ICAR KVK, CENDECT, THENI, TAMILNADU

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

1. GENERAL INFORMATION ABOUT THE KVK

1.1. Name and address of KVK with phone, fax and e-mail
Name of the KVK as per official records (MoU):
ICAR KRISHI YIGYAN KENDRA, CENDECT, THENI
Address : 89-A/B-3, West Street, Kamatchipuram (S.O) Theni District, Tamil Nadu -625 520.
Phone : 04546247564
Fax : 04546247564
Email : cendectkvk@rediffmail.com

1.2. Name and address of host organization with phone, fax and e-mail
Name of the Host Organization as per Official Records:
CENTRE FOR DEVELOPMENT AND COMMUNICATION TRUST (CENDECT)
Status of the Host Organization (As per the MoU): Non-Governmental Organization
Address : 89-A/B-3, West Street, Kamatchipuram (S.O) Theni District, Tamil Nadu -625 520
Phone : 04546247245
Fax : 04546247245
Email : cendect@gmail.com
Name of the Chairperson: Dr. P. Patchaimal
Mobile No.: 9443047245
Email : cendect@gmail.com

1.3. Name of the Programme Coordinator with phone & mobile No.
Name of the Programme Coordinator / SS&H: Dr. S.Thirumurugan
Residential Address: Quarters, ICAR KVK, CENDECT, Kamatchipuram, Theni District, Tamil Nadu -625 520
Phone No. : 04546247564
Mobile No. : 9585142666
Email : haithirus@gmail.com

1.4. Year of sanction of the KVK (as per Official Order):1994
1.5. Total land with KVK (in ha) (Consolidated figure):

S. No.	Item	Area (ha)
1	Under Buildings	0.11ha
2.	Under Demonstration Units	0.03ha
3.	Under Crops	9.65ha
4.	Orchard/Agro-forestry	1.00ha
5.	Others (specify)	10.79ha
	Total	**21.58 ha**

1.6. Infrastructural Development:

A) Buildings

Sl.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction Completed/ in progress/ to be initiated)
1.	Administrative Building	ICAR	3.30.1996	483.5	2135800	03.01.1995	403.5	Completed
2.	Farmers Hostel	ICAR	12.25.2002	312.0	1749596	03.02.2000	312.0	Completed
3.	Staff Quarters (No.)	ICAR	2.11.1997	260.0	2930577	05.12.1995	260	Completed
4.	**Demonstration Units**							
	Sericulture unit	ICAR	3.31.2012	160	417000	03.01.2012	160	Completed
	Dairy	ICAR	3.30.1996	0	102000	04.01.1995	150	Completed
5	Fencing	ICAR	3.21.1996	0	100000	04.01.1995	-	Completed

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms covered as on 31.12.2020	Present status
Honda Activa	2009	50800	128432	Need Replacement
Bolero	2010	606153	255937	Need Replacement
Tractor	2010	516000	16425	Need Replacement
Mini Tractor	2012	185015	4928	Need Replacement

C) Equipment & AV aids

Name of the equipment	Cost (Rs.)	Year of purchase	Present status
Over head projector	11160	1/6/1995	Under repair
Electronic typewriter	21035	1/6/1995	Scrapped
Mixie	2175	1/14/1996	Scrapped
Onida color tv	18600	2/28/1996	Good Condition
English t/w machine	9852	2/29/1996	Scrapped
Tape recorder	3925	10/25/1995	Scrapped
Weighing scale	2643	3/29/1996	Scrapped
Amplifier & mike unit	4600	5/27/1996	Good Condition
Duplicating machine	17500	10/10/1995	Scrapped
Vcr	14990	2/28/1996	Scrapped
Slide projector	12855	2/28/1996	Scrapped
Lcd projector	69750	3/7/2007	Under repair
Fax machine	15150	3/30/2009	Under repair

Xerox machine	75400	3/1/2010	Under repair
Digital camera	25000	6/30/2010	Under repair
Generator	100000	11/24/2010	Under repair
Epabx system	50220	3/30/2011	Under repair
Steel table	1500	11/4/1994	Under repair
Mica table	800	11/4/1994	Scrapped
Godrej table	13340	1/23/1995	Scrapped
Wooden table	2250	1/23/1995	Scrapped
Steel table	11785	12/15/1995	Scrapped
Mould chair	2896	1/13/1995	Scrapped
Plastic chair	5508	1/22/1995	Scrapped
S type chair	600	11/4/1994	Scrapped
S type chair	1500	3/10/1995	Scrapped
Pvc chair	23240	3/1/1998	Good Condition
File cabinet	7980	10/13/1995	Good Condition
White mark writing board	8875	12/12/1995	Good Condition
Water tanker	25000	2/26/1996	Scrapped
Disc plough	24853	2/26/1996	Good Condition
Tiller	13408	2/26/1996	Good Condition
Mould board plough	16379	2/26/1996	Good Condition
Cupboard	11140	2/28/1995	Good Condition
Executive chair	12290	3/22/1996	Damaged
Cupboard	11500	3/7/2010	Good Condition
Nilkamal chair	20000	3/7/2010	Good Condition
Revoling chair	6500	3/7/2010	Damaged
3 x 2 cash table	4400	3/7/2010	Damaged
4 x 2 cash table	2600	3/7/2010	Damaged
Computer table	2400	3/7/2010	Damaged
Wall fan	3800	3/7/2010	Damaged
Water punel	2000	3/7/2010	Scrapped
Water punel	4000	3/15/2010	Scrapped
Kusan	5000	3/7/2010	Good Condition
Reception chair	4500	3/7/2010	Good Condition
Steel cot	51000	3/8/2010	Good Condition
Speaker	2640	3/8/2010	Damaged
Filling cabinet	14400	3/9/2010	Good Condition
Premium wall coffer	5300	3/9/2010	Good Condition
Digital camera	25000	6/30/2010	Under repair
ICD recorder and DVD player	8280	3/15/2010	Under repair
USB Modem	2008	3/15/2010	Under repair
Camera	6990	3/20/2010	Under repair
Display system	17085	3/24/2010	Under repair
Hp printer	2400	3/5/2010	Scrapped
Round table	25837	3/31/2010	Good Condition

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

S.No.	Date	No of Participants	Salient Recommendations
1.	12.03.2021	22	Enclosed Proceedings

S.No.	Suggestions/Recommendations (bullet points)	Name of the SAC Member
1	• To collaboration with Horticultural college and Research institute, Periyakulam on latest Horticultural technologies viz., manila Tamarind PKM2, Minor fruits cultivation for Drought areas • To make wider spread of location Specific of TNAU technologies though OFT and FLD programmes • Collaboration with Gapes Research Station, Rayappanpatti for adoption of Grapes cultivation technologies	Dr.M.Jawaharlal, DEE, TNAU, Coimbatore
2	• To develop model demonstration units in KVKcampus for effective learning of farmers • To Develop crop cafeteria with all new varieties in KVK campus • To add Seeds and seedlings production activities for enhance the revolving fund • To record results, Feedback and success stories of FLD and OFT programmes to be shared with TNAU and State Agricultural department.	Dr.A.Bhaskaran, Principal Scientist, ATARI,Hyderabad
3	• To develop Crop production Capsule for Major Agricultural and Horticultural crop • To implement the Latest AICRP technologies in FLD and OFT programme in Collaboration with Horticultural college and research Institute Periyakulam • To develop value added products from Minor fruits like Jamun and Manila Tamarind • To Prepare the calendar of operation for various Horticultural crops • To disseminate Red guava Cultivation through KVK, Programmes • Identify and Disseminate alternative crops for Major Crops • Nutriceous rich Fruits and Production and value addition technologies to be include in KVK programmes	Dr.Rajangam, Professor and Head, Department of Fruit Science, Horticultural college and research Institute Periyakulam
4	• To develop model Shed for Diary, Goat and Sheep in KVK Campus • To develop rearing of Desi bird with incubator	Dr.Venkidapathy, Professor and Head, TANUVAS

	unit in KVK Campus • To add Fodder Seed production with involving farmers will help farmers to get quality Seeds. • To conduct trainings related to animal husbandry should be conducted in collaboration with FTC and Verinary College and Research Institute , TANUVAS, Theni • To disseminate suitable Drought related Animal husbandry technologies for Drought areas in Theni District. • To Disseminate Sheep rearing in Mango Orchard.	
5	• To conduct District specific Oft and FLD Programmes in Future • To record feed back and Success stories of FLD and OFT programmes should be shared with State Agricultural Department, Theni for Large scale adoption • To encourage the farmers on Seed production particularly minor millet seed Production • To conduct field day on FLD programmes in collaboration with ATMA, Theni for wider adoption of Technologies.	Dr.T.Alagunagendran, Joint Director of Agriculture, Theni
6	• To develop Knowledge sharing capacity on Agricultural and allied activities • To develop demonstration units in KVK campus • To encourage the farmers on Seed production in Paddy particularly ADT 53 and VGD 1 varieties, VBN 11 Black gram and CO 32 Sorghum variety • To develop multi crop cafeteria developed in KVK campus • To disseminate Direct Paddy Seeder technologies for large scale adoption. • To develop fodder bank, Nutri Garden, Medicinal Plant Park and IFS model in KVK Campus.	Dr.Selvi Ramesh, Programme Coordinator, KVK Madurai
7	• To Convergence FPOs in Theni district for KVK training programmes • To develop the food lab in KVK in Colloboration with NABARD • To Disseminate export tomato verities for higher income.	Mrs.L.Bhuvaneshwari, AGM, NABARD, Theni
8	• To Develop Bio flack fish production technologies in KVK campus • To disseminate the market based Herbal plant technologies for tribal people.	Dr.V.Nadanasabapathy, Chairman, KVK, Ariyalur
9	• Training to be given on soil and water conservation and water harvesting, • To give awareness on Marketing of produces	Mr.M.Pandiyan, President, Farmers association, Theni

10	• To collaborate with ATMA for Diagnostic the field level problems and awareness on Field problems • To give training to Extension personnel's in Theni District • To conduct Adoptive Research Trails in collaboration with ATMA, Theni. • To give Award for Best FIG, best FLD farmer for encourage the Farmers for better adoption of new technologies • To conduct rural youth training in collaboration with ATMA, Theni.	Mrs.K.Muthulakshmi, Deputy Director, ATMA, Theni
11	• To conduct Training should be given on Agricultural marketing, and FPO • To disseminate Tomato value addition technologies.	Mr.Jeyachandran, Progressive Farmer, Seepalakottai
12	• To give training for rural youths in their respective villages	Mr.P.Bindhu, Progressive farm Women,T.Bomminayakkanpatti, Theni.
13	• To develop value added products from clove, Pepper, Chilli. • To organize Exposure visit to Spices board for effective learning of technologies and schemes.	Mr.S.Senthil Kumar, Spices Board.
14	• To record success stories with the help AIR, Madurai for large scale dissemination. • To share programme schedule for live telecasting of KVK programmes.	Mr.Jacob Jebareuben, Programme Executive, All India Radio, Madurai.

2. DETAILS OF DISTRICT (2020)

2.0. Operational jurisdiction of KVKs

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

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

S. No.	Farming system/enterprise
1	The total geographical area of the district is 288923Ha.Forest occupies 35.9%of total area. Net area cultivated occupies 40.7%. Food crops occupy 38.9% of total gross area cultivated. About 8.4% of area comes under coconut, which is steadily increasing year by year. Horticultural crops occupy 25.1% of area due to favorable agro climatic condition and assured market. Oilseeds, Cotton and Sugarcane occupy 10.7%, 5.9% and 9.8% respectively.

