

ICAR KVK, CENDECT, Theni

PROFORMA FOR PREPARATION OF ANNUAL REPORT (1stJanuary 2021 to 31stDecember 2021)

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 VIGYAN KENDRA, CENDECT, THENI

Address: 89- A/B-3, West Street, Kamatchipuram (S.)) Theni District, TamilNadu - 625520

Phone: 04546247564

Fax:04546247564

Email:cenectkvvk@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 (State Government University – [AU, HU, VU, FU] / State Government Department / ICAR Institute/ Central University / Deemed University / Non-Governmental Organization)

Address: 89- A/B-3, West Street, Kamatchipuram (S.)) Theni District, TamilNadu - 625520

Phone:04546247245

Fax:04546247245

Email:cenect@gmail.com

Name of the Chairperson: Dr. P. Patchaimal

Mobile No:9443047245

Email:cenect@gmail.com

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

Name of the Programme Coordinator / SS&H: Mr. P. Maheswaran

Residential Address: CENDECT KVK, Quarters, Kamatchipuram, Theni District

Phone No.: 04546247564

Mobile No.:9677661410

Email:danushmahes@gmail.com

1.4. Year of sanction of the KVK (as per Official Order): 1994

1.5. Month and year of establishment: March, 1994

1.6. 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	21.58ha

1.6. Infrastructural Development:

A) Buildings

S.No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	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	-	-	Completed
2.	Farmers Hostel	ICAR	12.25.2002	312.0	1749596	-	-	Completed
3.	Staff Quarters (No.)	ICAR	2.11.1997	260.0	2930577	-	-	Completed
4.	Demonstration Units							
	Sericulture Unit	ICAR	3.31.2012	160	417000	-	-	Completed
	Dairy Unit	ICAR	3.30.1996	120	102000	-	-	Completed
5	Fencing	ICAR	3.21.1996	2 km	100000	-	-	Completed

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms covered as on 31.12.2021	Present status
Bolero	2010	606153	267320	Need Replacement
Mini Tractor	2012	185015	348 hrs	Need Replacement
Honda Activa	2009	50800	83260	Need Replacement
Tractor	2010	516000	12100	Need Replacement

C) Equipment & AV aids

Name of the equipment	Cost (Rs.)	Year of purchase	Present status
Overhead projector	11160	01.06.1995	Under repair
Electronic typewriter	21035	01.06.1995	Scrapped
Mixie	2175	01.14.1996	Scrapped
Onida Colour TV	18600	2.28.1996	Scrapped
English t/w machine	9852	2.29.1996	Scrapped
Weighing Scale	2643	3.29.1996	Scrapped
Amplifier & mike unit	4600	5.27.1996	Good condition
Duplicating machine	17500	1.10.1995	Scrapped
VER	14990	2.28.1996	Scrapped
Slide projector	12855	2.28.1996	Scrapped
LED 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
Epabax system	50220	3.30.2011	Under repair
Steel table	1500	11.04.1994	Under repair
Mica table	800	11.04.1994	Under repair
Godrej table	13340	1.23.1995	Scrapped
Wooden table	2250	1.23.1995	Scrapped
Steel table	11785	12.5.1995	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	24953	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
Revolving chair	6500	3.7.2010	Damaged
3x2 cash table	4400	3.7.2010	Damaged
4x2 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	3.15.2010	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
2.	29.12.2021	30	Enclosed

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

22nd Scientific Advisory Committee Meeting Proceedings Date : 12.03.2021

ICAR KVK, CENDECT, Theni conducted 22nd Scientific Advisory Committee meeting on 12.03.2021 (Friday) at Seminar Hall, KVK, Theni. The welcome address was given by Mr.P.Maheswaran, Programme Coordinator (i/c), KVK, Theni. The presidential address was given by

Dr.P.Patchaimal, Chairman, ICAR KVK, CENDECT, Theni. During his presidential address he explained the role of KVK, Theni on Agricultural development in Theni District.

The Chief guest address was given by Dr.M.Jawaharlal, Director of Extension Education, Tamil Nadu Agricultural University, Coimbatore through virtual mode. During his address, he gave suggestions for the overall development of CENDECT KVK i.e. conduct horticulture crops activities in collaboration with Horticultural College and Research Institute, Periyakulam and Gapes Research Station, Royappanpatti for the dissemination of latest Horticultural technologies viz., Manila Tamarind PKM2, Minor fruits cultivation for Drought areas and Grapes cultivation technologies. He also suggested that wider spread of location Specific of TNAU technologies to be conducted through OFTs and FLDs programmes by the KVK.

Key note Address was given by Dr.A.Bhaskaran, Principal Scientist, ATARI, Hyderabad through virtual mode. During his address, he has suggested to develop 15 model demonstration units in KVK campus for effective learning of farmers. Develop crop cafeteria with all new varieties in KVK campus. He also suggested that to add Seeds and seedlings production activities for increase the revolving funds. FLDs and OFTs programmes results, feedback and success stories should be recorded and to be shared with TNAU, Coimbatore and State Agricultural Department for larger adoptions.

The special address was given by Dr.Rajangam, Professor and Head, Department of Fruit Science, Horticultural College and Research Institute Periyakulam. He has suggested to develop Crop production Capsules for major Agricultural and Horticultural Crops and also to disseminate the latest AICRP technologies through FLDs and OFT programme in Collaboration with Horticultural College and Research Institute, Periyakulam. He has given ideas to Develop value added products from Minor fruits like Jamun and Manila Tamarind and to Prepare the calendar of operation for various Horticultural crops. Disseminate Red guava cultivation through KVK Programmes. Identify and Disseminate alternative crops for Major Crops based on the need. Value addition in Nutritious Fruits technologies to be demonstrated through the training programmes. Joint Venture Programmes have to be conducted with NABARD, National Horticultural Board, etc.

Dr.Venkidapathy, Professor and Head, TANUVAS, Suggested that Model Shed for Dairy, Goat and Sheep Should be developed in KVK Campus. Rearing of Desi bird with incubator unit should be developed in KVK Campus. Fodder Seed production with involvement of farmers will help farmers to get quality Seeds. Trainings related to animal husbandry should be conducted in collaboration with FTC and Veterinary College and Research Institute, TANUVAS, Theni. Dissemination of suitable Drought related Animal husbandry technologies for Drought areas in Theni District. Disseminate Sheep rearing in Mango Orchard.

Dr.T.Alagunagendran, Joint Director of Agriculture, Theni suggested that District specific OFT and FLD Programmes have to be conducted in Future. 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.Selvi Ramesh, Programme coordinator, Madurai KVK suggested that KVK should 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. Multi crop cafeteria should be 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.

Mrs. L.Bhuvaneshwari, AGM, NABARD, Theni Suggested that KVK should Convergence FPOs in Theni district for KVK training programmes. She wanted to develop the Food park in KVK in Collaboration with NABARD and also to disseminate export Tomato varieties for higher income.

Dr.V.Nadanasabapathy, Chairman, KVK, Ariyalur suggested to develop Bio flack fish production technologies in KVK campus and to disseminate market based Herbal plant technologies of tribal people.

Mr.M.Pandiyan, President, Farmers Association, Theni suggested that trainings to be given on soil and water conservation and water harvesting and also to give awareness on Marketing of produces

Mrs.K.Muthulakshmi, Deputy Director, ATMA, Theni suggested that KVK should collaborate with ATMA for Diagnostic the field level problems and awareness on Field problems. 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,

Mr.Jeyachandran, Progressive famrmer, Seepalakottai, suggested that Trainings should be given on Agricultural marketing, and FPO. To disseminate Tomato value addition technologies.

Mr.P.Bindhu, progressive farm Women,T.Bomminayakkanpatti, Periyakulam Theni suggested to give trainings for rural youth in their respective villages.

Mr.S.Senthil Kumar, Spices Board has suggested that to develop value added products from Clove, Pepper, Chilli and also organize Exposure visit to Spices board for effective cross learning of technologies and schemes.

Mr.Jacob Jebareuben, Programme executive, All India Radio, Madurai suggested to record the success stories with AIR, Madurai for large scale dissemination and to share programme schedule for live telecasting of KVK programmes

Mrs.M.Ramya Siva Selvi, Home Science, KVK, Theni has proposed Vote of Thanks to all the participants. The programme ended with National anthem.

23rd Scientific Advisory Committee Meeting Proceedings

Date: 29.12.2021 (Wednesday) Place: Seminar Hall, KVK, Theni

The 23rd Scientific Advisory Committee Meeting was held at Seminar Hall, KVK, Theni on 29.12.2021. The programme was started with prayer (Tamizhthai Vazhthu) song.

Mr.P.Maheswaran, Programme Coordinator (i/c) welcomed gathering of the meeting and explained the action taken on the recommendations of 22nd SAC meeting conducted on 12.03.2021. The presidential address was given by Dr.P.Patchaimal, Chairman, ICAR KVK, CENDECT, Theni. During his presidential address he explained the Vision and Mission of KVK, Theni and achievement of Doubling of Farmers Income by 2023 and he also added the role of KVK in development of Agricultural and Allied sectors of Theni district. He appealed the SAC members to provide their valuable suggestion to be executed by KVK Theni for the welfare of Theni District.

The meeting was started with with the SAC members self introduction. All The Subject Matter Specialists have presented the mandatory activities since last SAC in discipline wise. Mr.P.Maheswaran has presented the Agronomic activities Mr.M.Arunraj has presented the Soil Science activities. Dr.G.Rajaraman has presented the Horticulture activities. Mrs.M.Ramya Siva Selvi has

presented the Home Science activities and Mr.C.Sabarinathan has presented the Agricultural Extension activities.

Dr.T.Alagunagendran, Joint Director of Agriculture, Theni has presided over the meeting. He suggested that the KVK should organize the Field days for every Front Line Demonstration for large scale adoptions of new technologies in collaboration with Agricultural Department. KVK should include the allied sector activities, training programmes etc., and also to share the suitable Agricultural and Horticultural technologies with line department officials for better widespread of recent technologies. Success stories could be shared with Agricultural and allied departments which are documented by KVK. He added to document the Feedback of the particular technologies with empirical data for adoption of the technologies. KVK should promote the minor millets cultivation and marketing value added products through Front Line Demonstrations. He urged to promote the Improved Direct Paddy seeder technologies for large scale adoption and include the bio fertilizer technologies in KVK on Farm Testing programmes and record the farmer's feedback with more data. He suggested that KVK should collaborate with ATMA for all programmes especially Training, Scientist visit etc.,.

Dr. A.Senthil Kumar, Assistant Professor and Head, Farmers training Centre, TANUVAS, Theni has graced the occasion and suggested that KVK should give Veterinary technologies in On Farm Testing and Front Line Demonstrations in collaboration with TANUVAS-FTC, Theni. He also suggested documenting the Ethno- Veterinary practices and creating awareness on that for large scale adoption. KVK should develop the multi fodder demonstration units in KVK Demo plots. KVK should promote the Azolla seed cultivation in all blocks of Theni District for large scale adoption. He also suggested developing value added products from Veterinary Products.

Mr.M.Ganapathy, Assistant Director, Department of Sericulture, Theni has participated in the meeting and suggested that KVK should conduct trial on nematode management practices in Mulberry and he added the soil test and water testing programmes for Sericulture farmers. He also suggested conducting trials on sericulture and training in collaboration with Sericulture Department, Theni.

Mr.V.S. Sankar, Deputy Director (State Scheme), Department of Agriculture, Theni has indicated that KVK should conduct the Front Line Demonstrations with latest agricultural and Horticultural Crop varieties. KVK should promote the Fodder sorghum seed production with COFS 29 and COFS 30. He also suggested to promote the Seed production activities by farmers with the help of KVK.

Mr.B.Sashikumar, District Development Manager, NABARD, Theni has indicated to document the follow-up activities of technologies which was disseminated by KVK. KVK could identify the Farmers Interest Groups (FIG's) and Famers Producer Companies for implementation of Front Line Demonstrations for adoption of more technologies. He also suggested organizing the Buyer-seller meets at KVK for promotion of famers, FIGs and FPOs products at large level. He also suggested identifying the specific issues and conducting the research on those issues. He urged to promote the packages of practices in Moringa cultivation of small and marginal farmers with low application of plant protection chemicals for Export purpose. KVK should conduct trainings on Bankable Projects and financial linkages to Agricultural extension staffs in collaboration with NABARD and Lead Bank, Theni. He suggested to start an Incubation center in KVK for the FPO start-ups.

Mr.M.Pandiyar, President, Farmers Association, Theni has addressed the meeting and suggested that KVK should promote Natural farming in Theni District and adopt Soil conservation practices, *in-situ* compost technologies, fodder crop seed Production and demonstration of Coconut Shredder.

Mr.A.Thandavan, Assistant Director, District Industrial Centre, Theni has participated in the meeting and indicated that KVK should conduct awareness programme on Financial Linkages activities to the farmers in collaboration with District Industrial and Entrepreneur Centre, Theni and also create awareness on Agro based business activities among the farmers.

Mr.S. Senthil Kumaran, Senior Field Officer, Spices Board, India Bodinayakkanur, has attended the meeting and suggested to organize skill development trainings on Spices crops in collaboration with Spices Board, Bodinayakkanur. He urged to create awareness about tree spices to the farmers and also to document the success stories and share with Spices board. He urged the KVK to include the other district participants during virtual training programmes and also arrange the Successful famers to participate in Scientific Advisory Committee Meeting.

Mr. D.L.Jacob Jeba Reuben, Farm Programme Officer, All India Radio, Madurai suggested recording the success stories with AIR, Madurai for large scale Dissemination and also to share programme schedule for live telecasting of pre and post event of KVK programmes

Mr.V.Akilan, Lead District Manager, Theni has suggested creating awareness on Finance and Bank scheme available in banking sectors to reach the farming community.

Mr.R.Murugan, Deputy Horticultural officer, Chinnamanur has suggested to promote the Nutri Garden activities and Natural farming in collaboration with Horticultural department.

Mr.Navaneetha Pandiyan, Assistant Engineer, Agricultural Engineering Department, Theni has suggested to create awareness about the hiring of agricultural implements which are available with agricultural Engineering department.

Mr.S.Murugan, Managing trustee, MESAP Trust, Periyakulam has participated in the meeting and suggested to create awareness about ill effects and health hazards of Artificial ripening of Banana and Mango fruits. He also suggested to Develop Suitable technologies for off season production of Banana and Moringa crops. He has given an idea to develop a Tissue culture lab for Banana in KVK campus.

M.Ashok Kumar, Subject Matter Specialist (Plant Protection), KVK, Ariyalur District has indicated to conduct trainings on Mushroom production and Organic farming.

All The SAC members gave their valuable suggestion for strengthening of KVK activities in the forth coming year.

A technical Book on Soil and Water Scenario in Theni District was released by Dr.T.Alagunagendran, Joint Director of Agriculture, Theni and received by all dignitaries in the Dias.

Vote of thanks was proposed by Mr.M.Arunraj, Subject Matter Specialist (Soil Science), ICAR KVK, CENDECT, Theni. The programme came to an end with National Anthem

2. DETAILS OF DISTRICT (2021)

2.0.Operational jurisdiction of KVKs

District	New districts governed by the KVK after division of the district, if applicable	Taluks/Tehsils and/or Mandals under the KVKs jurisdiction
Theni	-	5 taluks and 8 Blocks

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

S. No	Farming system/enterprise
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,	24644

		well drained with moderate permeability	
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 gray to very dark gray, 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 2021

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	Rainfall (mm)	Temperature ° C		Relative Humidity (%)
		Maximum	Minimum	
January 2021	10	40.2	21.0	56.2
February 2021	30	32.8	22.93	54.71
March 2021	00	38.42	23.04	61.03
April 2021	20	32.8	22.93	54.71
May 2021	90	40.0	29.3	61.5
June 2021	130	35.3	27.1	68.1
July 2021	30	33.6	26.6	66.5
August 2021	30	35.3	25.6	64.3
September 2021	150	36.4	25.5	64.3
October 2021	220	37.9	23.9	70.0
November 2021	130	34.7	20.8	63.1
December 2021	130	36.3	21.0	56.2

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2021)

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

2.7. Details of Adopted Villages (2021)

Sl.No.	Taluk/mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Theni	Theni	Veerapandi	2017	Paddy	Farmers getting low yield (5.7 t/ha) due to pest and diseases incidence, Farmers growing Goraknath 509 in longer year its inviting more pest and disease Increasing the cost of production due to need of more chemical spray	ICM
10	Chinnamanur	Chinnamanur	Chinnaovulapuram	2016	Groundnut	Non availability of high yielding variety and lack of knowledge about Integrated Crop Management.	ICM
27	Periyakulam	Periyakulam	Vadugapatty	2018	Sugarcane	Low yield (100 t/ha) due to non availability of drought tolerant and shorter duration variety	Varietal evaluation Value chain management
47	Andipatty	Andipatty	G.Usilampatti	2017	Cumbu	Cultivation of ICMV 221 with yield of 12 q/ha and incidence of	ICM, Value addition

						drought and other calamities	
55	Andipatty	Andipatty	Theppampatti	2018	Drudgery reduction	Manual broadcasting of seeds and fertilizers is tedious, laborious, uneven sowing and uneven fertilizing, consumes more time, more seed rate and hand pain	Drudgery reduction
DFI villages							
1	Andipatty	Andipatty	Mullayampatti	2017	Maize, Cotton	Low yield (55q/ha) in maize, Pest incidence in Cotton, non availability of High yielding sorghum hybrid sorghum	ICM, Value chain management, Entrepreneur development
2	Bodinayakanur	Bodinayakanur	Palarapatti	2019	Banana, Onion, Pulses, Paddy and millets, Sugarcane	Low yield, lack of knowledge in new varieties and technologies, improper pest and disease management	Varietal introduction, 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 2021 to 31st December 2021)

S.No	Activity	Target	Achievement
1.	Technologies Assessed and refined(No.)	16	16
2.	On-farm trials conducted (No.)	8	8
3.	Frontline demonstrations conducted (No.)	13	13
4.	Farmers trained (in Lakh)	1340	2698
5.	Extension Personnel trained (No.)	150	185
6.	Participants in extension activities (in Lakh)	8000	9809
7.	Production and distribution of Seed (in Quintal)	22.00	12.2
8.	Planting material produced and distributed (in Lakh)	50000	22000
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	683
12.	Water, plant, manure and other samples tested (No.)	1000	1111
13.	Mobile agro-advisory provided to farmers (No.)	20000	24093
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.)	600	683

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

- We have developed 126 Azolla Growers in the District through training and SCSP Scheme
- We have Produced and Supplied 3000 kg of IIHR Banana Special with the benefit of 650 Farmers in the district
- We have given training on Double pruning and Single harvest technologies to the farmers in collaboration with other line department.
- We have developed 53 entrepreneurs on Honey Based Value added Products under Honey Mission Programme.
- We have formed Five Farmers Producer company viz., Grapes FPO, Sugarcane and Betel Vine FPO, Malar FPO, Honey FPO and Banana FPO in collaboration with NABARD and TNSFAC, Chennai with involving more than 5000 farmers.

