11.2017	20

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

Proceedings of the 9th SAC meeting held on 30.11.2017 at ICAR-KVK, Kanyakumari

The Ninth Scientific Advisory Committee meeting was held at ICAR-KVK, Kanyakumari on 30.11.2017. The following SAC officials and staff members participated in the meeting.

1. Dr. Y.G Prasad, Director, ICAR-ATARI, Hyderabad
2. Dr. H. Philip, Director of Extension Education, TNAU, Coimbatore
3. Dr.J. V. Prasad, Principal Scientist, ICAR-ATARI, Hyderabad
4. Dr. R. Swarnapriya, Professor and Head, Horticultural Research Station, Pechiparai
5. Dr. S. Malmarugan, Professor and Head,Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoil
6. Dr. S. Suresh, Professor (SS&AC), Agricultural Research Station, Thirupathisaram
7. Dr. R. Muthuraj, Senior Scientist , CTCRI, Thiruvananthapuram
8. Mr. P. Pandian, Joint Director of Agriculture, Nagercoil
9. Mr. Ashok Macrin, Deputy Director of Horticulture, Nagercoil
10. Mr. M. Raja Kumar, Deputy Director of Agriculture, Nagercoil
11. Mr. N. Balakrishnan, Assistant Director of Horticulture, Nagercoil
12. Mr. M. Nijamudeen, PA(Agri) to District Collector, Nagercoil
13. Dr. A. Ramakrishnan, Programme Coordinator, ICAR-KVK, Kanyakumari
14. Dr. K. Kavitha, SMS (Plant Pathology), ICAR-KVK, Kanyakumari
15. Dr. Cissie Theeblyn David, SMS (FSN), ICAR-KVK, Kanyakumari
16. Dr. R. Latha, SMS (PB&G), ICAR-KVK, Kanyakumari
17. Dr. G. Preetha, Asst.Professor (Agrl. Ento.), ARS, Thirupathisaram
18. Mrs. K. R. Sudha, Programme Assistant (Technical), ICAR-KVK, Kanyakumari
19. Mr. R. Rajesh Kannan, Farm Manager, ICAR-KVK, Kanyakumari

20. Mr. V. Sivaraman, Prog. Asst. (Computer), ICAR-KVK, Kanyakumari

The Programme Coordinator, ICAR-KVK, Thirupathisaram, welcomed the gathering. Dr. H. Philip, Director of Extension Education, TNAU, Coimbatore inaugurated the meeting. In his opening remarks, he urged the members to putforth their scientific need based field problems with the goal to double the income and triple the production of the farmers. He also stressed the members to offer their opinion for changes in the action plan and requested them to give recommendations for the forthcoming year.

The Programme Coordinator presented the action taken report on the recommendations of 8th scientific advisory committee meeting held on 30.11.2017. While presenting the action plan Director of Extension Education, TNAU, Coimbatore emphasized to assess the reasons for non-adoption of value addition technology in pineapple. He advised to increase the number of trainings on value addition in pineapple. He observed that the quantity of vegetable seeds supplied through KVK was very less and recommended to impart training nutrition gardening and establish crop cafeteria at KVK. In all the trainings conducted in ICAR- KVK, the officials from NABARD and Lead bank have to be invited so as to explain about the schemes available in the Bank. The Director of Extension Education, TNAU, Coimbatore suggested to include Agricultural Department officials in the kumari farmers whatsApp group and make the group more interacive for the benefit the farmers of Kanyakumari district. He also added that more number of technical messages to be sent to All India Radio, Nagercoil.

PA (Agri) to District Collector Mr. M. Nijamudeen recommended to include tapioca varieties released by KAU in the action plan. In addition, he also emphasized to give press news on the availability of technology products of KVK. Mr. P. Pandian, Joint Director of Agriculture, Nagercoil suggested to give more radio messages in more numbers for the benefit of the farmers of Kanyakumari District. Mr. Ashok Macrin, Deputy Director of Horticulture, Nagercoil recommended to document the traditional varieties of fruit crops of Kanyakumari viz., Mango, Jack and Banana under PPV Act.

The Principal Scientist from CTCRI, Thiruvananthapuram, Dr.R. Muthuraj recommended to assess the suitability of tapioca variety for product development technology and utilize the services of the incubation centre of CTCRI on value addition in Tapioca and sweet potato. The Joint Director of Agriculture, Kanyakumari commented that trainings on cocoa based confectionary products to be included as part of training to impart technology to the farming society.

Dr. S. Malmarugan, Professor and Head, Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoil suggested to introduce shade loving fodder crops suitable for growing in coconut gardens. In addition, he suggested that hydroponics fodder and azolla cultivation need to be demonstrated to the farmers.

The Director of Extension Education, TNAU, Coimbatore advised to strengthen the revolving fund by producing planting materials of horticultural crops, value added products, spawn, etc., and to maintain production register.

The Director, ICAR-ATARI, Hyderabad emphasized to focus on the activity related to farmer's income generation and to concentrate on market linked and growth linked extension. He also suggested to document the impact of five successful technologies. He also stressed to adopt a village and impart skill development training for entrepreneurial development and study their impact. He also opined to update the data base related to farmers, progressive farmers and organic farmers. In addition he stressed to display the government schemes in KVK through posters and spread the technology through messages. He urged to include the feed back obtained from the SAC non-official members under the recommendations. The Director of Extension Education, TNAU, Coimbatore emphasized that KVK should work as team for the effective transfer of technologies. Every member of the team should contribute productively for the success of KVK. The KVK team should guide the farmers for adopting the newer technologies so as to enhance their livelihood. He urged the KVK team to work with confidence and enthusiasm. He also stressed to study the impact of trainings for their effectiveness and adoption. The Director of Extension Education, TNAU, Coimbatore in his concluding remarks advised to update the farmer's database. Dr. K.Kavitha, SMS (Plant Pathology), ICAR-KVK, Thirupathisaram proposed the vote of thanks.

Based on the above discussions, the following recommendations were suggested during the 9th SAC meeting.

13. Impact study on non-adoption on value addition in pineapple to be given to the needy people and the impact study is to be conducted. The training has to be conducted at the Thiruvattar block (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore).
14. Officials from NABARD and Lead bank have to be invited for skill development trainings so as to explain about the schemes available in the Bank (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore).
15. Agricultural Department officials to be included in the Kumari farmers whatsApp group for sharing information on Agriculture and allied sectors (Proposed by: **Dr. H. Philip,** Director of Extension Education, TNAU, Coimbatore).
16. More number of technical messages (@ 2 / Scientist / Month) is to be given to All India Radio, Nagercoil to reach the technologies widely to the farming community (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore).
17. Include tapioca varieties released by KAU in the action plan. (Proposed by: **Mr. M. Nijamudeen**, PA (Agri) to District Collector)
18. Document the traditional varieties of fruit crops of Kanyakumari viz., Mango, Jack and Banana under PPV Act. (Proposed by: **Mr. Ashok Macrin**, Deputy Director of Horticulture, Nagercoil)

19. Trainings on cocoa based confectionary products to be included as part of training to impart technology to the farming society(Proposed by: **Mr. P. Pandian,** The Joint Director of Agriculture, Kanyakumari)
20. Introduce shade loving fodder crops suitable for growing in coconut garden are to be introduced (Proposed by: **Dr. S. Malmarugan**, Professor and Head, Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoi).
21. Hydroponics fodder and azolla cultivation need to be demonstrated to the farmers. (Proposed by: **Dr. S. Malmarugan**, Professor and Head, Veterinary University Training and Research Centre, TANUVAS, Parakkai, Nagercoi).
22. Strengthening the revolving fund by producing planting materials of horticultural crops, value added products, spawn etc. (Proposed by: **Dr. H. Philip**, Director of Extension Education, TNAU, Coimbatore).
23. Update the data base related to farmers, progressive farmers and organic farmers (Proposed by: **Dr. Y.G Prasad**, Director, ICAR-ATARI, Hyderabad)
24. Display the government schemes in KVK through posters and spread the technology through messages(Proposed by: **Dr. Y.G Prasad**, Director, ICAR-ATARI, Hyderabad)

10. PUBLICATIONS

Publications in journals

S. No	Authors	Year	Title	Journal
1	KVK, Kanyakumari	2018	Krishi Vigyan Kendra, Thirupathisaram- At a glance	Uzhavarin valarum Velaanmai. 9(7): 26-34.