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

S. No	Agro-climatic Zone	Characteristics
1.	Southern Zone. Based on the rainfall distribution, irrigation pattern, soil characteristics, cropping pattern and physical, ecological and social characteristics, 90% of Theni district fit into Southern Zone and the area adjoining to Western ghats fit into Western Zone accounting for 10% of area.	Average Annual rainfall 857 mm, Annual potential evapo transpiration -1825

2.3. Soil types

S. No.	Soil type	Characteristics	Area in ha
1.	Red calcareous	Yellowish red to dark red, Medium texture, Neutral to mild alkaline, well drained and moderate permeability	13259
2.	Red non calcareous	Moderate deep red to yellowish medium textured ,slightly acidic to neutral well drained with rapid permeability	23670
3.	Red lateritic calcareous	Dark reddish brown to brown heavy textured slightly acidic to neutral, well drained with moderate permeability	24644
4.	Red lateritic non calcareous	Yellowish red to very deep heavy textured neutral to mild alkaline moderate permeability, moderately drained	41667
5.	Black soil	Dark grey to very dark grey fine textured mild to moderate alkaline slow permeability poorly dried	2727
6	Mixed soil	Dark yellowish grey to dark grey fine textured to moderate, neutral to mild alkaline well drained good permeability	23526
7	Sand dunes	Yellowish red, single grain, loose, very friable, well drained with good permeability.	10900
8.	Hilly soils	Dark yellowish grey to very dark grey, heavy textured, acidic, well drained with good permeability.	147471

2.4. Area, Production and Productivity of major crops cultivated in the district (or the jurisdiction as the case may be) for 2019-20

Crop	Area (ha)	Production	Production Unit	Productivity	Productivity Unit
Rice	12259	64970	Metric tons	5300	kg /ha
Sorghum	14200	2200000	Metric tons	1548	kg /ha
Cumbu	5300	800000	Metric tons	1501	kg /ha
Ragi	100	10000	Metric tons	1664	kg /ha
Maize	6200	1240000	Metric tons	2005	kg /ha
Redgram	3000	330000	Metric tons	1095	kg /ha
Blackgram	200	10000	Metric tons	367	kg /ha
Greengram	200	10000	Metric tons	399	kg /ha
Other pulses	5100	90000	Metric tons	173	kg /ha
Groundnut	2600	620000	Metric tons	2389	kg /ha
Sunflower	200	20000	Metric tons	947	kg /ha
Castor	100	183	Metric tons	183	kg /ha
Gingelly	400	10000	Metric tons	346	kg /ha
Coconut	15000	2314.88	lakh nuts	15533	Nuts
Sugarcane	5900	72300	Tons	117	q /ha
Mango	8582	600740	Metric tons	70	q /ha
Banana	3328	2346240	Metric tons	700	q /ha
Grapes	1937	439700	Metric tons	227	kg /ha
Tomato	2394	229820	Metric tons	96	q/ha
Bhendi	137	11650	Metric tons	85	q /ha
Onion	478	46840	Metric tons	98	q /ha
Cashew	5520	27600	Metric tons	5	kg /tree

2.5. Weather data

Month (2020)	Rainfall (mm)	Temperature ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
January	16	35.8	20.8	56.4
February	22	32.7	22.1	57.7
March	45	37.9	23.4	61.3
April	86	33.4	24.3	56.5
May	69	33.1	24.1	55.7
June	34	38.7	28.7	61.5
July	55	35.1	27.6	69.0
August	46	33.6	25.6	66.5
September	82	35.3	25.1	74.8
October	263	34.1	23.9	70.0
November	148	36.1	23.9	84.0
December	63	34.1	19.8	67.7

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

Category	Population	Population Unit	Production	Production Unit	Productivity	Productivity Unit
Cattle - Crossbred	74277	No	133698600	no	10	lt
Cattle - Indigenous	28663	No	20637360	No	4	lt
Buffalo	39650	No	42822000	No	6	lt
Sheep - Crossbred	33515	Nos	837875	Nos	25	kg
Sheep – Indigenous	18732	Nos	374640	Nos	20	kg
Goats	83454	Nos	2086350	Nos	25	kg
Pig – Crossbred	9050	Nos	452500	Nos	0	0
Pig – Indigenous	12524	Nos	438340	Nos	0	0
Rabbits	1070	Nos	5350	Nos	0	0
Poultry – Hens	244337	Nos	366506	Nos	1.5	kg
Poultry – Desi	44293	Nos	88586	Nos	2	kg
Poultry - Improved	44293	Nos	221618	Nos	1.5	kg
Ducks	974	Nos	2435	Nos	2.5	kg
Turkey and others	992	Nos	7936	Nos	8	kg
Fish – Inland	20	Nos	10795	Nos	540	kg

2.7. Details of Adopted Villages (2020)

S.No.	Taluk/ Mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Periyakulam	Periyakulam	Vadugapatty	2019	Paddy, Sugarcane, Bêtel vine and Coconut	Non availability of high yielding varieties Lack of awareness about Good Agricultural Practices in Sugarcane Lack of awareness	Varietal introduction ICM practices Value addition

DFI villages							
1	Andipatty	Andipaty	Mullayamp atti	2017	Maize, Cotton	Low yield (55q/ha) in maize, Pest incidence in Cotton, non availabilit y of High yielding sorghum hybrid sorghum	ICM in Sorghum, ICM in Maize
2	Bodinayakka nur	Bodinayakka nur	Palaraptti	2019	Banana, Onion, Pulses, Paddy and millets , Sugarca ne	Low yield, lack of knowledge in new varieties and technologi es, improper pest and disease manageme nt	Varietal introducti on, ICM, IPDM, Value addition, FPO

2.8. Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy	Varietal evaluation and mechanization
Maize	Integrated pest management
Bhendi	Varietal evaluation
Onion	Integrated crop Management, Integrated pest management
Redgram	Integrated pest management, varietal evaluation
Black gram	Varietal evaluation and Pest management
Grapes	Integrated crop Management
Banana	Resource conservation technology
Banana	Crop geometry evaluation
Tomato	Integrated crop Management
Tamarind	Drudgery reduction
Green gram	Integrated crop Management
Organic farming	Resource utilization technologies
Paddy	Indigenous Technical; Knowledge

Brinjal	Integrated Pest Management
Guava	Integrated crop Management
Gingelly	Integrated crop Management
Samai	Integrated crop Management
Gingelly	Integrated crop Management
Sugarcane	Varietal evaluation
Mulberry	Varietal evaluation
Groundnut	Integrated crop Management
Sunflower	Integrated crop Management
Paddy	Integrated crop Management
Filed lab lab	Integrated pest management
Banana	Integrated crop Management
Black gram	Integrated crop Management
Ragi	Varietal evaluation
Cumbu	Integrated crop Management
Cotton	Integrated crop Management
Sorghum	Integrated crop Management
Black gram	Integrated crop Management
Green gram	Integrated crop Management
Jasmine	Integrated pest management
Marigold	Integrated crop Management
Cumbu	Integrated crop Management
Fodder crops	Integrated crop Management
Livestock	Disease management

3. Salient Achievements

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

S.No	Activity	Target	Achievement
1.	Technologies Assessed and refined (No.)	**20**	**16**
2.	On-farm trials conducted (No.)	**10**	**8**
3.	Frontline demonstrations conducted (No.)	**14**	**12**
4.	Farmers trained (in Lakh)	**1900**	**1735**
5.	Extension Personnel trained (No.)	**500**	**531**
6.	Participants in extension activities (in Lakh)	**6000**	**6304**
7.	Production and distribution of Seed (in Quintal)	**15**	**10.57**
8.	Planting material produced and distributed (in Lakh)	**2000**	**16000**
9.	Live-stock strains and finger lings produced and distributed (in Lakh)	**0**	**0**
10.	Soil samples tested by Mini Soil Testing Kit (No)	**0**	**0**
11.	Soil samples tested by Traditional Laboratory (No)	**600**	**557**
12.	Water, plant, manure and other samples tested (No.)	**300**	**352**
13.	Mobile agro-advisory provided to farmers (No.)	**30000**	**35353**
14.	No. of Soil Health Cards issued by Mini Soil Testing Kits (No.)	**0**	**0**
15.	No. of Soil Health Cards issued by Traditional Laboratory (No.)	**500**	**557**

4. TECHNICAL ACHIEVEMENTS

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

OFT (Technology Assessment)

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials / Replications / Beneficiaries	
Targets	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**
10	8	20	16	10	10	50	50

FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	**Achievement**	**Targets**	**Achievement**	**Targets**	**Achievement**
15	13	50	42	165	145

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

Number of Courses			Number of Participants	
Clientele	**Targets**	**Achievement**	**Targets**	**Achievement**
Farmers and Farm Women	**70**	**62**	**1900**	1735
Rural youth	**6**	**120**	**5**	105
Extn. Functionaries	**10**	**10**	**500**	531

Extension Activities

Number of activities		Number of participants	
Targets	**Achievement**	**Targets**	**Achievement**
700	768	6000	6304

Seed Production (q)

Target	Achievement	Distributed to no. of farmers
15	10.57	85

Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
20000	16000	22

Technology Assessments (OFTs) in Detail

OFT 1

1. Thematic area: Varietal evaluation
2. Title: Assessment of Suitable Groundnut variety for Theni District
3. Scientists involved: SMS (Agronomy)
4. Details of farming situation: the on farm trial plot was located in Kombai village of Uthamapalayam Block. The area comes under the fotthills of western ghats. The soil type of the trail plot id red sandy loamy soil with high nitrogen content (274 kg/ha), medium in phosphorous (11.7 kg/ha) and high in Potassium (164 kg/ha). The major cropping system of the area is groundnut – pulses. The total amount of rainfall received during crop period is 425 mm with 17 rainy days.
5. Problem definition / description: the major problem in Groundnut cultivation area in Uthamapalayam block non availability of improved high yielding variety and non adoption of integrated crop management practices in groundnut. During last one decade farmers are cultivating same variety its lead to low yield (1800 kg/ha) and higher cost of cultivation. The main season in kharif. Heavy rainfall during vegetative stage leads to incidence of wilt and Tikka leaf spot diseases in an area of 1256 ha among 1800 farmers
6. Technology Assessed:

TO1: **VRI 8,**Yield : 2130 kg/ha(Rain fed)Duration 105- 110 days,Moderately resistant to LLS and Rust, 70% Shelling, 49 % oil content, Medium bold kernels

TO 2: **BSR 2,**Duration : 110days,Yield 2220 kg/ha (Rain fed), Oil content : 46.51 %

Farmers practice : JL 22 variety with average yield of 1800 kg/ha.

8. Results:

Table : Performance of the technology

Technology Option	No.of trials	Yield (q/ha)	Net ns (Rs.	B:C ratio	No.of Pods per plant*
Farmers Practice: Jl 24	5	19.5	42516	2.21	31.00
Technology 1: VRI 8		23.62	57961	2.84	38.30
Technology2: BSR 2		26.62	67186	2.97	40.60

Description of the results:

The result of Assesssment of suitable groundnut variety for theni district reveakd that, the highest yield was recorde in BSR 2 groundnut variety (26.24q/ha), followed by VRI 8 (23.62). the lowest yield was recorded by farmers practice JL 22 (19.5 q/ha). The highest net return (Rs.67186) was recorded by TO 2: BSR 2, followed by TO 1: VRI 8 (Rs. 57961). The lowest net return was recorded by famrers practice JL 22 (Rs. 42516). Regarding Benefit cost ratio BSR 2 recorded highest (2.97) followed by VRI 8 (2.84).

Constraints faced:

In Uthamapalayam block groundnut cultivated during kharif season, the high amount of rainfall during vegetative growth leads to wilt and leaf spot incidence. It will suffer the number plant survived in unit area and pod formation.

