

ICAR - KVK KRISHNAGIRI
ANNUAL PROGRESS REPORT
(1st January 2023 to 31st December 2023)

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

Address : Elumichangiri, Mallinayanapalli Post, Krishnagiri, Tamil Nadu – 635 120

Phone : +91 80982 80123, 4343 291944

Fax No. : -

E-mail : drperumalkvk@gmail.com,
kvk.Krishnagiri@icar.gov.in

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

Name of the Host Organization as per Official Records : Tamil Nadu Board of Rural Development (TNBRD)

Status of the Host Organization (As per the MoU) : Tamil Nadu Board of Rural Development (TNBRD)

Address : No.24, Second floor, Crescent Park Street, T. Nagar, Chennai – 600 017

Phone : 044- 24360234

Fax No. : -

E-mail : tnbrd1978@gmail.com

Name of the Chairperson : Mr. S. Ramesh

Mobile No : +91 94440 21523

Email : tnbrd1978@gmail.com

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

Name of the Programme Coordinator / SS&H : Dr. T. Sundarraaj

Residential Address : Mullai Nagar, 3rd Cross, Krishnagiri

Phone No. : -

Mobile No. : +91 94438 88644

Email : drsundarraaj@yahoo.com

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

1.5. Month and year of establishment : September and 1994

1.6. Total land with KVK (in ha) : 20.3

S. No.	Item	Area (ha)
1	Under Buildings	0.80
2	Under Demonstration Units	2.00
3	Under Crops	14.3
4	Orchard/Agro-forestry	1.3
5	Others (specify)	1.90
Total		20.3

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
1	Administrative Building	ICAR	November, 2012	550	53,00,000	-	-	-
2	Farmers Hostel	ICAR	November, 2012	300	35,00,000	-	-	-
3	Staff Quarters (No.)	-	-	-	-	-	-	-
4	Demonstration Units:							
	i. Poultry unit for desi bird	ICAR	March, 2019	40.13	1,04,250	-	-	-
	ii. Slatted floor goat unit	ICAR	December, 2014	71	62,000	-	-	-
	iii. Vermi compost	ICAR	March, 2019	13.4	30,800	-	-	-
	iv. Azolla unit	ICAR	March, 2019	9.29	15,000	-	-	-
	v. Nutritional garden	ICAR	December, 2020	323.71	13,880	-	-	-
	vi. Honey Bee Rearing	ICAR	October, 2019	-	16,116	-	-	-
	vii. Shade net nursery unit	ICAR	December, 2019	83.61	69,609	-	-	-
	viii. Medicinal plants demonstration unit	ICAR	March, 2020	404.64	11,250	-	-	-
	ix. Banana macro propagation unit	ICAR	December, 2021	50	39,998	-	-	-
	x. Sheep rearing unit	ICAR	November, 2021	53.51	1,25,148	-	-	-
	xi. Ultra high density plantation in mango	ICAR	October, 2013	607.03	11,100	-	-	-
xii. High density plantation in amla	ICAR	September, 2014	607.03	9,000	-	-	-	

	xiii. High density planting in custard apple	ICAR	September, 2014	404.6	5,000	-	-	-
	xiv. Future fruit crops	ICAR	August, 2021	404.64	7,130	-	-	-
	xv. Mother plant in citrus	ICAR	January, 2017	404.6	3,000	-	-	-
	xvi. Agro-forestry germination bed	ICAR	December, 2022	28	30,000	-	-	-
	xvii. Rootstock Nursery Unit	ICAR	December, 2023	80	68,303	-	-	-
5	Fencing	ICAR	November, 2012	1520 rm.	5,00,000	-	-	-
6	Rain Water harvesting system	-	-	-	-	-	-	-
7	Threshing floor	-	-	-	-	-	-	-
8	Farm godown	-	-	-	-	-	-	-
9	Shed (Farm equipment)	-	-	-	-	-	-	-

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms covered as on 31.12.2023	Present status
Two wheeler Hero Honda – CD Dawn	2006	39,890	1,33,070	Good
Two wheeler Hero Honda Passion	2009	50,000	1,45,461	Good
Jeep – Mahindra Bolero plus	2009	6,00,000	2,91,787	Submitted the Condemnation certificate dated on 28.7.2023
Tractor – MF 5245 DI	2011	5,00,000	1507.6 (Hrs)	Good

C) Equipment & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Computer with accessories	2005	75,000	Not in Working condition
Copier	2005	75,000	Not in Working condition
Digital Camera	2005	20,000	Not in Working condition
LCD with accessories	2007	1,01,250	Working
Fax Machine	2009	15,000	Not in Working condition
Power Generator	2011	1,00,000	Working
Printer D2600 - Inkjet	2010	2,150	Working
Power Tiller – VST Shakti 130 DI	2010	1,48,190	Working
Computer with Accessories - Nos 2	2022	82,600	Working
HP Printer with Scanner (Neverstop Laser MFP 120x)	2022	17,991	Working

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

S. No.	Date	No of Participants	Salient Recommendations
1.	07.02.2023	30	SAC Details given below

PROCEEDINGS OF SCIENTIFIC ADVISORY COMMITTEE MEETING

VENUE : ICAR - KVK, Krishnagiri

DATE: 07.02.2023

No. of participants : 30 Nos.

Chairman of the SAC Meeting : Thiru. **S. Ramesh**, President, TNBRD, Chennai
 Member from ATARI - X : **Dr. A. Bhaskaran**,
 Principal Scientist, ATARI, Zone –X Hyderabad
 Member from TNAU : **Dr. P. P. Murugan**,
 The Director of Extension Education,
 Tamil Nadu Agricultural University,
 Coimbatore.
 Member Secretary : **Dr. T. Sundarraaj**,
 Senior Scientist and Head, ICAR- KVK, Krishnagiri

Members Participated:

S. No	Name and Designation	Department
1	Mr. S. Ramesh, President	Tamil Nadu Board of Rural Development, Chennai.
2	Dr. A. Bhaskaran, Principal Scientist	ATARI, Zone –X, Hyderabad.
3	Dr. P. P. Murugan, Director of Extension Education,	Tamil Nadu Agricultural University, Coimbatore.
4	Dr. P. Parasuraman, Professor and Head	Regional Research Station (TNAU), Paiyur.
5	Dr. L. Jeeva Jothi, Nodal Officer	Horticulture College and Research Institute, Jeenur.
6	Dr. C. Sivakumar, Professor (Agronomy)	Regional Research Station (TNAU), Paiyur.
7	Mr. Mohammed Aslam, Joint Director of Agriculture	Department of Agriculture and Farmers Welfare, Krishnagiri.
8	Mr. C. Pachiyappan, Deputy Director of Agriculture	Department of Agriculture and Farmers Welfare, Tirupathur.
9	Mr. S. Jeyaprakash, Cluster Office In-charge	NABARD, Salem.

S. No	Name and Designation	Department
10	Dr. L. Rajendran, Regional Joint Director of Animal Husbandry	Department of Animal Husbandry, Krishnagiri.
11	Mr. K. Senthil kumar, Assistant Director of Horticulture	Department of Horticulture, Krishnagiri.
12	Dr. C. Senthamil Pandian, Assistant Professor	College of Poultry Production Management, (TANUVAS), Mathigiri, Hosur.
13	Mr. R. Mahendran, LDM, Krishnagiri	Lead Bank Manager, Indian Bank, Krishnagiri.
14	Mr. P. Chinnasamy, Programme Head	All India Radio, Dharmapuri.
15	Dr. P. A. Enbavelan, Assistant Professor	Veterinary University Training and Research Centre (VUTRC), TANUVAS, Krishnagiri.
16	Mr. Kathrivel, Inspector of Fisheries	Department of Fisheries, Krishnagiri.
17	Mrs. V. Veeralakshmi, Assistant Inspector of Sericulture	Department of Sericulture, Bargur - TSC, Krishnagiri.
18	Mr. K. S. Somasekar, Forest Range Officer	Social Forestry and Extension Division, Bargur Block, Krishnagiri.
19	Mr. C. Panneerselvam, Agriculture Officer (FTC)	Department of Agriculture, Krishnagiri.
20	Dr. K. Jeevanandhan, Agricultural Officer/Plant Incharge	Department of Agricultural Marketing and Agri Business, Pochampalli PPC, Krishnagiri.
21	Mr. S. Prasanna Bala Murugan, General Manager	District Industries Centre, Krishnagiri.
22	Ms. Hemavarthini, Case Worker	District Social Welfare Office (DSWO), One Stop Centre (OSC), Krishnagiri.
23	Dr. S. K. Gopal, Professor (Rtd)	Gandhigram University, Dindugal District.
24	Mr. P. Narayana Reddy,	Farmer Representative, Alasapalli Village, Hosur Block, Krishnagiri District

S. No	Name and Designation	Department
25	Mr. K. Rajendiran,	Farmer Representative, Medungampalli, GN Palli Po, Bargur, Krishnagiri District.
26	Mrs. S. Ramya,	Farmer Representative, Periyakottapalli Vill & Po, Krishnagiri District.
27	Mrs. Akila Surendran,	Farmer Representative, Mittapalli Po, Uthangarai Block, Krishnagiri District.
28	Mrs. L. Gayathri, Entrepreneur,	Majith Golla Halli Village, Krishnagiri District
29	Mrs. M. Vijaya, Women Self Help Group	Kottaiyoor Village, Kammampalli Post, Krishnagiri District.
30	Dr. T. Sundarraj, Member Secretary, Senior Scientist and Head	ICAR - KVK, Krishnagiri.

The programme was started with invocation song. The meeting was presided over by Mr. S. Ramesh, President, TNBRD, Chennai. Dr. T. Sundarraj, Senior Scientist and Head of KVK and Member Secretary of SAC gave a welcome address and presented an overview of activities for the reporting period and the action taken report of the previous SAC meeting. The Members recommended the following points for the effective functioning of the Krishi Vigyan Kendra.