Other publications

S.No	Item	Year	Authors	Title	Publisher
1	Books				
2	Book chapters / manuals				
3	Training manuals	2017	Ramakrishnan, K., K. Kavitha, R. Latha, Cissie Theeblyn David, K.R.Sudha, R. Rajesh Kannan and V. Sivaraman.	Self employment opportunities of farm women (Tamil)	ICAR- Krishi Vigyan Kendra, Thirupathisaram, Kanyakumari District
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	2018	Kavitha, K., R.Latha and K.Ramakrishnan	Demonstration of Banana Pseudostem Weevil Management Practices In Nendran In Kanyakumari District-A Critical Study.	International Conference on Biocontrol for Sustainable Insect Pest Management-ICBS 2018 during 29.1.18 to 31.1.18 at AC & RI, Killikulam. Pp: 567-569

		2018	Radhakrishnan,V., K.Kavitha, V, Senthilvel	Integrated Pest and Disease management in watermelon for sustainable farming system.	International Conference on Biocontrol for Sustainable Insect Pest Management-ICBS 2018 during 29.1.18 to 31.1.18 at AC & RI, Killikulam. Pp: 597-598
		2018	Ramakrishnan, K., K. Kavitha and R. Latha	Information Technology- A boon for Agriculture	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018 Pp: 334-335.
		2018	Sangeetha, S., K. Parameswari ,K.Kavitha and M. Jayaramachandran	Impact of Initiative for Nutritional security through Intensive Millet promotion in Villupuram district.	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018 Pp: 202.
		2018	Thavaprakaash, N., R. Latha, K. Kavithaand R. Premavathi	Performance assessment of Blackgram varieties in Kanayakumari District.	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018.Pp :254.

		2018	Kavitha, K., R.Latha, CessieTheeblyn Davidand K.Ramakrishnan	Impact of Skill Development Training on Mushroom Cultivation in Kanyakumari District of Tamil Nadu	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018.Pp: 366-367.
		2018	Latha, R., K.Kavitha, and K.Ramakrishnan	Impact of TPS5 Rice variety in Kanayakumari District	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018.Pp: 230.
		2018	Kavitha, K.,V.K. Satya, S. Sangeetha and K. Parameswari.	Facilitating the farmers to adopt Ecofriendly Management Practices for blast and sheath blight in paddy; the KVK experience	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018.Pp: 264-265.
		2018	Ramakrishnan, K., R. Vijayalakshmi and V.K. Pal Pandi .	Profitable goat rearing in Virudhunagar district of Tamil Nadu – A Success story	Abstract published during International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development:

					Futuristic Challenges and Prospects - INTFES – 18 during March 9 &10, 2018.Pp:255-256
5	Technical bulletin/ Folders	2017	ICAR- Krishi Vigyan Kendra, Thirupathisaram, Kanyakumari District.	Sankalp Se Siddhi folder (Tamil)	ICAR- Krishi Vigyan Kendra, Thirupathisaram, Kanyakumari District
		2018	Kavitha, K., R. Latha, Cissie Theeblyn David and K. Ramakrishnan	Safe handling of pesticides (Tamil)	ICAR- Krishi Vigyan Kendra, Thirupathisaram, Kanyakumari District
		2018	Latha, R., K.Kavitha,CessieTheeblyn David, S. Santheepanand K.Ramakrishnan	Plant Protection varieties and Farmers Rights Act. (Tamil)	ICAR-KrishiVigyan Kendra, Thirupathisaram, Kanyakumari District
6	Reports				
7	Others (Newspaper)	2017	G.Preetha and K. Kavitha	Tapioca mealy bug management (Tamil)	Diamalar dated. 13.09.2017 Pp: 13

Newsletter/Magazine - Nil

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

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

Name of the staff	**Title**	**Duration**	**Organized by**
Dr. K. Ramakrishnan	Annual Review Workshop of KVKs	3 days (04.05.2017 to 06.05.2017)	KVK, Goa
Dr. K. Ramakrishnan	Social Scientist Meet	1 day (10.05.2017)	TNAU, Coimbatore
Dr. Cissie Theeblyn David	Training on "Extension Strategies for mainstreaming women in agriculture"	3 days (19.06.2017 to 21.06.2017)	MANAGE, Hyderabad
Dr. K. Ramakrishnan	Cluster FLD meeting	2 days (04.07.2017 & 05.07.2017)	TNAU, Coimbatore
Dr. K. Kavitha	Training for Scientists and Subject matter Specialists of KVKs on "Mushroom production technology"	7 days (12.07.2017 to 18.07.2017)	DMR, Solan
Dr. K. Ramakrishnan	National Banana Festival	4 days (20.07.2017 to 23.07.2017)	AC&RI, Madurai, TNAU

Dr. K. Kavitha	Scientific Workers Conference	1 day (11.08.2017)	TNAU, Coimbatore
Dr. K. Kavitha	International symposium on "Sugarcane Research Since Co 205; 100 years and beyond"	4 days (18.09.2017 to 21.09.2017)	ICAR-SBI, Coimbatore
Dr. CissieTheeblyn David	Training on "Biogas technology"	4 days (25.09.2017 to 28.09.2017)	TNAU, Coimbatore
Mr. V. Sivaraman	Training on "Video conferencing"	1 day (04.10.2017)	TNAU, Coimbatore
Dr. K. Kavitha	Training on "Approaches and strategies for startups in agriculture and allied sector"	5 days (09.10.2017 to 13.10.2017)	EEI, Hyderabad
Dr. K. Ramakrishnan	Training on "Vigilance"	1 day (01.11.2017)	TNAU, Coimbatore
Dr. K. Ramakrishnan	Training on "Improving e-Governances in Agriculture"	3 days (13.11.2017 to 15.11.2017)	MANAGE, Hyderabad
Dr. K. Ramakrishnan	Training on "Extension strategies for management of organic certification"	3 days (03.01.2018 to 05.01.2018)	MANAGE, Hyderabad
Dr. K. Ramakrishnan Dr. CissieTheeblyn David	ARYA project review meeting	1 day (20.01.2018)	CRIDA, Hyderabad
Dr. K. Ramakrishnan Dr. K. Kavitha	International conference on "Biocontrol for Sustainable Insect Pest Management- ICBS 2018"	3 days (29.01.2018 to 31.01.2018)	AC & RI, Killikulam, TNAU
Dr. R. Latha	Training on "Agroforestry models"	3 days (29.01.2018 to 31.01.2018)	IFGTB, Coimbatore
Dr. CissieTheeblyn David	Banana festival 2018	4 days (17.02.2018 to, 20.02.2018)	CISSA, Kerala at Kalliyoor, Thiruvananthapuram
Dr. K. Ramakrishnan Dr. K. Kavitha Dr. R. Latha	International Conference on "Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18"	2 days (09.03.2018 & 10.03.2018)	TNAU Coimbatore
Dr. K. Ramakrishnan	National Conference of KVKs	2 days (16.03.2018 & 17.03.2018)	IARI, New Delhi
Dr. R. Latha	Training on "Biosafety issues of genetically modified organisms"	1 day (23.03.2018)	TNAU Coimbatore

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

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

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

Introduction of alternate crops/ varieties

Crops/cultivars	**Area (ha)**	**Extent of damage**	**Recovery of damage through KVK initiatives if any**
Rice	5320		Introduced an extra early duration rice variety ADT 37 (105 days) instead of long duration variety CR-1009 (150 days) due to delayed planting of Rabi season.
Total	5320		

Major area coverage under alternate crops/varieties

Crops	**Area (ha)**	**Number of beneficiaries**
Cereals	530	500
Total	530	500

Farmers-scientists interaction on livestock management - Nil

Animal health camps organised - Nil

Seed distribution in drought hit states - Nil

Large scale adoption of resource conservation technologies - Nil

Awareness campaign - Nil

13. Awards/rewards by KVK and staff

Recognitions &Awards/Special attainments and Achievements of Practical Importance			
Recognitions & Awards (Team Award/individual			
Item of Recognition	Year	Awarding Organization National / International / Professional; Society	Individual/ collaborative
Best Poster Presentation	2018	International Conference on Biocontrol for Sustainable Insect Pest Management- ICBS 2018 29.1.18 to 31.1.18 at AC & RI, Killikulam	Individual (Dr.K.Kavitha)
Best Poster Presentation	2018	International Conference on Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects - INTFES – 18 from 09.03.18 to 10.3.18 by Extension Education Society, at TNAU, Coimbatore	Individual (Dr.R.Latha)
Best KVK stall award (KVK Thirupathisaram)	2018	Farmers day held at TNAU, Coimbatore during 9.2.2018 to 10.2.2018	Team Award

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

14. Details of sponsored projects/programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1.	Attracting and Retaining Youth in Agriculture (ARYA)	ICAR	Imparting trainings on value addition in Banana and Coconut		24 lakhs
2.	Protection of Plant varieties and Farmers Rights Act 2001 (GOI-PPV&FRA)	ICAR	Creating awareness on PPV&FRA and identification of traditional varieties		0.80 lakhs
3.	Mini Soil Testing laboratory	ICAR	Purchase of Soil Testing Kits (Mridaparikshak Mini labs) – To analyse soil samples and distribute Soil Health Card to the Farmers of Kanyakumari District.		1.72 lakhs

Please attach detailed report of each project/programme separately

15. Success stories

15. A. success stories/case studies

1. RICE TPS-5 VARIETY – A BOON TO KANYAKUMARI DISTRICT

Situation analysis/Problem statement: Rice is one of the major crops being cultivated in Kanyakumari District. It occupies more than 12000 ha in two seasons (*Kharif* and *Rabi*) of the year. ASD 16 is the only rice variety cultivated by the farmers in *Kannipoo* season. Low yield due to lodging, occurrence of pest and diseases (leaf folder, stem borer and tungro)and poor grain filling are the major constraints reported by the farmers while cultivating ASD rice varieties. So, farmers need alternate high yielding, non-lodging, pest and disease resistant variety. Agricultural Research Station, Thirupathisaram has released TPS-5 rice variety during 2013 which is having almost similar duration of existing ASD 16. Also the new variety produces 10-15% higher yield, non-lodging, tall growing and moderately tolerant to most of pest and diseases. This variety may fulfill the requirement of farmers.