9. Feed back of the farmers involved:

- BS2 groundnut varity give bold seed it will give higher market price

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

- Seed hub and timely availability of seeds will helpful to large scale adoption of improved groundnut variety

OFT 2

Thematic area: Varietal evaluation

Title: Assessment of suitable Paddy variety for navarai season in Theni district

Details of the farming situation: The trail were conducted at angoorplayam village of theni District. Which is located near Cumbum town? The Average annual rainfall of the area is 947 mm. the soil have high Nitrogen content, Low Phosphorous and medium Potassium content. The major copping pattern of the area is Paddy-Paddy-Pulses. The main problem occurred during second season is water scarcity due to low rainfall in reservoir area of Mullai periyar dam. I nthis connection we have planned to assess sort duration and high yielding paddy varieties.

Problem identified: Low yield (5.3q/ha) due to non availability of suitable short duration variety for *navarai* season in Theni District. Availability of water for only 120 days during second crop. Incidence of yellow stem borer in an area of 980ha among 1800 farmers

Technology assessed :

TO 1: Goraknath 509,

TO 2: ADT 53

TO 3: CO 51

Technology Option	No.of trials	Duration	No of ive tillers	Grain quality	Yield
Farmers Practice: Gt 509	5	130	28.51	Medium slender	55.26
Technology 1: ADT 53		114	36.47	Medium, slender	61.24
Technology2: CO 51		110	32.48	Medium Slender	58.48

Economics

Technology Option	No.of trials	Yield (t/ha)	Gross cost (Rs)	Gross (Rs)	Net return (Rs)	B:C
Farmers Practice: Goraknath 509	5	55.26	51783	92836	41053	1.79
Technology 1: ADT 53		61.24	49850	104057	54207	2.08
Technology2: CO 51		58.48	50160	99416	49256	1.98

Results

The highest yield was obtained by ADT 53 (61.24q/ha), followed by CO 51 (58.48). The lowest yield was obtained by Farmers practice Goreaknath 509 (55.26). high number of productive tillers (36.47) leads to higher yield in ADT 53.

OFT 3

Title: Assessment of high yielding, YMV resistant Black gram variety for Theni District
Problem identified: High incidence of YMV (38 %), Non availability of YMV Resistant and High yielding variety. Lack of Knowledge about ICM
TO 1 : VBN 11
Duration : 70-75 days, Yield 8.65 q/ha, highly resistant to yellow mosaic virus
TO 2 : TBG 104
Duration: 75-80
Yield : 12q/ha
YMV resistant and photo insensitive variety

Results:
Yield attributes

Technology Option	No.of trials	Duration	YMV Incidence (%)	No of Pods	Yield
Farmers Practice: VBN 4	5	81	37	37	7.65
Technology 1: VBN 11		76	24	52	10.27
Technology2: TBG 105		72	21	46	9.18

Technology Option	No.of trials	Yield (q/ha)	Gross (Rs)	Gross (Rs)	Net return (Rs)	B:C ratio
Farmers Practice: VBN 4	5	7.65	18500	42840	24340	2.31
Technology 1: VBN 11		10.27	16450	57512	41062	3.49
Technology2: TBG 105		9.18	16340	51408	35068	3.14

Economics

The higher yield was obtained by VBN 11 (10.27 q/ha) followed by TBG 105 (9.18 q/ha). The lowest yield was obtained by famers practice VBN 4. Regarding Gross income the highest gross income obtained by VBN 11 (Rs.57512) with 3.49 Benefit Cost ratio.

OFT 4

Thematic area: Varietal evaluation
Title: Assessment of suitable Paddy variety for navarai season in Theni district
Details of the farming situation: The trail were conducted at angoorplayam village of theni District. Which is located near Cumbum town? The Average annual rainfall of the area is 947 mm. the soil have high Nitrogen content, Low Phosphorous and medium Potassium content. The major copping pattern of the area is Paddy-Paddy-Pulses. The main problem occurred during second season is water scarcity due to low rainfall in reservoir area of Mullai periyar dam. I nthis connection we have planned to assess sort duration and high yielding paddy varieties.

Problem identified: Low yield (5.3q/ha) due to non availability of suitable short duration variety for *navarai* season in Theni District. Availability of water for only 120 days during second crop. Incidence of yellow stem borer in an area of 980ha among 1800 farmers

Technology assessed :
TO 1: Goraknath 509,
TO 2: ADT 53
TO 3: CO 51

Technology Option	No.of trials	Duration	No. of productive tillers	Grain quality	Yield
Farmers Practice: Gt 509	5	130	28.51	Medium slender	55.26
Technology 1: ADT 53		114	36.47	Medium, slender	61.24
Technology2: CO 51		110	32.48	Medium Slender	58.48

Economics

Technology Option	No.of trials	Yield (t/ha)	Gross (Rs)	Gross (Rs)	Net return s)	B:C
Farmers Practice: Goraknath 509	5	55.26	51783	92836	41053	1.79
Technology 1: ADT 53		61.24	49850	104057	54207	2.08
Technology2: CO 51		58.48	50160	99416	49256	1.98

Results

The highest yield was obtained by ADT 53 (61.24q/ha), followed by CO 51 (58.48). The lowest yield was obtained by Farmers practice Goreaknath 509 (55.26). high number of productive tillers (36.47) leads to higher yield in ADT 53.

OFT 5

1. Thematic area: INM
2. Title: Assessment of organic nutrient management in Rice cultivation (CO51)
3. Scientists involved: SMS (Soil Science & Agronomy)
4. Details of farming situation:

Paddy is a main food crop cultivated in Cumbum, Uthamapalayam, Chinnamnur and Andipatii block of Theni district in an area of 8200 ha during Kharif season of every year. More than 30 per cent of the area is occupied by rice cultivation in different season of Theni district. On Farm trial on assessment of organic nutrient management in Rice cultivation (CO51) at five farmers field of KK Patti village of Cumbum block respectively during Kharif season 2019-20. The trial area comes under the Cumbum valley within the Mullaiperiyar river irrigation basin. The soil type is Clay with medium nitrogen (370.6 kg/ha), low phosphorus (7.65 kg/ha) and high in potassium (127.6 kg/ha). Cropping scheme of the area is Paddy-Paddy-Pulses. The total area under Paddy cultivation is 1500 ha. During summer Green gram was growing as summer. It was used as a Green manure crop for Paddy cultivation. The average productivity of paddy is 65.4 q/ha during Kharif and 59.61 q/ha during Rabi. The village received 28 rainy days with annual rainfall of 950 mm.

5. Problem definition / description:

The farmers were getting 30-50% of yield loss due to improper usage of fertilizers. The farmers cannot cultivation of green manure crops due to unaware which results yield will be decreased. The farmers are didn't knowledge about organic manure sources which results poor grain and straw yield due to the improper nutrient management. The main objective of the study was to assess the suitable organic nutrient management in Rice cultivation (CO51) in Theni district for higher grain yield and more net income.

6. Technology Assessed:

TO 1: Farmer Practice: Green manure + Chemical fertilizers

TO 2: Recommended Practice: INM - Green manure + Soil Test based NPK+ Biofertilizers

TO: 3Alternate Practice: Organic Nutrient: Incorporation of green manure, Seed treatment 3% Panchagavya, FYM @750 kg/ha + 100 kg rock phosphate + neem cake 200 kg/ha + top dressing vermicompost @ 1t/ha + 3% panchagavya spray twice at AT and PI (TNAU 2014).

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

Name of critical input	Qty per trial/ha	Cost per trial (Rs.)
Soil health card	1	160
Biofertilizers	20 kg/ha	340
Green manure	20kg/ha	128
Panchagavya	8 li/ha	300
EFYM	750 kg/ha	100
Rock phosphate	100 kg/ha	400
Field board	1	

8. Results:

The results of the on farm trail conducted assessment of organic nutrient management in Rice cultivation (CO51) are presented below (Table).

Table: Performance of the technology

Technology Option	***No.of trials***	***Yield (q/ha)***	***Net Returns (Rs. in ha)***	***B:C ratio***	***No. of productive tillers per hill***
TO 1 (Farmer Practice)	*5*	51.4	32740	1.66	*20.6*
TO 2 (Recommended Practice)		59.4	50720	1.90	*32.4*
TO 3 (Alternate Practice)		62.8	68200	2.19	*35.6*

Description of the results:

On farm trial results revealed that cultivation of paddy by application of organic nutrient (Incorporation of green manure, Seed treatment 3% Panchagavya, FYM @750 kg/ha + 100 kg rock phosphate + neem cake 200 kg/ha + top dressing vermicompost @ 1t/ha + 3% panchagavya spray twice at AT and PI) was recorded highest grain yield (62.8 q/ha) followed by the practice of INM(Green manure + Soil Test based NPK+ Biofertilizers). The lowest grain yield of 51.4 q/ha was recorded in farmer Practice (Green manure + Chemical fertilizers).

Economics of the study revealed that, higher net returns (Rs.68200/ha) and benefit cost ratio (2.19) was recorded in application of organic nutrient (Incorporation of green manure, Seed

treatment 3% Panchagavya, FYM @750 kg/ha + 100 kg rock phosphate + neem cake 200 kg/ha + top dressing vermicompost @ 1t/ha + 3% panchagavya spray twice at AT and PI) followed by INM (Green manure + Soil Test based NPK+ Biofertilizers) and farmers practice.

Constraints faced:

Non availability of panchagavya and other bio fertilizers during panicle initiation stage was observed.

9. Feed back of the farmers involved:

The application of organic nutrient (Incorporation of green manure, Seed treatment 3% Panchagavya, FYM @750 kg/ha + 100 kg rock phosphate + neem cake 200 kg/ha + top dressing vermicompost @ 1t/ha + 3% panchagavya spray twice at AT and PI) recorded higher productive tillers (32-39 tillers/hill) and grain yield compare to the INM and Green manure practices. Also, the soil health was increased by these practices.

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

Organic inputs such as panchagavya, vermicompost and neemcake production technology training programme will engage the farmers to make available to the farmers.

OFT 6

1. Thematic area : Varietal evaluation
2. Title : Assessment of suitable high yielding varieties of Tomato in Theni District.
3. Scientists involved: SMS (Horticulture) and (Plant Protection)
4. Details of farming situation:

The trails were conducted at Pulikuthi village of Chinnamanur Block, Theni District. The soil type is red loamy with high nitrogen (482.4 kg/ha), low Phosphorous (8.9 kg/ha) and high Potassium (290.5 kg/ha). The local variety of tomato was recorded low yield, low market price and fruit borer incidence among 120 famers in an area of 50 ha. Cropping scheme of this village Tomato – Brinjal – Chilli, the main crop cultivation season is Kharif. Total area under tomato is 250 ha with average production of 78 t/ha. The village received 18 rainy days with annual rainfall of 890 mm.

5. Problem definition / description: Low yield, low market price and Poor quality of fruits, Incidence of Pest and Diseases (Leaf Curl, Blossom End Rot, Bacterial wilt, Early blight) in an area of 800 ha among 1400 Nos. of farmers.