THE MAJOR RECOMMENDATIONS OF THE SAC MEETING ARE AS FOLLOW:

Mr. S. Ramesh, The President, TNBRD, Chennai	✓ Create awareness on line department schemes during KVK training programme.
Dr. A. Bhaskaran, Principal Scientist, ATARI, Zone –X, Hyderabad.	✓ Biofloc fish farming demonstration may be planned in KVK in due course of time. ✓ KVK Sales Point at centralized area in Krishnagiri may be planned to increase the RF. ✓ NEWSONAIR app should be popularized and advertize regular KVK activities and training details through AIR Dharmapuri.
Dr. P. P. Murugan, Director of Extension Education,	✓ Promote small farm machineries under Farm Mechanization.

TNAU, Coimbatore.	<ul style="list-style-type: none"> ✓ Promote TNAU crop boosters. ✓ KVK may create one stop sales center and create awareness about it.
Dr. L. Jeeva Jothi, Nodal Officer, Horticulture College and Research Institute, Jeenur.	<ul style="list-style-type: none"> ✓ Documentation of entrepreneurs developed by KVK may be done.
Dr. C. Sivakumar, Professor (Agronomy), Regional Research Station (TNAU), Paiyur.	<ul style="list-style-type: none"> ✓ Popularize horsegram wonder through FLD/Trainings. ✓ Create awareness on farm mechanization for ragi cultivation from seed drill, usage of power weeder, and combined harvester.
Mr. Mohammed Aslam, Joint Director of Agriculture, Department of Agriculture and Farmers Welfare, Krishnagiri.	<ul style="list-style-type: none"> ✓ Popularize new varieties in millets. ✓ New ragi variety suitable for krishnagiri district may be promoted.
Mr. C. Pachiyappan, Deputy Director of Agriculture, Department of Agriculture and Farmers Welfare, Tirupathur.	<ul style="list-style-type: none"> ✓ Popularize new varieties of paddy, horsegram, blackgram, barnyard millet (MDU 1), little millet (ATL 1) in Tirupathur District.
Mr. S. Jeyaprakash, Cluster Office In-charge, NABARD, Salem.	<ul style="list-style-type: none"> ✓ Project on Millets/Medicinal plant/Fisheries through FSPF (Farm Sector Promotion Fund) may be proposed.
Dr. L. Rajendran, Regional Joint Director of Animal Husbandry, Department of Animal Husbandry, Krishnagiri.	<ul style="list-style-type: none"> ✓ Make awareness on vaccination of Ranikhat diseases, Brucellosis diseases, LST (Lumpy Skin Disease), FMD (Foot and Mouth Disease). ✓ Awareness creation and training on Mixed fodder and Green fodder development may be done.
Mr. K. Senthil kumar, Assistant Director of Horticulture, Department of Horticulture, Krishnagiri.	<ul style="list-style-type: none"> ✓ Package of practices and nutrient management for the protected cultivation may be promoted.
Dr. C. Senthamil Pandian, Assistant Professor, College of Poultry Production Management, (TANUVAS), Mathigiri, Hosur.	<ul style="list-style-type: none"> ✓ KVK may create awareness about the paid training of CPPM on "Hatchery Supervisor and Quail Farming". ✓ Quail farming may be promoted.

<p>Mr. R. Mahendran, Lead Bank Manager, Indian Bank, Krishnagiri.</p>	<p>✓ LDM may be invited to the KVK training for credit and banking related promotions.</p>
<p>Mr. P. Chinnasamy, Programme Head, All India Radio, Dharmapuri.</p>	<p>✓ Promote government schemes on line department through AIR Dharmapuri. ✓ More programmes may be done by KVK in AIR.</p>
<p>Dr. P. A. Enbavelan, Assistant Professor, Veterinary University Training and Research Centre (VUTRC), TANUVAS, Krishnagiri.</p>	<p>✓ Awareness creation on Mastitis may be done.</p>
<p>Mr. Kathrivel, Inspector of Fisheries, Department of Fisheries, Krishnagiri</p>	<p>✓ Plan to establish fish farming demo unit in KVK.</p>
<p>Mrs. V. Veeralakshmi, Assistant Inspector of Sericulture, Department of Sericulture, Bargur - TSC, Krishnagiri.</p>	<p>✓ Create awareness on sericulture schemes to farmers</p>
<p>Mr. K. S. Somasekar, Forest Range Officer, Social Forestry and Extension Division, Bargur Block, Krishnagiri.</p>	<p>✓ Information may be given to the farmer on availability of Agro-forestry tree seedling (<i>Melia dubia</i>, Teak, Etc.,) at forest nursery for planting from month of June 2023.</p>
<p>Mr. C. Panneerselvam, Agriculture Officer (FTC), Department of Agriculture, Krishnagiri.</p>	<p>✓ Short duration redgram may be popularized.</p>
<p>Dr. K. Jeevanandhan, Agricultural Officer/Plant Incharge, Department of Agricultural Marketing and Agri Business, Pochampalli PPC, Krishnagiri.</p>	<p>✓ Export oriented farmers may be motivated in associations with Agri marketing department.</p>
<p>Mr. S. Prasanna Bala Murugan, General Manager, District Industries Centre, Krishnagiri.</p>	<p>✓ Make awareness on loan availability for value addition and millet processing.</p>
<p>Ms. Hemavarthini, Case Worker, District Social Welfare Office (DSWO), One Stop Centre (OSC), Krishnagiri.</p>	<p>✓ KVK may give training for transgender.</p>

<p>Dr. S. K. Gopal, Professor (Rtd), Gandhigram University, Dindugal District.</p>	<ul style="list-style-type: none"> ✓ Create awareness to school student on kitchen garden and nutrigarden. ✓ Establish sale center of KVK in a commercial place.
<p>Mr. P. Narayana Reddy, Farmer Representative, Alasapalli Village, Hosur Block, Krishnagiri District.</p>	<ul style="list-style-type: none"> ✓ Make awareness on Natural farming and/or Organic farming. ✓ Create platform for organic products marketing.
<p>Mrs. M. Vijaya, Women Self Help Group, Kottaiyoor Village, Kammampalli Post, Krishnagiri District.</p>	<ul style="list-style-type: none"> ✓ Provide training on green fodder production techniques.
<p>Mrs. L. Gayathri, Entrepreneur, Majith Golla Halli Village, Krishnagiri District</p>	<ul style="list-style-type: none"> ✓ Give training on millet processing machineries and exposure visit to ATHIYENTHAL.
<p>Mrs. Akila Surendran, Farmer Representative, Mittapalli Po, Uthangarai Block, Krishnagiri District.</p>	<ul style="list-style-type: none"> ✓ Market for organic products may be facilitated.
<p>Mr. K. Rajendiran, Farmer Representative, Medungampalli, GN Palli Po, Bargur, Krishnagiri District.</p>	<ul style="list-style-type: none"> ✓ Training on Traditional paddy varieties and Millets may be given under natural farming concepts.

2. DETAILS OF DISTRICT (2023)

2.0. Operational jurisdiction of KVK

District	New districts governed by the KVK after division of the district, if applicable	Taluks/Tehsils and/or Mandals under the KVK jurisdiction
Krishnagiri	NA	Krishnagiri

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

S. No	Farming system/enterprise
1	Agriculture + Horticulture + Animal husbandry
2	Horticulture + Animal husbandry
3	Horticulture
4	Agriculture + Animal husbandry
5	Agriculture + Horticulture
6	Animal husbandry
7	Sericulture

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

S. No	Agro-climatic Zone	Characteristics
1	North western zone	<ul style="list-style-type: none"> The North Western Zone comprising the revenue districts of Dharmapuri, Krishnagiri, Salem, Namakkal (excluding Tiruchengode taluk) and Perambalur taluk of Perambalur District is situated between 11 and 12°55' north latitude & 77° 28' and 78° 50' east longitude. It is completely land locked, covering an area of 16,150 Sq.km. equivalent to 12.4 % of the state area. Of the total geographic area of 17.31 lakh ha, 8.01 lakh ha (46.3%) are cultivated. The area under forest is 4.86 lakh ha. Representing 28.1 per cent of the area. Barren land and cultivable waste represent 5.8 per cent of the total area The climate in the zone ranges from semi-arid to sub-humid with frequent occurrence of drought The mean annual rainfall of the North Western Zone is 877.6 mm. The zone enjoys the rainfall from both South-West and North-East monsoon seasons. The contributions by winter, summer and South-West and North-East monsoon are 1.5, 17.5, 46.4 & 34.6 % respectively. The maximum temperature ranges from 20°C to 47°C and minimum from 10°C to 31°C; the evapotranspiration is very high. The driest months are January and February. The major soil types occurring in the zone are

S. No	Agro-climatic Zone	Characteristics
		<ol style="list-style-type: none"> 1) Red non-calcareous, 2) Red- calcareous 3) Alluvial 4) Black soil 5) Hill soil 6) Forest soil 7) Saline/alkali soil. <p>Of this major area comes under red non-calcareous and red calcareous soils. In the above major soil types, saline & alkali soil also occur in sizable proportion in the zone. Totally 1.7 lakh ha of area is affected by high salinity and alkalinity. Out of this 0.2 lakh ha is under Non-calcareous type and 1.5 lakh ha under calcareous type</p> <ul style="list-style-type: none"> • Paddy (1.29 lakh ha), sorghum (1.43 lakh ha), finger millet (1 lakh ha), little millet (0.45 lakh ha) horsegram, blackgram, redgram & greengram • Among the oilseeds, groundnut (2.11 lakh ha), sesame (0.21 lakh ha), sunflower (0.06 lakh ha) and castor (0.25 lakh ha) • Cotton (0.33 lakh ha), sugarcane (0.45 lakh ha) • The spices and condiments such as coriander, chillies, turmeric are being cultivated in small portions throughout the zone • Vegetables (0.24 lakh ha), tapioca (0.59 lakh ha), mango (39,680 ha). The other crops are: potato (0.25 lakh ha), banana (0.28 lakh ha) and onion (0.08 lakh ha).
2	AES – I (Krishnagiri, Veppanapalli, Bargur, Uthangarai and Mathur blocks)	Red soil, altitude 1000 – 2000 ft, well irrigated and rainfed
	AES – II (Kaveripattinam block)	Red soil, altitude 1000 – 2000 ft, canal irrigated
	AES – III (Hosur, Shoolagiri, Thally and Kelamangalam blocks)	Red soil, altitude 2000 – 3000 ft, well irrigated and rainfed