Plan, Implement and Support: The new variety (TPS-5) seeds was introduced to the farmers through KVK and ARS, Thirupathisaram initially through FLDs programmes. Created awareness through leaflets, folders, Air Message and talk to the farmers. The new variety along with IWM and ICM practices were imparted through frequent trainings and special programmes.

Trainings and Front Line Demonstrations were conducted on newly released TPS-5 variety with early post emergence herbicide to the farmers. FLDs were raised during 2014 at Ramapuram village of Agestheswaram block. FLDs on Integrated Weed Management in (TPS -5) rice were conducted during 2015-16 at Ramapuram and Andarkulam villages. FLDs on Integrated Crop Management in TPS-5 rice were conducted during 2016-17 in Peiyakulam ela of Manavalakurchi village of Kurunthankodu block. On and off campus trainings, Field days, extension functionaries trainings, special programmes, seminar, exhibitions were also conducted during 2014-15, 2015-16 and 2016-17. The following table clearly depicts the details of the programmes conducted at KVK from 2014- till date.

S. No.	Title	Nos.	Total participants	Extension functionaries (Nos.)
1.	FLDs on popularization of new variety TPS-5 and early post emergence herbicide in rice	10	10	-
2.	FLDs on IWM in (TPS-5) rice variety	10	10	-
3.	FLDs on ICM in (TPS-5) rice variety	10	10	-
4.	On and Off campus training programmes	12	260	16
5.	Field days	3	160	24
6.	Extension functionaries trainings	12	-	265
7.	Pre -rabi and pre- kharif training programmes, seminar, Exhibitions and meals	5	1800	120
8.	ATMA trainings	7	156	38

Output: During 2014-15, TPS 5 rice variety performed better with taller plants, increased panicle length, number of tillers/m2, number of productive tillers/m2 and filled grains/panicle than ASD 16. Demonstration (TPS 5 variety) recorded higher grain yield (70.1 q/ha)

compared to ASD (56.5 q/ha). Yield increase was 26 percentage. Similarly, higher net returns (Rs. 83389/ha) and BCR (2.69) were recorded with TPS 5 compared to ASD 16 (net returns – Rs. 59119/ha); BCR – 2.24).

During 2015-16, the TPS variety was integrated with IWM practices and results indicated that demonstration recorded 54.9 q/ha compared to the check (46.66 q/ha). Though the straw was not harvested, the farmers realized higher gross income, net income and net income and B:C ratio.

Frontline demonstration on integrated crop management practices in rice with TPS 5 during 2016-17 was conducted in Manavalakurichi village. The crop growth with the demonstration in terms of plant height, tillers, productive tillers were higher with demonstration than check.

Outcome: The TPS -5 new variety has wide spread among the farmers of Agestheswaram, Kurenthencode and Rajakagamangalam blocks of Kanyakumari district. The higher yield in TPS 5 was due to high productive tillers and grain yield/ panicle. The per cent yield increase ranged from 10.5 to 32.2. The TPS -5 variety resulted in an additional income of Rs. 7000 to 12500/ha.

Apart from the FLDs, the technology was transferred to the farmers through trainings, field visits, diagnostic visit, seminars etc. The farmers interest groups of Rice in Thovalai and Agastheeswaram and Kurunthancodu were also trained about this technology. The extension functionaries of the district understood the importance of this new variety. The farmers were trained to produce the seeds by themselves and started to supply seeds to the fellow farmers. The technology has spread to 1000 to 1500 hectares in the district.

The seeds requirement of the farmers is satisfied partly by the KVK and ARS, Thirupathisaram. Department of Agriculture, Nagercoil is presently involved in TPS 5 seed production for further distribution to farmers.

Impact:

Among the attributes of a new variety or technology, relative economic advantage over the existing ruling variety or traditional practice is an important criterion for adoption or discontinuance of the variety. From this study it is evident that TPS 5 rice variety has significant yield advantage over the variety ASD 16. The average yield potential of TPS 5 was 71.4q/ha as against 63.0q/ha in ASD 16. The net return obtained from TPS 5 was Rs.67100/ha while it was Rs.54500/ha in ASD 16. The average economic gain was Rs.12600/ha. As the new rice variety TPS 5 expressed its real potential in the farmers holdings, the rate of adoption will be increased. However the seed requirement of the farmers should be met by the Department of Agriculture and Agricultural Research Station, Thirupathisaram.

2. MECHANIZATION IN RICE CULTIVATION

Situation analysis/Problem statement:

Rice is one of the major crops of Kanyakumari District. It occupies about 12,000 ha during both '*Kannipoo' (Kharif)* and *'Kumbapoo'* (*Rabi*) seasons. The farmers were following conventional methods of Rice cultivation. The conventional method leads to high investment cost and labour with low productivity. FLDs and trainings on SRI were conducted since 2008 to increase the productivity with low input cost and without affecting the ecosystem. It resulted in yield increase (10-40%), and savings of water (25 to 30%) and nitrogen (25 kg/ha). Though SRI technology is adopted in 50-60 per cent area of this district, the farmers are facing labour scarcity for Rice cultivation and timely operations. It ultimately delayed the farm operations and skipping of adoption of technologies which resulted low

productivity in Rice. Due to labour constraints, rice area of the district is decreasing year by year. Mechanization in rice is a way for reducing the labour scarcity, address the labour issues besides reducing the time of operation. Tray nursery preparation, transplanting, weeding and harvesting are the major operations which are possible to carry out using machine/implements.

Plan, Implement and Support: Krishi Vigyan Kendra, Kanyakumari had initiated the programme on mechanization in Rice cultivation in the district. The mechanical transplanter and drum seeder have been demonstrated through front line demonstrations since 2007-08. Subsequently, cono-weeder, power weeder and combined harvesting was demonstrated in SRI Rice cultivation. During 2012-13, complete mechanization in Rice cultivation was demonstrated through front line demonstration in Thovalai and Agastheeswaram blocks. Farmers Field School (FFS) on mechanization in Rice was made during 2014-15 at Perumselvavilai of Vembanoor village which enabled the farmers to adopt complete mechanization.

Tray nursery preparation (Plastic trays – 60 cm x 30 cm with seed rate of 20kg/ha), mechanical Rice transplanting (walk behind and drive type), power weeding (TNAU model two row weeder) and mechanical harvesting using combined harvester are the technologies demonstrated.

Output: Farmers were well trained for cono weeding and combined harvesting of Rice. Mechanization spread to 40-60 percent area of the district. Farmers are satisfied and expressed that mechanization in Rice registered low labour requirement (41 man working days in complete mechanization and 139 man working days in conventional method), highly profitable (net profit of Rs. 40,400/- with BCR of 2.25.) and easy to adopt all the technologies *viz*., transplanting, weeding and harvesting in time.

Outcome : During *Rabi* season, farmers adopted mechanical Rice transplanting around 500-600 ha. Two progressive farmers purchased Rice transplanter through subsidy. Four cooperative societies and FIG purchased Rice transplanters. Ten farmer groups purchased Paddy power weeder through Tamil Nadu government subsidy scheme. In Kanyakumari district around 70-75 per cent of the Rice was harvested through combined harvester during *Kharif*, 2016-17.

Impact :

Two entrepreneurs were developed on mechanical transplanting and three on harvesting. These entrepreneurs are engaging youth for the operations. They are charging Rs. 2,500/- for one acre transplanting and Rs. 3000/- to Rs. 3500/- for one acre mechanical harvesting using combined harvester. Each youth is being paid Rs. 750 – 1000 per day as wage.

3.MANAGEMENT OF SOIL ACIDITY THROUGH DOLOMITE APPLICATION FOR RICE

Situation analysis/Problem statement:

Rice is one of the major crops being cultivated in Kanyakumari District. It occupies more than 12000 ha in two seasons of the year. The soil cultivated with Rice is acidic in 50 to 60 % of the cultivable area. Therefore due to low pH and continuous submergence, the mobilization and reduction of ferric iron to ferrous iron causes nutritional imbalance and disorder in rice crop. This has resulted in yield reduction due to less productive and ill-filled grains.