6. Technology Assessed:

TO 1: Farmer Practice: Private variety (Sivam)

TO 2: Recommended Practice:

COTH-4 (CO4): Fruits are flat round with thick pericarp (5.84 mm) with extended shelf life (10 days at room temperature). Fruits have green shoulder at breaker stage which turns to red colour at ripening. Fruits are borne in clusters of 5-6, with an average fruit weight of 75.3 g. Hybrid has long harvesting period with 20-22 harvests in 150 days with a yield of 2.94 kg per plant. Yield: 92.3 t/ha (27.31 % increase over TNAU tomato hybrid CO3 and 40.91% over Lakshmi). Ascorbic acid content: 26.13 mg/100 g, TSS: 6.7o brix and Titratable acidity: 0.70 %. Source: TNAU, Coimbatore, 2020

TO: 3: Alternate Practice

Arka Apeksha: It is a high yielding hybrid developed by crossing ITHR 2834 and ITHR 2918. It has triple disease resistance to Tomato Leaf Curl Disease (Ty1+Ty2), Bacterial wilt and Early blight. Plants are semi-determinate with dark green foliage. Fruits are firm, deep red, oblong,

medium large (90-100g) with iointless (j2) pedicel. Fruits are suitable for processing as they have TSS (4.7° Brix), acidity (0.36%), lycopene (14.15mg/100g fresh weight). Recommended for summer, kharif & rabi cultivation. It has a yield potential of 43 to 90 t/ha in 140- 150 days. Source: IIHR, 2018

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

Name of critical input	**Qty per trial/ha**	**Cost per trial (Rs.)**
Seed (**COTH 4)**	60 g/ 0.25 ac	2500
Seed (Arka Apeksha),	60 g/ 0.25 ac	2500
Pseudomonas fluorescence	1 lit	450
Field board	1	400

8. Results:

Table: Performance of the technology

Technology Option	***No.of trials***	***Yield (t/ha)***	***Net Returns (Rs. In)***	***B:C ratio***
TO 1 (Private variety-Sivam)	*5*	*68.4*	279000	2.76
TO 2 (COTH 4)		*88.5*	364500	3.25
TO 3 (Arka Apeksha)		*76.7*	353500	3.19

Technology Option	***Percentage of pest incidence (%)***	***Average fruit weight (g)***	***No.of fruits/plant***
TO 1 (Private variety-Sivam)	29	49.0	26
TO 2 (COTH 4)	14	76.4	38
TO 3 (Arka Apeksha)	22	55.5	34

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

The results of the assessment of two new high yielding variety of Tomato in Theni district indicated that out of the local varieties viz., (COTH 4) recorded significantly higher fruit yield of 88.5 t/ha followed by Arka Abeksha with 76.7 t/ha and the lowest fruit yield of 49.0 t/ha was recorded in local variety(Sivam). The highest number of fruits per plant (38) was recorded in COTH 4 followed by Arka Abeksha (34). In the case of net returns, COTH 4 was recorded significantly higher net return of Rs. 364500/ha followed by Arka Abeksha (Rs. 353500/ha) and the least net returns was recorded in local variety (Rs. 279000/ha). During flowering and fruiting stages of crop growth farmers faced the viral incidence problem and fruit Borer incidence. COTH 4 tomato hybrid was recorded high fruit yield and farmers could get good quality of fruits in Pulikuthi village of Chinnamanur Block, Theni District.

Constraints faced:

Due to pest and Disease incidence of same variety leads to low yield and low market price. COTH-4 has moderately resistant to viral and pest incidence. Cultivation of COTH 4 were recorded high yield than other IIHR and local varieties in Theni district area.

9. Feed back of the farmers involved:

1. Moderately resistant to pest and disease incidence
2. The yield was high in COTH 4 variety when compare to the other private and IIHR varieties.

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

Yield loss upto 20 % due to imbalanced use of fertilizer, poor fruit set, incidence of pest & disease and minimum growth due to nutrient deficiency. Low price and price fluctuation due to less demand in the market.

OFT 7

1. Thematic area: Varietal evaluation
2. Title: Assessment of suitable Bottle Gourd varieties for Theni district
3. Scientists involved: SMS (Horticulture) and SMS (Soil Science)
4. Details of farming situation:

Bottle gourd cultivated in Sukkangalpatti village of Chinnamanur Block. The soil type is red loamy with medium nitrogen (320 kg/ha), low Phosphorous (8.1 kg/ha) and medium Potassium (260.5 kg/ha). The local variety of bottle gourd was recorded high pest and disease incidence, low yield among 250 famers in an area of 100 ha. Cropping scheme of this village Bottle gourd – Coccinia – Bitter gourd. The main crop cultivation season is Rabi. Total area under Bottle gourd is area of 450 ha among 900 Nos. of farmers. The village received 18 rainy days with annual rainfall of 890 mm.

5. Problem definition / description: Non availability of improved variety and low yield (28 t/ha). Yield reduction due to improper nutrient management. Reddening of fruit due to nutrient deficiency. Low number of fruit due to drought incidence in an area of 450 ha among 900 Nos. of farmers.

6. Technology Assessed:
TO 1: Farmer Practice: Local variety.
TO 2: Recommended Practice:
PLR-2 : Fruits are light green in colour. It does not require pandal support/training system. It yields 42.2 t/ha and recorded 35.3% yield increase over Pant Lauki 3, First harvest starts in 50-55 days. It is moderately resistant to fruit fly, powdery and downy mildews. It is very good in taste and suited for all types of culinary preparations.
TO: 3Alternate Practice
Arka Shreyas: Female flower appeared at 15th node. Takes 48 days for the first female flower appearance and 60 days for first picking of fruits Green, club shaped, tender fruits. Resistant to Gummy stem blight with a PDI: Field reaction: 7.33- 20.00. Artificial challenging: 10.00. Has good shelf life with less weight loss, firmness and colour retention up to 10 days of storage under RT. Yield- 45-48 t/ha

7. Critical inputs given:

Name of critical input	Qty per trial/ha	Cost per trial (Rs.)
Seeds (PLR-2)	150 g/ 0.5 ac	1700
Seeds (Arka Shreyas)	150 g/ 0.5 ac	1700
Trichoderma viride	1kg	200
Field board	1	400

8. Results:
Table : Performance of the technology

Technology Option	*No.of trials*	*Yield (t/ha)*	*Net Returns (Rs. in*	*B:C ratio*
TO 1 (Local variety)	*5*	*32.5*	144600	2.75
TO 2 (PLR 2)		*41.5*	233400	3.36
TO 3 (Arka Shreyas)		*38.5*	210400	3.15

Technology Option	*No. of fruits per plant*	*Fruit weight (g)*	*Percentage of pest and disease incidence (%)*
TO 1 (Local variety)	*10*	*400*	*28*
TO 2 (PLR 2)	*14*	*950*	*17*
TO 3 (Arka Shreyas)	*12*	*650*	*18*

The results of the assessment of two new high yielding varieties of Bottle gourd in Sukkangalpatti village of Chinnamanur Block, Theni district indicated that out of the local varieties viz., (Local variety),PLR 2 recorded significantly higher Fruit yield of 41.5 t/ha followed by Arka Shreyas with 38.5/ha and the lowest bulb yield of 32.5 t/ha was recorded in local variety. The highest number of fruits per plant (14) was recorded in PLR 2 followed by Arka Shreyas (12). The lowest number of fruits per plant (10) was recorded in local variety. In the case of net returns, was recorded significantly higher net return of Rs. 233400 /ha In PLR 2 followed by Arka Shreyas (Rs. 210400/ha) and the least net returns was recorded in local variety (Rs. 144600/ha). During vegetative stage of crops farmers faced the thrips incidence problem. The PLR 2 variety was recorded higher Fruit yield and farmers could get good quality of Fruits.

Constraints faced:

Most of the farmers were cultivated local variety of Bottle gourd. Due to high pest and disease incidence of local variety leads to low yield and low market price. PLR 2 has It is moderately resistant to fruit fly, powdery and downy mildews. Cultivation of PLR 2 were recorded high yield than other local varieties in Theni district area.

9. Feed back of the farmers involved:

Cost of cultivation in local variety was higher due to 3 weeding operations in the initial period
Foliar application of micronutrient helped in deep Green colour fruits fetching more price.

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

- Even though PLR 2 and Arka shreyas variety was longer than the local variety. In this trail PLR 2 variety can be promoted to cultivation because of higher BCR.
- Linked Sukkangalpatti village farmers interest group with TNAU, Palur & Coimbatore for supply of seeds for horizontal spread.

OFT-8

1. **Thematic area** : Value Addition
2. **Title** : Alternative Natural Sweetner for Bakery Products
3. **Scientists involved** : Subject Matter Specialist (Home Science)
4. **Details of farming situation** : -
5. **Problem definition / Description***: High consumption of sugar leads to High incidence of non communicable diseases.*

Sugar is an essential and mostly commonly used ingredient in the Indian cuisines, mostly all the people in India consume sugar at least once in their daily meals. There are different varieties of sugar available in our country i.e.Palm Sugar, Jaggery, White Sugar etc.,

Technology Assessed

TO1 – Palm sugar (Centre for Post Harvest Technology, TNAU, 2017)

Palm sugar has been used as a traditional sweetener for thousands of years in Asia. It is now gaining popularity globally because of its natural, minimal processed and healthy. One of the major health claims is its glycemic index (GI). In view of the above point Centre for Post Harvest Technology, TNAU, 2017 has incorporated Palm sugar in bakery products for prevention of degernativer disorders.

TO2 – Jaggery (IIFPT, 2014)

Gur (Jaggery) is a natural, traditional sweetener made by the concentration of sugarcane juice and is known all over the world in different local names It is a traditional unrefined non-centrifugal sugar consumed in Asia, Africa, Latin America and the Caribbean. Containing all the minerals and vitamins present in sugarcane juice, it is known as healthiest sugar in the world. India is the largest producer and consumer of jaggery. Out of total world production, more than 70% is produced in India.

The special feature of the technology is

Rich in mineral salts, Easy to digest, Develops unique taste as sweetener,Treats throat and lung infections, Easily dissolved and balances the deficiency of sugar level, Sulphur less Organic Composition, a best to suite as preferred health alternative.

Being rich in vitamins and minerals, Jaggery was added in the bakery products i.e.Millet Cookies to improve the nutritional values of the products and also for a healthy life.

TO3: Farmers Practice (White Sugar)

Farmers are getting white sugar in the ration shop at low cost.

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

Details of inputs	***Total cost involved (Rs.)***
Raw materials (Jaggery, Palm sugar, White Sugar)	*1000*
Packaging materials	*500*
Total	***1500***

Organoleptic Evaluation

Particulars	**Appearance (5)**	**Colour (5)**	**Flavour (5)**	**Taste (5)**	**Texture (5)**	**Overall Acceptability (25)**
TO1	4.5	4.5	4.5	4.5	4	22.0
TO2	**5**	**5**	**5**	**5**	**4.5**	**24.5**
TO3	3	4	4	4	3.5	18.5

Excellent: 5, Very Good: 4, Good:4, Fair:1, Not Accepted:1

Organoleptic qualities play an important role in evaluating the quality of food products. A total of three types of natural sugars namely ground Palm, Jaggery and White sugar were used in the preparation of millet cookies. A numerical score card was used to measure the acceptability in terms of appearance, colour, flaovour, taste and texture with five scores for each criteria. Semi trained panel members in the age group of 20 -30 years evaluating the recipes. These scores given were excellent (5), very good (4), good (3), fair (2) and poor (1). The acceptability score was 25. For comparison purposes farmer practice i.e white sugar was used in preparation of millet cookies.

The acceptability trials of TO1, TO2 and TO3 obtained a mean score in the range of 3.0-5 out of 5. When compared to the farmers practice jaggery used millet cookies were highly acceptable in terms of appearance, colour, flavour, taste and texture and secured higher score.

The results indicated that the overall acceptability of different natural sweetner obtained a mean score in the range of 18.5 – 24.5 out of 25. The acceptability trials of different natural sweetner in comparison to the farmers practices, proved that TO2 ranked higher and was more acceptable by the semi trained panel members. The recipes would not only add taste and colour, but also provide important nutrient of iron to the human body. It can help to allivate malnutrition among children.