2.3. Soil types

S. No	Soil type	Characteristics	Area in ha
1	Sandy clay loam-Hosur series	Soil structure-Moderate coarse crumb, Soil depth-125 cm, Soil Erosion-Moderate, Soil colour-Dark brown to reddish brown, Non calcareous, CEC-low, Water holding capacity-High	1,11,317
2	Sandy clay loam-Kelamangalam series	Soil structure-Moderate coarse crumb Soil depth-125cm, Soil Erosion-Moderate, Soil colour-Brown to very dark grayish brown Non calcareous, CEC-low, Water holding capacity-low	10,863
3	Sandy loam-Sonnepuram series	Soil structure-Strong medium sub angular blocky Soil depth-128cm, Soil Erosion-Moderate Soil colour-Brown, Non calcareous, CEC-medium, Water holding capacity-low	8,342
4	Sandy loam-Mathigiri series	Soil structure-Moderate coarse crumb, Soil depth-191 cm, Soil erosion-moderate, Soil colour-Reddish brown to brown, Non calcareous, CEC-Low	7,834
5	Sandy loam-Krishnagiri series	Soil structure-Moderate medium sub angular blocky Soil depth-102 cm, Soil erosion-moderate Soil colour - Grayish brown, Calcareous, CEC-Medium, Water holding capacity-Medium	10,195
6	Sandy loam-Sulakkarai series	Soil structure-Weak medium sub angular blocky, Soil depth-32 cm, Soil Erosion-Slight, Soil colour-Dark brown to very dark grey Calcareous, CEC-Low, Water holding capacity-Low	2,833
7	Sandy loam-Thoppur series	Soil structure-Weak fine to medium crumb, Soil depth-180 cm, Soil Erosion-Moderate, Soil colour-Dark brown, Calcareous, CEC-Low, Water holding capacity-Medium	4,276
8	Loamy sand-Vannapatti series	Soil structure-Weak fine crumb, Soil depth-45 cm Soil erosion-Moderate, Soil colour-Yellowish red to red Non calcareous, CEC-Medium Water holding capacity-Low	1,39,329
9	Loamy sand-Salem series	Soil structure-Weak fine to medium crumb, Soil depth-80 cm, Soil Erosion-Moderate, Soil colour-Dark reddish brown, Non calcareous, CEC-Low Water holding capacity-Low	4,163
10	Silty clay loam-Harur series	Soil structure-Moderate medium sub angular blocky, Soil depth-98 cm, Soil Erosion-Slight, Soil colour-Dark brown to dark grayish brown Calcareous, CEC-Medium Water holding capacity-High	4,209
11	Forest and hills	Soil colour-Dark brown to very dark brown	2,06,278
12	Water bodies	Soil colour-Reddish brown to brown	934

2.4. Area, Production and Productivity of major crops cultivated in the district for 2023

Kharif:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	21,865	9,48,950	43.4
2	Sorghum	4,435	70,076	15.8
3	Finger millet	34,091	10,99,448	32.25
4	Little millet	321	3,406	10.6
5	Pearl millet	744	22,899	30.76
6	Maize	1,142	43,011	37.65
7	Red gram	10,799	1,12,312	10.4
8	Green gram	788	5,765	7.32
9	Black gram	2,231	21,130	9.47
10	Groundnut	13,178	3,27,329	24.84
11	Sesame	457.8	4,212	9.2
12	Cotton	1,793	12,105	6.75
13	Banana	709	3,53,397	498.62
14	Mango	42,380	3,23,359	7.63
15	Chillies	651	3,040	4.67
16	Brinjal	2,639	4,69,680	178
17	Tomato	11,668	23,16,019	198.5
18	Cabbage	15,087	91,83,731	608.7
19	Sugarcane	478	3,09,104	647
20	Turmeric	1,784	43,885	24.6

Rabi:

S. No	Crop	Area (ha)	Production (Qtl)	Productivity (Qtl /ha)
1	Paddy	10,142	4,74,948	44.6
2	Finger millet	4,734	2,43,389	48.96
3	Maize	110.25	5,047	43.6
4	Horse gram	17,454	1,75,938	9.6
5	Green gram	82	671	7.8
6	Black gram	745	7,309	9.35
7	Groundnut	913	25,361	26.44
8	Banana	472	2,47,566	499
9	Chillies	131	661	4.8
10	Brinjal	661	1,27,107	183
11	Tomato	3,334	7,03,588	201
12	Cabbage	246	1,57,007	606

2.5. Weather data

Month	Rainfall (mm)	Temperature ° C		Relative Humidity (%)
		Maximum	Minimum	
January 2023	0	29.50	24.00	68.00
February 2023	0	33.12	27.86	42.15
March 2023	60.4	34.12	28.78	50.55
April 2023	18.6	37.00	21.00	65.00
May 2023	210	37.50	25.24	64.51
June 2023	158.8	35.00	28.00	63.24
July 2023	37.6	32.26	26.73	69.15
August 2023	64.4	32.15	27.38	72.46
September 2023	165.4	25.00	23.40	67.20
October 2023	87.6	34.00	22.00	72.30
November 2023	140	30.50	19.40	70.50
December 2023	4.8	27.40	23.85	72.10

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2023)

Category	Population	Production	Productivity
Cattle			
Crossbred	262829	225.168 tons	1600 lit/annum
Indigenous	100434	123.377 tons	600 lit/annum
Buffalo	18051	120.157 tons	1200 lit/annum
Sheep			
Crossbred	29993	371.952 tons	20 kg b.wt
Indigenous	341887	456.258 tons	14 kg b.wt
Goats	154809	220.122 tons	14 kg b.wt
Pigs	4064	580.167 tons	60 – 70 kg b.wt
Crossbred	-	-	-
Indigenous	-	-	-
Rabbits	-	-	-
Poultry			
Hens	309034	-	-
Desi	2181895	458.39 lakh eggs	160 – 180 eggs
Improved	58769	863.90 lakh eggs	300 – 310 eggs
Ducks	190	28891.5 eggs	215 eggs
Turkey and others	768 & 3970	42084 & 133859 eggs	80 eggs & 45 eggs

2.7. Details of Adopted Villages (2023)

S. No.	Taluk/ Mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Krishnagiri	Krishnagiri	Kammampalli, Velalahalli, Pasipatti	2020	Cluster Beans, Coriander, Groundnut, Dairy Cattle, Herbal	Low yield due to improper crop management, Indiscriminate use of chemical dewormer for small ruminants, Poor shelf life, utilization and raw sales	ICM, IDM
2	Krishnagiri	Kaveripattinam	Kaveripattinam, Arasmapatti, Bannihalli	2022	Horsegram, Blackgram, Paddy, Finger Millet, Cowpea, Coconut, Agricultural Drone, Jasmine, Dairy cows	Low yield due to repeated cultivation of private varieties Amman, Super Amman, Improper nutrient management, Low yield due to improper crop management, Most of the farmers cultivating old variety CO (CP) 7 gives low yield, Indiscriminate application of bio-fertilizers / pesticides, Low yield due to pest and disease incidence, Ketosis is a common metabolic disorder left undiagnosed in subclinical form	ICM, INM, IPDM
3	Krishnagiri	Bargur	Bargur, Puliampatti, Ikuntham	2020	Jasmine, Mango, Horsegram, Little millet, Coconut	Low yield due to improper crop management, Improper nutrient management, Yield loss due to incidence of pest and diseases, Poor grain yield due to their repeated cultivation of old traditional varieties,	ICM, INM, IPDM
4	Krishnagiri	Mathur	Mathur, Valipatti, Soolakarai	2020	Groundnut, Cotton, Turmeric	Less yield due to repeated cultivation of Old varieties like Dharani, VRI 6, Improper crop management, Improper nutrient management, Yield loss due to disease incidence	ICM, INM, IDM

DFI villages							
1	Krishnagiri	Krishnagiri	Maharajakadai, Periyakottapalli	2017	Tomato, Banana, Groundnut - Wildboar	Low yield due to pest incidence, Low yield due to improper crop management, Wildboar infestation	ICM, IPM, Wild Menace
2	Krishnagiri	Bargur	Guttur, Bellavarthi	2021	Banana, Dairy cows	Low yield due to improper nutrient management, less aware of control measures for ectoparasitic infestation causing loss of body condition	INM

2.8. Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Ragi, Horsegram, Tapioca, Onion, French Beans, Mango	Integrated crop management
Chickpea	Varietal evaluation
Maize, Paddy, Mango, Groundnut, Tomato	Integrated pest and disease management
Turmeric, Tomato, Cotton, Maize	Integrated Nutrient Management
Aseel Chick	Poultry Management, Nutrition Management
Sheep	Sheep Management
Fodder	Feeding management
Dairy Cow	Disease Management
Groundnut, Cotton, Multi Seed Drill	Drudgery reduction, Farm mechanization
Paddy, Banana	Information Communication Technology
Nutrigarden	Value addition

3. Salient Achievements

Achievements of Mandated activities (1st January 2023 to 31st December 2023)