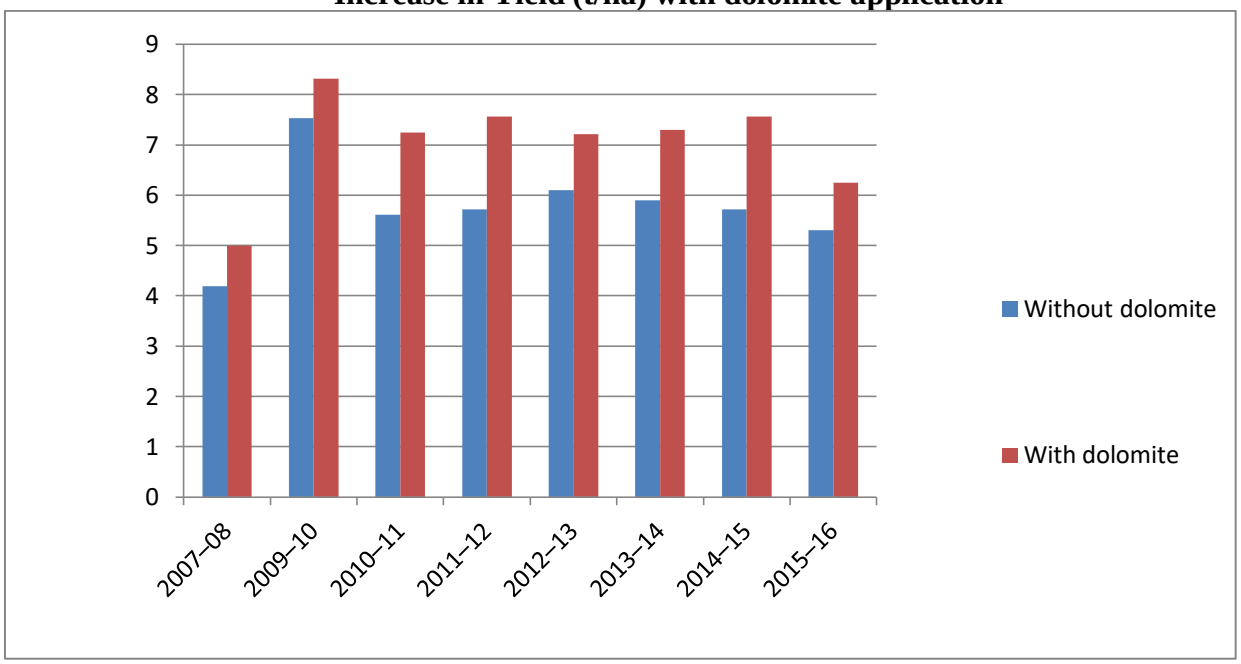
Plan, Implement and Support: The application of cheaper and high neutralizing powder amendment dolomite @ 500 kg/ha during the last plough is effective in reclamation of soil acidity and also act as a source for calcium and magnesium which are deficient in these soils.

On campus trainings, off campus trainings, meetings and method demonstrations were conducted on reclamation of soil acidity using low cost amendment and application of the micronutrients since 2008-09 in different villages. Apart from this, FLD programmes were also conducted at Perumselvavilai, Andarkulam, Veeranamangalam, Thuvarankadu and Thalakudi villages.

Output:The application of dolomite increased the yield of Rice. The Rice yield was increased from 5.0 to 8.32 t/ha due to the application of dolomite (Table). The percentage yield increase was ranged from 10.5 to 32.2. The dolomite application is also resulted in an additional income of Rs. 7000 to 12500 per hectare.

Sl. No.	Year	Gross yield(t/ha)		BCR		Yield (%) Increase
		Without dolomite	With dolomite	Without dolomite	With dolomite	
1	2007–08	4.19	5.00	1.82	2.07	19.3
2	2009–10	7.53	8.32	2.11	2.51	10.5
3	2010–11	5.61	7.24	2.05	2.59	29.1
4	2011–12	5.72	7.56	2.06	2.64	32.2
5	2012–13	6.10	7.21	2.14	2.48	18.2
6	2013–14	5.90	7.30	2.01	2.40	23.7
7	2014–15	5.72	7.56	2.06	2.64	32.2
8	2015–16	5.30	6.25	2.32	2.52	20.6

Increase in Yield (t/ha) with dolomite application



Because of this high return due to the management of soil acidity by dolomite application, the farmers started practicing application of dolomite regularly with an additional cost of Rs. 1500 to 2000/ha. Employment generation is created in terms of dolomite incorporation @ one man day / acre. Additional employment can be generated in processing of produce @ one man day/acre.

Outcome: The farmers interest groups of Rice in Thovalai and Agastheeswaram of the district which has major area were well trained in this technology. The extension functionaries of the district understood the viability of the technology demonstrated. The farmers demanded to supply dolomite on subsidy from the Government officials. They started purchasing the dolomite and showed enthusiasm in application to their fields. The technology has spread to 2000 to 3000 hectares in the district.

Impact : The dolomite application is also resulted in an additional income of Rs. 7000 to 12500 per hectare.

4. NURSERY AND CUT FLOWER PRODUCTION

Situation analysis/Problem statement:

Nursery production is an attractive farm enterprise which provides scope for self-employment of rural youth and women. The enterprise requires little area and the least initial investment. But technical knowledge and access to the produce (planting material) are important to start the enterprise. The commercial activity of production and marketing of horticulture products is also a source of gainful and quality employment to people.

Plan, Implement and Support: With changing life styles and increased urban affluence, floriculture has assumed a definite commercial status in recent times. Appreciation of the potential of commercial floriculture has resulted in the blossoming of this field into a viable agri-business option. Availability of natural resources like diverse agro-climatic conditions permit production of some of the temperate and tropical flowers, almost all throughout the year in some part of Kanyakumari district.

Considering the demand for production of quality planting material and cut flowers, the need for creation of employment in the field of horticulture, vocational trainings and demonstrations on nursery and cut flower production techniques were conducted for the duration of 21 and 10 days to the women Self Help Groups and rural youth of Kanyakumari District since 2004. Exposure visits were also made in well established nurseries and cut flower units

The technology and skills involved in nursery production viz., selection of site, planning and layout of nursery, media and containers for propagation of nursery plants, nursery bed preparation and pro tray nursery raising, seed treatment and sowing, maintenance of seedlings, propagation through cuttings and layering, grafting and budding and micro propagation were disseminated through trainings and demonstrations

Cut flower production

Orchid, *Anthurium*, *Heliconia*, *Gladiolus*, and Tuberose are important cut flower crops which performs very well either under open or shade net conditions in the District. Technological backup on selection of planting material and seed treatment, planting techniques, nutrition, weed, water and shade management, plant protection, harvest, post-harvest handling and packing techniques were provided through training and demonstrations.

Output: After attending 21 days training programme during 2005-06 Mr. Sasikumar, Sarode, Thuckalay has started a nursery unit (Indira nursery gardens) for the production of ornamental plants, Casuraina, Jasmine and cut flowers like heliconia and orchids. Apart from nursery plants he is also producing cut flowers like heliconia, orchids and anthurium and earning an average of Rs. 7500/ month.

Outcome:

The vocational training on nursery and cut flower production has motivated the Self Help Groups and the rural youth those who have attended the training. As a result of this, two self-help groups and four individuals started their own production units at their respective places. In case of SHG the work and profits were shared among them. Nursery cum cut flower production venture are also providing employment opportunities to some labourers throughout the year.

Impact : The farmers are earning an average of Rs. 7500/ month.

5. MANAGEMENT OF PSEUDOSTEM WEEVIL IN BANANA

Situation analysis/Problem statement:

Banana is one of the important fruit crop in Kanyakumari district which occupies an area of 8500 ha as pure crop as well as intercrop /mixed crop in coconut /rubber/spice based cropping systems. More than 75 percent of the holdings are below one ha and the production, profit and employment derived from such small holdings are quite in sufficient to sustain the dependant families. The low production and profitability is mainly due to inefficient farming practices, nutritional imbalances and rampant pest and disease problems.

Plan, Implement and Support: Incidence of pseudostem weevil and rhizome weevil are the most dangerous pests in banana and at severe conditions it has resulted in yield reduction of more than 50 per cent. Scope for expansion of land area and land holding size is limited and hence crop intensification through transfer of advanced production and protection techniques is the only mean to enhance the production and income.

Pseudostem injection technology was assessed through OFT during 2010-11 and subsequently the technology was demonstrated in large scale through FLD during 2011-12 & 2013-14 at Ellavuvillai, Enjaokodu, Thiruvattar, Kolvel, Thakalai villages. The technology demonstrated includes Pseudostem injection of diluted Monocrotophos 36WSC (54ml of Monocrotophos with 350 ml of water) @ 2 ml at 45 cm from ground level and another 2 ml at 150 cm from the ground level at monthly interval from 5^{th} to 8^{th} month after planting. This successful technology was disseminated through method demonstrations, on and off campus trainings to farmers and Extension personnel.