From the foregoing trails, it may be concluded that the TO2 possess high nutrient and also more acceptable. It is evident in terms of micronutrient especially rich in Iron.

9. Feed back of the farmers involved:

Farmwomen are very happy to adopt the technology and also they are using jaggery in their home. They are planning to develop the product in large scale level in the coming years.

Lack of machineries to develop value added products in large scale.

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

Jaggery used products can be recommended to supplement in all the Anganwadi Centers to improve health and nutrition status of the children.

Frontline Demonstrations in Detail

a. **Follow-up of FLDs implemented during previous years**

Technology-1

Crop/Enterprise: Chilli

Thematic area: INM

Technology Demonstrated as a follow-up from OFT: New

Feedback sent to the Research System: The foliar application of IIHR vegetable special helps in getting it also help to retaining the more number of flowers, thus increase in the fruit set leading to higher yield. The flower drop was reduced due to foliar spray of micronutrient formulation during flowering stage. Also it enhanced the fruit quality such as fruit appearance and odor

Details on the performance of the technology sent to the Extension Department

Horizontal spread of the technology (No. of Villages, farmers and area in ha)

- In an area of 120 ha around 200 farmers in 2 villages
- Field day was conducted with collaboration of ATMA
- There are two training programme on “Importance of micronutrient in Vegetable crops cultivation” was conducted with collaboration of ATMA.

Technology-2 Demonstration of VGD 1 Paddy variety

Crop/Enterprise: Paddy

Thematic area: varietal introduction

Technology Demonstrated as a follow-up from OFT

Feedback sent to the Research System: incidence of leaf folder was noticed. Break down of rice during milling.

Details on the performance of the technology sent to the Extension Department:

We send the results to Department of Agriculture for large scale adoption

Horizontal spread of the technology (No. of Villages, farmers and area in ha)
No of villages : 12
Farmers: 37
Area (ha): 24 ha

Technology-3 Demonstration of ADT 53 Paddy variety
Crop/Enterprise: Paddy
Thematic area: varietal introduction
Technology Demonstrated as a follow-up from OFT
Feedback sent to the Research System: Incidence of yellow Stem borer and ear head bug.
Details on the performance of the technology sent to the Extension Department
We send the results and feedback of the technology to the state agricultural department of large scale adoption.
Horizontal spread of the technology (No. of Villages, farmers and area in ha)
No of villages : 12
Farmers: 37
Area (ha): 24 ha

Technology-1- Demonstration of VGD 1 Paddy variety

Crop: Paddy
Thematic area: Varietal introduction
Technology demonstrated: **: Special features of VGD 1:** Duration : 130 days,Average yield: 5850 kg/ha,High tillering and non lodging plant ,Cooking quality and organoleptic character are similar to Seeragasamba ,Mild scented and suitable for making Briyani ,Moderately resistant to leaf folder, blast and brown spot. **Technology to be demonstrated:** Bacterial Leaf Blight Seed treatment with *pseudomonas flurescens* Pf.1at 10g/kg of seeds, foliar spraying with streptomycin + tetracycline combination 300g at 30 and 60 days after transplanting**. Leaf Folder:***Beauvaria bassiana* at 500ml/ac,Pheromone trap at 12 number /ha, and Release of Trichogramma egg parasitoids Trichogramma chilonis and Trichogramma japanicum for stem borer and leaf folder management (5cc/ha/release) based on pest monitoring i.e. pheromone catches and egg count.

Season and year: Kharif 2020
Farming situation: Irrigated
Source of fund: ICAR
No of locations (Villages): one
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: 8
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers: Cultivation of VGD 1 Paddy variety gives high net return due to higher market preference of the variety. This characteristics are Similar to seeragasamba , highly suitable for Briyani making and aroma of the rice after cooking is good. Demonstration of seed treatment with pseudomonas decreases the disease incidence.

Feedback of the Scientist: Incidence of stem borer and leaf folder pest, test weight of the grain was low as compare to farmers practice.
Extension activities on the FLD:
Farmers training-2
Field days- field day was conducted in collaboration with ATMA, Theni.
Total participants -36

Media coverage- Nil
Training to Extension Functionaries- One training programme on VGD1 Cultivation conducted to Block Level extension Staff of Agriculture Department.

Technology-2
Crop: Cotton
Thematic area: Varietal Introduction
Technology demonstrated: Duration : 135-140 days, Seed cotton yield : 2500 kg/ha, Suitable for high density planting and machine harvest. Mealy Bug Management: Verticillium 20 ml/10 liter of water at 15 days interval

Season and year: Kharif 2020
Farming situation: Rainfed
Source of fund: ICAR
No of locations (Villages): one
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: 0
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers: number of bolls per plant was higher over other variety. Incidence of mealy bug was lower due to application of verticillium. Application of cotton plus increase the number of Bolls per plant. Easy to harvest
Feedback of the Scientist: give good yielding character during ratoon crop. Highly suitable for high density plantin.
Extension activities on the FLD:
Field days was conducted on CO 17 Cotton with ICM with participation of 38 farmers and farm women.
Farmers training – 2 training programmes was conducted
media coverage – one popular article was pulblishe on Co 17 cotton cultivation

training to Extension Functionaries- one training programme on ICM in Cotton conducted

Technology3
Crop: Cowpea
Thematic area: varietal introduction
Technology demonstrated: VBN 3 Variety with Foliar application of pulses wonder at 2kg/acre, application of micronutrient mixture at 5 kg per acre with integrated Crop Management Practices **.**
Season and year: Rabi 2020-2021
Farming situation: Rainfed
Source of fund: ICAR
No of locations (Villages): one
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: 4
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers: number of pods per plant higher than farmers practice. Application of TNAU Pulses wonder increases the pods and yield.
Feedback of the Scientist: incidence of Pod borer was noticed. Flower Shedding was noticed during rainy day.
Extension activities on the FLD:

Field days was conducted with the participation of 25 famers and 2 extension officials
Farmers training- 2 training programmes was conducted
Media coverage
Training to Extension Functionaries- one training programme on VBN3 Cowpea cultivation was conduced

Technology-4
Crop: Tomato
Thematic area: INM
Technology demonstrated: Demonstration of INM practices by foliar nutrition for enhancement of yield in Tomato
Season and year: Rabi 2019
Farming situation:

Tomato is a major fruit crop cultivated in Uthamapalayam, Chinnamnur and Andipatii block of Theni district in an area of 800 ha during Rabi season of every year. More than 25 per cent of the area is occupied by tomato cultivation in different season of Theni district. Demonstration on INM practices by foliar nutrition for enhancement of yield in Tomato at different farmer's field of U Ambasamuthiram village of Uthamapalayam block respectively during Rabi season 2020-21. The soil type is sandy loam with medium nitrogen (320.2 kg/ha), low phosphorus (7.15 kg/ha) and medium in potassium (121.6 kg/ha). Cropping scheme of the area is Tomato-Brinjal-Tomato. The village received 32 rainy days with annual rainfall of 920 mm.

Source of fund: ICAR KVK
No of locations (Villages): 10
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: 2
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers:

- The higher number of fruits per plant was recorded in the demo plot.
- The fruit quality (size, colour and TSS) was good condition by foliar application of Micronutrient mixture.
- Foliar nutrition of water soluble fertilizer recorded higher yield when compared to the check.
- The quantity of applied fertilizer was low in demo plot when compare to the soil application (check).

Feedback of the Scientist:

- Foliar application of 19:19:19 and micronutrient mixture @1g / lit (0.1%) during 40th and 80th days after planting were induces the flowering and increased the fruit yield.
- The application of pseudomonas fluorescence reduced the disease incidence (fusarial wilt diseases).

Extension activities on the FLD:

Field day was conducted with collaboration of ATMA and Department of Agriculture.

Technology-5
Crop: Cotton
Thematic area: INM
Technology demonstrated: Demonstration of INM in rainfed Cotton
Season and year: Kharif 2020
Farming situation:

Cotton is a major fibre crop cultivated in Theni and Andipatty block of Theni district in an area of 1200 ha during Kharif season of every year. More than 20 per cent of the area is occupied by cottoncultivation in different season of Theni district. Demonstration of INM in rainfed Cotton at different farmer's field of Srirebgapuram village. The soil type is sandy clay loam with medium nitrogen (335.7 kg/ha), low phosphorus (7.20 kg/ha) and medium in potassium (115.6 kg/ha). Cropping scheme of the area is Cotton-Castor-Cotton. The village received 22 rainy days with annual rainfall of 860 mm.

Source of fund: ICAR
No of locations (Villages): 10
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: Nil
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers:

- The higher number of boll per plant was recorded in the demo plot.
- Reddening problem was reduced by basal application of Micronutrient mixture.
- Flower shedding was reduced in the demo plot.
- The 20 percent of seed cotton yield was increased by INM practices.

Feedback of the Scientist:

- The basal application of micronutrient mixture reduced reddening in Cotton.
- The foliar application of TNAU Cotton plus to reduced flower shedding and also improves boll bursting.
- The Soil application of Azospirillum and phosphobacteria @ 2kg/ha and Pseudomonas @ 2.5kg/ha along with FYM 50 kg and neem cake 100 kg which increased seed cotton yield up to 20 per cent.

Extension activities on the FLD:

Field day was conducted with collaboration of ATMA and Department of Agriculture.

Technology-6
Crop: Lab lab
Thematic area: INM
Technology demonstrated: Demonstration of Actino microbial consortium (Actino plus) for enhancement of yield in Lab lab
Season and year: Rabi 2020
Farming situation:

Brinjal is a major vegetable crop cultivated in Chinnamanur, Cumbum and Uthamapalayam block of Theni district in an area of 650 ha during Kharif season of every year.

More than 40 per cent of the area is occupied by vegetable cultivation in different season under irrigated condition. Demonstration of Actino microbial consortium (Actino plus) for enhancement of yield in Lab lab at different farmer's field of Anaipatti village. The cluster comes under the mullai periyar channel. The soil type is sandy loam with medium nitrogen (330.5 kg/ha), low phosphorus (7.40 kg/ha) and medium in potassium (132.7 kg/ha). Cropping scheme of the area is Brinjal-Tomato-Coriander. The village received 26 rainy days with annual rainfall of 920 mm.

Source of fund: ICAR
No of locations (Villages): 10
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: Nil
Area proposed (ha): 4
Actual area (ha): 4
Justification for shortfall if any: Nil
Feedback from farmers:

- The fruit quality was good condition in demo plot
- Fruit set was higher in the demo plot when compare to the check.

Feedback of the Scientist:

- Flower drop was reduced by foliar application of Arka Actino Plus at flowering stage.
- The number of fruits per plant was higher in demo plot
- The higher fruit yield (20 percent) was recorded in demo plot when compared to the check

Technology-7

Crop : Tomato
Thematic area : ICM
Technology demonstrated: Demonstration of TNAU FRUITY FRESH for enhancement of shelf life in Tomato and Mango.
Season and year : Rabi 2020
Farming situation:

Tomato is a major fruit crop cultivated in Uthamapalayam, Chinnamnur and Andipatii block of Theni district in an area of 800 ha during Rabi season of every year. More than 25 per cent of the area is occupied by tomato cultivation in different season of Theni district. Demonstration TNAU FRUITY FRESH for enhancement of shelf life in Tomato at differentfarmer's field of Ramakrishnapuram village of Andipatti block respectively during Rabi season 2020-21. The soil type is sandy loam with medium nitrogen (308.2 kg/ha), low phosphorus (6.15 kg/ha) and medium in potassium (118.6 kg/ha). Cropping scheme of the area is Tomato-Brinjal-Tomato. The village received 30 rainy days with annual rainfall of 910 mm.