S. No	Activity	Target	Achievement
1	Technologies Assessed and refined (No.)	26	26
2	On-farm trials conducted (No.)	13	13
3	Frontline demonstrations conducted (No.)	27	27
4	Farmers trained (in Lakh)	0.01358	0.01358
5	Extension Personnel trained (No.)	283	283
6	Participants in extension activities (in Lakh)	3.80672	3.80672
7	Production and distribution of Seed (in Quintal)	78.907	78.907
8	Planting material produced and distributed (in Lakh)	11.30655	11.30655
9	Live-stock strains and finger lings produced and distributed (in Lakh)	0.00943	0.00943
10	Soil samples tested by Mini Soil Testing Kit (No)	272	272
11	Soil samples tested by Traditional Laboratory (No)	0	0
12	Water, plant, manure, and other samples tested (No.)	0	0
13	Mobile agro-advisory provided to farmers (No.)	323496	323496
14	No. of Soil Health Cards issued by Mini Soil Testing Kits (No.)	272	272
15	No. of Soil Health Cards issued by Traditional Laboratory (No.)	0	0

Salient Achievements by KVK during January – December 2023:

- To increase the quality and productivity of the mango by 30 - 40 %, foliar nutrition has been promoted by KVK. Total quantity of 480 kg of IIHR Mango special (Micronutrient formulation) produced and distributed to farmers. During the reporting period alone, it has got spread over an area of 118 ha in the district.
- To reduce the Mango fruit fly incidence, KVK produced 2,062 Mango fruit fly traps and distributed to farmers. During the reporting period alone, it has got spread over an area of 137 ha in the district.
- Quality fodder seeds like Hedge Lucerne, Subabul, COFS 31, Fodder Cowpea, Stylo etc., (8.637 qtl.) were supplied to the farmers and the varieties have spread over an area of 3,500 ha in the district.
- A Total of 11,30,655 Seedlings (Fruits, Coconut, forest trees and vegetables) produced and supplied to the farmers and other agencies

4. TECHNICAL ACHIEVEMENTS

Details of target and achievements of mandatory activities by KVK during 2023

OFT (Technology Assessment)

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials / Replications / Beneficiaries	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
13	13	26	26	13	13	75	75

FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
27	27	58.9	58.9	283	283

No of CFLD		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
2	2	70	70	175	175

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

Clientele	Number of Courses		Number of Participants	
	Targets	Achievement	Targets	Achievement
Farmers and Farm Women	62	62	1233	1233
Rural youth	3	3	61	61
Extn. Functionaries	9	9	283	283
Vocational Training	3	3	64	64
Sponsored Training	5	5	148	148

Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
534	534	380672	380672

Seed Production (q)

Target	Achievement	Distributed to no. of farmers
78.907	78.907	850

Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
1130655	1130655	2040

Technology Assessments (OFTs) in Detail

OFT-1: Assessment of Redgram varieties (CO 8 and WRGE 93) for higher productivity

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of Redgram varieties (CO 8 and WRGE 93) for higher productivity
3. **Scientists involved** : SMS (Agronomy)
4. **Details of farming situation** :

Redgram is the most important pulse crop in India. India ranks sixth in Redgram production. In Tamil Nadu, redgram was cultivated around 6.06 lakh hectares area with an average productivity of 798 kg per hectare. In Krishnagiri district redgram was cultivated more area 14000 ha in Kharif season as rainfed with an average production of 13.85 kg per hectare. Despite the fact that the area under Redgram cultivation in the various blocks of Krishnagiri district was more widely distributed, it contributed less to the overall production since the farmers were not aware of new high-yielding varieties and modern package of practices. Red sandy loam was the predominant soil type in Samalpatti village at Mathur block. Redgram cultivation is ideally suited to this sort of soil. This research contributes to find out the effective cropping techniques through better variety selection.

5. **Problem definition / description** :

Redgram is cultivated in an area of 14000 ha in the district as rainfed based condition. usually, farmers growing LRG 41 variety which is highly susceptible to fusarium wilt and sterility mosaic disease by mites and pod borers like *Helicoverpa* sp. It leads to a low yield (7.98 q/ha). Due to uneven distribution of rainfall during monsoon period, existing old varieties are not able to withstand drought conditions. And also farmers have not been followed modern cultivation practices. They are struggled to adopt modern package of practices, and some improved new high yielding varieties. These are the significant reasons for getting low yield in redgram crop during kharif season in this zone.

6. **Technology Assessed** :

Technology Option 1	Cultivation of Redgram variety – CO 8
Technology Option 2	Cultivation of Redgram variety - Telangana kandi-1 (WRGE-93)
Farmers practice	Cultivation of Local variety LRG 41

7. **Critical inputs given** :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
CO 8 Seeds	2 kg	234	10 kg	1,170
WRGE 93 Seeds	1.8 kg	190	9 kg	950
Field board	1 no.	200	5 no.	1,000
TOTAL				3,120

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio	Other performance indicators – 100 Kernels Weight (g)
Farmers Practice	5	10.35	23,430	1.60	10.25
Technology 1 Cultivation of Redgram variety – CO 8		13.47	44,792	2.24	10.75
Technology 2 Cultivation of Redgram variety - Telangana kandi-1 (WRGE-93)		12.46	36,214	1.93	10.40

9. Constraints : NIL

10. Feedback of the farmers involved :

CO 8 variety has recorded a higher pod yield than WRGE 93 and LRG 41. It was also found to be moderately resistant to wilt and sterility mosaic disease. The pod yield of CO 8 variety gives good taste than WRGE 93.

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

WRGE 93 variety showed a unsynchronized flowering and maturity than CO 8 and LRG 41.

OFT-2: Assessment of dual-purpose Sorghum varieties (CO 32 and CSV 31) for higher productivity

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of dual-purpose Sorghum varieties for higher productivity
3. **Scientists involved** : SMS (Agronomy)
4. **Details of farming situation** :

Sorghum is the most important pulse crop in India. At global level, India ranks fifth in position of sorghum production. In Tamil Nadu, sorghum was cultivated around 2.44 lakh hectares area with an average productivity of 1174 kg ha⁻¹. In Krishnagiri district sorghum was cultivated around 2500 ha in Kharif and 1500 ha in rabi season with an average production of 1100 kgs ha⁻¹. Despite the fact that the area under sorghum cultivation in the various blocks of Krishnagiri district was sparsely distributed, it contributed less to the overall production since the farmers were not aware of new high-yielding varieties and modern package of practices. Red sandy loam was the predominant soil type in Thamodharahalli village at Kaveripattinam block. This research contributes to find out the better variety suited to this zone.

5. Problem definition / description :

Sorghum is cultivated in an area of 4000 ha in both season at Krishnagiri district. Usually, farmers growing Sencholam variety which is highly susceptible to pest and diseases gives low yield (11.00

q/ha). Also, farmers have not been followed to cultivate new varieties with modern package of practices. These are the main reasons for getting low yield in sorghum crop during both season in this zone.

6. Technology Assessed :

Technology Option 1	Cultivation of dual purpose sorghum variety CO 32
Technology Option 2	Cultivation of dual purpose sorghum variety CSV 31
Farmers practice	Cultivation of old variety sencholam

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
CO 32 Seeds	2 kg	120	10 kg	600
CSV 31 Seeds	2 kg	300	10 kg	1,500
Field board	1 no.	200	5 no.	1,000
TOTAL				3,100

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Fodder yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio
Farmers Practice	5	17.35	60.74	23,164.25	1.44
Technology 1 Cultivation of dual purpose sorghum variety CO 32		23.16	93.12	57,133.45	2.14
Technology 2 Cultivation of dual purpose sorghum variety CSV 31		22.46	90.30	53,785.71	2.06

9. Constraints : NIL

10. Feedback of the farmers involved :

From the OFT results of five locations, a promising information found out in CO 32 variety which was matured over 110 days, got an average grain yield of 2316 kg ha⁻¹, fodder yield of 9312 kg ha⁻¹ with yield increase of 33.52 % over farmers practice sencholam variety, followed by CSV 31 variety recorded an average yield of 2246.4 kg ha⁻¹ and fodder yield of 9030.520 Kg ha⁻¹ with yield increase of 29.47 % than farmers practice sencholam variety.

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

CO 32 variety showed a synchronized flowering and maturity gives good grain and fodder yield.

OFT-3: Assessment of high yielding hybrids resistant to leaf curl virus, leaf blight and wilt in Tomato

1. **Thematic area** : Varietal evaluation
2. **Title** : Assessment of high yielding hybrids resistant to leaf curl virus, leaf blight and wilt in Tomato
3. **Scientists involved** : SMS (Horticulture), SMS (Soil Science)
4. **Details of farming situation** :

Tomato is one of the important vegetable crop cultivated in Krishnagiri district in an area of 2500 ha. In this district Tomato is cultivated in all blocks with more area in Shoolagiri and Hosur block under irrigated condition. In some areas Mostly private hybrids are grown by the farmers. It is grown in red loamy soil under garden lands condition. It can be grown in diverse tropical conditions from sea level to 1500 mm above MSL within a temperature range of 20 to 30 degree Celsius.

The OFT was conducted in Keelpoonkuruthi village of Burgur block cluster during 2022-23. Seeds were sown in Protrays during November 2022 in a community nursery and the farmers were given training on portrays nursery production techniques. Transplanting was done during the first week of December. The soil is sandy loam with high content of gravel. Soil is medium in Phosphorous and Potassium where as low in Nitrogen.

5. **Problem definition / description** :

Private hybrids of Tomato is mostly preferred by the farmers. The problem with the private hybrids is that it is susceptible to array of pest and diseases. Farmers use heavy dose of pesticides mostly mixing 3 to 4 pesticides together once in a week. This leads to resurgence of sucking pests especially thrips and whiteflies to an uncontrollable level. Almost all private hybrids are susceptible to Viral diseases especially leaf curl virus, leaf blight and wilt. There is a yield loss of even upto 80 % Hence this trial was conducted to assess the performance of Arka Abhed against major diseases of leaf curl virus, leaf blight and wilt.