Output: The technology of banana pseudostem injection with Monocrotophos @4 ml/plant recorded the highest per cent reduction of pseudostem weevil (76.07%) over farmers practice with a net profit of Rs. 3,84,840 and BCR of 3.33. The pseudostem injection technology is very simple, cost effective and is highly accepted by the farmers for weevil management. Further pseudostem injection technology is providing employment opportunities for the farm labourers and farmers @ Rs. 2/- per plant and a net profit of Rs. 1500-2000/ha is earned as part time venture.

Outcome: The success of this technology has now spread over an area of more than 1500 ha in this district. Self-help group members, rural youth and farmers have taken initiative to adopt this technology for additional income generation.

Impact:

The success of this technology has now spread over an area of more than 1500 ha in this district. Further pseudostem injection technology is providing employment opportunities for the farm labourers and farmers @ Rs. 2/- per plant and a net profit of Rs. 1500-2000/ha is

earned as part time venture. Self-help group members, rural youth and farmers have taken initiative to adopt this technology for additional income generation.

6. ROOT FEEDING OF COCONUT TONIC

Situation analysis/Problem statement:

Coconut is the major crop in Kanyakumari District and occupies an area of more than 22,000 ha. Low yield in vast majority of gardens is due to lack of manuring and fertilizer application. The soil fertility is also degraded year by year. Shedding of button, pre-mature nut and barren nuts are the common problems in coconut cultivation. High acidity (<5.5) is yet another reason for the button shedding. The average yield/tree/year is 65 with the highest yield potential of 150 to 180 nuts/tree/year. The farmers are not applying the scheduled manures and fertilizers.

Plan, Implement and Support: Coconut tonic released by TNAU, Coimbatore is very effective in reducing button shedding and increasing the yield.

Training programmes and demonstrations were conducted for improving the soil fertility and yield by manuring and short term measure of root feeding of coconut tonic. Apart from that, FLD programmes were also conducted at Azhagappapuram, Udaiyarvilai, Manavalakurichi, Ethamozhi and Puthalam villages on root feeding of TNAU coconut tonic. A healthy feeder root with pencil thickness was selected from 50 cm away from the trunk without any damage to the root. A slanting cut was given with a sharp knife (or) a blade and the root was inserted into the polythene sachet containing the tonic (200 ml). The sachet and the root at the point of insertion were tied with a thread. The technology of root feeding of TNAU coconut tonic was demonstrated as FLD during 2006-07 at five villages in an total area of 2 ha to prove its efficiency in reducing the button shedding and increasing the yield. Subsequently during 2007-08 also FLD was conducted in 2 ha at Puthalam village. The button shedding percentage and yield of nuts/palm was recorded.

Output: By the root feeding of coconut tonic, the barren nut was reduced in the demonstrated palms. The reduction in the button shedding ranged from 6.5 to 10.2 per cent. The mean yield increase was recorded as 94.4 nuts/tree/year and in the local check it was 80.2 nuts/tree/year. The usage of root feeding of coconut tonic is increased year by year.

The area of adoption and coverage of village with farmers are also increased.

Details on the usage of coconut tonic

Year	Coconut tonic purchased by farmers (litres)	No. of farmers	No. of villages	Area adopted (ha.)
2006-07	284	1661	33	8.1
2007-08	226	37	16	6.4
2008-09	171	97	7	12.2
2009-10	180	168	19	11.5
2010-11	153	110	12	9.3
2011-12	218	145	15	10.3
2012-13	130	120	14	9.4
2013-14	150	170	20	11.2
2014-15	201	105	10	8.2
2015-16	460	258	35	20.3

Outcome: The technology was disseminated through trainings, demonstrations in farmer's field, exhibition and seminar. Leaflets were circulated at the time of trainings, demonstration

for creating awareness on root feeding of coconut tonic. Radio talks and messages were also given for mass spreading of technology.

In KVK, the tonics is being sold to the farmers @ Rs. 10/packet. The farmers given the following feedback after adopting the technology.

- Barren nuts were reduced
- Button shedding was reduced
- Nut cracking was reduced
- Enhanced flower retention
- Increased yield

Impact : Because of the increased nut yield due to the application of coconut tonic the farmer get an additional income of Rs. 15000/year/acre.

7. MECHANICAL COCONUT HARVESTER –A BOON TO THE FARMERS OF KANYAKUMARI DISTRICT

Situation analysis/Problem statement:

In Kanyakumari district, coconut is the major crop and is cultivated in 24,000 hectares. The soil and climatic conditions prevailing in the district is highly suitable for its cultivation and each and every household have one or two coconut palms. In recent years, harvesting of coconuts in correct stage and time is felt difficult due to labour scarcity. The traditional method of coconut climbing is cumbersome, risky and less effective, because of high energy consumption. The young generation is not showing interest for harvesting of coconut because of poor respect in the society. The aged people alone are doing traditional harvest. Often these aged people fall from coconut palms leading to permanent handicap (or) death. In traditional methods, farmers are harvesting an average of 50-60 palms per day. The climbers cannot do the harvest during rainy seasons, since Kanyakumari district is benefited by both southwest and northeast monsoons and this further affects the timely harvest of coconuts. The labourers who are harvesting the coconut in traditional way are demanding Rs. 20 to 25/tree and they are attending harvesting in 3 months interval. This has led to yield reduction due to improper maintenance of coconut palms and loss by theft of fallen coconuts.

Plan, Implement and Support: Mechanical coconut harvester developed both by TNAU and KAU are easy to operate and attracted the youth. Use of mechanical coconut harvester by the youth was recognized by the society besides the employment year round (even during rainy seasons) which encouraged the youth to enter into this new venture.

The Krishi Vigyan Kendra, Kanyakumari introduced the mechanical coconut harvesting device through various demonstrations in different locations of the district to create awareness and trainings were also conducted. A total of 21 numbers of trainings and demonstrations were conducted in 20 villages of the district. About 330 men and 80 women were participated in the programmes.

There are two models of mechanical coconut harvesting device *viz*., (i) TNAU model and (ii) Kerala model. The TNAU model is highly safe and it takes little more time (7-10 minutes) for climbing the palm, but the aged and women farmers are using it. It is a rectangular frame type, one fitted at bottom for standing and the other fitted at top for sitting. The Kerala model less safe, but it is preferred by the labourers and youths for harvesting of coconuts.

Output: The mechanical device for coconut harvest attracted the unemployed youths. At present the trained unemployed youths formed groups of 4-6 members of each and started harvesting the coconuts. The groups are formed in various places of the district namely

Rajavoor, Colachel, Thuckalay, Marthandam and Monday market. They are taking the device in two wheelers and harvesting the coconuts. These groups are starting the harvest by 6.30 am and completing by 12.00 noon. Within this time, they are climbing 80 to 100 palms. These coconut harvesting groups are charging Rs.10-15/tree depending on the total number of coconut trees available and height of the tree. Each individual is having cell phone and they are communicating the programme to the customer in advance. This has encouraged the farmers and coconut growers of the district. In the afternoon, these youths are involved in their regular household activities. They are working in all the days, even in rainy days with hat, except on Sundays. Each individual is earning minimum income of Rs. 1000/day and a maximum of Rs.1500/day and leading a happy life. Some of the mazons who were engaged in construction work also shifted the job to harvesting of coconut, since it seems to be highly remunerative.

The trained persons who are employed in government and private organizations are utilizing the holidays and Sundays for harvesting the coconuts of their own. At times, on urgent need of tender coconut for household purpose, the people themselves are using this device for harvesting.

Outcome: A trained unemployed youth Thiru D.Venus of Colachel village is serving as a trainer and he had trained more than 50 persons on mechanical coconut harvester. He is giving training on using mechanical device and also harvesting the coconuts in the nearby villages. He is having 6 members in his group. Thiru R. Ramu of Putheri village is a trained person working in a fertilizer shop. He is also giving training at his leisure hours to the farmers and youths.

Thiru G. Suresh of Rajavoor with his five members group is doing the mechanical harvest in the nearby villages. He was initially a tailor shifted his profession to coconut climbing using the mechanical device. Thiru V. Thanesh from Monday market is having 4 members in his group is using the mechanical device for harvesting coconut in the surrounding villages.

Thiru C. Suresh, a farmer of Thuckalay is harvesting coconuts in the villages around his native village. Thiru.G.George of Marthandam with his 4 members group doing the mechanical harvest. Mechanical harvesting persons are charging Rs. 10-15/palm in the villages and Rs. 15-25/palm in the urban areas depending on the number of nuts and height of the trees. At present, 250-300 coconut mechanical harvesting devices are being used in the district. The technology is a boon to the farmers and growers of coconut in the district.

Impact: The youth is earning minimum income of Rs. 1000/day and a maximum of Rs.1500/day and leading a happy life. Some of the mazons who were engaged in construction work also shifted the job to harvesting of coconut, since it seems to be highly remunerative.