4. TECHNICAL ACHIEVEMENTS

Details of target and achievements of mandatory activities by KVK during 2021

OFT (Technology Assessment)

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials / Replications / Beneficiaries	
Target s	Achievements	Target s	Achievements	Target s	Achievements	Target s	Achievements
8	8	46	16	8	8	40	40

FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
13	13	34	34	130	130

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	80	89	1340	2698
Rural youth	2	50	2	51
Extn.Functionaries	8	9	150	185

Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
700	6000	738	10163

Seed Production (q)

Target	Achievement	Distributed to no. of farmers
22	12.5	70

Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
50000	22000	64

Technology Assessments (OFTs) in Detail

OFT 1

1. **Thematic area:** Varietal Assessment

2. **Title:** Assessment of suitable Paddy varieties for Theni District

3. **Scientists involved:** SMS (Agronomy), SMS (Plant Protection)

4. **Details of farming situation:** Paddy is major crop in Theni district under Irrigated Condition. The main source of the irrigation is canal. Paddy-Paddy –Pulses in the cropping system of the trial area. The major soil type is clay loam soil with Medium Nitrogen Content, Low Phosphorus content and High Potassium content. The average rainfall of the area is 910 mm. Major varieties are Short duration to Medium duration varieties.

5. **Problem definition / description:** (one paragraph): The identified cluster village recorded Low yield (4900 kg/ha) due to continuous cultivation of same variety and incidence of Yellow Stem borer, Sheath blight and Bacterial Leaf Blight in Paddy. The farmers of the village are unaware about high yielding new varieties

6. **Technology Assessed: TO 1:** CO 54 - Early duration(115-118 days), High yielding medium tall rice variety ,Mean grain yield:6354Kg/ha;10.83and10.35percent increase over CO51 and ADT53 , Moderately resistant to Blast, Sheath rot, Brown spot and BPH, White medium slender rice with high milling (66.5%) and head rice recovery(60.7%) ,Intermediate amylase content, gelatinization temperature and soft gel consistency

TO 2 : ADT 55 - Semi-dwarf, erect habit and non lodging , Moderately resistant to blast, sheath rot and leaf folder , Medium slender, white rice with good quality characteristics on par with ADT 43 and CO 51, Duration–115 days, Season–Khar/Kuruvai and Summer, Average grain yield – 5929 kg/ha (10.1% higher yield over ADT 43 and 2.7% higher than CO 51), Potential yield – (13.7% and 8.4% higher than ADT 43 and CO 51 respectively)

TO 3: Farmers Practice- var Sowbahgya, Duration – 120 days, yield 5100 kg/ha, fine grain variety with moderately resistant to stem borer.

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

Critical inputs	Quantity	Value
CO 54 seeds	20 kg	1500
ADT 55	20 kg	1500
T. viride	10 kg	1000
Pheromone trap	50 Nos.	5000
	Total	9000

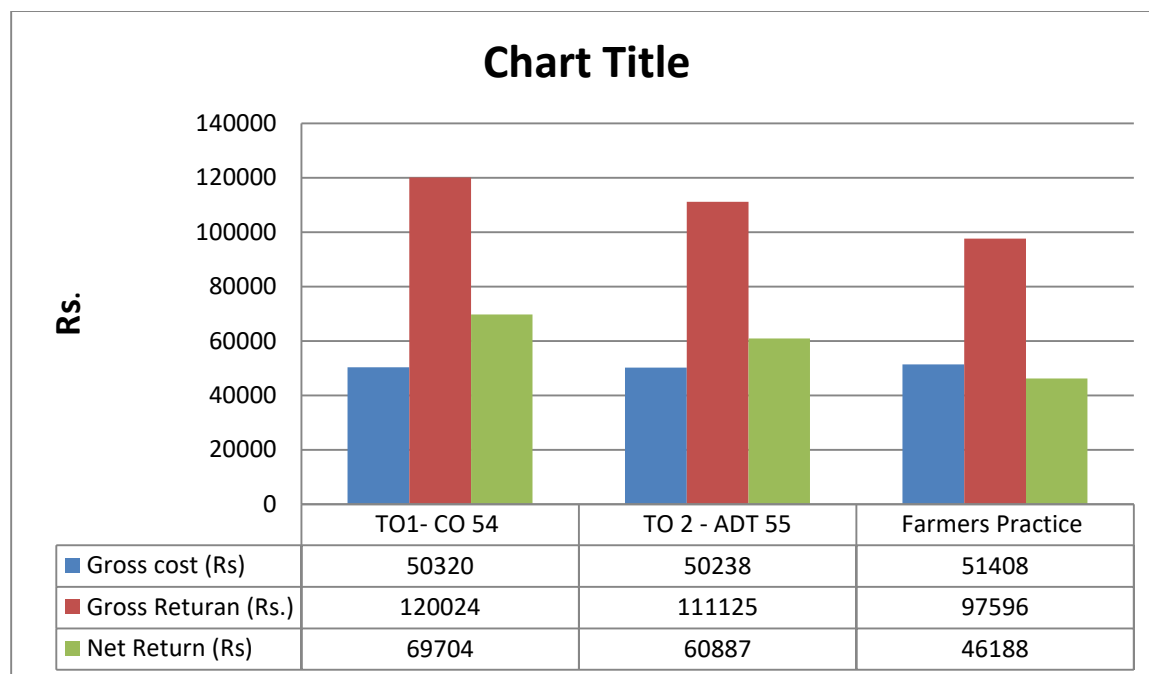
8. Results:

Table : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs./ha)	B:C ratio	No. of Productive tillers	% of Pest incidence
Farmers Practice	5	54.22	46188	1.90	26.18	37.00
Technology 1- CO 54		66.68	69704	2.39	33.73	16.37
Technology 2- ADT 55		60.06	60887	2.21	29.46	19.5

Description of the results

The on farm trial were revealed that the highest yield was recorded in CO 54 (66.68 q/ha) followed by ADT 55 (60.06 q/ha). The highest number of productive tillers (33.73) recorded in CO 54 Paddy variety followed by ADT 55 (29.46). the lowest productive tillers (26.18) recorded in farmers practice. Regarding cost of cultivation the highest cost of cultivation recorded in CO 54 due to application of MN mixture and Zinc sulphate for avoiding lodging. The highest gross return and net return (Rs.69704) recorded in CO 54 variety followed by ADT 55. Installation pheromone traps helps to monitor the Pest and economic control. Regarding overall performance CO 54 variety rank first.



9. Constraints: Incidence of Yellow Stem Borer in Nursery Stage, Delayed opening of water Sources affected the Sowing season.

10. Feedback of the farmers involved: Both ADTT 55 and CO 54 performs well under this Situation. The Productive tillers were high in CO 54. Installation pheromone traps very useful for pest monitoring and reduce the pesticide cost.

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

Incidence of yellow stem borer noticed in Both CO 54 and ADT 55 paddy varieties. The grain quality was good and leads to higher market price.

OFT 2

1. **Thematic area:** Varietal Assessment

2. **Title:** Assessment of YMV resistant Bio fortified Black gram variety for Theni District

3. **Scientists involved:** SMS (Agronomy), SMS (Plant Protection)

4. **Details of farming situation:** The trial area comes under the rainfed region of Southern zone with average annual rainfall of 830 mm. The major crops in the area are pulses and Cumbu. Farmer's generally cultivating only one crop per year. The major soil type of the area is Red sandy loam soil with Low Nitrogen content, Medium Phosphorus content and Medium Potassium content.

5. **Problem definition / description:** (one paragraph): The Yellow Mosaic Virus is the important problem in Black gram. 38 % of YMV incidence occurs during Rabi season. Farmers are cultivating locally available Black gram variety due to lack of awareness and Non availability of YMV Resistant and High yielding variety. Generally Black gram cultivated under poor fertile soil Lack of Knowledge about ICM.

6. **Technology Assessed:** TO 1- CO 7: Duration 60-65 days, Yield- 820kg/ha, resistant to yellow mosaic virus

TO 2 : TBG 104: Duration-75-80 days, Yield: 1200 kg/ha, Resistant to Yellow Mosaic virus

TO 3: Farmers Practice- VBN 4: Duration- 75-80 days, yield-750 kg/ha

7. Critical inputs given:

Critical inputs	Quantity	Value
Seeds- CO 7	20 kg	2600
Seeds – TBG 104	20 kg	2600
Pulses wonder	10 kg	2500
	Total	7900

8. Results:

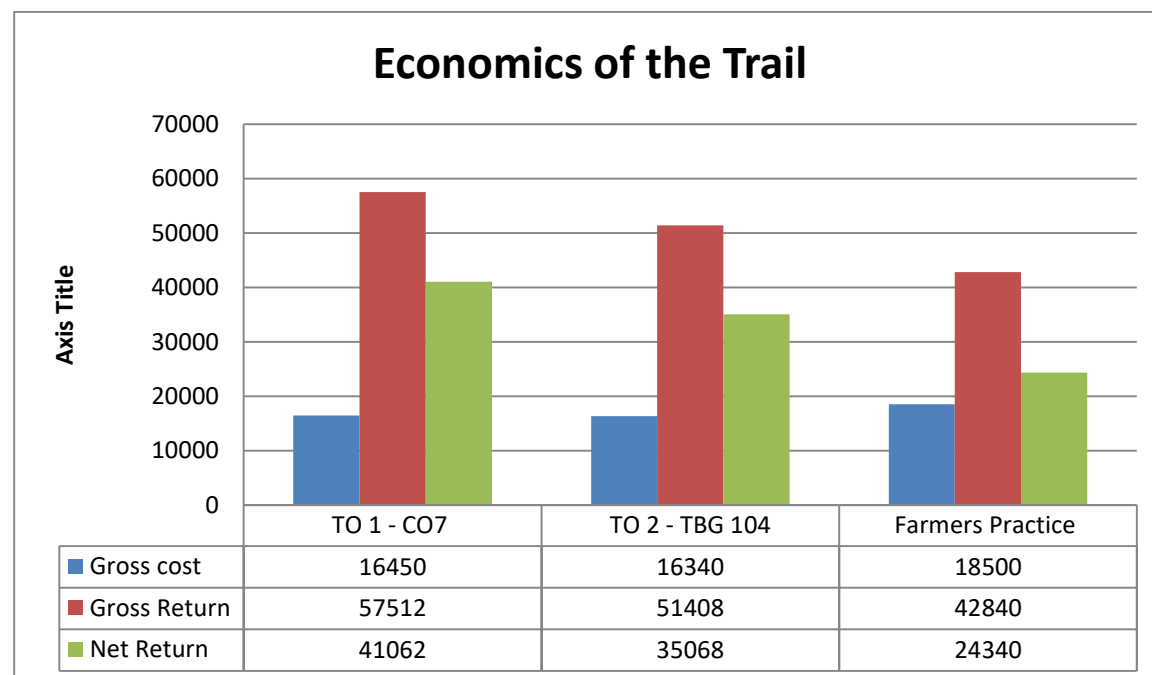
Table 2: Performance of the technology

<i>Technology Option</i>	<i>No. of trials</i>	<i>Yield (q/ha)</i>	<i>Net Returns (Rs./ha)</i>	<i>B:C ratio</i>	<i>% of Pest incidence</i>
<i>Farmers Practice</i>	5	7.63	24340	2.32	27.48
<i>Technology 1- CO 7</i>		10.27	41062	3.50	9.24
<i>Technology 2- TBG 104</i>		9.18	35068	3.15	11.56

Description of the results:

The on farm trail were revealed that the highest yield was obtained in CO 7 Black gram (10.27 q/ha) variety followed by TBG 104 (9.18). The yield improvement in CO 7 Variety due to genetic nature and adopted in the rainfed situation. The number of pods per plant and yield was increased by application of TNAU Pulses Wonder. Regarding economics the highest net return was recorded in CO 7 Black gram followed by TBG 104.

The on farm trail were revealed that



9. Constraints: incidence of wilt disease due to high rain during flowering stage

10. Feedback of the farmers involved:

- CO7 Black gram variety recorded higher yield and Perform well.
- Foliar application of TNAU Pulses wonders increase the Pod formation and seed weight

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

Incidence of sucking pest reduces the number of pods per plant. Soil Application of MN mixture increase the crop stand.

OFT 3

1. **Thematic area:** Varietal Assessment

2. **Title:** Assessment of Bio fortified Cumbu Hybrids for Theni District

3. **Scientists involved:** SMS (Agronomy),)

4. **Details of farming situation:** The trail area comes under the rainfed tract of the district. The major crops are Cumbu and Sorghum and other millets. The average rainfall of the area is 830 mm. the soil type is red sandy loam with Medium Nitrogen content, Low phosphorus content and medium Potassium content.

5. **Problem definition / description:** Low yield 21.4 q/ha due to non availability of high yielding cumbu hybrid and lack of knowledge about biofortified varieties in Theni district. Lack of knowledge on Application of Micronutrient in Cumbu.

6. **Technology Assessed:** TO 1- AHP 1200: Yield 32q/ha, Dry fodder yield 70 q/ha, Duration- 78 days

TO 2 : CO 9: Yield -37 q/ha, Duration- 75-80 days, Resistant to Downy Mildew

TO 3: Farmers Practice- Pvt hybrid: Duration - 100days, Yield -19q/ha

7. Critical inputs given:

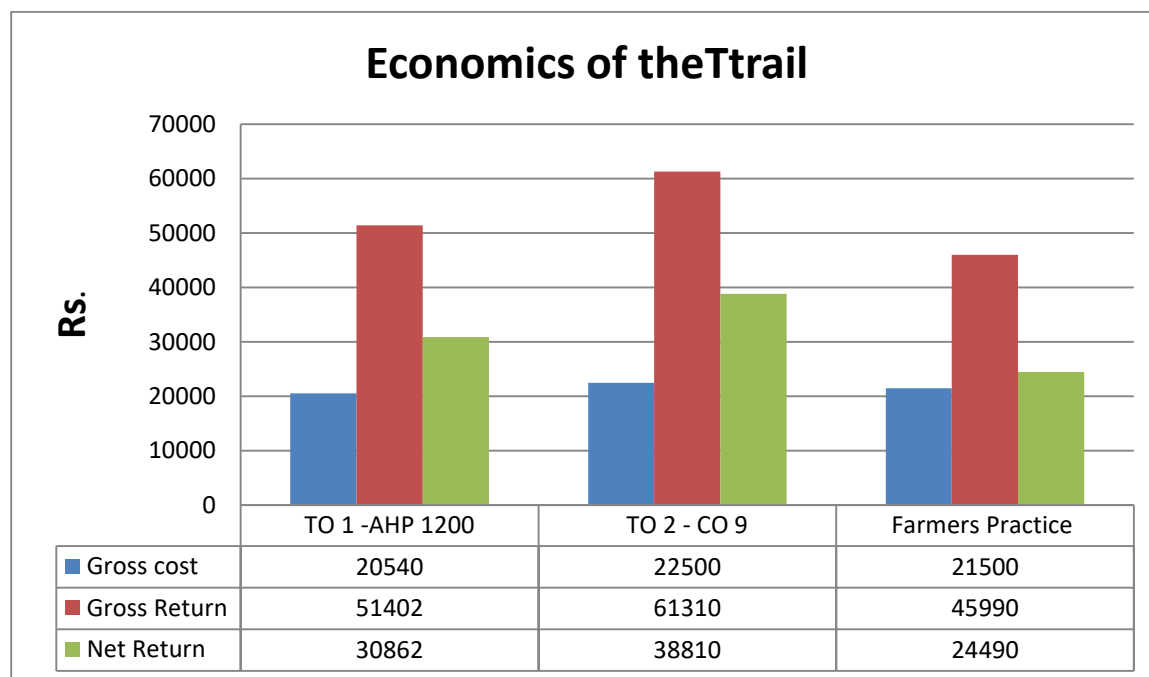
Critical inputs	Quantity	Value
Seeds AHP 1200	5 kg	1500
Seeds CO 9	5 kg	1500
MN mixture	60 kg	4000
	Total	70000

8. Results:**Table : Performance of the technology**

<i>Technology Option</i>	<i>No.of trials</i>	<i>Yield (q/ha)</i>	<i>Gross Cost (Rs.)</i>	<i>Net (Rs./ha)</i>	<i>B:C ratio</i>	<i>Number of productive tillers</i>
<i>Farmers Practice</i>	5	21.90	21500	24490	2.14	3
<i>Technology 1- AHP 1200</i>		24.72	20540	30862	2.50	5.8
<i>Technology 2- CO 9</i>		29.50	22500	38810	2.72	7.4

Description of the results

The on farm trail was revealed that the highest number of productive tillers (7.4) recorded in CO 9 Cumbu hybrid followed by AHP 1200 (5.8). The highest yield was recorded in CO 9 (29.50 q/ha) followed by AHP 1200 (24.72). This was due to highest number of Productive tiller and panicle length. Regarding economics of the trail, the highest net return were recorded in CO 9 (Rs.38810) followed by AHP 1200 (Rs.30826). The conclusion of the trail is the CO 9 Hybrid was more suitable in the rainfed areas in the District.



9. **Constraints:** Downy mildew incidence was occurred during Panicle initiation stage.

10. **Feedback of the farmers involved:**

More number of productive tillers was recorded in the CO 9. The panicle girth and seed weight also higher in the CO 9.