6. **Technology Assessed** :

Technology Option 1	Cultivation of Arka Abhed
Farmers practice	Sahoo (Private hybrid)

7. **Critical inputs given** :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Arka Abhed Seedlings	20 g	713	30000	3,565
Field Board	1 No	200	5	1,000
TOTAL				4,565

9. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio
Farmers Practice	5	640.03	97,883	1.44
Technology 1 Cultivation of Arka Abhed		766.12	1,42,192	1.53

Data on Other performance indicators

Technology Option	% Fruit damage Tuta	% LCV	Early blight	%TOSPO Virus	wt/fruit	Number of frt/plt
Farmers Practice	32.44	0.6692	16.72	0.3386	56.36	56.28
Technology 1 Cultivation of Arka Abhed	22.96	0.4485	12.604	0.2308	61.8	60.96

The OFT results showed that the yield obtained in Arka Abhed was found to be higher (76.61 t/ha) than the yield of the local check (Private Hybrid-64 t/ha). This was found to be 20 % more than the Private Hybrid. The average fruit per plant was found to be more in Arka Abhed (60.8) than the Private Hybrid (56.4). The farmers received a net return of Rs 1,42,192 per hectare in Arka Abhed while it was Rs 97,883 in check. The B:C ratio obtained was more in Arka Abhed (1.53) compared to local check (1.44).

10. Constraints : NIL

11. Feedback of the farmers involved :

Arka Abhed Tomato gave higher yield than the private hybrid since the major diseases of leaf curl virus, leaf blight and wilt was less. Because of the green shoulder the market preference was more for Arka Abhed.

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

Arka Abhed Tomato gave 20 % higher yield than the private hybrid. The major diseases of leaf curl virus, leaf blight and wilt was less than in Private hybrid. BC ratio was 1.53 compared to 1.44 in farmer's practice.

OFT-4: Assessment on Efficiency of Bio-consortia (CSR Grow sure) in enhancing the yield in Tomato

1. **Thematic area** : Nutrient Management
2. **Title** : Assessment on Efficiency of Bio-consortia (CSR Grow sure) in enhancing the yield in Tomato
3. **Scientists involved** : SMS (Soil Science), SMS (Horticulture)
4. **Details of farming situation** : Irrigated, Soil type - Red sandy loam.

5. Problem definition / description :

Injudicious usage of chemical fertilizers with improper nutrient management leads to poor soil health which may result in yield loss up to 20 – 25 % in tomato. Even though the availability of the soil nutrients is greatly influenced by many factors, they can be made available by the microbial consortia that can solubilize them in the soil. CSR Grow sure and the Arka Microbial consortia have the capacity to improve the soil health to supply the essential nutrients required for the crop growth. To assess the efficiency on the performance of the microbial consortia this OFT is conducted.

6. Technology Assessed :

Technology Option 1	Soil drenching of CSR Grow sure @ 1 % liquid formulation (1 L in 100 L of water + 200 g of jaggery, incubated for 24 – 48 hrs and applied at 10, 30 & 50 days after planting).
Technology Option 1	Soil drenching of Arka Microbial Consortia @ 20 g/ lit - Applied near to the root zone on 10 DAT + 12.5 kg/ha mixed with 500 kg of FYM and applied near the root zone of standing crop.
Farmers practice	No microbial supplementation

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
CSR Grow Sure	1 lit.	500	5 lit	2,500
Arka Microbial Consortia	3 kg	440	15 kg	2,200
Field board	1 no.	200	5 nos	1,000
TOTAL				5,700

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio	Data on Other performance indicators* Average No. of fruits / plant (g)
Farmers Practice	5	580.0	2,54,360	2.68	33.7
Technology 1 CSR Grow sure		690.0	3,33,560	3.23	40.8
Technology 2 Arka Microbial Consortia		667.5	3,20,110	3.18	38.2

9. Constraints : NIL

10. Feedback of the farmers involved :

The use of microbial consortia increased the yield of the crop besides the reduction in cost of cultivation.

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

The yield increase over the farmers practice was 18.9 per cent in the technology using the CSR Grow sure and 15.1 per cent in the fields that received the Arka microbial consortia.

OFT-5: Assessment on Performance of different microbial consortia in Paddy

1. **Thematic area** : Nutrient Management
2. **Title** : Assessment on Performance of different microbial consortia in Paddy
3. **Scientists involved** : SMS (Soil Science), SMS (Agronomy)
4. **Details of farming situation** : Irrigated, Soil type - Sandy loam
5. **Problem definition / description** :

Injudicious usage of chemical fertilizers with improper nutrient management leads to poor soil health which may result in yield loss up to 20 – 25 % in paddy. The farmers use chemical fertilizers for the nutrient supplementation and most of the time they injudiciously use them which may lead to the soil deterioration. Using the biological consortia for the nutrient mobilisation in soil is economic and eco-friendly too. Hence different microbial consortia namely Pusa sampoorn and Biofort IARI and the TNAU Liquid biofertilizers were assessed to know the performance of their efficiency in influencing the yield of paddy.

6. **Technology Assessed** :

Technology Option 1	RDF + Application of PUSA SAMPOORN (<i>Azotobacter chroococcum</i> , <i>Pseudomonas psychrophila</i> and <i>Bacillus decolorationis</i>) Seed treatment (250 mL in 2.5litre /ha of seeds); root dip (1250ml /6.25 L with water /ha) and Biofort IARI (<i>Providencia sp.</i> + <i>B. diminuta</i> + <i>Ochrobactrum anthropi</i>) - Seed coating/soil application /seedling dip – 1,250 g/ha
Technology Option 1	RDF + TNAU Liquid biofertilizers (N– <i>Azospirillum lipoferum</i> (Az204), P – <i>Bacillus megaterium</i> (Pb1), K- <i>Bacillus mucilaginosus</i> (KRB9), Zn - <i>Pseudomonas chlororaphis</i> (ZSP15), Drought mitigation – <i>Methylobacterium aminovorans</i> (Tm13) Seed treatment-125 ml/ha, Seedling dip- 125 ml/ha, Soil application - 500 ml/ha, Foliar spray - 500 ml/ha
Farmers practice	No biofertilizers supplementation

7. **Critical inputs given** :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
PUSA SAMPOORN	200 ml	300	1 lit.	1,500
Biofort IARI	300 g	-	1.5 kg	-
TNAU Liquid biofertilizers	800 ml	280	4 lit.	1,400
Field board		200	5	1,000
TOTAL				3,900

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio	Data on Other performance indicators* Average No. of productive tillers / plant
Farmers Practice	5	5.38	42,853	1.55	32.8
Technology 1 PUSA SAMPOORN and Biofort IARI		6.43	80,893	1.97	35.3
Technology 2 TNAU Liquid biofertilizers		6.20	71,885	1.83	34.6

9. Constraints : NIL

10. Feedback of the farmers involved :

The use of biological consortia increased the yield and reduced the cost of cultivation in an eco-friendly way.

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

The yield increase over the farmers practice was 19.7 per cent in the Pusa sampoorn and Biofort IARI received fields and 15.4 per cent in the TNAU liquid biofertilizers received fields in paddy.

OFT-6: Assessment of ICM Practices in Tuberose

- 1. Thematic area :** Integrated Crop Management
- 2. Title :** Assessment of ICM Practices in Tuberose
- 3. Scientists involved :** SMS (Horticulture), SMS (Soil Science)
- 4. Details of farming situation :**

Tuberose (*Polianthes tuberosa* L.) is one of the most important tropical ornamental bulbous flowering plants cultivated in Krishnagiri district in an area of 750 ha for the production of long-lasting flowers. Tuberose is best suited for cultivation in tropical to subtropical areas of Krishnagiri district with average temperature ranging from 20° to 30°C. The crop flowers profusely throughout the year. It is grown on wide variety of soils ranging from light, sandy loam to a clay loam. The hybrid, Prajwal released by IIHR, Bangalore is widely cultivated in Krishnagiri district. The flower buds are slightly pinkish, while the flowers are white. The individual florets are large in size, compared to 'Local Single'. It yields twenty per cent more loose flowers than "Local Single".

5. Problem definition / description :

It is sensitive to water stagnation and cannot tolerate water logging even for a short period. If the temperature is above 40°C, the length of the spike and quality of the flowers are severely affected. Shady or semi-shady situation which drastically reduces the flower yield. Humidity and temperature are the two main factors responsible for increasing or decreasing the production of tuberose. Tuberose although

not strictly photosensitive, long-day exposure promotes vegetative growth as well as early emergence of the first flower spike and also increases flower spike length.

In tuberose cultivation pest and diseases like mealy bug, nematode and rhizome rots are seen and in general low yield due to improper management. There is no awareness on the influence of biotic factors affecting growth and on the use of growth regulators and micro nutrients. Hence OFT was conducted in K.Papparapatti village of Mathur block cluster during 2022-23 to assess the ICM practices in Tuberos.