8. EMPOWERMENT OF FARM WOMEN THROUGH MUSHROOM CULTIVATION

Situation analysis/Problem statement: Rice is a major crop of Kanyakumari District cultivated in both the seasons (Kharif and Rabi). Most of the farm holdings are very small with less than one acre and the earnings of farmers are very less to sustain their livelihood.

Plan, Implement and Support: The climatic condition of Kanyakumari is conducive for abundant production of mushrooms. The demand for mushroom is high since it is one of the substitute for non-vegetarian foods and possesses lot of medicinal values. Rice being the predominant crop, the availability of raw material (Rice straw) for mushroom cultivation is not a constraint in Kanyakumari district

An additional income generating activity was introduced by the Krishi Vigyan Kendra to upgrade the standard of living of farming community through various trainings cum demonstrations. Vocational trainings on Mushroom cultivation, Spawn production and Value addition were given to rural youth and farm women. Exposure visits were also arranged for the trainees to visit entrepreneur's farm to study about this successful venture.

Output: The training on mushroom cultivation has motivated and paved way for the farm women to start mushroom unit in their homesteads. Also, this enterprise developed self-employment opportunities among the farm women. The entrepreneur Mrs. T. Pushpalatha, Karumankoodal, Mondaikadu post, Kanyakumari district is commercially involved in cultivation of Oyster mushroom with a production capacity of 15 kg per day with net return of Rs.15,000/- per month. The entrepreneur herself is acting as a master trainer for mushroom cultivation programme organized by different banks, Department of Agriculture and NGOs and motivating farmers, rural youth and farm women in mushroom cultivation. Success of this entrepreneur has motivated farm women to form group for mushroom production. The mushroom produced by the group is procured by Mrs. T. Pushpalatha and marketed in the local markets, nearby cities viz., Trivandrum .

Outcome: Presently oyster mushroom cultivation is undertaken by 27 growers which generates an additional income. Further guidance for bank loans were facilitated to all SHGs to develop infrastructure for mushroom farming which motivated the growers towards mushroom cultivation commercially.

Impact: The training on mushroom cultivation has motivated and paved way for the farm women to start mushroom unit in their homesteads. In Kanyakumari district seven entrepreneurs are engaged in milky mushroom production and five in oyster mushroom production under the technical guidance of Krishi Vigyan Kendra. The production capacity of the growers ranged from 3 to 10 kg per day with net return of Rs.20,000/month.

9. IMPROVING THE STATUS OF FARM WOMEN – HANDICRAFTS MAKING FROM BANANA FIBRE

Situation analysis/Problem statement: Banana is one of the major crops of Kanyakumari district which occupies an area of 6800 ha as pure crop as well as intercrop /mixed crop in coconut /rubber/spice based cropping systems. More than 75 per cent of the holdings are below one hectare and the production, profit and employment derived from such small holdings are quite insufficient to sustain the dependant families. Also, the disposal of pseudostem after the harvest of banana is a laborious and cost intensive.

Plan, Implement and Support: All the banana varieties are being cultivated in Kanyakumari district and among them red and nendran varieties are cultivated in large area. The harvested bunches are being marketed in the local markets and exported to other countries through Thiruvananthapuram, the state capital of Kerala which is near to the district. All the parts of banana are highly useful to prepare value added products. Using banana fibre for making garlands is well known to all. The fibre extracted can also be used for making attractive handicrafts which has high demand in local and outside markets. The demand for the natural fibre at national and international level is high. The quality and quantity of fibre extracted from red banana and nendran varieties are good compared to other varieties. The availability of raw material for this enterprise is sufficient, since both these varieties are cultivated

predominantly in the district. The farm women can do this activity in their leisure time in their house without spending huge investment.

An additional income generating activity was introduced by the Krishi Vigyan Kendra to upgrade the standard of living of such farming community. Vocational trainings were given to the women group in fibre extraction, processing, knitting and making different types of handicrafts from banana fibre in collaboration with Khadi and Village Industries.

The fibre is generally extracted by hand stripping by the elderly group. To get quality fibre, it should be extracted within two days after harvest. The stripped fibre is dried and then coloured with dyes for making attractive handicrafts. The shade dried coloured fibre is used for making knits of different sizes and attractive handicrafts are prepared using the knits.

Handicrafts prepared

- Tea set and round set
- Table mat and door mat
- Hand bag and pooja bag
- Purse and basket
- Flower vase and pen stand
- Wall hanging and caps

Output: The trained farm women are self-employed and marketing the handicrafts made from banana fibre in local markets, exhibitions and tourist spots of the district. They are also exporting the products through Fibre Workers Cooperative Society of Khadi and Village Industries. Since the raw material is available sufficiently, this is one of the best income generating activity for the farm women without any investments. Also, they need not move anywhere and can do this activity in their leisure time in their house itself.

Outcome: Fibre workers Self Help Groups were formed by the trained farm women and the enterprise was strengthened. The trained farm women are doing this enterprise successfully and they also train other farm women. Exhibition stalls were also arranged in the melas and special programmes conducted by the KVK. Further, the entrepreneurs conveyed their successful venture technology through radio programmes and Doordarshan programme.

Impact: The entrepreneur has studied eighth standard only and her husband is a mason. The income generated by her husband was sufficient only to meet out the food expenses. The additional income generated has helped the entrepreneur to give good education to their children and they are well employed now. In addition, she is giving employment to farm women in banana fibre knit making and handicrafts making. She is earning about Rs. 60,000/- per year. She has also received the National level-Micro entrepreneur Award and the cash price of Rupees one lakh for the development of entrepreneurship.

10. VALUE ADDITION IN BANANA – A SUCCESSFUL ENTERPRISE FOR SELF EMPLOYMENT

Situation analysis/Problem statement: Banana is one of the major crop of Kanyakumari district which occupies an area of 6800 ha as pure crop as well as intercrop /mixed crop in coconut /rubber/spice based cropping systems. More than 75 percent of the holdings are below one ha and the production, profit and employment derived from such small holdings are quite insufficient to sustain the dependant families.

Plan, Implement and Support: Value added products of banana have a potential market both in the domestic and global levels. The parts of banana plant other than the fruit such as the flowers and pseudostem which generally go as waste are potential raw materials for

banana value addition. Being a banana growing area, the availability of major raw materials is a boon for this enterprise.

KVK, Kanyakumari has given vocational trainings on the aspect of value addition to farmers, farm women and rural youth. Technological knowhow regarding preparation of different products were disseminated to the trainees. An exposure visit was also arranged to Home Science College and Research Institute, Madurai. In continuation of the above programmes, a special programme on value addition in banana was conducted to the farmers and farm women in banana growing areas. A series of trainings on preparation of different value added products from banana were given to selected trainees. Finally, they were taken to Home Science College and Research Institute, Coimbatore as exposure visit to know more about value addition. The information on marketing strategies was also provided to them.

Value added products

- Pseudostem pickle
- Flower pickle
- Unripe fruit pickle
- Pseudostem candy
- Fruit candy
- Fruit halwa
- Fruit powder
- Flower vadagam
- Nendran chips

The banana farmers and farm women formed a group and were involved in the process of value addition. The raw materials from the farmers' field are being utilized for making value added products. The farm women are involved in the preparation of value added products. All the products were packed in different sizes of bottles and packets and marketed.

Output: A banana farmer, Mr. C. Arumugam, Puthuvilai, Thalakkulam (P.o), Kanyakumari district who has attended the vocational training and the special programme trainings has successfully established a value addition enterprise. He is earning an average income of Rs. 45,000/- per month. In addition, he is giving employment to 13 farm women. The products are being marketed in the name of "Kumari Farmers products". He is marketing the products in exhibitions also. The entrepreneur has given programmes in radio and television about the enterprise. He has also published many articles in Tamil magazines. Mr. C. Arumugam received "Velaan Asiriyar Award- 2014" and "Uzhavar Ookuvipalar Award-2015" of Tamil Nadu Agricultural University, Coimbatore.

Outcome: Twenty banana farmers have successfully formed Banana Farmers Self Help Group. Farm women who have attended the trainings are preparing the products for their household purposes and spread it to neighbourers also. The entrepreneur is giving advisory services through phone. The scope of this enterprise spreads to other districts and states also.

Impact: A banana farmer, Mr. C. Arumugam, Puthuvilai, Thalakkulam (P.o), Kanyakumari district has successfully established a value addition enterprise. He is earning an average income of Rs. 45,000/- per month. In addition, he is giving employment to 13 farm women.