11. **Feed back to the scientist who developed the technology:**

Lodging problem was noticed during heavy rainfall period and grain setting also low during that period

OFT 4

1. **Thematic area:** INM

2. **Title:** Assessment of suitable nutrient management practices in Onion (Co 5)

3. **Scientists involved:** SMS (Soil Science & Horticulture)

4. Details of farming situation:

Onion is a major vegetable crop cultivated under irrigated condition in Chinnamnur, Bodinayakanur and Uthmapalayam block of Theni district in an area of 1800 ha during Kharif and Rabi season of every year. On Farm trial on Assessment of suitable nutrient management practices in Onion (Co 5) at five farmer's field of Palarpatti village of Bodinayakanur block respectively during Kharif season 2021-22. The soil type is basically sandy loam. In this soil contains medium nitrogen (289.5 kg/ha), low phosphorus (7.12 kg/ha) and medium in potassium (121.7 kg/ha). The average productivity of Onion is 13.8 t/ha. The village received 23 rainy days with annual rainfall of 820 mm.

5. Problem definition / description:

The farmers were getting low yield (12t/ha) due to improper nutrient management practices; poor quality of bulbs due to micronutrient deficiencies; lack of awareness about foliar nutrition and biofertilizers. The main objective of the study was to assess the suitable nutrient management practices in Onion (Co 5) for higher grain yield and more net income

6. Technology Assessed:

TO 1: Farmer Practice: Application of complex fertilizer without any bio fertilizers and foliar nutrition

TO 2: Recommended Practice: Bi-weekly application of 100% RDF of NPK (100:60:100 kg/ha) through water soluble followed by foliar spray of IIHR vegetable special at twice.

TO 3: Alternate Practice: Application of FYM 25 t/ha, Azospirillum 2 kg and Phosphobacteria 2 kg/ha, N 30 kg, P 60 kg and K 30 kg/ha as basal and 30 kg N/ha on 30th day of sowing; Soil application of 25 kg ZnSO₄, 2.50 kg CuSO₄, 30kg S, and 25 kg MnSO₄ /ha; Foliar spraying of 0.5% ZnSO₄, 1% MnSO₄ thrice on 30, 40 & 50 days after sowing.

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

Name of critical input	Qty per trial	Cost per trial (Rs.)
IIHR vegetable special	1 kg	250
Bio fertilizers	4 kg	1000
Field board	2	800

8. Results:

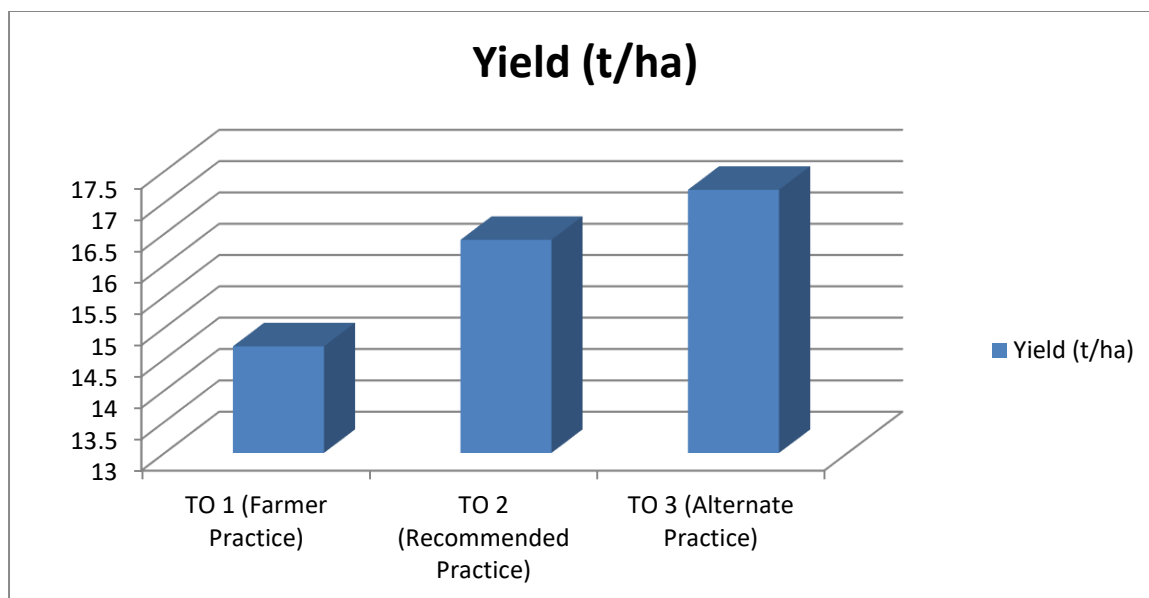
The results of the on farm trail conducted Assessment of suitable nutrient management practices in Onion (Co 5) are presented below (Table).

Table: Performance of the technology

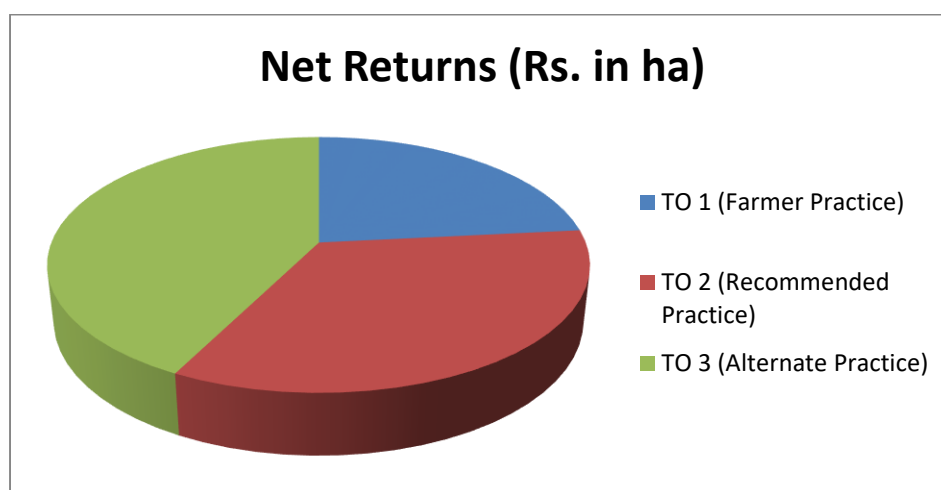
Technology Option	No.of trials	Yield (t/ha)	Net Returns (Rs. in ha)	B:C ratio	No. of Bulbs per cluster
TO 1 (Farmer Practice)	5	14.7	201000	1.95	4
TO 2 (Recommended Practice)		16.4	292800	2.26	6
TO 3 (Alternate Practice)		17.2	365300	2.66	7

Description of the results:

On farm trial results revealed that, the higher bulb yield of 17.2 t/ha was recorded in application of FYM 25 t/ha, Azospirillum 2 kg and Phosphobacteria 2 kg/ha, N 30 kg, P 60 kg and K 30 kg/ha as basal and 30 kg N/ha on 30th day of sowing; Soil application of 25 kg ZnSO₄, 2.50 kg CuSO₄, 30 kg S, and 25 kg MnSO₄ /ha; Foliar spraying of 0.5% ZnSO₄, 1% MnSO₄ thrice on 30, 40 & 50 days after sowing followed by the practices of Bi-weekly application of 100% RDF of NPK (100:60:100 kg/ha) through water soluble followed by foliar spray of IIHR vegetable special at twice. The lowest bulb yield of 14.7 q/ha was recorded in farmer's practices (Application of complex fertilizer without any bio fertilizers and foliar nutrition).



Economics of the study revealed that, higher net returns (Rs. 365300/ha) and benefit cost ratio (2.66) was recorded in application of FYM 25 t/ha, Azospirillum 2 kg and Phosphobacteria 2 kg/ha, N 30 kg, P 60 kg and K 30 kg/ha as basal and 30 kg N/ha on 30th day of sowing; Soil application of 25 kg ZnSO₄, 2.50 kg CuSO₄, 30 kg S, and 25 kg MnSO₄ /ha; Foliar spraying of 0.5% ZnSO₄, 1% MnSO₄ thrice on 30, 40 & 50 days after sowing followed by the practices of Bi-weekly application of 100% RDF of NPK (100:60:100 kg/ha) through water soluble followed by foliar spray of IIHR vegetable special at twice and farmers practice.



Constraints faced:

Farmers faced basal rot problem slightly due heavy rain.

9. Feedback of the farmers involved:

Split application of inorganic fertilizer along with FYM and biofertilizers increased the efficiency of nutrient uptake and mainly reduce the cost of cultivation. The low amount of inorganic fertilizer application reduces pest and disease infestation problem.

10. Feedback to the scientist who developed the technology:

The application of FYM and Bio fertilizers along with split dose of inorganic fertilizer increased the efficiency of nutrient uptake which results bulb yield increased. Also combined application of FYM, Bio fertilizer and inorganic fertilizer reduce the cost of cultivation. The foliar nutrition of micronutrient increased the bulb quality (colour, size and shape).

OFT 5

1. Thematic area: INM

2. Title: Assessment of suitable drought management practices in Black gram under rainfed condition

3. Scientists involved: SMS (Soil Science & Agronomy)

4. Details of farming situation:

Black gram is a major pulse crop cultivated under Rainfed condition in Andipatty block of Theni district in an area of 450 ha during Kharif an Rabi season of every year. On Farm trial on assessment of suitable drought management practices in Black gram under rainfed condition at five farmer's field of K Kamatchipuram village of Andipatty block respectively during Rabi season 2021-22. The soil type is basically red sandy loam. In this soil contains medium nitrogen (290.9 kg/ha), low phosphorus (7.96 kg/ha) and medium in potassium (132.6 kg/ha). The average productivity of Black gram is 6.5 t/ha. The village received 18 rainy days with annual rainfall of 740 mm.

5. Problem definition / description:

The farmers were getting low yield (4.2 q/ha) due to drought incidence; improper nutrient management practices; yellow mosaic virus incidence. The main objective of the study was to assess the suitable drought management practices in Black gram under rainfed condition for higher grain yield and more net income

6. Technology Assessed:

TO 1: Farmer Practice: Without any application bio products for drought mitigation

TO 2: Recommended Practice: Foliar spraying of 2% KCl + 100 ppm Boric acid; foliar spray of NAA 40 mg/litre once at pre-flowering and another at 15 days; foliar spray of TNAU Pulse wonder @ 5 kg/ha once at flowering; foliar spray of salicylic acid 100 mg/litre once at preflowering and another at 15 days.

TO 3: Alternate Practice: CRIDA Bacterial consortia – Two bacterial consortia (P7+B30+G12 and P45+B17+G12) applied through foliar.

7. Critical inputs given:

Name of critical input	Qty per trial	Cost per trial (Rs.)
KCL	1 kg	150
PPFM	1 lit	400
TNAU Pulse Wonder	2 kg	400
CRIDA Bacterial Consortia	1 lit	400
Field board	1	400

8. Results:

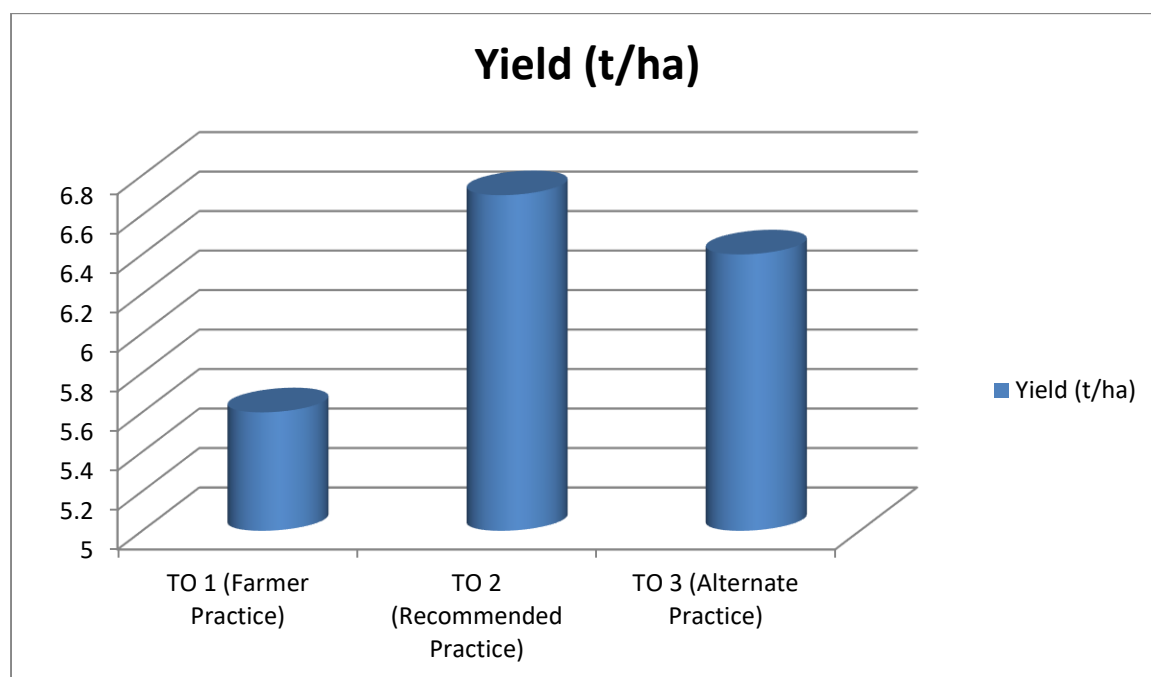
The results of the on farm trail conducted assessment of suitable drought management practices in Black gram under rainfed condition are presented below (Table).

Table: Performance of the technology

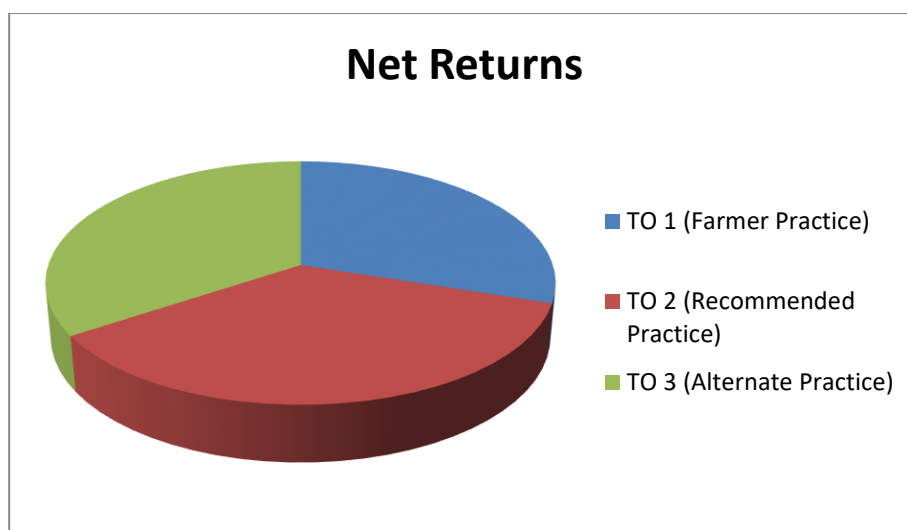
Technology Option	No.of trials	Yield (t/ha)	Net Returns (Rs. in ha)	B:C ratio	No. of pods per plant
TO 1 (Farmer Practice)	5	5.6	16900	1.76	12
TO 2 (Recommended Practice)		6.7	27460	2.11	18
TO 3 (Alternate Practice)		6.4	24720	1.98	15

Description of the results:

On farm trial results revealed that, the grain yield of 6.7 t/ha was recorded in foliar spraying of 2% KCl + 100 ppm Boric acid; foliar spray of NAA 40 mg/litre once at pre-flowering and another at 15 days; foliar spray of TNAU Pulse wonder @ 5 kg/ha once at flowering; foliar spray of salicylic acid 100 mg/litre once at preflowering and another at 15 days. The lowest bulb yield of 5.6 q/ha was recorded in farmer's practices (Without any application bio products for drought mitigation).



Economics of the study revealed that, higher net returns (Rs. 27450/ha) and benefit cost ratio (2.11) was recorded in foliar spraying of 2% KCl + 100 ppm Boric acid; foliar spray of NAA 40 mg/litre once at pre-flowering and another at 15 days; foliar spray of TNAU Pulse wonder @ 5 kg/ha once at flowering; foliar spray of salicylic acid 100 mg/litre once at preflowering and another at 15 days followed by the practices of CRIDA Bacterial consortia – Two bacterial consortia (P7+B30+G12 and P45+B17+G12) applied through foliar and farmers practice.



Constraints faced:

Farmers faced yellow mosaic virus incidence problem during flowering and pod stage.

9. Feedback of the farmers involved:

Foliar application of 2 % KCl with 100 ppm boric acid tolerates the drought incidence. During flowering stage a foliar spray of TNAU Pulse wonder @ 5 kg/ha decreases flower shedding and increases 15 – 20 per cent grain yield.

10. Feedback to the scientist who developed the technology:

Foliar application of pulse wonder during flowering stage increases drought tolerance and pod setting percentage under rainfed condition. Also, foliar application of 2% KCl with 100 ppm Boric acid increases drought tolerance.