6. Technology Assessed :

Technology Option 1	<p>Spraying of growth regulators and micronutrients as recommended by TNAU</p> <ul style="list-style-type: none"> ➤ Dipping of Corm in 5000 ppm CCC (5 g/lit) before planting to increase the yield ➤ Micronutrient: Foliar spray of ZnSO₄ 0.5% +FeSo₄ 0.2% + Boric Acid 0.1% <p>Growth regulators: Foliar application of GA3 at 50 to 100 ppm thrice at 40,55 & 60 DAP</p>
Technology Option 2	<p>Spraying of growth regulators and micronutrients as recommended by IIHR</p> <ul style="list-style-type: none"> ➤ Neem cake 200 kg + 1 kg of Trichoderma harzianum ➤ Bulb treatment with carbendazim ➤ Fertilizer application FYM 25 ton, 130 kg Urea, 85 kg DAP, 100 kg MOP per ha <p>Micronutrient: Foliar spray of ZnSO₄ 0.5% +FeSo₄ 0.2% + Boric Acid 0.1%</p>
Farmers practice	Indiscriminate use of Fertilizers and growth regulators

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Growth promoters (GA)	1.5 lit	860	7.5 lit	6,450
Micronutrient	250g	2600	1.250 kg	3,250
Bio-control agent (T.viridii)	1 kg	168	5kg	840
Field Board	1 No	200	5 Nos	1,000
TOTAL				11,540

9. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio
Farmers Practice	5	116.540	2,55,769	1.54
Technology 1 Spraying of growth regulators and micronutrients as recommended by TNAU		145.612	3,65,799	1.62
Technology 2 Spraying of growth regulators and micronutrients as recommended by IIHR		137.214	3,29,232	1.59

Data on Other performance indicators

Technology Option	Length of the spike(cm)	No. of Florets n/spike	No. of spikes/Plant	No. of Tillers/Plant	Rot %
Farmers Practice	87.4	21.1	2.90	3.12	5
Technology 1	91.97	23.75	3.53	3.78	2.68
Technology 2	91.54	23.09	3.23	3.39	3.6

Highest individual yield among all three treatments was obtained in TO1 (150.25 q/ha) Average yield was highest in TO1(145.612 q/ha) followed by TO2 (137.214 q/ha) and Farmer's practice (137.214q/ha). Lowest individual yield was seen in Private hybrid (98.3q/ha). Length of Spike was more in TO1(91.97 cm) followed TO2 (91.54 cm) and Farmer's practice (87.4 cm). No of florets per spike was highest in TO1 (23.75 nos.) followed by TO2 (23.09nos.) and Farmer's practice (21.1 nos.). Incidence of Rot was lowest in TO1(2.68%) followed TO2 (3.6 %) and Farmer's practice (5%)

10. Constraints : NIL

11. Feedback of the farmers involved :

The treatment recommended by TNAU gave higher yield than the local practice due to improvement in all growth parameters of plant. The flowers are preferred in market

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

The treatment recommended by TNAU gave higher yield (1.62 q/ha) than the local practice (1.54 q/ha) due to improvement in all growth parameters of plant.

OFT-7: Assessment of technology modules against mango fruit borer *Citripestis eutrapphera* (Meyrick) (Pyralidae: Lepidoptera)

1. **Thematic area** : Integrated Pest Management
2. **Title** : Assessment of technology modules against mango fruit borer *Citripestis eutrapphera* (Meyrick) (Pyralidae: Lepidoptera)
3. **Scientists involved** : Senior Scientist and Head
4. **Details of farming situation** :

Mango considered as ‘King of fruits’, is the most important commercially grown fruit of India due to its wide range of adaptability, high nutritive value, richness in variety, delicious taste and excellent flavour. It is a rich source of vitamin A and C. The fruit, utilized raw or ripe, is well-liked by the people and has great export potential. Mango is well adapted to tropical and sub-tropical climates. It may not be desirable to grow mango commercially in areas above 600 m above MSL in subtropics Mango thrives well in places with annual rainfall in the range of 75 to 375 cm. It can also do well in areas having average annual rainfall of as low as 25 cm with irrigation during peak requirement of plant establishment and fruit development. Heavy rainfall prior to flowering induces excessive vegetative growth at the expense of flowering. Frequent rains and high humidity (about 80%) during flowering and fruit set are conducive to the incidence of pests and diseases and impair pollination and fruit set. In general, places with well distributed rainfall and dry summer are ideal for mango cultivation. Light rains during fruit development are good but heavy rains and hail cause damage to the fruits. It is better to avoid areas with heavy winds and cyclones, which may cause flower and fruit shedding and also breaking of branches.

Mango comes up well on a wide range of soils which are deep (minimum 6 feet) and well drained except clay, extremely sandy, rocky, calcareous, alkaline and water logged soils. Mango prefers slightly acidic soils though it can tolerate pH range of 5.5 to 7.5 and can also tolerate salinity up to 4.5 dSm-1. Slightly acidic to neutral, well drained and aerated loamy or alluvial deep soils rich in organic matter are ideal for mango cultivation.

5. **Problem definition / description** :

Citripestis eutrapphera has been recorded damaging mango fruits in Krishnagiri district. The larvae have been found boring and feeding on immature mango fruits causing extensive fruit damage. The infested fruits have bored holes and the fruit often blackened around the bored area. Several infested fruits also exhibited split. The young larvae were found scraping the fruit skin causing characteristic scab like patch and the later stage larvae found boring in to the fruit. Even the adjacent fruits also found bored indicating single larva can damage several fruits. Hence this oft is proposed.

6. **Technology Assessed** :

Technology Option 1	<ul style="list-style-type: none"> ➤ First spray of an insecticide, spinetoram (1.25 ml) or deltamethrin (1 mL L-1), followed by ➤ Second spray with IHR Neem Soap @ 10 g L-1 or Azadirachtin 1% (3 mL L-1) after two weeks. ➤ Spraying should commence when fruits are lemon size.
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Technology Option 2	<ul style="list-style-type: none"> ➤ Removal of dead wood from the trees ➤ Removal and destruction of damaged and MFB infested fruits especially at pea and marble stages of the fruit ➤ In Second fortnight of January spray of Neem oil 3ml + chloripyriphos 1 ml per litre of water at marble stage of the fruit. ➤ Spraying of NSKE 5 % at 10 days interval during the months of April and May up to 15 days before harvest
Farmers practice	Spraying of combination of insecticides during flowering to harvest

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Spinetoram-	100ml	1520	500 ml	7,600.00
IIHR Neem soap	1 kg	280	5 kg	1,400.00
Neem oil	1 lit	700	5 lit	3,500.00
Field board	1 no.	200	5 no.	1,000.00
Total				13,500.00

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio	Other performance indicators –Pest incidences
Farmers Practice	5	47.80	33,360	1.87	10.4
Technology 1		52.85	49,975	2.71	2.4
Technology 2		51.60	48,060	2.64	4.8

9. Constraints : NIL

10. Feedback of the farmers involved :

First spray of an insecticide like spinetoram (1.25 ml) followed by Second spray with IIHR Neem Soap @ 10 g L-1 after two weeks effectively manage the pest and Spraying commence when fruits are lemon size was very effective for the management of the pest.

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

Further research is needed for organically management of the pest.

OFT-8: Assessment of Technology modules against Redgram sterility Mosaic virus

1. **Thematic area** : Integrated Pest Management
2. **Title** : Assessment of Technology modules against Redgram sterility Mosaic virus
3. **Scientists involved** : Senior Scientist and Head
4. **Details of farming situation** :

Red gram is an important pulse crop in India. It is also known as Pigeonpea, Arhar and Tur. Red gram is mainly cultivated and consumed in developing countries of the world. This crop is widely grown in India. India is the largest producer and consumer of Redgram in the world. This crop is highly suitable crop for rainfed agriculture and needs minimum inputs and produces reasonable yields even under unfavorable agro-ecological conditions. Its seeds contain about 20-22% protein and reasonable amounts of essential amino acids. Its rainfed ecosystem, high protein content and multiple uses make it an ideal crop all smallholder farmers.

5. **Problem definition / description** :

Production of pigeon pea in the Indian sub-continent and other countries in Asia is severely affected by sterility mosaic disease (SMD). SMD affected plants show mosaic symptoms on leaves and cease flowering rendering the plant sterile, Sterility mosaic disease (SMD), considered as the “green plague of pigeonpea” caused by pigeonpea sterility mosaic virus (PPSMV) and the virus is transmitted by the vector eriophyid mite, *Aceria cajani* is one of the major biotic factor, which leads to heavy yield losses and hence pose a big challenge for pigeonpea production in the Indian subcontinent. This disease was first reported from Pusa, Bihar state (Mitra, 1931). More than 90 per cent of the crop would be lost if it occurs at the early stage of the crop growth. Control of the disease by chemical method is effective in reducing the mite population. The present study has been undertaken with the objective of evaluation Technology modules of against sterility mosaic virus through management of vectors.

6. **Technology Assessed** :

Technology Option 1	<ul style="list-style-type: none"> ➤ Rogue out the virus infected plants in the early stages of growth ➤ Spray Fenazaquin@1 ml/L soon after appearance of the disease and if necessary, repeat after 15 days
Technology Option 2	<ul style="list-style-type: none"> ➤ Fenpyroximate 5% E. C. @1 ml/litre at 25 and 40 days after sowing
Farmers practice	<ul style="list-style-type: none"> ➤ Application of combination of insecticides

7. **Critical inputs given** :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Fenpyroximate 5% E. C.	250 ml	390	1.25 lits	1950
Fenazaquin 10% EC	250 ml	613	1.25 lits	3065
Field board	1 no.	200	5	1000
Total				7,380.00

8. Results :

Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs. /ha)	B:C ratio	Other performance indicators – Disease incidences
Farmers Practice	5	9.02	26,840	1.98	60.4
Technology 1		10.8	38,280	2.44	18
Technology 2		10.22	34,400	2.28	24.4

9. Constraints : NIL

10. Feedback of the farmers involved :

Spraying of Acaricides like Fenazaquin and Fenpyroximate at early stages and appearance of the disease effectively controls the disease.

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

Further research is needed on biological control of mites.

OFT-9: Assessment of AFDT salt in mineralized salt lick to improve growth performance in small ruminants

- 1. Thematic area :** Livestock Nutrition Management
- 2. Title :** Assessment of AFDT salt in mineralized salt lick to improve growth performance in small ruminants
- 3. Scientists involved :** SMS (Animal Science)
- 4. Details of farming situation :** Semi Intensive system

The On farm Trial was conducted at Thinoor Village of Bargur block in Krishnagiri District. Five farmers were selected and assessed for AFTD Mineralised Salt lick to small ruminants for improved growth performance.