Source of fund : ICAR
No of locations (Villages) : 10
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers:3
Area proposed (ha) : 4
Actual area (ha) : 4

Justification for shortfall if any: Nil

Feedback from farmers:

- Fruity fresh when sprayed 15-30 days before harvest, helped grower retain tomato fruits for 6 to 13 days compared to those fruits that were not sprayed.
- The quality of tomato fruit whenfruity fresh sprayed was high in demo plot when compare to the not sprayed (check).

Feedback of the Scientist:

- Fruity fresh when sprayed 15-30 days before harvest of tomato, helped grower retain fruits for 6 to 13 days compared to those fruits that were not sprayed.
- The fruity fresh sprayed tomato fruit was more shelf life when compare to the not sprayed (check).

Extension activities on the FLD:

Field day was conducted with collaboration of ATMA and Department of Agriculture/Horticulture officials.

Technology-8
Crop: Snake gourd
Thematic area: Varietal Introduction
Technology demonstrated: Demonstration of Snake gourd hybrid COH-1 in Theni District
Season and year: Rabi 2020
Farming situation:

Snake gourd is a major vegetable crop cultivated in Chinnamanur and Andipatty Block of Theni district in an area of 720 ha during Rabi and Kharif season of every year. More than 20 per cent of the area is occupied by snakegourd cultivation in different season of Theni district. Demonstration of Snake gourd hybrid COH-1 in Theni Districtat different farmer's field of Thenpalani village. The soil type is sandy clay loam with medium nitrogen (315.7 kg/ha), low phosphorus (6.18 kg/ha) and medium in potassium (109.6 kg/ha). Cropping scheme of the area is Snakegourd-Coccinia-Snakegourd. The village received 18 rainy days with annual rainfall of 845 mm.

Source of fund : ICAR
No of locations (Villages) : 10
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers: Nil
Area proposed (ha) : 4
Actual area (ha) : 4
Justification for shortfall if any: Nil
Feedback from farmers:

- The higher number of fruitsper plantFruit weight (g), Fruit yield (t/ha) was recorded in the demo plot.
- Pest and disease incidence was minimum in Snake gourd hybrid COH-1.
- Flower shedding was reduced in the demo plot.
- The 20 percent of fruit yield was high in Snake gourd hybrid COH-1 compare to check varieties.

Feedback of the Scientist:

- Snake gourd hybrid COH-1 is Resistant to downy mildew, powdery mildew and anthracnose incidence as well as less fruit fly incidence.
- Cropping period also high in Snake gourd hybrid COH-1.
- The BCR also high in Snake gourd hybrid COH-1.

Extension activities on the FLD:

Field day was conducted with collaboration of ATMA and Department of Agriculture/Horticulture officials.

Technology-9

Crop : Mango
Thematic area : Value Addition
Technology demonstrated : Development of Value Added Product AMCHUR (Mango Powder) from unripe Mango for income generation
Season and year : Rabi 2019-20
Farming situation : -
Source of fund : ICAR
No of locations (Villages) : 1 (Thenkarai, Periyakulam)
No. of demonstrations (replications/farmers/beneficiaries): 10
No. of SC/ST Farmers and women farmers: 5
Area proposed (ha) : -
Actual area (ha) : -
Justification for shortfall if any: -
Feedback from farmers : Easy to adopt during the peak season, low market price period. Heavy demand during the Non season period

Feedback of the Scientist : Farmers are very much interested to adopt this technology and also heavy demand in the market. Very difficult to implment in large level due to lack of machinaries.

Extension activities on the FLD: Disseminated this technology through various extension activities i.e Conducted Group Meeting, Training, Method Demonstration, Home Visit.
Lecture delivered to all ATMA Extension Functionaries on Amchur Production.

Technology-10

Crop : Bhendi
Thematic area : Drudgery Reduction
Technology demonstrated : Demonstration of Bhendi ring cutter
Season and year : Rabi 2019-20
Farming situation : -
Source of fund : ICAR
No of locations (Villages) : 1 Nagalapuram
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers **:** 10
Area proposed (ha) : -

Actual area (ha) : -
Justification for shortfall if any : -
Feedback from farmers : Easy to operate, no scratches, less time required to harvest, reduced labour cost
Feedback of the Scientist : Easy to use multipurpose i.e. Bhendi, gourds etc.,
Extension activities on the FLD: Conducted Group meeting, Method Demonstration, Field visit, Lecture delivered on Drudgery reducing technologies to farmers, farm women, College students and ATMA Extension Functionaries.

Technology-11

Technology demonstrated : Demonstration of Vegetable Seedling Transplanter
Season and year : Rabi 2019-20
Farming situation : -
Source of fund : ICAR
No of locations (Villages) : 1
No. of demonstrations (replications/farmers/beneficiaries): 10
No of SC/ST Farmers and women farmers:10
Area proposed (ha) :
Actual area (ha) :
Justification for shortfall if any :
Feedback from farmers: Reduces labour cost, Time saving, easy to implement espeically for tomato, brinjal saplings.
Feedback of the Scientist : Need skilled labour to use this implements
Extension activities on the FLD : Method Demonstration

Technology-12

Technology demonstrated : Demonstration of Nutri Garden
Season and year : Rabi 2019-20
Farming situation : -
Source of fund : ICAR
No of locations (Villages) : 5 different Locations
No. of demonstrations (replications/farmers/beneficiaries): 5
No of SC/ST Farmers and women farmers:10
Area proposed (ha) : 5 cent
Actual area (ha) : 5 cent
Justification for shortfall if any :
Feedback from farmers: Getting Good quality of organic Green Leafy Vegetables and other vegetables regularly. Disseminated this technology to near Govt. school teachers, farm women, parents etc., through Field Day

Feedback of the Scientist : Cultivation of organic fruits and vegetables-is need of Hour duing this COVID to improve the Immunity.
Extension activities on the FLD : Method Demonstration

Technology Week Celebrations

Types of Activities	No. of	Number of	Related

	Activities	Participants	crop/livestock technology
Gosthies	1	33	Pulses
Lectures organised	2	67	Pulses and Groundnut
Exhibition	0	0	0
Film show	1	33	Pulses
Fair	0	0	0
Farm Visit	3	47	Pulses and Groundnut
Diagnostic Practicals	1	28	Pulses
Distribution of Literature (No.)	2	67	Pulses and Groundnut
Distribution of Seed (q)	0	0	0
Distribution of Planting materials (No.)	0	0	0
Bio Product distribution (Kg)	0	0	0
Bio Fertilizers (q)	0	0	0
Distribution of fingerlings	0	0	0
Distribution of Livestock specimen (No.)	0	0	0
Total number of farmers visited the technology week	2	67	Pulses and Groundnut
Others	-	-	-

Training/workshops/seminars etc. attended by KVK staff

Name of the staff	Title	Dates	Duration	Organized by
M.Ramya Siva Selvi SMS (Home Science)	5-Day National Level online FDP onValue Added Food Products for Present and Predicted COVID - 19 Scenario	6th July - 10th July 2020	5 Days	Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore
	National Webinar on 'Food Products-Innovation and Launching	June 15, 2020	One Day	Dept of Foods and Nutrition and Foods and Nutrition Alumni Association (MSUFNAA), Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda

Details of sponsored projects/programmes implemented by KVK

S. No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs.)

•	FPO-Grapes	NABARD, Chennai	• Mobilizing farmers in groups at the village level and build their associations (FPOs) at an appropriate. • Federating point to plan and implement product specific cluster/ commercial crop cycles strengthen farmer capacity through agricultural best practices for enhanced productivity in Grapes. • Ensuring access to and usage of quality inputs and services for intensive agriculture enhancing cluster competitiveness. • Facilitate access to fair & remunerative markets including linking producer groups to marketing opportunities by market aggregators for Grape byproducts.	Three Years (February 2019-January 2022)	1144400.00
•	FPO Sugarcane and Betelvine	NABARD, Chennai	• Mobilizing farmers in groups at the village level and build their associations (FPOs) at an appropriate. • Federating point to plan and implement product specific cluster/ commercial crop cycles strengthen farmer capacity through agricultural best practices for enhanced productivity in Sugarcane and Betel vine. • Ensuring access to and usage of quality inputs and services for intensive agriculture enhancing cluster competitiveness. • Facilitate access to fair	Three Years (February 2019-January 2022)	1144400.00

			& remunerative markets including linking producer groups to marketing opportunities by market aggregators for Sugarcane by products and Betel vine.		
•	Evaluation and Dissemination of farmer's crop varieties (*Sona-40*; Onion, *HZKB-1*;Brinjal, *G-vilas pasand*; Guava) under TamilNadu conditions	National Innovation Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	• To test the suitability and potentiality of the farmers' Onion, Brinjal and Guava variety for the dissemination in Tamil Nadu area. • To test the yield, important yield attributing traits and responses against general insect pests. • To test the potentiality and suitability of the farmers' variety based on trails, growers and market feedback	One Year (May 2020-June 2021)	502128.00
•	FSPF Project on Scientific Bee-keeping and Honey production Value Chain	NABARD, Chennai	• To Empower the farmes by providing practical training on scientific Bee-keeping techniques • To form 10 Farmers Interest Groups to market the farmers products • To create marketing linkages with KVIC through CENDECT Group of Industries, Super Markets, Online Sales etc., • To develop the beneficiaries as successful bee enterpreneurs • To generate sustainable additional income to the farmers through scientific bee-keeping.	3 Months (August 2020-October 2020)	2,40,000
•	Dissemination of the	National	• To test the suitability and potentiality of the	One year (September	745833.00

	Grassroots Innovations for the upliftment of Socio Economically Weaker Sections of Theni District”	Innovation Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	farmers’ Innovations for the dissemination in Theni District Tamil Nadu. • To find out the efficient and effectiveness of the grassroots innovation and compare with farmers practices through various parameters (Time consumed, Energy saving, Cost benefit analysis etc. • To study the impact of disseminations in every 3, 6,9,12 months.	2020 - August 2021)	

Success Stories

Doubling of Farm Income thorough Adoption of Integrated Crop Management practice in Groundnut

Name: Mrs. R.Malaiyakkal
Address: No.23/B2, Middle Street, Ethakovil, Andipatty -625530, Theni District.
Contact number: 9688147547
Age: 36
Education: 12th
Category: Agriculture

Background:

Mrs. R.Malaiyakkal residing at Ethakovil Village of Andipatty Block, Theni District. She Doing agriculture in 3.17 acre of Land along with partial irrigation water facility. She also have 10 goat and 3 milch cows associated with groundnut cultivation. She cultivates Groundnut as major crop. She also cultivate cumbu, Sorghum for fodder purposes. During past year she is practices conventional agricultural practices with low and inadequate input management and old, low yielding varieties which was supplied by local traders from the area. She obtain low yield in Groundnut in rainfed cultivation.

At the time she participated in the tainting programme on integrated crop management practices in groundnut under rain fed situation was organized by KVK, Theni during the year 2017. After the training she regularly interact with KVK scientists to learn the improved management practices. She also participated in KVK Cluster Front Line demonstration programme on Groundnut. During this programme she adopted CO 6 groundnut variety with Integrated Crop Management Practices. She also adopted the mulching practices for water conservation. After the adoption of technologies, she got Groundnut yield 23.45 q/ha which was 9.15 q/ha higher than conventional practice.

4.Training and motivational to other farmers

She did not hold the new technology with her own purpose only. Being a president of Farm Science Club in her village she disseminates the technology through seed distribution and training programme to other farmers in that village. Totally 73 groundnut growers have adopted the new technologies in this village.