OFT 7

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 trials 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: 6.7° 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 jointless (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	Cost per trial (Rs.)
Seed (COTH 4)	60 g/ 0.25 ac	2500
Seed (Arka Apeksha),	60 g/ 0.25 ac	2500
<i>Pseudomonas fluorescence</i>	1 lit	450
Field board	1	400

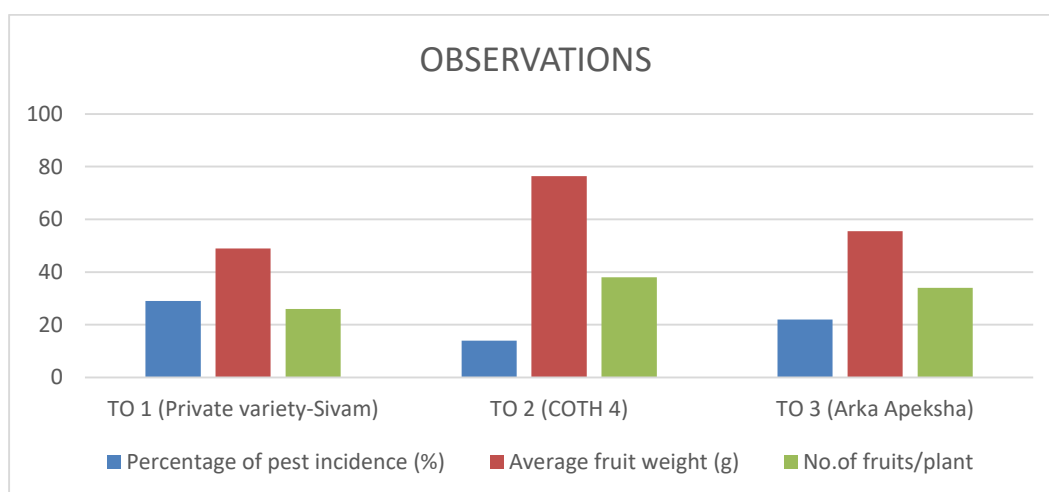
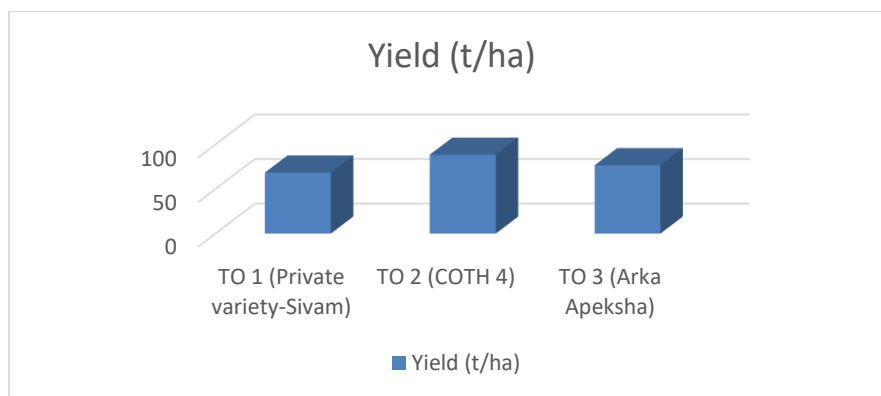
8. Results:

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

Description of the results:



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** : Value Addition
2. **Title** : Assessment of Suitable Banana Varieties for Nutri Mix
3. **Scientists involved**: Subject Matter Specialist (Home Science)
4. **Details of farming situation:-**
5. **Problem definition / description:**
 - Lack of awareness on Value Addition in Banana
 - More Yield, Low Income
 - Incidence of Malnutrition high among children

6. Technology Assessed:

TO-I: **Nutri mix from Nendran** : Pearl millet, Sorghum, Ragi, Wheat, Roasted Bengal gram, Nendran Banana flour and Jaggery.

TO-II- **Nutri mix from Grand 9 (G9)**: Pearl millet, Sorghum, Ragi, Wheat, Roasted Bengal gram, G9 Banana flour and Jaggery.

Farmers Practices: Direct Selling (No Value Addition)

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

<i>Details of inputs</i>	<i>Total cost involved (Rs.)</i>
Cereals (25%)- Pearl millet, Sorghum, Ragi, Wheat, Pulses (20%)-Roasted Bengal gram, Banana flour (40%) G9 and Nendran Banana flour, Jaggery, Nuts and Oil seed (15%) and Packaging material and Field Board	7500
<i>Total</i>	<i>7500</i>

8. Results:**Selection of Fruit**

Fresh Banana fruits G9 and Nendran were procured from local farmers field in Seepalakottai Village of Chinamannur Block, Theni District and utilized for the processing of banana flour. We also purchased Pearl millet, Sorghum, Ragi, Wheat, Roasted Bengal gram from super market.

Processing of Banana Flour

Freshly Harvested fully matured green fresh banana fruits were washed in tap water, surface dried, steamed (15 minutes), peeled out manually and cut into circular slices of 3mm thickness, dried at 60-70 degree C in solar drier for 2 days. After drying, milled/ground, sieved, packed and stored in a air tight container at room temperature for the preparation of Health Mixes.

Preparation of Health Mix

Pearl millet, Sorghum, Ragi, Wheat, Roasted Bengal gram, G9 Banana flour and Jaggery were used to prepare the health mix. Banana flour (40%), Cereals (25%), Pulses (20%) and Nuts and Oil seed (15%).

Organoleptic Evaluation of Banana Flour incorporated Nutri Mix

Particulars	Appearance (5)	Colour (5)	Flavour (5)	Taste (5)	Texture (5)	Overall Acceptability (25)	Shelf life of the Nutri mix
TO1 (Nendran)	4.5	4.5	4.5	5	4.5	23.0	6 Months
TO2 (G9)	4.5	4.5	4	4.5	4	21.5	

Excellent: 5, Very Good: 4, Good: 3, Fair: 2, Not Accepted: 1

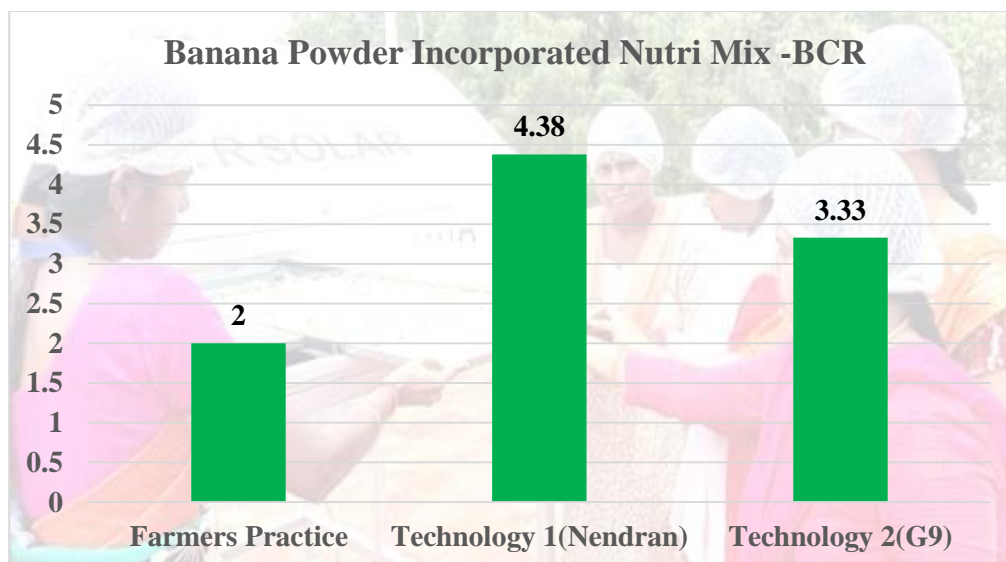
Organoleptic qualities play an important role in evaluating the quality of food products. A total of two types of health mix were prepared using Nendran banana flour and G9 Banana flour along with other ingredients i.e. cereals (25%), pulses (20%), nuts and oilseeds (5%) and Jaggery (10%). A numerical score card was used to measure the acceptability in terms of appearance, colour, flavour, taste and texture with five scores for each criteria. Semi trained panel members in the age group of 20 -30 years evaluating the health mixes. These scores given were excellent (5), very good (4), good (3), fair (2) and poor (1). The acceptability score was 25.

The acceptability trials of TO1 and TO2 obtained a mean score in the range of 4-5 out of 5. Nendran banana flour was highly acceptable in terms of appearance, colour, flavour, taste and texture and secured higher score when compared with G9.

The results indicated that the overall acceptability of Nendran banana flour obtained a mean score was 23 out of 25. The recipes would not only add taste and colour, but also provide important nutrient of sodium, potassium and antioxidants to the human body. It can be recommended to use supplementary food/complementary food to the children.

Economics of the trail

<i>Technology Option</i>	<i>No.of trials</i>	Gross cost (Rs)	Gross return (Rs)	Net return (Rs)	B:C ratio
<i>Farmers Practice</i>	5	3000	6000	3000	2.00
<i>Technology 1(Nendran)</i>		6000	26250	14250	4.38
<i>Technology 2(G9)</i>		4500	15000	6000	3.33



9. Constraints: Lack of machineries to develop value added products in large scale at village level.

10. Feedback of the farmers involved :

Nendran Flour incorporated health mix was good and highly acceptable. But majority of the farmers are growing banana G9 Variety. Non availability and cost of Nendras was high compared with G9. During peak season the cost of G9 banana will be very low. Hence, they are planning to develop more products Health mix, laddoo, honey balls etc., in large scale level using G9.

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

Banana flour incorporated health mix can be recommended to all age groups especially for Children (below 5 years).

OFT 8

1. Thematic area : Post Harvest Technology (PHT)

2. Title : Assessment of Different Coating Formulations to improve the Shelf life of Fruits and Vegetable

3. Scientists involved : Home Science

4. Details of farming situation: -

5. Problem definition / description: Poor Shelf life of fruits and vegetables because of its perishable in nature. Lack of Post-harvest facilities i.e. Non availability of refrigerated to transport and high quality cold storage facilities for food manufactures and sellers.

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

TO1:ICAR-IINRG: Dipping in 2% of coating formulation for 5 minutes, surface drying & packing

TO2:TNAU: Fruity Fresh-Enhanced Freshness Formulations (EFF)-Dipping in 2% TNAU Fruity Fresh coat for 5 Minutes, surface drying & packing

Farmer Practice: Direct Selling: No Value Addition

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

Name of the Critical Inputs	Quantity (L)
IINRG Coating formulations – Tomato (5 L) & Brinjal (5 L)	10 L
Fruity Fresh Coat	5 L

8. Results:

Table – Evaluation of Shelf Life of the Produce

Technology Options	No.of trials	Shelf life of the Produce (Days)	
		Brinjal	Tomato
Farmers Practice	5	5	10
Technology 1(ICAR-IINRG)		24	27
Technology 2(TNAU)		10	15

Evaluation of shelf-life of the Produce: The shelf-life quality of the control as well as treated fruits was evaluated through appearance changes.

Brinjal were dipped in 2% coating formulations for 5 minutes; the excess coating was drained and the coated brinjal were dried. After coating, brinjal were kept at room temperature for 24days and also analysed daily for any visible change and after every 1, 5,10,15,20 and 24 days. The shelf life of Brinjal was 24 days using TO1 and 10 days using TO 2.

Tomatoes were dipped in 2% coating formulations for 5 minutes; the excess coating was drained and the coated tomatoes were dried. After coating, tomatoes were kept at room temperature for 27days. The fruits were analysed daily for any visible change and after every 1, 5,10,15,20,25 and 27 days. The shelf life of Tomato was 27 days using TO1 and 15days using TO 2.

9. Constraints:-

10. Feedback of the farmers involved: It can be applicable/suitable only during peak harvest period. Cost of the Coating formulations is very high.

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

We can minimize the post-harvest losses and also improve shelf of the fruits and vegetables during peak harvest time.

Frontline Demonstrations in Detail

a. Follow-up of FLDs implemented during previous years

Technology-1

Crop/Enterprise: Cotton

Thematic area: Varietal Introduction

Technology Demonstrated as a follow-up from OFT

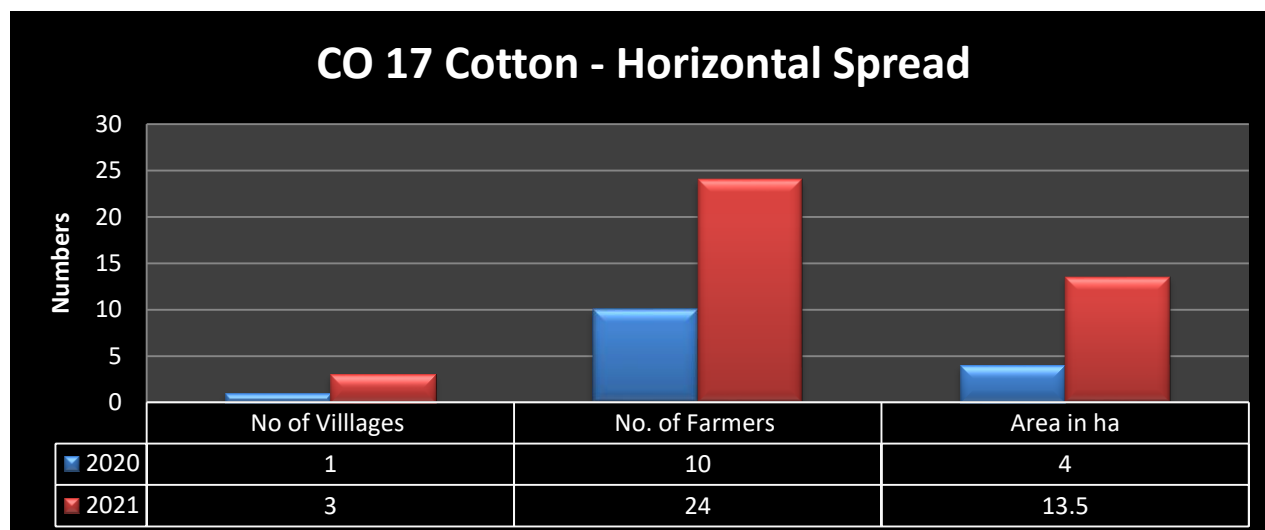
Feedback sent to the Research System:

- Magnesium deficiency occurred during rainy days.
- Flower shedding during rainy days.
- Boll size was going to smaller than other cultivars

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

Particulars	Technology	No. of Bolls /plant	Incidence of Mealy bug (%)	Yield (q/ha)	Gross Cost (Rs/ha)	Net Income (Rs/ha)	BC R
Farmer Practice	Private hybrid	49.65	21	14.29	27720	40872	2.47
Demonstration	CO 17 Cotton variety	61.14	17	19.46	24760	70594	3.85

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



Technology-2

Crop/Enterprise: paddy

Thematic area: Varietal Introduction

Technology Demonstrated as a follow-up from OFT:

CO 51 Paddy variety with Integrated Pest management Practices

Feedback sent to the Research System:

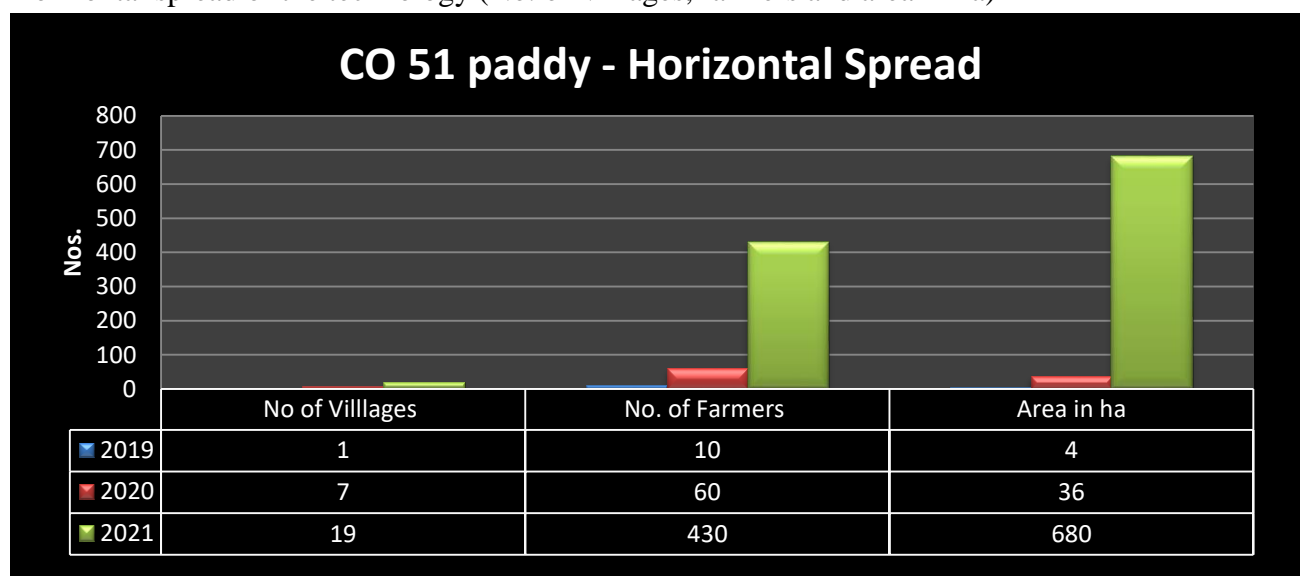
Crop lodging was occur during second crop

Incidence of Yellow Stem Borer was high in Thaladi season

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

Particulars	Technology	No. of Productive tillers	Yield (q/ha)	Gross Cost (Rs/ha)	Net Income (Rs/ha)	BCR
Farmer Practice	Goraknath 509	29	61.25	48250	57793	2.20
Demonstration	CO 51	38	69.00	52684	87715	2.60

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



Technology 3 -Demonstration of Amchoor powder from raw mango

Crop/Enterprise : Mango

Thematic area : Value Addition

Technology Demonstrated as a follow-up from OFT: No

Feedback sent to the Research System:

1. Low cost high nutritious product
2. Simple and easy to adopt by the rural community.
3. Used as multi spice powder

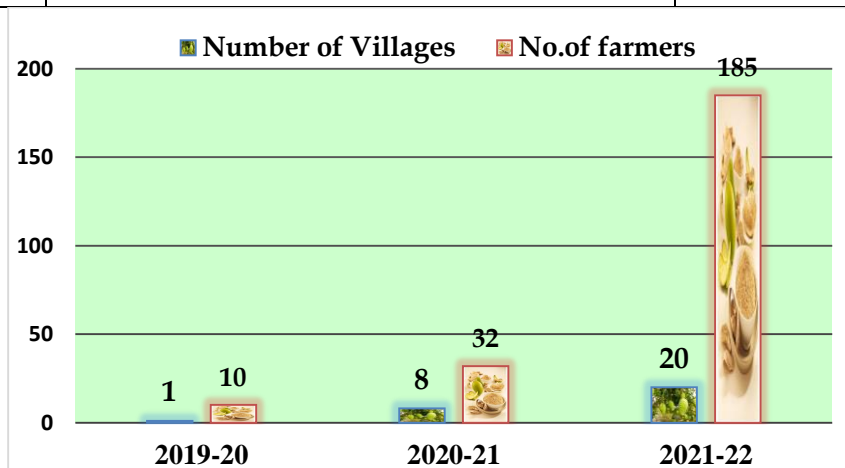
Details on the performance of the technology sent to the Extension Department:

“Wealth from Waste”- During the early stages of growth, the tree may have a heavy “fruit drop”. These drops are not worth eating but are usually used to prepare Amchoor (Mango Powder), a popular North Indian Spice. Any variety of mangoes is used. After implementing this technology farmers are making good quality products from waste.