5. Problem definition / description :

Sheep and goat rearing is more intensive in Tamilnadu. In Krishnagiri district majority of the animals are reared under Semi intensive system and are not supplemented with concentrate feed. Mineral deficiency is common which causes decreased growth rate in small ruminants. Also, there was lack of knowledge on Mineral deficiency among sheep and goat rearers. Commercial mineral mixtures comprising the essential minerals are available only for large ruminants like cattle and buffalo. Although, small ruminants have specific mineral requirements which are quite different from the large ruminants, are commercially not available to farmers.

The new technology AFTD (Aerated Thin Film Drier) removes moisture from minerals and prepared in the form of salt lick. Hence, new technology of AFTD Mineralised salt lick and small ruminant's mineral mixture have been assessed on the growth performance in Small ruminants.

6. Technology Assessed :

Technology Option 1	AFTD salt in Mineralised Salt lick (<i>TANUVAS, 2020</i>) Complete source of essential minerals for livestock incorporated with spirullina. Supplement 1 lick/block per sheep/goat for 2 months
Technology Option 2	NIANP Small ruminants mineral mixture (<i>ICAR- NIANP, 2018</i>) Formulated based on the specific mineral requirement of sheep and goat to meet 100% requirement of most deficient trace minerals and partially meet the requirement of other minerals. 15 gm per day / animal
Farmers practice	No mineral mixture feeding, Maintaining the flock normally with grazing/ tree leaves/ shrubs feeding.

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
AFTD Mineralised Salt lick	20 nos	400	100 Nos	4,000
NIANP Small ruminant Mineral Mixture (Sheep min)	20 kg	1150	100 Kg	11,500
TOTAL				15,500

8. Results :

Performance of the technology

Technology Option	No. of trials	Average Body weight (in Kgs)	Average Body Weight gain (in Kgs)	Net Returns (Rs.)	B:C ratio	Data on Other performance indicators*
Farmers Practice	5	14.47	2.01	6,262	1: 1.56	Avg. Daily Weight gain: 22.33 gm
Technology 1 AFTD Mineralised Salt lick		16.15	3.24	11,732	1: 1.87	Avg. Daily Weight gain: 36.00 gm
Technology 2 NIANP Small ruminant Mineral Mixture (Sheep min)		15.26	2.68	9,613	1: 1.64	Avg. Daily Weight gain: 29.78 gm

Description of the results:

Based on the assessment on different mineral mixture for sheep/goats, Significant weight gain was observed in the TO 1 (3.24 kg) and TO2 (2.68 kg) when compared to farmer's practice (2.01 kgs). The average daily weight gain in sheep on supplementing AFTD mineralised salt lick and NIANP small ruminant Mineral Mixture (Sheep /goat min) was 36.0 gm and 29.78 gm respectively. The Net return of TO 1 (TANUVAS Sheep and goat mineral mixture) was comparatively higher than the net return of TO 2 (NIANP Small ruminant mineral mixture). From the on farm trial it is concluded that the mineral supplementation had increased the body weight gain. Hence, the farmers may use AFTD Mineralized salt lick for improved growth performance in small ruminants.

9. Constraints : NIL

10. Feedback of the farmers involved :

The farmers expressed that supplementation of mineralized lick exclusively for sheep and goats was beneficial and had improved body weight at market age.

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

AFTD Mineralized salt lick technology by TANUVAS has improved body weight of Small ruminants and the farmers can realize additional benefit on adoption of this technology. The products may be made available with KVK/veterinary Dispensaries for further adoption by farmers.

OFT-10: Assessment of Methicon spray to mitigate the acaricidal resistance of ectoparasites in dairy animals

- 1. Thematic area : Livestock Health Management**
- 2. Title : Assessment of Methicon spray to mitigate the acaricidal resistance of ectoparasites in dairy animals**
- 3. Scientists involved : SMS (Animal Science)**
- 4. Details of farming situation : Semi Intensive system**

The On farm Trial was conducted at Periyadeyanapalli Village of Kaveripatinam block in Krishnagiri District. Fifteen farmers were selected and assessed for Methicone spray to control ectoparasites especially tick infestation in dairy cows and also to mitigate acaricidal resistance.

5. Problem definition / description :

Ectoparasitic infestation transmitting diseases to livestock (like ticks acts as reservoir for infectious agents) like LSD, Tick fever etc., also causing loss of body condition, reduction in productivity of animals which in turn causes economic loss to dairy farmers. On an average 10% of clinical cases are Ticks and tick-borne diseases (TTBDs). The control of ticks is mainly based on the use of acaricides / chemicals. But the increased frequency of using acaricides causes resistance in dairy cows. Hence the new technology "Nano Methicone Spray" released by Translational Research Platform for Veterinary Biologicals (TRPVB) have been assessed on the efficiency and mitigation of acaricidal resistance of ectoparasites in dairy cattle.

6. Technology Assessed :

Technology Option 1	Methicone Spray (TRPVB -TANUVAS,2022) It contains Dimethicon oil and polyherbals encapsulated in nanoform and useful for control of ectoparasites.
Technology Option 2	NIF Polyherbal spray (NIF-DST, 2019) Herbal Acaricidal Liquid/spray to mitigate ectoparasites in Livestock. Combination of 300 ml of extracts of Neem (<i>Azadirachta indica</i>) and 100 ml of Notchi (<i>Vitex negundo</i>) extract in 3.6 litre of normal water for application in dairy cows
Farmers practice	Use of Deltamethrin (2%).

7. Critical inputs given :

Particulars	Qty./ trial	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Methicone Spray	15 nos	168	15 Nos	2,520
NIF Polyherbal Spray	15 nos	<i>Preparation by Farmers</i>		
TOTAL				2,520

8. Results :

Performance of the technology

Technology Option	No. of trials	Efficiency – E% (28 th day after application)	Net Returns (Rs.)	B:C ratio	Data on Other performance indicators*
Farmers Practice	15	90.99	405	1: 1.74	Avg. reduction in Tick Count:3 rd day – 39.47 and 14 th day – 11.07
Technology 1: Methicone Spray		97.78	556	1: 2.10	Avg. reduction in Tick Count: 3 rd day -28.67 and 14 th day – 4.80
Technology 2: NIF - Polyherbal Spray		94.39	430	1: 1.96	Avg. reduction in Tick Count: 3 rd day – 36.13 and 14 th day – 8.53

Description of the results:

Based on the assessment on different acaricidal treatment for tick infestation in dairy cows, it was observed that the efficiency (E%) of TO 1 (97.78%) was comparatively higher than Farmers practice (90.99%) and TO2 (94.39%).

Tick count was taken before the treatment for tick infestation in selected dairy cows. The tick count was done on 3rd day, 7th day, 14th day and 28th day after application. It was observed that the average reduction in tick count on 3rd day and 14th day in TO1 was 28.67 and 4.80 and in TO2 was 36.13 and 8.53 respectively. In farmers practices due to application of Deltamethrin/cypermethrin, the average reduction in Tick count on 3rd and 14th day was 39.47 and 11.07. The Netreturn was comparatively higher on TO1 and tick count was reduced in TO1 on application of Methicone spray. Hence it was concluded that Methicone was effective to control ectoparasites in dairy cows.

9. Constraints : NIL

10. Feedback of the farmers involved :

Application method of Methicone spray is easy to handle when compared to other treatments and also effective for control of tick infestation in dairy cows. Polyherbal Spray (combination of Neem and Notchi) is also good natural alternate to use for livestock.

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

Methicone Spray application method was proved to be user friendly technology for farmers and effective for control of external parasitic infestations and protect cattle from reinfection upto 28 days. NIF Poly herbal spray is also showed comparable results in reduction of tick count. Since it is a combination of herbs which are easily available with farmers. TO2 also can be recommended to use as an alternate cost-effective method for control of ectoparasite in dairy cows.

OFT-11: Assessment on different dehydration techniques of Millet Papad

- 1. Thematic area : Value addition**
- 2. Title : Assessment on different dehydration techniques of Millet Papad**
- 3. Scientists involved : SMS (Home Science)**
- 4. Details of farming situation : -**
- 5. Problem definition / description :**

Ragi is cultivated extensively in our district and farmer get low price due to raw sales, an unaware of the processing technologies and dehydrated products.

6. Technology Assessed :

Technology Option 1	Multigrain millet flour papad using cabinet drier (IFPT 2019) Composite millet flours like ragi, barnyard, kodo millet is mixed with urad flour, spices, etc and the dough is made into a batter and pressed and dried using cabinet drier
Technology Option 2	Ragi Papad - Dehydration Using Solar Drier (TNAU 2016) The ragi flour is mixed with urad dhal flour, spices and oil, and other ingredients and the dough is made into a batter and dried using solar drier
Farmers practice	Traditional sun drying

7. Critical inputs given :

Particulars	Qty/ trial (Kg)	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Pressing device	1	-	1	400
Pouch cover	0.25	14	1	70
Raw materials	5	113	1	566
TOTAL				1,036

8. Results :

Performance of the technology

Technology Option	No. of trials	Net Weight (Kg)	Net Returns (Rs.)	B:C ratio
Farmers Practice	5	2	400	2
Technology 1: Multigrain millet flour papad using cabinet drier		6.5	2,100	3.50
Technology 2: Ragi Papad - Dehydration Using Solar Drier		4.5	1,350	2.45

9. Constraints : NIL

10. Feedback of the farmers involved :

Multigrain millet flour papad using cabinet drier dried within 8 hrs and handwash palatable were has ragi flour papad dried by solar drier took 2 days for drying.