She also acting as teacher farmers for groundnut cultivation to this panchayath. Regularly guide and support the farmers on Groundnut cultivation with Collaborative with KVK and State Agricultural Department.

5.Impact

Particulars	Before impart skill	After impart skill
Yield	14.30 q/ha	23.45 q/ha
Gross income	88920	51480
Net income	59845	28640
Employment generation		51 mandays

6.Awards and recognition: She has received Best farm women at Block level during the year 2018

7. Outcome:

- Yield increased up to 63 %
- The easy availability of quality seeds though Seed production programme
- Getting higher sold rate per unit quantity through group approach

A Sweet "Bee School" Journey with Honey

Name : **Mrs.S.SALEEMA**
Age : 47
Address : W/O Saeed Muhammad,
364-A, Pallapatti, Koduvilarpatti,
Theni District-625 534
Education : B.Com.,
Land in acre : 5 acre
Mobile No. : 81486-21443

Category : Agricultural Entrepreneurship

Background:

Mrs. Saleema (47) is residing at Koduvilarpatti Village. Basically she is a progressive farm woman, knowledge thirst person to learn the new things and early adoption of Agriculture and income general activities. She has been adopting Coconut cultivation, pepper, flowers i.e. rose etc., and coconut value addition using solar dryer.

She has visited Krishi Vigyan Kendra, Theni in the year 2011 and underwent many formal training programmes i.e Apiculture, Friends of Coconut, Food Processing, Good Agricultural Practices, Seminars, and Demonstrations etc., at KVK Premises.

She has also participated in 5 days Basic Bee keeping training and received Bee boxes, Bee colonies, Tool kits, Honey Extractor, C.F.Sheets and multiplied 42 boxes.
She has started Bee farm, Poly house, Value addition unit -solar dryer and Integrated Farming System in 2012, 2017, 2019 & 2020 respectively.

Training and Motivational Support: She has been providing many skill training and motivational support to the farming community especially to the farmers, SHGs, College students. She acted as Master Training and conducted 15 training programmes and 500 farm women, farmers and college students were benefited.

Impact

Particulars	Net Income (Rs.) Before Adoption	Net Income (Rs.) After Adoption
Income Generation per year		
Poly House	40,000	3,50,000
Bee farm	-	96,000
Coconut Value Addition Unit	4,00,000	6,50,000
Flower Cultivation	50,000	4,00,000

She sells Honey under her Own ***"SHIFFA-Natural Honey" brand throught Tamil Nadu.***

Awards & Recognition : Best Entrepreneurship Cash Award (Rs.5000/-) in November 2020

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

S. No.	Innovative Technology	Innovative Methodology	Technology transferred (No.)	Technology Used (No.)
•	**Brinjal** ***(HZKB-1)***	• Higher yielding • Bigger and glossy fruit • Dark purple colour and good taste • Seeds are formed only when the fruits reach at 2.5 kg.	**500** (Tranferred of technology through Extension Activities)	**150** (2 Districts of Tamil Nadu - Theni & Dindugal)
•	**Onion** ***(Sona-40)***	• Early maturity • Red colour and medium sized bulbs • Long shelf life period • Resistant to leaf blotch disease		**150** (2 Districts of Tamil Nadu - Theni & Dindugal)
•	**Guava** ***(G-vilas pasand)***	• Fruiting throughout the year • In winter (Plain white • yellow fruit), in summer (Striped white yellow fruit)		**150** (2 Districts of Tamil Nadu -

		• Jumbo size fruiting (500-950gm) • High market Acceptance • Higer yielding		Theni & Dindugal)
•	**Portable Energy Efficient (PEE) Wood Stove**	• PEE wood stove is a double-chambered efficient portable stove. • This stove is transportable and has high burning efficiency 37.6% against an efficiency of 17% with other stoves. • Different kinds of fuel woods, bio mass can be used	**328** (Tranferred of technology through various Extension Activities i.e 4 Awareness Programme and 2 Training Programmes)	**25**
•	**Paddy Husk Stove**	• It is a uniquely designed stove to enable the use of paddy husk as fuel.		**-**
•	**Fruit and Vegetable Capper**	• This fruit capper is a small tool, which can be used for capping or bagging fruits and vegetables to protect from birds, squirrels and insects.		**-**
•	**Fruit Nipper**	• It is used to reduce the drudgery of Mango Growers		**25**
•	**Tamarind De-Seeder**	It is used to reduce the drudgery of women.		**-**

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): Nil

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)
IIHR Banana Special	150	65	630/Bunch	855/Bunch

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

1.Foliar Application of Banana Special for Quality Bunches

Name: M.Jeyaraj

Background:

The farmer is hailing from Palarpatti village in Bodi Taluk of Theni District. He developed 10 acres of Land holding with adequate supply of irrigation water. This farmer has cultivated Banana, Rice and Coconut. But now he gives more importance to Banana Cultivation.

In initial Banana Cultivation, he used heavy dose of chemical fertilizers and other inorganic inputs to increase the production and the productivity. On continuous banana cultivation in his field, he couldn't take up the lead in Banana Cultivation because of lowest production and more cost of cultivation. Hence he could not realize the profit

margin in Banana Cultivation. In subsequent years of Banana Cultivation pulled him down economically.

At particular point of time, interventions of KVK made him to aware and adopt the technologies of Banana Special application for Banana Cultivation. He interacted with our KVK and purchased of IIHR Banana Special for the past 3 years. Banana Special was sprayed by him during all vegetative stage at monthly interval and at the time of bunch formation and development stage. He has given more thrust for foliar spray of banana special to the banana to take more advantages like less micronutrient consumption, crop improvement and increase in fruit size and color and fast correction of deficiency.

As the banana special was applied in entire banana field, the yield increase was substantial and ultimately made profit margin increased economical. In initial banana cultivation he could realize only 28 - 30 Kg per bunch. Now after the banana special spray, he got and additional yield of 5 Kg/bunch and he was able to take more yield and increase production and productivity. After the foliar application of banana special, he now applied Banana Special through Drip Irrigation. Now a days, he couldn't practice basal soil application of micronutrients. Instead he prefers to go for foliar spray and drip fertigation. Banana Special mixture gave more yields and quality of bunches in banana cultivation. This helped him to increase profit of Rs. 40,000/acre.

2.Cashew Apple Squash Preparation

Intervention Process:

She is a farm women. The acute shortage of irrigation water has lead to decrease in yield and farm income. The home scientist of CENDECT KVK imparted training programme on Home Care Products, Various Pickle Preparation, and Fruits Processing Technologies for the SHG members at Thangammalpuram. She had attended many of our training programmes. With the skills learnt, she has started preparing Cashew Squash with locally wasted Cashew apple. KVK Home Scientist has given the technical guidance to become a entrepreneur. She purchased other raw materials from whole sale shop and started preparing the Cashew Squash. She is now selling the Cashew Squash in the local markets in Theni District.

Impact: Now one group of SHG members have started preparation of Cashew Squash for the home consumption.

Economic Gains:

In initial stage, she produced 3 Lt of Cashew Squash per day. After that she increased the amount of production to 15 Lt Cashew Squash per day. The production cost is Rs. 10/ lt. The cost of selling of 1 Lt Cashew Squash is Rs. 30 and for 15 Lt of Cashew Squash. She earns Rs. 300/day. She earns Rs. 9000/- per month.

3.Onion storage structure

Background:

The farmer is hailing from Ambasamudram in Theni Block in Theni District. He developed 4 Onion storage structure for storing Onion cultivated from his 20 acre land holding. But now he gives more importance to Onion storage.

In his initial farming, he cultivated Rice and Vegetables in irrigated condition and Cumbu at rainfed situation. He was not able to earn more profit from these crops. He wanted to become a business turned farmer. So he started Onion cultivation in small areas of land holding. After that, he cultivated 10 acres of Onion. At harvesting time, low market price for Onion reduced the profit. So he wanted to store and sell during the high market price time.

At particular point time, interventions of KVK made him aware and adopt the technologies on pre harvest spray for long term storage and low cost Onion storage structure. He interacted with KVK for the past 3 years. He established Onion storage structures with the interaction of our KVK. He has given more thrust for utilizing locally available bamboo, sorghum Stover and wild grasses for construction of structure for storaging of Onion to take more advantages to get better market price.

Onion storage structure is 80ft length, 3 ft width with the height of 6ft. In this storage structure, he stores 7,500kg of Onion.

At the time of harvesting, price for Onion is Rs.15/kg due to low demand. After two months cost of Onion is Rs.20-25/kg. Average price increment is Rs. 2-7/kg/month.

CO 51 Paddy variety: Profitable Rice Production in Theni

Water scarcity was a major problem, its availability being dictated by the monsoon in Theni district. Lack of adoption of good agricultural practices reduces the productivity of paddy. There was an urgent need to reduce water consumption and implement the good agricultural practices for rice cultivation while enhancing productivity. CO 51 Paddy variety was shorter duration with 110 days duration with white medium slender grains. High milling capacity (69%) and Head rice recovery (63%) with intermediate amylase content (22%). CO 51 paddy has Average yield of 6623 kg/ha it is 11 % increase over ADT 43 with yield potential of 11377 in Tamil Nadu. This variety suitable for cultivation as Transplanted rice throughout Tamil Nadu except Nilgris District.

Plan, Implement and Support

Integrated Crop Management Practices for higher Productivity

Split application of Urea

Application of excessive Nitrogenous Fertilizers Particularly Urea leads to Plants are dark green in colour, Abundant foliage, Restricted root system, Flowering and seed setting may be retarded and attract the sucking pests. Application of Urea and other Nitrogenous fertilizers at three split doses. Application of 50 % of N at the time of Transplanting. Remaining first 25 % at time of active tillering stage and second 25 % at the time of Panicle emergence stage. This method helps increased the Nitrogen use efficiency and reduces the cost of fertilizers. (Source:P. Pardha-Saradhi)

In other hands, Productivity of Paddy is reduced when leaf Nitrogen content < 2% at the time of tillering stage. Foliar application of Urea at 1 % at active tillering stage increase the No. of tillers per hills resulted from high tillering ability.

Pheromone traps for controlling Yellow Stem Borer.

Rice yellow stem borer is the major problem identified in paddy growers in Tamil Nadu. Appearance of Symptoms mostly at panicle emergence stage. In this stage unable to implement the control measures with 16 % yield losses. Pheromone traps installation at the rate of 5 No.s / Acre for monitoring the Yellow stem borer incidence in paddy from transplanting onwards. This method helps to farmers for manage the Yellow Stem borer from early Stages onwards.

Integrated Disease Management: In Tamil Nadu paddy growing areas yield loss due to incidence of Blast and Sheath Blight are the main diseases during Kharif and Rabi Season. Rice crops grown under irrigated conditions were inoculated with*Pyricularia oryzae* during early growth stages to study the effect of leaf blast on yield formation. The inoculations led to severe epidemics of leaf blast around maximum tillering, characterized by the presence of typical blast lesions and an accelerated senescence of heavily infested leaf tissue. Leaf blast led to a prolonged tillering and a delay in flowering and maturity. Crop growth rate and leaf area formation declined sharply during establishment of the disease and continued to be reduced till maturity. This resulted in a marked reduction of total dry matter production and grain yield. (Source: L. Bastiaans)IDM Practices which comprising seed treatment with Trichiderma at 10g/kg of seeds and Foliar application of Pseudomonas 5g/ litre of water at 15 Days After Transplanting and 15 days after first spray. It is control the Blast and Sheath blight in Paddy and reduces the indiscriminate application of fungicide.