Mango powder is used as sour agent in cookery and as a substitute for Tamarind and Lime Juice. It is particularly used in preparations where the stuffing need to be dry like samosa or cutlets.

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

Year	Number of Villages	No.of farmers
2019-20	1	10
2020-21	8	32
2021-22	20	185

**b. Details of FLD conducted during reporting Period****Technology-1****Crop:** Paddy**Thematic area:** varietal Introduction**Technology demonstrated:**

- ADT 54: 132 days duration, Yield-6307 kg/ha,
- Foliar application of *Bacillus Subtilis* for Sheath Blight control
- Installation of Pheromone trap for Yellow Stem Borer Control

Season and year: Kharif 2021**Farming situation:** Irrigated condition. The soil type is Black Clay loam soil. The average rainfall of the area is 890 mm. Cropping pattern is Rice – Rice – pulses.**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:**

- ADT 54 was recorded 450kg higher yield than CO 51 variety
- Non lodging variety with short duration

Feedback of the Scientist:

- Incidence of Yellow Stem borer and leaf spot was occurred.

Extension activities on the FLD:

Field days- 1

Farmer's training-2

Media coverage: nil

Training to Extension Functionaries-2

Technology- 2

Crop: Sorghum

Thematic area: varietal Introduction

Technology demonstrated:

- CO 32 : Dual purpose sorghum variety with 90 days duration, yield - 24 q/ha
- Soil application of MN Mixture at 12.5 kg per hectare

Season and year: Kharif 2021

Farming situation: Irrigated condition. The Soil type is Clay loam soil. Average rainfall of the 860 mm.

Source of fund: ICAR

No of locations (Villages): one

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 10

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: nil

Feedback from farmers:

- Higher yield than other varieties
- The fodder yield was higher than other varieties
- Incidence of shoot fly and stem borer was very low

Feedback of the Scientist:

- Grain mould disease occurred during rainy days.
- Crop lodging was noticed in clay loam soil.

Extension activities on the FLD:

Field days- 1

Farmer's training-2

Media coverage: 2

Training to Extension Functionaries-1

Technology- 3

Crop: Cotton

Thematic area: varietal Introduction

Technology demonstrated:

- CO 17 : Duration -135 days, Yield- 2500 kg/ha
- Soil Application of MN Mixture at 12 kg/ha

Season and year: Kharif 2021

Farming situation: Rainfed situation, Red loamy soil. Average annual rainfall is 920 mm

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:

- Higher yield and quality over other variety
- Suitable for closer planting
- Feedback of the Scientist:
- Boll size was smaller than other cultivar

Technology- 4

Crop: Paddy

Thematic area: varietal Introduction

Technology demonstrated:

- VGD1: 130 days duration, Yield- 5850 kg/ha,
- YSB control through Pheromone trap
- Soil Application of MN Mixture

Season and year: Kharif 2021

Farming situation: Irrigated situation, Black loamy soil. Average annual rainfall is 930 mm

Source of fund: ICAR

No of locations (Villages): one

No. of demonstrations (replications/farmers/beneficiaries): 10

No of SC/ST Farmers and women farmers: 10

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: nil

Feedback from farmers:

- Grain quality was superior over other variety
- No of Productive tillers was higher than other variety
- Feedback of the Scientist:
- Incidence of Yellow stem borer was noticed
- Rice was broken during hulling

Extension activities on the FLD:

Field days- 1

Farmer's training-3

Media coverage: 2

Training to Extension Functionaries-2

Technology- 5

Crop: Varagu

Thematic area: varietal Introduction

Technology demonstrated: ATL 1 Kodo millet variety with Soil Application of MN mixture at 12.5 kg/ha

Season and year:Kharif 2021

Farming situation:ranified situation. The soil type is red loamy soil. The average annual rainfall 840 mm

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:

- More number of Productive tillers
- Higher yield than other varieties
- Suitable for making laddu
- Feedback of the Scientist:
- More no of ill filled grains

Extension activities on the FLD:

Field days- 1

Farmer's training-1

Media coverage: 0

Training to Extension Functionaries-1

Technology- 6

Crop: Lab lab

Thematic area:INM

Technology demonstrated:Foliar spray of Actino plus @ 0.5 % at before and after flowering.

Season and year:Kharif 2021

Farming situation: Irrigated, 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): 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:

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

Extension activities on the FLD:

Field days- 1

Farmer's training-1

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 7

Crop: Fodder Sorghum

Thematic area: INM

Technology demonstrated: Application of FYM 25 t/ha, Azospirillum 2 kg/ha and Phosphobacteria 2 kg/ha; Soil application of 45:40:40 kg NPK/ha as basal and 45 kg of N as top dressing on 30 DAS.

Season and year: Kharif 2021

Farming situation: Irrigated, soil type is sandy loam with medium nitrogen (329.4 kg/ha), low phosphorus (7.40 kg/ha) and medium in potassium (125 kg/ha). The village received 32 rainy days with annual rainfall of 850 mm.

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:

- The application of bio fertilizer will reduce the cost of straight fertilizer used.
- The Soil application of 45:40:40 kg NPK/ha as basal and 45 kg of N as top dressing on 30 DAS along with bio fertilizer will increase seed yield when compared to the check.

Extension activities on the FLD:

Field days- 1

Farmer's training-1

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 8

Crop: Bottle gourd

Thematic area: INM

Technology demonstrated: Boric acid at 25 ppm concentration applied as foliar spray thrice prior to early fruiting.

Season and year: Kharif 2021

Farming situation: Irrigated, soil type is sandy loam with medium nitrogen (319 kg/ha), low phosphorus (7.25 kg/ha) and medium in potassium (131 kg/ha). The village received 21 rainy days with annual rainfall of 790 mm.

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:

- Flower drop was reduced by foliar application of Boric acid at 25 ppm concentration applied as thrice prior to early fruiting.
- Fruit setting was increased by foliar nutrition of boric acid.

Extension activities on the FLD:

Field days- 1

Farmer's training-1

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 9

Crop: Castor

Thematic area: INM

Technology demonstrated:: Soil application of RDF (45:15:15 NPK kg/ha) and 12.5 kg ZnSO₄ ha⁻¹, TNAU MN mixture 7.5 kg/ha Foliar application of plant growth regulator consortia (CASTOR GOLD) @ 0.05 % (0.5 ml/litre of water) on 25 and 60 DAS.

Farming situation: Irrigated, soil type is clay loam with medium nitrogen (306 kg/ha), low phosphorus (7.12 kg/ha) and medium in potassium (124 kg/ha). The village received 15 rainy days with annual rainfall of 720 mm.

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:

- Foliar application of Castor gold increases flower setting percentage and seed yield increase more than 15 per cent when compare to the untreated plot.

Extension activities on the FLD:

Field days- 1

Farmer's training-2

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 10

Crop: Cotton

Thematic area: INM

Technology demonstrated: Soil Application of Azospirillum and phosphobacteria @ 2kg/ha and Pseudomonas @ 2.5kg/ha along with FYM 50 kg and neem cake 100kg before last ploughing. Recommended dose of fertilizers: 200:100:100 kg NPK/ha throughout the cropping period through

split application. Foliar application cotton plus (2.5 kg/ac) at flowering and boll formation stage and soil application of MN mixture (5 kg/ac) as basal along with soil test based NPK fertilizers.

Farming situation: Rainfed, soil type is clay loam with medium nitrogen (291 kg/ha), low phosphorus (6.58 kg/ha) and medium in potassium (118 kg/ha). The village received 12 rainy days with annual rainfall of 680 mm.

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:

- 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 100kg which increased seed cotton yield up to 20 per cent.

Extension activities on the FLD:

Field days- 1

Farmer's training- 1

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 11

Crop: Tomato

Thematic area: Crop management

Technology demonstrated: Fruity fresh when sprayed 15-30 days before harvest, helped grower retain tomato fruits for 6 to 12 days compared to those fruits that were not sprayed).

Season and year: Kharif 2021

Farming situation: Irrigated, soil type is sandy loam with medium nitrogen (325 kg/ha), low phosphorus (6.25kg/ha) and medium in potassium (135 kg/ha). The village received 21 rainy days with annual rainfall of 790 mm.

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:

- 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.

Extension activities on the FLD:

Field days- 1
 Farmer's training- 1
 Media coverage: 0
 Training to Extension Functionaries: 0

Technology- 12

Crop: Bottle Gourd

Thematic area: Varietal introduction

Technology demonstrated: Inbred line selected from Uchimedu, Cuddalore District. Round shaped fruit like traditional bottle gourd types. Short necked and mottle less light green fruits. Average weight of single fruit is 950g. 12-15 fruits per vine. Moderately resistant to powdery and downy mildews. High yield (42 t/ha)

Season and year: Kharif 2021

Farming situation: Irrigated, soil type is sandy loam with medium nitrogen (317 kg/ha), low phosphorus (6.75kg/ha) and medium in potassium (125 kg/ha). The village received 24 rainy days with annual rainfall of 790 mm.

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:

- Round shaped light green colour fruit and good demand for local market. High yield compares than other locally available varieties. Good resistant for powdery and downy mildews.

Extension activities on the FLD:

Field days- 1
 Farmer's training- 1
 Media coverage: 0
 Training to Extension Functionaries: 0

Technology- 13

Crop: Onion

Thematic area: Varietal introduction

Technology demonstrated: CO 5- It is a high yielding variety developed by mass pedigree method of selection. This variety has the ability of free flowering and seed set throughout Tamil Nadu. It possesses high bulb yield 18.9 t/ha (18.8 per cent higher than CO 4) in a crop duration of 90 days. It is free flowering type with seed setting ability of 250-300 kg/ha and so it is propagated through seeds. The seed rate required is 2.5 kg / ha.

Season and year: Kharif 2021

Farming situation: Irrigated, soil type is sandy loam with medium nitrogen (305 kg/ha), low phosphorus (7.25kg/ha) and medium in potassium (131 kg/ha). The village received 27 rainy days with annual rainfall of 780 mm.

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:

- 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.

Extension activities on the FLD:

Field days- 1

Farmer's training- 1

Media coverage: 0

Training to Extension Functionaries: 0

Technology- 14

Crop: Paddy

Thematic area: Extension

Technology demonstrated: TNAU Paddy Expert System. **Season and year:** Kharif 2021

Farming situation: Irrigated, soil type is sandy loam

Source of fund: ICAR

No of locations (Villages): Two

No. of demonstrations (replications/farmers/beneficiaries): 20

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: The TNAU paddy expert system mobile-based application was useful and comfortable. The farmers stated that the assistance of agricultural experts and Scientist are not available at all time, in that condition this mobile based-application would be very useful to make timely decisions.

Extension activities on the FLD:

Field days- 1

Farmer's training- 1

Media coverage: 1

Training to Extension Functionaries: 0

Technology- 15

FLD on Other enterprises

Crop : Nutri Garden

Thematic area : House Hold Food and Nutritional Security

Technology demonstrated: Demonstration of Nutri Garden

Season and year : Round the Year & 2020

Farming situation : -

Source of fund : ICAR

No of locations (Villages): 10

No. of demonstrations (replications/farmers/beneficiaries): 10

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: Anganwadi workers are very happy to implement Nutri Garden, Terrace Garden in the available spaces throughout the year to provide good quality of GLVs and vegetables for the young children.

Feedback of the Scientist: Getting Good quality of organic Green Leafy Vegetables and other vegetables regularly. Disseminated this technology to Anganwadi Centers, near Govt. school teachers, farm women, parents etc., through Field Day.

Extension activities on the FLD: Conducted Training to the Extension Functionaries. Organized field day for wider adoption of the technology.

Results

Technology Option	Yield (Kg) / 5 cent	Gross cost (Rs)	Gross return (Rs)	Net return	B:C
Nutri Garden	56	800	3360	2560	4.2
Farmers Practice	10	250	600	350	2.4

Technology- 16

FLD on Value Addition

Crop : Millets

Thematic area : Value Addition

Technology demonstrated: Demonstration of Beta-carotene Enriched Millet Chikkies for Income Generation

Season and year : Rabi & 2021

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: Beta-carotene enriched millet bar is very unique and children are happy to eat instead of fried snacks. It is also not available the markets.

Feedback of the Scientist: Beta-carotene Enriched Millet bars contain Macro and Micro nutrients and have the potential to be considered as a functional food. It will help to alleviate micro nutrient deficient especially in children.

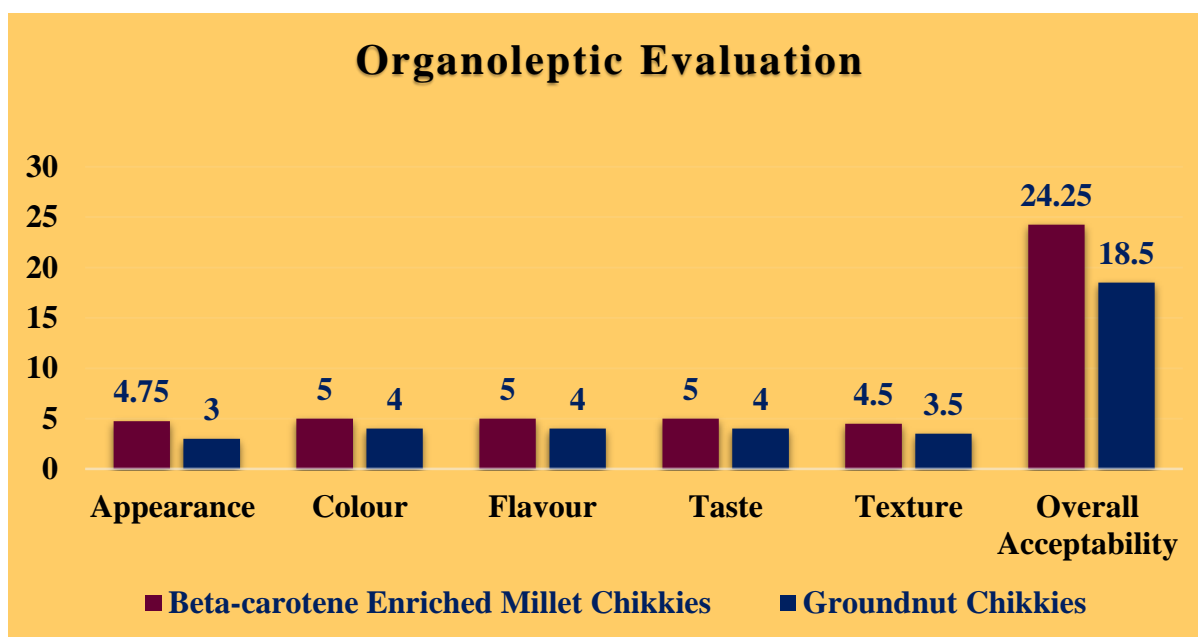
Constraints: Can be implemented during the Mango Season.

Extension activities on the FLD: Conducted FLD Training, Group Meeting, Home Visits to organize and also follow up.

Organoleptic Evaluation

Results							
Treatments	Appearance (5)	Colour (5)	Flavour (5)	Taste (5)	Texture (5)	Overall Acceptability (25)	Shelf life of the product
Beta-carotene Enriched Millet Chikkies	4.75	5	5	5	4.5	24.25	2 Months
Groundnut Chikkies	3	4	4	4	3.5	18.5	45 days

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



The results indicated that the overall acceptability of Beta-carotene enriched millet chikkies obtained a mean score was 24.25 out of 25. The shelf life of the product was higher compared with Farmers practice.

Economics

Technology	Gross cost (Rs)	Gross return (Rs)	Net return (Rs)	B:C ratio
Multi Nutrient Health Mix	7100	24100	17000	3.39
Farmers Practice	2100	5700	3600	2.71

Technology- 17

FLD on Value Addition

Crop : Multi Nutrient Mix

Thematic area : Value Addition

Technology demonstrated: Demonstration of Multi Nutrient Mix

Season and year : Kharif & 2020

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: -

Results							
Treatments	Appearance (5)	Colour (5)	Flavour (5)	Taste (5)	Texture (5)	Overall Acceptability (25)	Shelf life of the Product

Multi Nutrient Health Mix	5	4.5	5	5	4.5	24	3 Months
Farmers Practice	4	4	4.5	4.5	4.5	21.5	20 days

The results indicated that the overall acceptability of Multi Nutrient Health Mix obtained a mean score was 24 out of 25. The shelf life of the product was higher compared with Farmer's practice.

Economics

Technology	Gross cost (Rs)	Gross return (Rs)	Net return (Rs)	B:C ratio
Multi Nutrient Health Mix	21000	61200	40200	2.91
Farmers Practice	10000	25200	15200	2.52

Feedback from farmers:Multi Nutrient Health Mix (using basic five food groups-cereals, pulses, fruits and vegetables, milk and milk products and nuts and oil) is very Cheap and more nutritious than the existing health mix in the Market.

Feedback of the Scientist:Multi Nutrient Health Mix contains Macro and Micro nutrients. It can be recommended to children (MAM, SAM Children) to alleviate micro nutrient malnutrition.

Extension activities on the FLD: Conducted FLD Training, Group Meeting, Home Visits to organize and also follow up.

Technology- 18

FLD on Value Addition

Crop : Tomato

Thematic area : Value Addition-Dehydration Techniques

Technology demonstrated:Demonstration of Dehydrated Tomato Products using Solar Dryer

Season and year :Kharif& 2020

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: -

Economics

Technology	Input/ Output	Price (Rs.)	Gross cost (Rs)	Gross return (Rs)	Net return (Rs)	B:C ratio
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Dehydration Techniques of Tomato (Tomato Powder)	100k/ 5kg	500/kg 2500	1000	2500	1500	2.5
Farmers Practice (Fresh Tomato)	100 kg	1000	-	-	-	-

Agricultural products with surplus production need preservation in some form to enhance their shelf life. Drying is an excellent way to preserve food and it adds higher value to the products. Drying preserves foods by removing extra moisture from the product by heated air surrounding the product. The air can be heated by any means, e.g. solar heater, electrical heater etc., to carry away the vapour released from the product until the product is dried to an acceptable moisture content.