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

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Paddy	Leaf extract of Bird's eye chilli is used in paddy	For control of ear head bug
2	Brinjal	Brinjal seedlings are soaked in water before planting, which contains one gram of aseophoteda and 10 grams of turmeric powder per litre of water.	For control of *Fusarium* wilt
3	Banana	Cris cross tagging with nylon rope, coir rope	For protecting the crops from wind damage
4	Banana	Bunch covering with coconut frond basket	For better colour and texture in red banana and Nendran
5.	Papaya	Mixing of 5g of *Pseudomonas* with 10ml of soar butter milk with 1 litre of water	To control viral disease in papaya

16. IMPACT

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

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)
Coconut tonic root feeding	90	12	25100 to 28500	35000 to 41000
Coconut climber	85	30	13500 to 14200	25000 to 29500
Soil test based paddy cultivation	425	21	49200 to 57200	58100 to 72100
SRI in paddy and mechanization	545	45.6	30,000 to 42500	43000 to 55000
Nursery and cut flower production	75	15	2300 to3300/month	6100 to 8200/month
Mushroom production	95	14	-	13,000 to 15,000
Handicrafts from Banana fibre	125	12	2400 to 3100/month	4500 to7500/month
Value addition in banana	85	14.5	2200 to 3000/month	5100 to6900/month
Milky Mushroom cultivation	72	16.66	4500	20000
TPS 5	100	20.57	54500	67100

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

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

1. Soil test based fertilizer application in paddy

Paddy is the m**a**jor food crop cultivated in more than 17,307 hectares in Kanyakumari District. The soil is acidic in 50-60 per cent of the paddy cultivated area. This has resulted in nutrient imbalances and thereby reduction in the yield. In many cases the yield reduction is due to less number of productive tillers and unfilled grains. The yield reduction is recorded to be the tune of 750 to 1500 kg/ha. The average yield is 4.5 t/ha. But with the introduction of SRI the average yield increased to 7.45t/ha. The yield targeted could not be attained due to soil problem.

Intervention

The addition of Dolomite based on soil test is cheaper available amendment. Application of organic manures, *in-situ* green manuring and balanced fertilization for paddy.

Details of technology

The *in-situ* green manuring with *Sesbania aculeate*(Daincha-25 kg/ha) and incorporating into the soil at time of flowering. Based on the soil test, application of the cheaper amendment/liming material (Dolomite-500kg/ha) and balanced fertilization with the deficient nutrient viz. $ZnSO_4$ at 25 kg/ha.

Result and Feedback

The demonstration on soil test based paddy cultivation recorded an average yield increase of 10-35 per cent with the BCR of 2.0-2.35. The tiller/hill increased from 25.5-27.9. There was no grain discoloration. The grains fetched better marketability.

Impact

The soil test based fertilization application for paddy, gain momentum among the farmers, since the amendment added not only mitigated the soil acidity but also a source of magnesium. The magnesium imparted better chlorophyll synthesis thereby more grain formation and filling. The zinc sulphate application has added influence on balanced fertilizers application and increased the yield. The technology has spread to 1500-2000 hectares.

2. Banana Pseudostem Weevil management

Banana is one of the major crop of Kanyakumari district occupies an area of around 8500 ha. Incidence of pseudo stem weevil and nematode are the major threats in banana cultivation and at severe conditions it resulted in an yield reduction of 50 per cent. Hence, there is an urgent need to cater the needs to this problem.

A technology which has already been developed by Tamil Nadu Agricultural University was demonstrated by the KVK, Pechiparai for the past six years (2008-14) at different locations of Kanyakumari district. The extension functionaries of the State Department of Agriculture and Horticulture were also involved in this demonstration. The demonstration yielded huge response from the farmers of this district as it was effective in managing the pest problem.

Interventions:

Pseudostem injection of monocrotophos for the management of pseudostem weevil in banana.

Technology demonstrated

The technology involves treatment stem injection of monocrotophos at 5, 7 and 8 month after planting @ 2 ml at 45 and 150 cm height. The solution of monocrotophos is prepared by diluting 54ml of the commercially available monocrotophos in 350 ml of water. The injection has been given at opposite direction to the first injection. This technology has now spread over an area of more than 1500 ha. in this district and is being recommended by the District extension functionaries.

Result

The technology of banana pseudostem injection of monocrotophos @ 4ml / plant registered the highest per cent reduction (76.07%) over the farmers practices with a net profit of Rs.3,84,840. As the banana pseudostem injection technology is very simple, cost effective and produced a BCR of 3.33 per rupee investment it is highly accepted by the farmers.

Impact

After attending the training programmes and demonstrations some of the self help groups, rural youth and farmers have taken initiative to adopt the technology for income generation. They are charging Rs. 2 per plant for pseudostem injection using monocrotophos and earning a net profit of Rs.1500- 2000/ha. as a part time venture

3. Rice TPS-5 Variety – A Boon To Kanyakumari District

Background

Rice is one of the major crops being cultivated in Kanyakumari District. It occupies more than 12000 ha in two seasons (*Kharif* and *Rabi*) of the year. ASD 16 is the only rice variety cultivated by the farmers in *Kannipoo* season. Low yield due to lodging, occurrence of pest and diseases (leaf folder, stem borer and tungro)and poor grain filling are the major constraints reported by the farmers while cultivating ASD rice varieties. So, farmers need alternate high yielding, non-lodging, pest and disease resistant variety.

Scope

Agricultural Research Station, Thirupathisaram has released TPS-5 rice variety during 2013 which is having almost similar duration of existing ASD 16. Also the new variety produces 10-15% higher yield, non-lodging, tall growing and moderately tolerant to most of pest and diseases. This variety may fulfill the requirement of farmers.

KVK interventions

The new variety (TPS-5) seeds was introduced to the farmers through KVK and ARS, Thirupathisaram initially through FLDs programmes. Created awareness through leaflets, folders, Air Message and talk to the farmers. The new variety along with IWM and ICM practices were imparted through frequent trainings and special programmes.

Trainings and Front Line Demonstrations were conducted on newly released TPS-5 variety with early post emergence herbicide to the farmers. FLDs were raised during 2014 at Ramapuram village of Agestheswaram block. FLDs on Integrated Weed Management in (TPS -5) rice were conducted during 2015-16 at Ramapuram and Andarkulam villages. FLDs on Integrated Crop Management in TPS-5 rice were conducted during 2016-17 in Peiyakulam ela of Manavalakurchi village of Kurunthankodu block. On and off campus trainings, Field days, extension functionaries trainings, special programmes, seminar, exhibitions were also conducted during 2014-15, 2015-16 and 2016-17. The following table clearly depicts the details of the programmes conducted at KVK from 2014- till date.

S. No.	Title	Nos.	Total participants	Extension functionaries (Nos.)
1.	FLDs on popularization of new variety TPS-5 and early post emergence herbicide in rice	10	10	-
2.	FLDs on IWM in (TPS-5) rice variety	10	10	-
3.	FLDs on ICM in (TPS-5) rice variety	10	10	-
4.	On and Off campus training programmes	12	260	16
5.	Field days	3	160	24
6.	Extension functionaries trainings	12	-	265
7.	Pre -rabi and pre- kharif training programmes, seminar, Exhibitions and meals	5	1800	120
8.	ATMA trainings	7	156	38

Impact

During 2014-15, TPS 5 rice variety performed better with taller plants, increased panicle length, number of tillers/m2, number of productive tillers/m2 and filled grains/panicle than ASD 16. Demonstration (TPS 5 variety) recorded higher grain yield (70.1 q/ha) compared to ASD (56.5 q/ha). Yield increase was 26 percentage. Similarly, higher net returns (Rs. 83389/ha) and BCR (2.69) were recorded with TPS 5 compared to ASD 16 (net returns – Rs. 59119/ha); BCR – 2.24).

During 2015-16, the TPS variety was integrated with IWM practices and results indicated that demonstration recorded 54.9 q/ha compared to the check (46.66 q/ha). Though the straw was not harvested, the farmers realized higher gross income, net income and net income and B:C ratio.

Frontline demonstration on integrated crop management practices in rice with TPS 5 during 2016-17 was conducted in Manavalakurichi village. The crop growth with the demonstration in terms of plant height, tillers, productive tillers were higher with demonstration than check.

Spread

The TPS -5 new variety has wide spread among the farmers of Agestheswaram, Kurenthencode and Rajakagamangalam blocks of Kanyakumari district. The higher yield in TPS 5 was due to high productive tillers and grain yield/ panicle. The per cent yield increase ranged from 10.5 to 32.2. The TPS -5 variety resulted in an additional income of Rs. 7000 to 12500/ha.

Apart from the FLDs, the technology was transferred to the farmers through trainings, field visits, diagnostic visit, seminars etc. The farmers interest groups of Rice in Thovalai and Agastheeswaram and Kurunthancodu were also trained about this technology. The extension functionaries of the district understood the importance of this new variety. The farmers were trained to produce the seeds by themselves and started to supply seeds to the fellow farmers. The technology has spread to 1000 to 1500 hectares in the district.

The seeds requirement of the farmers is satisfied partly by the KVK and ARS, Thirupathisaram. Department of Agriculture, Nagercoil is presently involved in TPS 5 seed production for further distribution to farmers.