PPFM (Methylobacteria) for Drought Mitigation

Theni district farmers are mainly depends on Mullai periyar River. After transplanting of paddy sometimes water deficit during 7-15 days. When water deficit occurs tillering stage leads to poor yield due low tillering capacity. For overcome this water demand ICAR KVK, Theni foliar application of PPFM at the ratio of 1000 mL/acre to reduce the evapotranspiration rate. It is not permanent measure against drought. It works 7- 15 days water deficit only. It is also works as a plant growth regulator to increase the growth of Paddy.

Group approach for horizontal spread of the variety

The CO 51 variety was first introduced at Veerapandi village of Theni district. After successful yield gain from co 51, district scientific advisory committee recommended the CO 51 variety for kharif and Rabi season. In collaboration with ATMA, KVK conducted the farm school in paddy with Co 51. Seed material also produce at seed farm in Theni district. Totally 800 ha among 1200 farmers were growing CO 51 with integrated crop management practices

Results and outcome

Yield obtained from CO-51 Paddy field is 78q/ha over he got net return of 87710 with 2.96 BC ratio. This is more profit than farmers practice. The paddy variety CO 51 with Integrated Crop Management Practices helps higher production when water deficit during maturity stage. Practice of Split application of urea reduces the nitrogen losses and increases the Nitrogen use efficiency lead to high tillering capacity. Growing Azolla in paddy field fix the atmospheric Nitrogen.Pest management strategies with Pheromone traps reduces the pesticides cost. Foliar application of PPFM reduces the rate of evapotranspiration and increase the Shoot growth. This will be a step forward in doubling the Paddy growers' income as target for our country.

4.CO-4 Bhendi Hybrid Cultivation

Background : The farmer is hailing from Balakrishnapuram village in Theni Taluk of Theni District. He developed 8 acres of Land holding with adequate supply of irrigation water. This farmer has cultivated Bhendi, Banana and Maize. But now he gives more importance to Bhendi Cultivation. In initial Bhendi Cultivation he used cultivation of private varieties, heavy dose of chemicals and fertilizers to increase the production and the productivity. On continuous Bhendi cultivation in his field, he couldnâ€™t take up the lead in Bhendi cultivation because of lowest market price, production and more cost of cultivation. Hence he could not realize the profit margin in Bhendi cultivation in subsequent years of Bhendi cultivation pulled him down economically. At particular point of time, intervention of KVK made him to aware and adopt Co-4 Bhendi features tall plants 135-150cm, dark green, bender medium size fruit, 25-29 fruits/plant, 22 harvest in 110 days starbing from 39 days after sowing resistant to bhendi YVMV disease. CO-4 bhendi hybrid cultivation through according to survey conducted by ICAR KVK, CENDECT. Bhendi cultivation area decreased. So KVK scientist approach the farmer to cultivate bhendi in Rabi season for getting higher price. He interacted with out KVK and he got CO-4 bhendi seeds during the last year. CO-4 bhendi hybrid was cultivated by him in 1 acre. IIHR vegetable special application, increased the quality of bhendi fruits and reduced curved bhendies. During harvest itching problems was not observed followed by labours compared to other bhendi varieties. As the CO-4 bhendi was cultivated the yield increase was substaintial and ultimately made profit margin increased economically in initial bhendi cultivation he could realize only 22 plucking per season. Now, after the CO-4 bhendi hybrid cultivation he got 32 plucking with yield of 115q per dare and he was able to take more yield, price, resistant to YMV and increased production and productivity. This helped him to get profit of 3,00.000/acre in a Rabi season.

5.Promotion of Precision Horticulture Through Farmer's Interest Group
Back ground

CENDECT KVK is collaboration with department of horticulture Theni jointly organized farmers in to 25 farmer's interest groups in Theni block for perimetro cluster vegetable development in 25 different villages. They are 500 members registered with this peri

metro scheme. This perimetro scheme serves the vegetable growers in all aspects of production and marketing. Each farmer's basic details are collected through baseline survey.

Process:

The farmers have participated in trainings organized by CENDECT KVK related to soil and water conservation, drip irrigation, alternate cropping, farm diversification for increase production and productivity, ICM in vegetables crops, processing and value addition in vegetable crops. The KVK scientists have made frequent scientist visits to the farmers field and offered various suggestions and technologies for adoption through dry land horticultural cultivation under drip irrigation.

Technology

During the fortnightly farmers meeting participatory discussion were made for assessing irrigation water availability and potentiality. The following technology options were suggested to the farmers for adoption.

- Cultivation of dry land vegetable crops
- IPM in vegetables crops

- IPDM in vegetables crops
- Processing and value addition in vegetable crops
- Application of pseudomonas, Trichoderma viride
- Application of EM in vegetable crops
- Drip irrigation with festination technologies

The farmers were promoted with CO 5 small onion cultivation, Vermi compost production, Annual moringa cultivation and highly marketable seasonable vegetables.

Horizontal Spread

Quality vegetable production was spread to 25 villages among 500 farmers

Economic Gain

Farmers are able to realize addition income of Rs 3000/ per month due to better marketing strategies.

Cases of large scale adoption/impact of specific technologies

1.Scaling up of IIHR Banana Special in Theni district

- 3FLDs conducted in an area of 12 ha among 30 farmers.
- The total area under IIHR Banana Special in adopted clusters is 250 ha as on 2019.
- 12 field days conducted.
- One farm school in collaboration with ATMA, Theni conducted and twelve training programmes and one ATMA training programmes related to IIHR Banana Special .
- Area Spread in district through convergence under IIHR Banana Special till 2020 is 800

	Yield (q/ha)	Yield increase (%)	Cost of Cultivation (Rs)	Gross income (Rs)	Net income (Rs)	BCR
IIHR Banana Special	1030	25	234500	1237200	1002700	5.28
Farmers practice	820	-	234500	984000	749500	4.20

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

Name: Mr.P.J eyachandran

Background:

The farmer is hailing from Palarpatti village in Bodi Taluk of Theni District. He developed 10 acres of Land holding with adequate supply of irrigation water. This farmer has cultivated Banana, Rice and Coconut. But now he gives more importance to Banana Cultivation.

In initial Banana Cultivation, he used heavy dose of chemical fertilizers and other inorganic inputs to increase the production and the productivity. On continuous banana cultivation in his field, he couldn’t take up the lead in Banana Cultivation because of lowest production and

more cost of cultivation. Hence he could not realize the profit margin in Banana Cultivation. In subsequent years of Banana Cultivation pulled him down economically.

At particular point of time, interventions of KVK made him to aware and adopt the technologies of Banana Special application for Banana Cultivation. He interacted with our KVK and purchased of IIHR Banana Special for the past 3 years. Banana Special was sprayed by him during all vegetative stage at monthly interval and at the time of bunch formation and development stage. He has given more thrust for foliar spray of banana special to the banana to take more advantages like less micronutrient consumption, crop improvement and increase in fruit size and color and fast correction of deficiency.

As the banana special was applied in entire banana field, the yield increase was substantial and ultimately made profit margin increased economical. In initial banana cultivation he could realize only 28 - 30 Kg per bunch. Now after the banana special spray, he got and additional yield of 5 Kg/bunch and he was able to take more yield and increase production and productivity. After the foliar application of banana special, he now applied Banana Special through Drip Irrigation. Now a days, he couldn't practice basal soil application of micronutrients. Instead he prefers to go for foliar spray and drip fertigation. Banana Special mixture gave more yields and quality of bunches in banana cultivation. This helped him to increase profit of Rs. 40,000/acre.

Linkages

Functional linkage with different organizations

Name of organization	Nature of linkage
Dept. of Agriculture	Conducting Training programmes and Demonstration. Received assistance for getting seeds/critical inputs for FLD Programme. Participation in department training programme as resource person.
Dept. of Horticulture	Received Guidance and Assistance for Conducting Training Programmes. Received and supply of Quality Seedlings to Farmers
Dept. of Animal Husbandry	Creating awareness about mixed fodder cultivation
Horticultural College and Research Institute, Periyakulam	Received Guidance and Assistance for Conducting Training Programmes. Guidance to students for their Rural Agricultural Work Experience programme
Agricultural College and Research Institute, Madurai	Guidance to students for their Rural Agricultural Work Experience programme
Nehru Yuva Kendra, Theni	Creating awareness among farmers about scientific farming through field level NYK volunteers
NGO Network	Creating awareness about Drought Mitigation and Sustainable Agriculture
All India Radio, Madurai	Broadcasting of Feedback/Interviews of KVK beneficiary Farmers for Adopting New Technologies
News Papers	Coverage of KVK activities
Tamil Nadu Agricultural University	Received Latest Technologies for Conducting Training Programmes. Getting Seeds/Critical Inputs for Conducting

	FLD/OFT Programmes
NRCB	Received Latest Technologies for Popularization of farmers. Getting Quality Improved Critical Inputs for Conducting OFT Programme
Cotton Corporation of India	Jointly Organised Trainings and Demonstration
NABARD	Organized CAT, MEDP, FSPFS, FPOs, Seminars etc.,
FTC, TANUVAS, Theni	Received Critical Inputs for conducting FLD Programme
Joint Action for Sustainable Livelihood (JASuL)	Training extension workers on Climate Change Mitigation Strategies
Vazhnthu Kattuvom Thittam,Theni	Organizing Training Programmes
ATMA	Conducting Farmers Field School Programmes, Capacity Building Training for ATMA Functionaries
MANAGE, Hyderabad & SAMETI	STRY Training
Coconut Development Board, Chennai	Conducted Friends of Coconut Tree Trainings and Demonstration
Coffee Board, Theni	Conducting training to SHG members
KVIC, Madurai	Bee keeping Training and distrubution of bee boxes
TNSCST, Chennai	Publication of Vivasaya Seithi Madal
DCCD, Cochi	Utilization of Cashew Apple for Unemployed Women
National Innovation Foundation-India	Research Study -Dissemination Projects
Educational Institutions	MOUs with 2 Colleges to transfer of technologies, joint implementation purposes

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

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

Name of the Scheme	Date/ Month of Initiation	Funding Agency	Amount (Rs.)
Utilization of Cashew Apple for Unemployed Women	February 2020	DCCD, Cochi	25,000
Evaluation and Dissemination of farmer's crop varieties (Sona-40; Onion, HZKB-1; Brinjal, G-vilas pasand; Guava) under Tamil Nadu conditions	May 2020	National Innovation Foundation-India	502128
FSPF-Scientific Beekeeping and honey Value Chain	June 2020	NABARD	2,40,000

Dissemination of the Grassroots Innovations for the upliftment of Socio Economically Weaker Sections of Theni District	September 2020	National Innovation Foundation-India	7,45,833
Basic Bee keeping Training and Distribution of Bee boxes with subsidy	December 2020	KVIC, Madurai	15,0000
FPO-Grapes	February 2019	NABARD	1144000
FPO-Sugarcane and Betelvine	February 2019	NABARD	1144000

Important Visitors to KVKs during 2020 (with photographs)

IIHR- Bangalore, Head, Division of Social sciences Dr. NArayanasamy Visited our KVK during Extension functionaries training	NRC for Grapes Director Dr.Somkumar Visited Our KVK during Grapes Seminar
Mr.Gowtham, IFS, Theni Visited our KVK During Poshan Maah	KVIC, regional Director, Mr.Ashokan Visited during Bee keeping training

PHOTOS

Photos on performance of technologies in OFTs and FLDs, Trainings, Extension Programmes, Other Extension Activities, Important Visitors, Awards and Recognitions (KVK, Staff, Farmers) *etc*.

Jpeg/png format with good resolution for printing (300 dpi, RGB/CMYK)
Title must have the KVK Name, activity (OFT/Training/Visitor/award *etc*.) and short description