The initial moisture content (w.b.) of 100kg tomato was 90 per cent. The product was dried continuously for total drying time of 72 hours when the average final moisture content (w.b.) was 7 per cent. The dried tomato weight was 5 kg. With proper sealing, the tomatoes could be stored at room temperature for eight to nine months without spoilage.

Economics

Technology	Gross cost (Rs)	Gross return (Rs)	Net return (Rs)	B:C ratio
Dehydration Techniques of Tomato (Tomato Powder)	1000	2500	1500	2.50
Farmers Practice (Fresh Tomato)	1000	0	0	0

Feedback from farmers: During the peak of season of tomato cultivation, majority of the farmers are not harvesting the tomato in the field since the labour cost is very high as compared to selling cost.

Feedback of the Scientist: The original colour of the product was retained after drying. The system can also be used to dry different agricultural products.

Extension activities on the FLD: Conducted FLD Training, Method Demonstration, Group Meeting, Home Visits to organize and also follow up.

Technology- 19

FLD on Value Addition

Crop : Tamarind

Thematic area : Drudgery Reduction

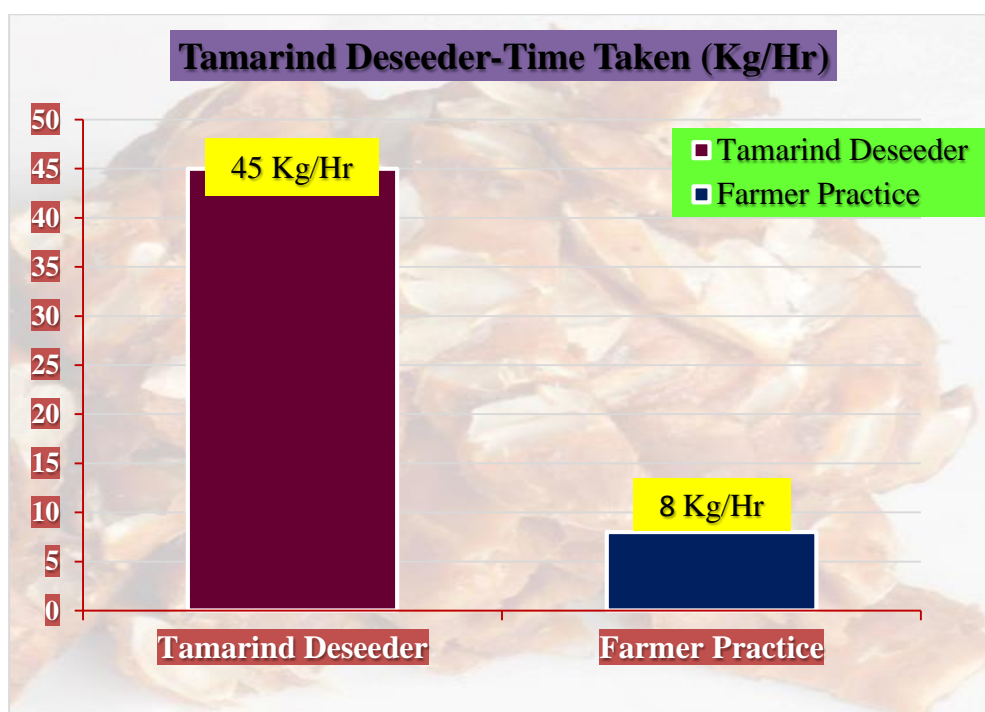
Technology demonstrated: Demonstration of Tamarind Deseeder

Season and year : Kharif& 2021

Farming situation : -
 Source of fund : ICAR
 No of locations (Villages): 2
 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: -

Parameter Assessed-Tamarind De-Seeder

Technologies	Time Taken	Cost Saving	No. of laborers reduces
Tamarind De-Seeder	45-50 kg/ hr	1250	5 members
Farmers Practices	8 kg/hr	-	-



The above table and figure shows that the parameters recorded were time taken, cost saving, no. of labour reduces during the demonstration of Tamarind De-seeder. Compared to farmer practices (Manual deseeding) 45-50 kg can be deseeded from tamarind in one hour.

It can be also observed that the deseeding efficiency initially increased and then decreased when the moisture content available in Tamarind.

Feedback from the beneficiaries

Merits	Demerits
<ul style="list-style-type: none"> • Energy efficient, Time Saving • Saves Labour • Low capital and operative cost • It can be operated by one person • It is mainly used in Tamarind peak season and labour shortage period • Health related issues can be minimized • Reduces the drudgery • Getting an additional income 	<ul style="list-style-type: none"> • The inserted tamarind (30%) is getting out of the machine in every five minutes. • It is used only for splitting the fruit. Again, we have to work on it.

Scientist Feedback

Seed separation unit with separate outlets should be arranged for the seeds and deseeded tamarind since one outlet, it is difficult to separate the seeds and pulp.

Extension activities on the FLD: Conducted FLD Off line and Online Trainings, Method Demonstration, Group Meeting, Home Visits to organize and also follow up.

Extension Studies

1. Impact Studies

Impact of Assessment of Beekeeping in Sustainable Rural Livelihood

Preamble:

Beekeeping or Apiculture is the preservation of honey bee colonies to get pure honey and helps in pollination. Beekeeping is a useful mean of strengthening livelihoods because it creates a variety of assessments. The main focus of the study was to assess the impact of Scientific Bee-keeping and Honey production Value Chain.

Methodology

A complete list of 200 respondents was randomly prepared who have under gone through training and demonstration on Honey Production technique from Krishi Vigyan Kendra, Theni districts from 2016-18 to 2018-2020. A questionnaire was framed covering background information. In order to assess the knowledge gained by the trainees and effectiveness of training, a pre-test before training and post evaluation after training was conducted to know the level of knowledge of participants about various species, storage process and value addition etc. To test the knowledge of trainees, a set of 10 questions related to honey production, nutritive value, value added products prepared from honey extraction and storage method etc. were prepared and the suggestions from the trainees were also recorded for further improvement in the next training programme. Change in perception level was calculated from the difference of scores obtained in pre and post knowledge test of the trainees. The data were tabulated and statistically analyzed using frequency, percentages and ranking.

$$\text{Change of Knowledge} = \frac{\text{After training} - \text{Before training}}{\text{Total respondents}} \times 100$$

Results & Discussion

Training courses aim at enhancing adoption and diffusion of innovations. Some of the outcomes envisaged for any training programme were gain in knowledge, gain in skill acquired and ultimately in more adoption and integration among farming community. An important indicator of the impact of training programme is the extent, to which they have adopted the package of practice of Beekeeping cultivation technology. Krishi Vigyan Kendra, Theni has been giving long and short duration training on Honey production both to farmers, rural youth and rural women. Honey production has become one of few enterprises which rural women of both district has adopted in big way both at household level and as commercial enterprise as a source of income generation after the proper dissemination of technology through KVK.

Table 1.
Changing Perception of the Respondents for Honey Production
(No.of Respondent=200)

Criteria	Pre test knowledge before training		Post test knowledge after training	
	Respondance	Percentage	Persons	Percentage
Colonies Replacement	5	2.5	154	77
Queen Rearing	4	2	97	48.5
Pest Management	2	1	120	60
Feeding Supplement	55	27.5	200	100
Honey Extraction	65	32.5	200	100
Value Added Products	75	37.5	187	93.5
Storage Methods	18	9	197	98.5
Nutritional and Medicinal Value of Honey	110	55	196	98
Grading/Packaging	12	6	155	77.5
Sale/Marketing	68	34	178	89

Table 1 indicates that the changing perception of the respondents for Honey Production. Totally 200 beneficiaries have participated and assessed the pre and post test knowledge by 10 criteria's which are mentioned in the above Table 1. Regarding the Honey Extraction and Feeding supplement scored high level (100%) perception among the respondents followed by Storage methods and nutritional cum medicinal value of honey scored 98.5 percent and 98 percent respectively.

Table -2

Impact of Training on Adoption of Beekeeping

Year	No.of Trainings	Number of Participants in Training	No.of participants adopting Honey Production	Percentage
2016-2018	4	80	24	30
2018-2020	6	120	77	64.17
Total	10	200	101	50.5

Table 2 shows that average rate of adoption of honey production was 50.5 percent from 2016-2020. The rate of adoption of honey production in 2016-2018 was 30% followed by 64.17 percent in 2018-2020. Remaining Other respondents are not adopting the Beekeeping due to non availability of bee boxes, uses of fertilizers in and around their farms, not adopting beekeeping techniques.

Conclusion

Training courses aim at enhancing adoption and diffusion of innovations. Some of the outcomes envisaged for any training programme were gain in knowledge, gain in skill acquired and ultimately in more adoption and integration among farming community. An important indicator of the impact of training programme is the extent, to which they have adopted the package of practice of Beekeeping cultivation technology. Krishi Vigyan Kendra, Theni has been giving long and short duration training on Honey production both to farmers, rural youth and rural women. Honey production has become one of few enterprises which rural women of both district has adopted in big way both at household level and as commercial enterprise as a source of income generation after the proper dissemination of technology through KVK.

Technology Week Celebrations

Types of Activities	No. of Activities	Number of	Related crop/livestock technology
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		Participants	
Gosthies	1	51	Organic farming
Lectures organized	1	50	Spices Value addition
Exhibition	1	65	Value added Products
Film show	1	35	Organic farming
Fair	-	-	-
Farm Visit	2	7	Coconut and Paddy
Diagnostic Practicals	3	12	Groundnut, terrace Garden and Bhendi
Distribution of Literature (No.)	1	120	Water harvesting
Distribution of Seed (q)	1	10	0.80 q of Paddy seeds
Distribution of Planting materials (No.)	1	130	260 nos. of Coconut seedlings
Bio Product distribution (Kg)	-	-	-
Bio Fertilizers (q)	-	-	-
Distribution of fingerlings	-	-	-
Distribution of Livestock specimen (No.)	-	-	-
Total number of farmers visited the technology week	12	380	
Others	--	-	-

Training/workshops/seminars etc. attended by KVK staff

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

Name of the staff	Title	Dates	Duration	Organized by
M.Ramyasivaselvi SMS (Home Science)	National Level Webinar “Natural Poshan with Nutrient Fortified Food	23.09.2021	One Day	Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore &KVK Theni
P.Maheswaran SMS (Agronomy)	Organic farming	04.08.2021	One day	Director of Extension Education , TNAU, Coimbatore.
P.Maheswaran SMS (Agronomy)	Recent Rice Cultivation technologies	12.08.2021	One day	Department of Rice, TNAU, Coimbatore
P.Maheswaran SMS (Agronomy)	Bamboo-Wonder Grass	14.12.2021-15.12.2021	Two days	Institute of Forest Genetics and Tree Breeding, Coimbatore
P.Maheswaran SMS (Agronomy)	Organic farming	04.08.2021	One day	Director of Extension Education, TNAU, Coimbatore.
G.Rajaraman SMS (Horticulture)	ICM in perennial vegetables	03.06.2021	One day	Krishi Vigyan Kendra, TNAU, Madurai
G.Rajaraman SMS (Horticulture)	Organic Agriculture	07.07.2021	One day	Department of Sustainable Organic Agriculture,TNAU, Coimbatore.
C.Sabarinathan SMS (Extension)	ICTs for Agricultural Extension:New Concepts	23.08.2021-27.08.2021	Five days	MANAGE, Hyderabad & CCS Haryana Agricultural University,Bawal
C.Sabarinathan SMS (Extension)	Social Skills for Extension Management	22.09.2021-24.09.2021	Three day	MANAGE, Hyderabad

Details of sponsored projects/programmes implemented by KVK

S.No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1.	Dissemination of the	National Innovation	<ul style="list-style-type: none"> To test the suitability and 	One year	745833.00

S.No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
	Grassroots Innovations for the upliftment of Socio Economically Weaker Sections of Theni District”	Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	<p>potentiality of the farmers’ Innovations for the dissemination in Theni District Tamil Nadu.</p> <ul style="list-style-type: none"> 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. 	(September 2020 - August 2021)	
2.	Evaluation and dissemination of the farmers’ crop varieties (Sona40-Onion, HZKB-1 - Brinjal, G-Vilas Pasand - Guava) under TamilNadu conditions	National Innovation Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	<ul style="list-style-type: none"> To test the suitability and potentiality of the farmer’s onion variety for the dissemination/social diffusion. To test the yield attributing traits To test against the insects (Entomology Screening) To test against the diseases (Plant Pathological Screening) 	One year (June 2020 - May 2021)	5,02,128.00

S.No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
			<ul style="list-style-type: none"> To study of any special characteristics 		
3.	Suruli River Grape Farmers Company Pvt.,Ltd.	NABARD, Chennai	To form 50 Farmers Interest Group To Promote FPO <ul style="list-style-type: none"> To start the Business activities 	Three years (2020-21 to 2022-23)	11,40,000.00
4.	Skill Training of Rural Youth (STRY) on Post Harvest Processing and Packaging of Fruits and Vegetables	MANAGE-Hyderabad through SAMETI & ATMA	<ul style="list-style-type: none"> To provide Skill Development Training To demonstrate value added products from locally available fruits and vegetables To provide knowledge on FSSAI Certification and Labelling proceders 	6 Days (19.01.2021-24.01.2021)	42,000.00
5.	Seminar on Promotion of Value Addition Technologies for Rural Community-Food Park in Theni District-Publications	NABARD, Chennai	<ul style="list-style-type: none"> To promote value addition technology for Rural Community 	16.02.2022	1,00,000.00
6.	Regional Level Seminar on Nutri Sensitive Agricultural Resources and Innovations for Building a Healthy Nation on the eve of	NABARD, Chennai	<ul style="list-style-type: none"> To create knowledge on NARI for building a Healthy Nation 	2 Days 08.03.2021-09.03.2021	1,00,000.00

S.No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
	International Women's Day- Publications				
7.	Organization of National Level Grassroots Innovators Meet	National Innovation Foundation- India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	<ul style="list-style-type: none"> To find out new Grassroots Innovations To disseminate the existing grassroots innovations for Sustainable livelihood and also to large-scale adaption. 	2 Days (26.09.2021-27.09.2021)	3,00,000.00
8.	Basic Beekeeping Training Programme	KVIC, Madurai	<ul style="list-style-type: none"> To Empower the farmers by providing practical training on scientific Bee-keeping techniques To create marketing linkages with KVIC, Super Markets, Online Sales etc., To develop the beneficiaries as successful bee entrepreneurs To generate sustainable additional income to the farmers through scientific bee-keeping. 	5 Days 01.02.2021-05.02.2021	16,500.00
9.	District Level Awareness Camp on Prime	KVIC, Madurai	To create awareness on PMEGP Schemes to general employment opportunities for the	1 Day 27.08.2021	16,500.00

S.No.	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
	Minister's Employment Generation Programme		betterment of Unemployed Personnel.		
10.	Sugarcane and Betel vine Farmers Producer Company	NABARD, Chennai	To form 25 Farmers Interest Group To Promote FPO To start the Business activities	Three years (2020-21 to 2022-23)	1140000
11.	Adoption of Improved Agricultural Practices and Value Chain management in Betel vine	NABARD, Chennai	To give capacity building training on Betel vine Production and value addition To give training on value chain management and linkages in Betel vine	Three days (2.2.2021-4.2.2021)	133000
12.	Chilli and Tomato Cultivation Training	TNRTP, Chennai	To give training on Production and value addition technologies of Tomato and Chilli	Four days (30.11.2021-3.12.2021)	66000
13.	Silkworm rearing	Sericulture department, Theni	To give Skill training on Silkworm rearing technologies, Mulberry cultivation technologies	Six days 26.07.2021 - 30.07.2021	60000
14.	National level seminar for Grape Farmers, Scientists and Students on "Emerging Technologies on Grapes Cultivation and Value Addition for Higher Productivity and Income"	Coca Cola India Pvt. Ltd.,	To introduce recent Technologies on Grapes Cultivation and Value Addition for Higher Productivity and Income	19.08.2021	2,00,000.00

Please attach detailed report of each project/programme separately

Success stories

success story on Enhance the Production through Solar pump set

Name of farmer: Manikandan

Address: S/ O Seeninayakkar, Nachiyarpuram, Andipatty, theni

Mobile Number: 9842678376

Age: 44

Education: 12

Size of land holding (in acre): 9 acre



1. **Situation analysis/Problem statement:** The farmers were hailing at Nachiyarpuram village of Andipatty block, Theni District. He have 9 acre of land with minimum of water resources. Due to continues failure of rainfall 6 acre out of 9 acre face the water shortage. Rs.5000- 60000 /acre loss in the every season. His land have water table but unable to use due to interior area.
2. **Plan, Implement and Support:** KVK, Theni implementing one training programme on Seed Production technologies at KVK, Theni. He was one of the participants. He learned the Cumbu Seed Production technologies and we also made two scientist Visits to his farm and given advisories on Installation of Solar Pump set for irrigation and encourage to cultivate Short duration vegetables based on water availability. We are linking with Agricultural engineering Department for getting Solar Pump set. After guidance he installed the Solar pump set and cultivate the short duration vegetables. He also involved the Cumbu and Sorghum Seed Production technologies activities. We supplied the quality breeder seeds for his Seed Production.
3. **Output:** After commitment of Seed Production we guided till certification. He annually produces 21 q of CO 10 Cumbu seeds and Supplied through Department of Seed Certification and get 56 % more income than higher production. After installation of Solar pump set Instead of rainfed crop like cotton he convert into Short duration vegetables like Onion, Coriander and chilli for higher income.