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

Training effectiveness and adoption percentage of trainings

The training effectiveness were studied by formulation of appropriate questions and the trainees were evaluated before and after the training programs at KVK Thirupathisaram. The results are furnished below

Training Effectiveness:

Sl. No	Date	Training title	No. of participants	Evaluation Score		Gain in knowledge (%)
				Pre	Post	
1	24.10.16 to 27.10.16	Mushroom cultivation and value addition	30	138	231	31.0
2	09.11.16	ICM in banana& Acid soil management	21	98	201	49.0
3	05.01.17	IPDM in banana	29	124	229	36.2
4	18.01.17	Mushroom cultivation and value addition	21	110	194	40.0
6	23.01.17	ICM in Rice CR1009 sub 1	19	109	180	37.3
7	27.01.17	IPDM in bhendi	31	172	322	39.5
8	17.03.17	IPDM in Bhendi	18	93	147	30.0
9	25.03.17	Recycling of organic waste	16	67	132	40.6
10	27.03.17	ICM in Rice fallow pulses	19	93	182	46.8
11	27.03.17	Biocontrol agents in disease Management	27	103	301	36.3
12	30.03.17	Importance and methods of soil sampling	20	94	163	34.5
13	24.05.17	Mushroom cultivation and value addition	5	9	43	68.0
14	09.06.17	Mushroom cultivation and value addition	18	61	146	47.2
15	16.06.17	Mushroom cultivation and value addition	13	53	114	46.9
16	01.08.17	ICM in traditional rice	25	118	241	49.2
17	01.08.17	ICM in tapioca	26	113	209	36.9
18	08.09.17	Mushroom cultivation and value addition	15	53	140	58.0
19	11.10.17	INM in dry seeded rice	21	98	162	30.5
20	20.10.17	ICM in rice	30	150	260	42.3

Adoption percentage:

The technology adoption by the farmers after attending the training programmes were studied and the adoption percentage is furnished below

Sl. No	Training title	No. of participants	No. of persons adopted	Adoption (%)
1	IPDM in bhendi	58	25	43.1
2	IPDM in banana	29	21	72.4
3	Mushroom cultivation and value addition	102	46	45.1
4	Biocontrol agents in disease Management	27	15	55.6
5	ICM in tapioca	26	20	76.9
6	ICM in banana& Acid soil management	19	7	36.8
7	ICM in Rice	51	25	51.0

Impact of skill development training on mushroom cultivation in Kanyakumari district

The impact of training on knowledge gain about mushroom production as an enterprise/self-employment was studied in detail. The training program on mushroom production was focused on farmers, farm women and youths who have interested in self-employment. The impact of the training was assessed by parameters such as impact of knowledge. Appropriate schedule was prepared which was pre evaluated and post evaluated for its validity before and after data turnings.

ICAR-KVK intervention in Mushroom promotion and production enterprise

Capacity building	Target people	Type of intervention
1 day	Farmers, Farm women and Youths	• Training • Spawn production • Demonstration of oyster mushroom • Demonstration of milky mushroom • Mushroom experience sharing among farmers • Short Message Service • Popularizing through mass media • Visit to mushroom centre

Increase in level of knowledge

Pre exposure and post-exposure scores were computed for all the sub-components of mushroom production. In pre-evaluation test, the knowledge range of different participants was 18.06

per cent regarding the types of mushroom to 58.33 percent in mushroom recipes. Post evaluation training score of various practices ranged from 77.78 per cent in case of spawn production to 95.83 per cent in case of importance of casing. It was noticed that pre training knowledge score was not much satisfactory for all the aspects of training programme. However, the knowledge score gained by participants after training was more satisfactory in all aspects. Sufficient gain in knowledge regarding mushroom production was recorded for sub-components viz., Nutritive value, optimum growing condition, types of mushroom, suitable substrate, importance of casing, quality spawn production, harvesting methodologies, marketing channels, preservation techniques and Mushroom receipes. In Table it was observed that 63.88 per cent of the respondents were deviating in knowledge on types of mushroom after training. Whereas, 59.72 per cent of the trainees were deviating knowledge on preservation techniques after training. While, 55.55 per cent of the respondents were deviating in knowledge on importance of casing during mushroom production after training. It was revealed that 54.16 per cent of the trainees were deviating knowledge on mushroom spawn production after training. Whereas, 48.61, 47.22 and 45.83 per cent of the trainees were deviating knowledge on substrate suitability, optimum growing condition, and marketing channels. It may therefore be concluded that respondents succeeded in acquiring knowledge after exposure to training on mushroom production. Thus, it can be inferred that exposure to training had increased the knowledge regarding all the sub-components of mushroom production. The reason behind the satisfactory gain in knowledge might be well educational background of participant also having keen interest of participants.

Gain in knowledge after training with respect to different components (n=72)

Sl.No	Parameters	Pre training (%)	Post training (%)	Deviation in knowledge
1	Nutritive value	41 (56.94)	66 (91.67)	+25 (34.72)
2	Optimum growing condition	29(40.28)	63 (87.50)	+34 (47.22)
3	Types of mushroom	13 (18.06)	59 (81.94)	+46 (63.88)
4	Suitable substrate	29 (40.28)	64 (88.89)	+35 (48.61)
5	Mushroom spawn	17 (23.61)	56 (77.78)	+39 (54.16)
6	Marketing channels	35 (48.61)	68 (94.44)	+33 (45.83)
7	Preservation techniques	23 (31.94)	66 (91.67)	+43 (59.72)
8	Importance of casing	29 (40.28)	69 (95.83)	+40 (55.55)
9	Harvesting methodology	28 (38.89)	57 (79.17)	+29 (40.27)
10	Mushroom recipes	42 (58.33)	69 (95.83)	+27 (37.50)

Impact study on the adoption of TPS5 rice in kanyakumari district

The study was attempted to find the adoption of TPS 5 rice variety by the farmers, area coverage and its economic impact in Kanyakumari district. The impact was studied by ex-post facto approach by randomly selected farmers from four blocks of Kanyakumari as respondents. The study revealed that TPS 5 rice variety is cultivated in 1260 ha in all blocks of Kanyakumari district except two blocks where rice is not a major crop. The adoption per cent is 20.57 in three years and is expected to replace ASD 16 by 2020.According to the respondents the average grain yield obtained in TPS 5 rice is more than 70q/ha (88per cent) , percent yield increase over ASD 16 is 10-15 per cent (76 per cent) , the net return is Rs.12000 to 15000 more than ASD 16 (74 per cent) and the Benefit Cost Ratio is more than ASD 16 (76 per cent. As the new rice variety TPS 5 has high yield potential and economic advantage over the existing ruling variety ASD 16 it is expected that TPS 5 rice variety will spread to larger area thereby the rice production in the district will be increased.

Adoption of TPS 5 Rice Variety in Kanyakumari district

Block	Area under ASD 16 (ha)	Area under TPS 5 (ha)	Adoption (per cent)
Rajakkamangalam	740	185	20.0
Kurunthancode	592	110	15.67
Thuckalay	109	26	19.26
Agastheeswaram	1463	525	26.40
Thovalai	1961	414	19.95
Total	**4865**	**1260**	**20.57**

Yield Potential of TPS 5 with net return and BCR

Block	Grain Yield (q/ha)		Net Return (Rs./ha)		BCR	
	TPS 5	ASD 16	TPS 5	ASD 16	TPS 5	ASD 16
Rajakkamangalam	62.5	70.5	65750	53750	2.19	1.91
Kurunthancode	65.0	73.2	69800	57500	2.32	2.05
Agastheeswaram	62.0	70.5	65500	53000	2.19	1.89
Thovalai	62.5	71.5	67250	53500	2.24	1.91
Mean	**63.0**	**71.4**	**67100**	**54500**	**2.24**	**1.94**

17. LINKAGES

17.A. Functional linkage with different organizations

Name of organization	Nature of linkage
Department of Agriculture	Monthly Zonal Workshop, ATMA trainings, National Food Security Mission training
Department of Horticulture	Prosophis eradication campaign, Joint inspection for micro irrigation, Joint diagnostic visit, ATMA trainings, Nursery accreditation of State Horticulture Farm, Kanyakumari
Department of Agricultural Marketing and Business	ATMA training
Horticultural Research Station, Pechiparai	Loranthus eradication demonstration
CTCRI, Thiruvananthapuram	Combined diagnostic visit – Tapioca mealy bug management
Coconut Development Board	Farmers Seminar on Scientific Coconut Cultivation Technology
Irrigation Management Training institute, Trichy	Training programme
Lead Bank (IOB)- RSETI Nagercoil	Collaborative trainings on Mushroom cultivation and Value addition
Doordharsan,Chennai	Television programmes recording and telecasting- Scientists and Farmers success stories
AIR, Nagercoil	Radio programme answering farmers quaries (live), technical talks, technical messages and announcements
Govt. High School, Thirupathisaram	Awareness programmes like Parthenium eradication, International Yoga Day, Swachhta Hi Sewa, Vigilance awareness etc.

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

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

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