Before Intervention

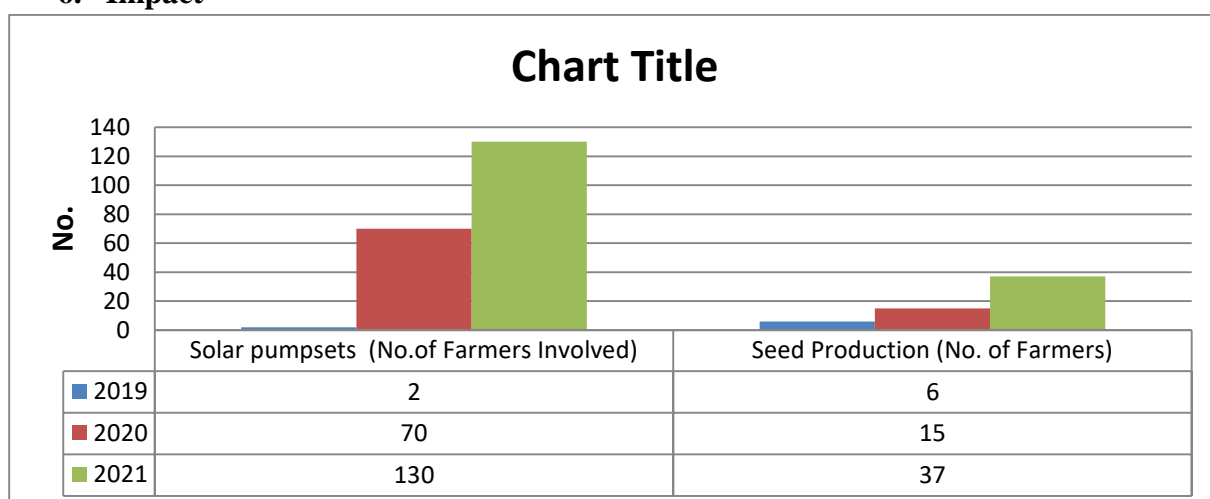
Component Names	Area (Acre)/No.	Production (Q/Liter/No.)	Gross income (Rs.)	Net Income (Rs.)
Cumbu	2 Acre	13.4 Q	26800	14800
Sorghum	4 Acre	48 Q	100800	64300
Cotton	2 Acre	19 Q	81700	45700
Coconut	1Acre	8960 No.	179200	144700
		Total	388500	269500

After Intervention

Components Names	Area (Acre)/No	Production (Q/Liter/No.)	Gross income (Rs.)	Net income (Rs.)
Cumbu	2 Acre	21 Q	84000	63000
Coconut	1Acre	13440 No.	282240	247540
Onion	1Acre	62 Q	186000	125000
Chilli	1Acre	80 Q	128000	70000
Coriander	1Acre	15 Q	60000	40000
			740240	545540

4. **Outcome:** Solar pump Sets are very useful to the interior areas particularly rainfed areas of the district. Cultivation of Short duration vegetables and Seed Production technologies are most proven income boosting activities.
5. Training programmes and linkage with other departments we Promoted Solar pump set for Irrigation. We also promote Seed Production technologies.

6. Impact



Source: Department of Agricultural engineering and Seed Certification department, Theni

Farmers are getting additional income of Rs. 50000/acre through Irrigation with Solar Pump sets by cultivating market needy short duration vegetables. Farmers are getting additional income of Rs.35000/acre by Certified seed Production Technologies.

Success stories- 2

Name of farmer: M. Karmegam

Address: 99/3 Palarpatti, Bodinayakannur, Theni

Mobile Number: 9943936511

Age: 47

Education: 10th

Size of land holding (in acre): 2.5 ac



1. **Situation analysis/Problem statement:** The farmers were hailing at Palarpatti village of Bodinayakanur Block, Theni District. He have 2.5 acre of land with required amount of water resources. He is cultivated G 9 Banana crop throughout the year. In theni district huge area of farmers are cultivated G 9 banana crop. Due to market price variation getting less amount of income from the G 9 Banana.
2. **Plan, Implement and Support:** KVK, Theni implementing training programme on improved production technology in Banana at KVK, Theni. He was one of the participants. He learned improved banana production technologies and banana intercropping system. After that training he was cultivated banana intercropped with small onion.
3. **Output:** After that banana cultivated intercropped with onion he was getting addition income from the onion crop. Also, the foliar application of IIHR Banana Special @ 0.5 per cent on 3rd, 5th and 7th month was increasing yield upto 5 kg per bunch of banana. Overall he was getting more income from the banana intercropping with onion system.

4. Before Intervention

Component Names	Area (Acre)/No.	Production (Q/Liter/No.)	Gross income (Rs.)	Net Income (Rs.)
Banana	2 ac	65.2 ton	295000	167000
Cow	2 nos	-	58500	44600
Total			353500	211600

After Intervention

Components Names	Area (Acre)/No	Production (Q/Liter/No.)	Gross income (Rs.)	Net income (Rs.)	% Increase over base year	
					Production	Income
Banana	2 ac	82.4 ton	391800	298000	26.4	78.5
Onion	2 ac	14.2 ton	378000	262000	-	-
Cow	4 nos	-	92600	58300	-	30.7
Total			862400	618300	-	192.2

5. **Outcome:** Banana cultivated intercropped with onion are given addition income to the farmers. When the G 9 banana market price down the onion will compensate the income loss. Also the foliar spray of banana special he got additional yield of 5 Kg/bunch and he was able to take more yield and increase production and productivity.

Success Story-3 -BANANA-“BEST VALUE FRUIT”

Name of Farmer : Mrs. K.PREETHI

Address : W/o Krishnakumar, 14/W-2, Raja Street,
Seepalakottai Village,
Chinnamanur Block, Uthamapalayam Taluk,
Theni District-625 540

Mobile Number : 8870869375

Age : 24

Education : 12th

Size of land holding (in acre): 2 Acre



- 1. Situation analysis/Problem statement:** India is the largest producer of banana in the world, contributing 25 per cent to the global production. During the market glut, the excess production of banana can be converted into value added product to get more profit. Banana is a Nature's gift to the mankind. It has four times protein, twice carbohydrate, three times phosphorus, five times vitamin A and iron, many times potassium and twice other vitamins and minerals compared to other fruits in general and apple in particular. Considering the above nutritive, nutraceutical and therapeutic values, banana is the '**BEST VALUE FRUIT**'.

The following problems were found from the farmers of Chinnamanur block, Seepalakottai Village during the Group meeting.

- Lack of awareness on Value Addition in Banana
- More Yield, Low Income
- Incidence of Malnutrition high among children

2. Plan, Implement and Support:

Plan:Planned and implemented the OFT Programme on ODOP Concept

One District One Product (ODOP) : Banana Based Byproducts.

Name of District/State : Theni/Tamil Nadu

Objectives

- To create awareness on Value Addition in Banana
- To prepare Banana flour incorporated Nutri Mix to eradicate malnutrition among children

Uniqueness and Benefits of Technology

7. Highly energetic and nutritious (rich in carbohydrate, vitamins, minerals and Dietary fibre).

8. Cheaper than existing baby food/health drink/soup mix items in the market.
9. Cheaply available raw materials.
10. Helps in nutritional security by providing all kinds of nutrients.
11. Employment generation to rural and urban population.

Implementation: Based on the above-mentioned problems, KVK Theni implemented OFT on Assessment of Suitable Banana Varieties for Nutri Mix at Seepalakottai for Malligai Horticulture Farmer Producer Group (FPG) members. Conducted Hand on Training cum method



Demonstration of Banana flour from Nendran, G9 to get the practical and technical knowledge i.e Processing of Banana Flour-Selection of raw Banana, washing techniques, steaming, drying, grinding at KVK Solar Dryer Demo Units. Given advisories on different types of packaging materials, FSSAI Certification, Labelling procedures and marketing linkages to the OFT beneficiaries. Distributed Critical Inputs to prepare Banana flour incorporated Nutri Mix and also given Pamphlets to the beneficiaries.

Support: Explained Central

Govt. Scheme Pradhan Mantri Formalization of Micro Food Processing Enterprise (PM FME) for One District One Product (ODOP) and linked with the Line Departments and KVIC, Madurai for availing loan from PMEGP Scheme. Marketing linkages also created with line departments, FPOs, SHGs, NABARD Rural Mart, Super Markets.

3. **Output:** She has adopted the technical knowledge and skills which is learned from the OFT Programme. She has developed different types of Banana Flour i.e Nendran Banana flour, Red banana flour, G9 Banana Flour (Based on the customer requirement) Banana Nutri Mix, Banana Baby Food, Banana flour chappati mix, Banana flour soup mix. She has applied and received FSSAI Number from the Block Level Food Safety Officer.

Name of the Brand : KP Tamil Products

Manufacturing Address : 14/W-2, Raja Street,
Seepalakottai Village,
Chinnamanur Block, Uthamapalayam Taluk,
Theni District-625 540

FSSAI Number : 2242227000038

Recognition:

- Received Best Entrepreneur Award during International Women Day programme at KVK.
- Participated in MAKKAL TV Program and shared her success journey for wider coverage. After participated in the TV Programme she is getting regular order from different District from all over TAMIL NADU

- Participated in the District Level Exhibitions- Chinnamanur and Aundipatti Blocks
- Selected as Best Farmer Award under ATMA in the year 2022-23

4. Outcome: For Horizontal spread of Technologies, KVK Theni given the technical guidance to the Line Departments-Horticulture, ATMA, FPGs (100 Members), FIGs (20 Members), SHGs (15 Members), JLGs (10 Members) through trainings, method demonstration, lecture delivered, group meeting, advisories

Impact:

i. Technological benefits: Given technical guidance to the Line Departments-Horticulture, ATMA, Primary Processing Center (PPC)-Agriculture Engineering, FPGs (100 Members), FIGs (20 Members), SHGs (15 Members), JLGs (10 Members) through trainings, method demonstration, lecture delivered, group meeting, advisories, home visits for large scale/macro level adoptions.

ii. Economic benefits

Low Cost Nutritious Food, Cheaper than existing baby food/health drink/soup mix items in the market and also cheaply available raw materials.

Technology Option	Gross Cost (Rs./Unit-100 kg)	Gross return(Rs.)	Net Returns (Rs./Unit-100 kg)	B:C ratio	Shelf life of the Product
Before Intervention (Direct Selling)	3000	6000	3000	2.00	5 Days
After Intervention (Banana Flour Incorporated Nutri Mix)	6000	26250	20250	4.38	6 Months

iii. Social benefits:

- Helps in nutritional security by providing all kinds of nutrients. Hence, it can be Recommended to include in the Anganwadi Nutri Mix to eradicate Micronutrient Deficiencies among Children.
- Highly energetic and nutritious (rich in carbohydrate, vitamins, minerals and dietary fibre).
- Employment generation to rural and urban population.

iv. Environmental Benefits: Eco friendly products.

v. Institutional Development: Given technical guidance to Primary Processing Centers (PPCs)-Agriculture Engineering, for large scale/macro level adoptions through KVK Activities.

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

a. Innovative Methodologies

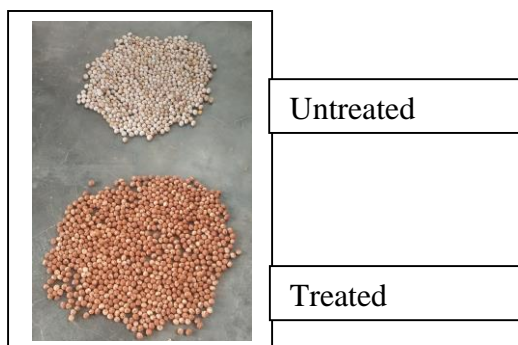
Year	Title of Innovative extension methodology developed /procedure adopted	Concept in brief	Objective (s)	Usefulness/ used for	Models operated	Outcome/result
2017-18	Master Trainers approach for technology spread	Our KVK is aimed at making the trainees in to trainers especially youth members been converted as master trainers	To develop the trainees in to trainers for the horizontal spread of the technologies	The master trainers are been utilized for the various training conducted in ON and OFF campus training	The youth members are with good educational background and good operating skills in the machines are been trained	Among 15 master trainers were been operating with the KVK for coconut climbing machine, bee keeping ,modern dairying
2018-19	The Group Approach - A mechanism to safeguard the farmers	Aggregating farmers in a group is a difficult task but it is the need of the day. By lack of co-operation among farmers they were exploited at different levels (input shops, commission mandies, local money lenders, middlemen, Govt. subsidies, etc.,) and they are still in distress. To overcome those issues our KVK believe strongly the group approach and formed FPOs with the NABARD funding	a.To bring the farmers under one umbrella for collective actions. b. To establish farmers group owned input shops, godown, value addition and marketing, etc.,	a. farm inputs especially seeds, pesticides, plant protection chemicals, feed, etc., b. To add the value to their produces and sell the products at remunerative prices to make agriculture as a profitable venture.	As the Farmers are clubbed into a group the mobilization of financial resources to establish input shops, value addition centers, etc., became easy. b.Being a group it is easy to avail Government schemes for their betterment.	FPO are formed on Grapes and sugarcane farmers are now benefited by this group formation approach

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)

ITK Technologies

Operational Area	Crop/Enterprises	ITK Practised	Purpose of ITK
Chinnamanur and Aundipatti Blocks	Red Gram/Sorghum (var-Irumbu Solam),	<u>Coating with Red Mud Soil</u> 1 kg of Red soil is required for 4 kg of Red Gram for coating	To prevent the pest and infestation during the storing peiod and also for good germinations.
Theni and Periyakulam Blocks	Paddy	<u>Storing with Pungam Leaves</u> Farmers are practising gunny bags to store paddy seeds for managing rice moth during storage period. Top of the gunny spreading Pungam for preventing storage pest in Paddy	To manage the pest and infestation during the storing peiod and also for good germinations.
Vellaiyammalpuram , Chinnamanur Block	Onion	Thalippu Vadagam is a sun dried condiment prepared using small onions and other spices during peak harvest time.	To minimize the post harvest losses during Peak harvest time and low market situations

ITK- 1 - Coating with Red Mud Soil



ITK Red gram seed priming at Seepalakottai Village



ITK- Thalippu Onion Vadagam

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)
CO 6 Groundnut	150	64.5	24700/ha	49600/ha
Scientific Beekeeping and Honey Production Value Chain	275	35.27	-	1600/Box
Demonstration of Amchoor powder from raw mango	120	47.82	3000/q	12500/q
CO 7 Redgram	75	72.00	3200/ha	37200/ha
IIHR Vegetable Special	80	43.25	147000/ha	165000/ha
Paddy expert system	20	80.00	68796/ha	80164/ha
Nutri garden	256	46.87	-	1240/Garden at Anganwadi
TNAU fruity fresh	25	68.40	132000/ha	163000/ha
CO 5 Onion	54	72.50	175000/ha	196000/ha

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

Year	Title	Success story in brief
2015 2016	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

		<p>supply of irrigation water. This farmer has cultivated Banana, Rice and Coconut. But now he gives more importance to Banana Cultivation.</p> <p>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.</p> <p>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.</p> <p>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.</p>
2017-2018	Cashew Apple Squash Preparation	<p>Intervention Process:</p> <p>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.</p>

		<p>Impact: Now one group of SHG members have started preparation of Cashew Squash for the home consumption.</p> <p>Economic Gains:</p> <p>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.</p>
2016-2017	Onion Storage Structure	<p>Background:</p> <p>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.</p> <p>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.</p> <p>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 storing of Onion to take more advantages to get better market price.</p> <p>Onion storage structure is 80ft length, 3 ft width with the height of 6ft. In this storage structure, he stores 7,500kg of Onion.</p> <p>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.</p>
2016-2017	CO-4 Bhendi Hybrid Cultivation	<p>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 couldn'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.</p>

		<p>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 starting 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 substantial 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.</p>
2017 2018	CO 51 Paddy variety: Profitable Rice Production in Theni	<p>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.</p> <p>Plan, Implement and Support</p> <p>Integrated Crop Management Practices for higher Productivity</p> <p>Split application of Urea</p> <p>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)</p>

		<p>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.</p> <p>Pheromone traps for controlling Yellow Stem Borer.</p> <p>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.</p> <p>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 <i>Pyricularia oryzae</i> 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.</p> <p>PPFM (Methylobacteria) for Drought Mitigation</p> <p>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.</p> <p>Group approach for horizontal spread of the variety</p> <p>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</p>
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		<p>district. Totally 800 ha among 1200 farmers were growing CO 51 with integrated crop management practices</p> <p>Results and outcome</p> <p>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.</p>
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Cases of large scale adoption/impact of specific technologies

Scaling up of CO 51 Paddy variety for Rabi season in Theni district

Introduction: Paddy is the major crop in Theni District. The total area under cultivation is 14000 ha. Among all the paddy growing area the cropping pattern is Paddy-paddy-Pulses. The second paddy crop was short duration due to lack of availability of water. Farmers are cultivating low yielding and medium duration varieties. The variety recorded low yield due to water shortage during milk dough stage. At the point KVK introduce CO 51 Paddy variety for Second Paddy crop.

Programmes Conducted on CO 51 Paddy variety

- OFT programme in 2 ha among 5 farmers
- FLD programmes in 8 ha among 20 farmers
- Training programmes – 6 for farmers 1 for rural youth with participation of 134 farmers and rural youth
- 3 field days and 2 farm school in CO 51 paddy variety conducted

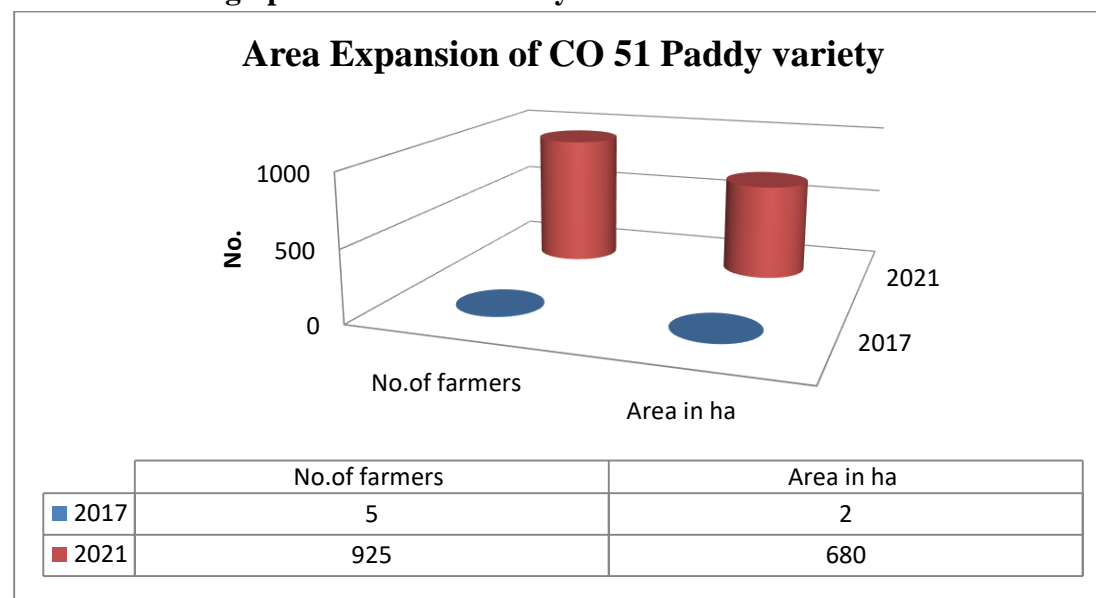
Economics of the Variety

	Yield	Yield increase (%)	Cost of Cultivation (Rs)	Gross income (Rs)	Net income (Rs)	BCR
Co 51	60.16	15.22	43257	102272	59015	2.37
Farmers practice	51.00	-	45650	76500	30850	1.68

Action taken for Scaling up:

After introducing the variety KVK were conducted 3 field days in collaboration with State department. In collaboration with Joint Director of Agriculture and Seed Certification department we have developed 7 Certified Seed producers in the District. We also recommend to the department to supply CO51 Paddy seeds as part of National Agricultural Development Programme on Subsidy Basis. This help to adopt the CO 51 Paddy variety in large scale in the District.

Chart on Scaling up details of the variety



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

Impact of Training on coconut tree climbing machine at Theni District

Introduction

KVK, Theni designs training courses for the farmers, farm women and rural youth. Training is an important aspect of the self-employment and it is considered as part of strategy for growth and development of an individual. KVK, Theni collaboration with Coconut Development Board, Cochin, jointly organizing training programme on “Coconut Tree Climbing using climbing machine” Totally 240 rural youth were trained during last three years from 2018-19 to 2019-21. Coconut is an important plantation crop with diverse end-uses, supporting livelihood of many farm households in the primary sector, grown in many states of India. But in recent days coconut farmers are facing serious problems in coconut harvesting due to the shortage of trained climbers to harvest the nuts and clean the trees annually. It costs high ranging Rs 70 per tree for climbing and harvesting. The present study was undertaken to assess the impact of trainings towards adoption on coconut climbing machine During 2018-2021 Twelve trainings programmes were conducted at Krishi Vigyan Kendra, Theni District with the financial support of Coconut Development Board) to 240 coconut farmers or youth members to provide the skill of using coconut climbing device and management of coconut plantations for higher yields. The knowledge of coconut tree cultivation and management practices also taught to the trainees.. After successful completion of the training they were provided with a coconut climbing machine.

Methodology

Out of 240 trainees 100 trainees were selected by using simple random sampling. The information pertaining to tree climber by traditional methods and advanced method of using climbing device was collected by using a well-structured pre-tested schedule. Adoption was operationalized here as a decision to make full use of coconut climbing device for harvesting of coconuts. Farmers adopt them either fully, partially or do not adopt at all. Score 3, 2 and 1 was given for fully, partial and non-adoption respectively. In order to interpret collected data and to draw meaningful conclusions, data were statistically analyzed by using statistical tools like percentage analysis.

Results and Discussion

Trainees adopted the coconut tree climbing device in two ways one is for harvesting their own coconuts and remaining one is as a profession for income generating purpose. The small farmers with few number of coconut trees were very happy to harvest nuts by their own by using this simple device. The small farmers with few number of coconut trees were very happy to harvest nuts by their own by using this simple device.

Table1. Distribution of respondents according to extent of adoption of coconut tree climbing machine

S.No	Technology	Extent of adoption					
		Fully		Partial		Non-adoption	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Coconut Tree Climbing Machine	45	45%	37	37%	18	18%

Table 1 reveals that 45.00 percent of the trainees were fully adopted the coconut tree climbing device as an income generating activities by climbing others trees for wage. About 37.00 percent of the trainees were partially adopted the device used for climbing, only 18.00 percent of the farmers were not adopted this device. More than 80.00 percent of trainees adopted the coconut climbing machine. The trainees expressed that the device is time saving, simple and safe and reduced the harvesting cost.

Conclusion

The study concludes that coconut climber equipment is a boon for the coconut harvesters, since it has reduced the drudgery in tree climbing and improved the climbing efficiency there by providing employment opportunity for rural youth.

Linkages

Functional linkage with different organizations

Name of Organization	Nature of Linkage
ICAR Institutes	

Name of Organization	Nature of Linkage
ICAR NRCB, Trichy, Tamil Nadu.	Received Latest Technologies for Popularization of farmers. Getting Quality Improved Critical Inputs for conducting OFT, FLD Programme
ICAR NRCG, Pune	Received Latest Technologies for Popularization of farmers. Getting Quality Improved Critical Inputs for conducting OFT, FLD Programme
ICAR IIHR, Bengaluru	Received Latest Technologies for Popularization of farmers. Getting Quality Improved Critical Inputs for conducting OFT, FLD Programme
MANAGE, Hyderabad & SAMETI	STRY Training
DST Institute	
National Innovation Foundation-India	Innovators Meet, Research Study, Dissemination of Grassroots Innovation Projects
Line Departments	
Department of Agriculture, Theni, Tamil Nadu.	Conducting Training programmes and Demonstration. Received assistance for getting seeds/critical inputs for FLD Programme. Participation in department training programme as resource person.
Department of Horticulture, Theni, Tamil Nadu.	Received Guidance and Assistance for Conducting Training Programmes. Received and supply of Quality Seedlings to Farmers
Department of Animal Husbandry, Theni, TamilNadu.	Creating awareness about mixed fodder cultivation
Department of Sericulture, Theni, TamilNadu.	Conducting Skill Trainings
VazhnthuKattuvomThittam,Theni,Tamil Nadu.	Organizing Training Programmes
MahalirThittam, Theni	Conducting Trainings to the SHGs Leaders/Members
ATMA, Theni, Tamil Nadu.	Conducting Farmers Field School Programmes, Scientist Visits, Field Visits, Capacity Building Trainings for ATMA Functionaries
FTC, TANUVAS, Theni, Tamil Nadu.	Conducting Training, Extension Activities, Important Days Receiving Critical Inputs for conducting FLD Programme
Joint Action for Sustainable Livelihood (JASuL)	Training extension workers on Climate Change Mitigation Strategies
ICDS, Theni, TamilNadu.	Establishment of Nutri Garden in Anganwadi, Conducting Training, Distribution of Nutri Garden Seeds, Seedlings, Saplings. Conducting Training to the Anganwadi Workers
Nehru Yuva Kendra (NYK), Theni, TamilNadu.	Creating awareness among farmers about scientific farming through field level to NYK volunteers.

Name of Organization	Nature of Linkage
	Linking SHGs to get NYKs schemes.
Cotton Corporation of India	Jointly Organized Trainings and Demonstration
Board	
Coffee Board, Bodinayakkanur, Tamil Nadu.	Conducting training to SHG members
Spices Board, Bodinayakkanur, Tamil Nadu.	Conducting Training and Awareness Programmes to Farmers, Rural Youth, SHGs
Council	
Tamil Nadu State Council of Science and Technology (TNSCST), Chennai, Tamil Nadu.	Publication of
Commission	
KVIC, Madurai, Tamil Nadu.	Organizing Basic Bee keeping Training and Distribution of Bee Boxes.
Financial Sectors	
NABARD, Theni, Tamil Nadu.	Getting financial assistances for 2 FPOs, Book Publications -Seminars.
District Industries Center, Tamil Nadu.	Organizing various Awareness programmes to Startups
Lead Bank, Theni, Tamil Nadu.	Financial Literacy Programmes
Education Institutions – Universities and Colleges	
Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu.	Receiving Latest Technologies for Conducting Training Programmes. Getting Seeds/Critical Inputs for conducting FLD/OFT Programmes
TNAU, Horticultural College and Research Institute, Periyakulam	Receiving Guidance and Assistance for Conducting Training Programmes. Guidance to students during Rural Agricultural Work Experience programme
Agricultural College and Research Institute, Madurai, TamilNadu.	Guidance to students for their Rural Agricultural Work Experience programme
Sri Adi Chunchanagiri Women's College, Cumbum, Theni, TamilNadu.	Signed MOUs with College to transfer of technologies, joint implementation purposes
Sri Arul Anandar College, Madurai, TamilNadu.	Signed MOUs with College to transfer of technologies, joint implementation purposes
Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu.	Conducting Training to the Faculty, Scholars, Students, Joint Implementation Activities
Fatima College, Madurai, Tamil Nadu.	Guidance to students for their Rural Agricultural Work Experience programme
Karunya Agriculture College, Coimbatore	Guidance to students for their Rural Agricultural Work Experience programme
Ramakrishna Agriculture College, Coimbatore, Tamil Nadu.	Guidance to students for their Rural Agricultural Work Experience programme
College of Agricultural Technology (CAT), Theni, Tamil Nadu.	Guidance to students for their Rural Agricultural Work Experience programme

Name of Organization	Nature of Linkage
Krishna College of Agriculture and Technology (KRISAT), Usilampatti, Tamil Nadu.	Guidance to students for their Rural Agricultural Work Experience programme
Hajee Karutha Rowther Howdia College, Uththamapalayam, Theni, Tamil Nadu.	Guidance to students for their Rural Agricultural Work Experience programme
Tamil Nadu Teachers Education University, Chennai, Tamil Nadu.	Conducting 12 hours Assist World Record Programme
Mass Media	
All India Radio, Madurai, TamilNadu.	Broadcasting of Feedback/Interviews of KVK beneficiary Farmers for Adopting New Technologies
Kodai FM, Dindugal	Broadcasting of Feedback/Interviews of KVK beneficiary Farmers for Adopting New Technologies
Leading News Papers-Daily Thanthi, Dinamalar, Thinakaran, Thinaboomi, MalaiMurasu, Agri-Doctor, TamilNadu.	Coverage of KVK activities
Farmers Producer Group/ Organizations (FPOs)	
Suruliaru Grapes Farmer Producer Company Ltd., Surulipatty, Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting, Scientist Visit
Vallalar Farmer Producer Company Ltd., Periyakulam, Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting
Malar Farmer Producer Company Ltd., Andipatty, Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting
Aghamalai Spices FPC Ltd., Periyakulam, Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting
Kamathenu FPC Ltd., Chinnamanur	Conducting Training Programmes, Participation in Meeting
Malligai Horticulture Farmer Producer Group, Seepalakottai, Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting
Salamalai Horticulture Development Farmer Producer Company Ltd., Tamil Nadu.	Conducting Training Programmes, Joint Implementation, Participation in Meeting
NGO Network and other Institutes	
Assist World Record, Tamil -America	Organizing 12 hours World Record Event
World Vision, Theni	Conducting Training Programmes for GAP to the farmers and farms women's
Dhan foundation, Madurai	Conducting Training Programmes GAP to the farmers and farms women's
NGOs	Creating awareness about Drought Mitigation and Sustainable Agriculture, Value Addition, Skill Training
Pay Agri	Conducting Training to the farmers

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.)
NIF-DSD Dissemination of the Grassroots Innovations for the upliftment of Socio Economically Weaker Sections of Theni District”	One year (September 2020 - August 2021)	National Innovation Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	7,45,833.00
NIF-DSD Organization of National Level Grassroots Innovators Meet	2 Days (26.09.2021- 27.09.2021)	National Innovation Foundation-India, Amrapur, Mahudi Road, Gandhinagar - 382650, Gujarat, India	3,00,000.00
Skill Training of Rural Youth (STRY) Post-Harvest Processing and Packaging of Fruits and Vegetables	6 Days (19.01.2021- 24.01.2021)	MANAGE-Hyderabad through SAMETI & ATMA	42,000.00
NABARD DEAR-Seminar Seminar on Promotion of Value Addition Technologies for Rural Community-Food Park in Theni District-Publications	16.02.2022	NABARD, Chennai	1,00,000.00
NABARD DEAR-Seminar Regional Level Seminar on Nutri Sensitive Agricultural Resources and Innovations for Building a Healthy Nation on the eve of International Women’s Day -Publications	2 Days 08.03.2021- 09.03.2021	NABARD, Chennai	1,00,000.00
Basic Beekeeping Training	5 Days 01.02.2021- 05.02.2021	KVIC, Madurai	16,500.00
District Level Awareness Camp on Prime Minister’s Employment Generation Programme	1 Day 27.08.2021	KVIC, Madurai	16,500.00

AWARDS and RECOGNITIONS

KVK, KVK Staff, KVK Contact Farmers etc. at district, state, national and international level supported by copies of certificates and photographs

Name of the Awards and Recognitions	KVK, KVK Staff, KVK Contact Farmers
International Level (Recognitions)	KVK Staff
12 hours Assist World Record Event on Agriculture and Rural Development	P.Maheswaran- Programme Coordinator (i/c)
	M.Ramyasivaselvi-SMS (Home Science)
	M.Arun Raj -SMS (Soil Science)
	Dr.G.Rajaraman – SMS (Horticulture)
	C.Sabarinathan – SMS (Extension)
	N.Raja-Farm Manger
	G.Winmathi-Programme Assistant (Computer)
	KVK Contact Farmers
	S.Saleema-Beekeeping and Value Addition, Koduvilarpatti, Theni
	P.Pandiaraj, IFS, Markeyankottai, Chinnamanur
	V.Jayakumar, Entrepreneur, Cumbum
National Level (Recognitions)	KVK Contact Farmers
Success Story of Mrs. P.Bindu has been included in Success Stories of Progressive Women Farmers and Agripreneurs Book (2021-22), Govt. of India, Ministry of Agriculture and Farmers Welfare, Department of Agriculture and & Farmers Welfare	P.Bindu, Bomminayakkanpatti, Periyakulam Block, Theni
State Level Award	KVK Contact Farmers
Best Farmer Award-Second Prize (Rs.75,000/-)-Sericulture	P.Chinnan, Koolaiyanur, Bodinayakkanur Block, Theni
District Level Award	KVK Contact Farmers
Best Farmer Award during International Women's Day 2021	R.Selvarani, B.Meenatchipuram, Periyakulam
	S.Saleema, Koduvilarpatti, Theni
	R.Malayakkal, Ethakkovil, Aundipatti
	P.Bindu, Bomminayakkanpatti, Periyakulam Block, Theni
	A.Anis Fatima, Anganwadi Worker, Vishwashapuram Anganwadi Center,
	S.Panchavarnam, Jakkampatti, Aundipatti
	R.Pandeeswari, Muthuvakudi, Bodinayakkanur
Block Level Award	KVK Contact Farmers
ATMA Farmer Award (Rs.5000/-)-Organic Farming	R.Rajmohan, Bodinayakkanur Block, Theni
ATMA Farmer Award (Rs.5000/-)-Value Addition in Millets	P.Venkadesan, Sukkankalpatti, Chinnamanur Block, Theni
ATMA Farmer Award (Rs.5000/-)-Value Added Products	Veleeswaran, Chinnamanur Block, Theni

Name of the Awards and Recognitions	KVK, KVK Staff, KVK Contact Farmers
ATMA Farmer Award (Rs.5000/-)- Organic Farming	Abushek, T.Meenatchipuram, Uthampalayam Block, Theni
ATMA Farmer Award (Rs.5000/-)- Multi Cropping	Thangaraj, T.Renganathapuram, Uthamapalayam Block, Theni
ATMA Farmer Award (Rs.5000/-)- Traditional Paddy Varieties (Mappilaisamba, Thangasamba)	M.Balasubramaniyan, Keelavadagai, Periyakulam Block, Theni
ATMA Farmer Award (Rs.5000/-)- Bee keeping	K.Muthusamy, Ponnampadugai, Kadamalaikundu Block, Theni
ATMA Farmer Award (Rs.5000/-)- Organic Farmer	T.Venkadesan, Mayiladumparai, Kadamalaikundu Block, Theni
ATMA Farmer Award (Rs.5000/-)- Organic Farming+IFS	P.Ashokan, Cumbum Block, Theni
ATMA Farmer Award (Rs.5000/-)- Value Addition using Solar Dryer	G.Sivananthan, Surulipatti, Cumbum Block, Theni
ATMA Farmer Award (Rs.5000/-)- Banana Value Added Products	S.Suresh, Nagalapuram, Theni
ATMA Farmer Award (Rs.5000/-)- Organic Farmer, Value Addition, IFS	L.R.Venkadesan, Ambasamuthiram, Theni District
Recognitions	KVK Contact Farmers
Bee Keeping Master Trainer (KVIC)	M.Meenatchisundaram, Kamatchipuram, Chinnamanur
	P.Anbuselvan, Kamatchipuram, Chinnamanur
Awards and Recognitions for SHGs	KVK Contact Farmers
Food Security Group -Value Addition in Millets (Rs.10,000/-)	Tharasas Self Help Group, Bodinayakkanur
Food Security Group – Value Addition in Groundnuts (Rs.10,000/-)	Joining Hands Self Help Group, Sankarapuram, Chinnamanur
Food Security Group – Coconut Oil Preparation (Rs.10,000/-)	Esther Self Help Group, Kokilapuram, Uthamapalayam
Food Security Group – Low-Cost Nutritious Health Mix (Rs.10,000/-)	Amma Pannai Self Help Group, Lakshmipuram, Periyakulam
Food Security Group – Ready to Eat Mix (Rs.10,000/-)	Amma Pannai Self Help Group, Guddalore, Cumbum
Food Security Group – Health Mix (Rs.10,000/-)	Amma Pannai Self Help Group, Vayalpatti, Theni

Important Visitors to KVKs during 2021



Chief Guest -Thiru. N.Ramakrishnan, Member of Legislative Assembly (MLA), Cumbum Constituency, Theni District during National Level Grassroots Innovators Meet



Chief Guest: Dr.S.Kowsalya, Registrar, Avinashilingam University Coimbatore-National Level Seminar on Promotion of Value Addition for Rural Community on 16.02.2021



Chief Guest:Shri T Venkatakrishna,Chief General Manager, NABARD Chennai, Visited Demo Units- Solar Dryer, Terrace Garden, Vertical Garden



Chief Guest: **Dr. Parthkumar P Dave**, Innovation Fellow, National Innovation Foundation-India, Gujarat during National Level Grassroots Innovators Meet

PHOTOS: Uploaded in the prescribed format.

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