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

The organoleptic characteristics with multigrain papad scored high with regard to flavour, aroma, taste and proved has a crispy health snack to all children and geriatric.

OFT-12: Assessment of guava preserve with different preservation techniques

1. **Thematic area** : Enterprise Development
2. **Title** : Assessment of guava preserve with different preservation techniques
3. **Scientists involved** : SMS (Home Science)
4. **Details of farming situation** : -
5. **Problem definition / description** :

Guava is seasonal fruit and is perishable. The farmers get low price during glut, hence processing of Guava through osmotic dehydration using sugar and jaggery extends the shelf life of the fruit and fetches high income.

6. Technology Assessed :

Technology Option 1	Preservation of preserve with addition of jaggery (CSC & RI, TNAU 2014) The guava slices are immersed in water and cooked at particular brix and the syrup is preserved in jaggery for extending the shelf life of the product.
Technology Option 2	Preservation of Guava Preserve with Addition of Sugar (UAS Bangalore, 2014) The guava is cooked and preserved in sugar solution, at 68 degree brix for extending the shelf life of the product.
Farmers practice	Raw sales, poor shelf life

7. Critical inputs given :

Particulars	Qty/ trial (Kg)	Cost/trial (Rs.)	Total Qty.	Total Cost (Rs.)
Preservatives chemical	1	142	2	142
Sugar	24	40	24	960
Guava	12	40	50	800
Jaggery	16	60	16	960
Standing pouch	300 (Nos)	520	300	520
TOTAL				3,382

8. Results :

Performance of the technology

Technology Option	No. of trials	Net Weight (Kg)	Net Returns (Rs.)	B:C ratio
Farmers Practice	5	20	2,200	1.83
Technology 1 Preservation of preserve with addition of jaggery		20	2,645	2.56
Technology 2 Preservation of Guava Preserve with Addition of Sugar		20	3,850	2.03

9. Constraints : NIL

10. Feedback of the farmers involved :

Dehydrated product of guava fetched more price and increased the shelf life.

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

The dehydrated product of guava through jaggery and osmotic dehydrated one product was healthier and good flavour.

OFT-13: Assessment of different types of herbal powder incorporated instant nutri beverage

1. **Thematic area** : Value Addition
2. **Title** : Assessment of different types of herbal powdered incorporated instant Nutri- beverage
3. **Scientists involved** : SMS (Home Science)
4. **Details of farming situation** : -
5. **Problem definition / description** :

Hibiscus and pea flowers are abundantly available, easily perishable and lack awareness on processing through dehydration and goes a meagre waste, Hence OFT was proposed to proper utilization and to extend the shelf life through dehydration and drier treatments.

6. **Technology Assessed** :

Technology Option 1	<p>Shade dried <i>Hibiscus</i> incorporated herbal beverage Colourant agent from <i>Hibiscus</i> (TNAU, Coimbatore 2021) Hibiscus sabdariffa is shade dried and powdered and utilized for beverage Nutri rich beverage, rich in antioxidants, antidiabetic, anthocyanin, ascorbic acid for all therapeutic uses</p>
Technology Option 2	<p>Shade dried <i>Clitoria ternatea</i> incorporated herbal drink Colorant agent from <i>Clitoria ternatea</i> (DBT 2018) Shade dried <i>Clitoria ternatea</i> powder is rich in antioxidants, bioflavanoids, natural food colorant, nutri beverage with therapeutic values</p>
Farmers practice	No processing of <i>Clitoria ternatea</i> and underutilized edible flower

7. **Critical inputs given** :

Particulars	Qty /trial	Cost / trial	Total qty	Total cost
Cello Seal	10	29	10	290
Dabur Honey	1	230	1	230
Jaggery Powder	2	40	2	80
Standing Pouch	360 gm	87.50	1,800 kg	437
TOTAL				1,037

8. **Results** :

Performance of the technology

Technology Option	No. of trials	Net Weight (Gram)	Net Returns (Rs.)	B:C ratio
Farmers Practice	5	50	550	2.37

Technology 1 Shade dried <i>Hibiscus</i> incorporated herbal beverage Colourant agent from <i>Hibiscus</i>		250	950	2.72
Technology 2 Shade dried <i>Clitoria ternatea</i> incorporated herbal drink Colorant agent from <i>Clitoria ternatea</i>		225	750	2.66

9. Constraints : NIL

10. Feedback of the farmers involved :

Farmers liked the taste of the tea beverage made from pea fly which was very attractive and pleasant with good organoleptic characteristics than compared to hibiscus beverage.

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

The time taken for dehydration for pea flower was less through solar dried and hibiscus took more duration for dehydration.

Frontline Demonstrations in Detail

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

S. No	Crop/ Enterprise	Thematic Area	Technology demonstrated as a follow-up from OFT	Feedback sent to the Research System	Details on the performance of the technology sent to the Extension Department	Horizontal spread of technology		
						No. of villages	No. of farmers	Area in ha
1	Tomato	IPM	Integrated Pest Management In tomato	Cost effective tomato pinworm lure pheromone may be developed	The demonstrated technology recorded 72.2 t/ha where as in check 61 t/ha. The percentage of yield increase over check was 18 percent	8	32	43
2	Poultry/Desi chicken	Breed Evaluation	OFT Conducted during 2018-19	NIL	TANUVAS Aseel had better body weight gain when compared to native breed and also adoptable for backyard condition. This improved breed can be reared as it was acceptable in market with increased income.	15	110	-
3	Fodder Crop	Livestock Nutrition management	-	NIL	Mixed fodder cultivation had higher fodder yield. Leguminous fodder velimassal acts as protein source for cattle which enhances milk yield. In 10 cent we can cultivate different fodder varieties to feed balanced fodder for dairy cattle. We came to know about multicut fodder Sorghum CO31 and Velimassal.	60	750	30

b. Details of FLDs implemented during the reporting period

S. No	Crop	Thematic area	Technology Demonstrated	Season and year	Farming Situation	Source of funds	No of locations (Villages)	No. of farmers/ demonstration			Area		Justification for shortfall if any
								SC/ST	Others	Total	Area proposed (ha)	Actual area (ha)	
1	Lemon	Varietal Demonstration	Demonstration on Balaji Lime	Kharif 2022	Rainfed	ICAR	1	5	0	5	1	1	-
2	Banana	ICM	Demonstration on Micronutrient Management in Banana	Rabi 2022	Irrigated	ICAR	1	2	8	10	4	4	-
3	Little Millet	Varietal Demonstration	Demonstration on Little millet variety ATL 1	Kharif 2023	Rainfed	ICAR	1	15	0	15	6	6	-
4	Castor	Varietal Demonstration	Demonstration on Castor YRCH 2	Kharif 2023	Irrigated	ICAR	1	1	9	10	4	4	-
5	Finger Millet	Varietal Demonstration	Demonstration on Finger millet variety ATL 1	Rabi 2023	Irrigated	ICAR	1	0	10	10	4	4	-
6	Brinjal	Varietal Demonstration	Demonstration on Brinjal Variety VRM (Br) 2	Summer 2023	Irrigated	ICAR	1	0	10	10	1	1	-
7	Chilli	Varietal Demonstration	Demonstration of Chilli hybrid Arka Saanvi	Rabi 2023	Irrigated	ICAR	1	0	10	10	1	1	-
8	French Beans	Varietal Demonstration	Demonstration of Arka Sukomal variety of French Bean	Rabi 2023	Irrigated	ICAR	1	5	0	5	0.5	0.5	-
9	Mango	ICM	Integrated Crop Management in Mango	Kharif 2022	Rainfed	ICAR	1	10	0	10	4	4	-
10	Banana	ICM	Micro nutrient management in Banana	Rabi 2022	Irrigated	ICAR	1	0	10	10	4	4	-

11	Coconut	ICM	Integrated Nutrient Management in Coconut	Kharif 2022	Rainfed	ICAR	1	10	0	10	4	4	-
12	Jasmine	Crop Management	Demonstration on Off season flowering techniques with ICM in Jasmine	Kharif 2023	Irrigated	ICAR	1	0	10	10	1	1	-
13	Tomato	Farm Mechanization	Demonstration on Vegetable planter (Manual Operated)	Rabi 2023	Irrigated	ICAR	1	5	0	5	2	2	-
14	Tomato	IPM	Demonstration on IPM in Tomato	Rabi 2022	Irrigated	ICAR	1	0	10	10	4	4	-
15	Poultry	Evaluation of Breeds	Demonstration of ProBeads-EC supplement with preventive management practices in Desichicken	-	Semi Intensive	ICAR	1	10	0	10	-	-	-
16	Poultry	Evaluation of Breeds	Popularization of TANUVAS Aseel under backyard condition	-	Semi Intensive	ICAR	1	10	0	10	-	-	-
17	Fodder	Varietal Demonstration	Demonstration of TANUVAS 10 cent Multicrop fodder production model to enhance milk production in crossbred dairy animals	-	Irrigated	ICAR	1	10	0	10	0.4	0.4	-
18	Poultry	Evaluation of Breeds	Popularisation of Namakkal Gold Quail in Krishnagiri District	-	Intensive	ICAR	1	10	0	10	-	-	-
19	Vegetables and Greens	Kitchen Gardening	Demonstration on Nutri Garden	-	-	ICAR	1	5	0	5	-	-	-
20	Palmyra	Value addition	Demonstration of Palmyra Fruit value added products	-	-	ICAR	1	3	0	3	-	-	-

21	Mushroom	Value addition	Demonstration of Arka – OM - 1 Oyster Mushroom	-	-	ICAR	1	0	5	5	-	-	-
22	Coconut	ICT	Demonstration On android based TNAU Coconut Expert System	-	-	ICAR	1	50	0	50	-	-	-
23	Little Millet	Varietal Demonstration	Demonstration on high yielding Little millet variety ATL 1	Kharif	Rainfed	ICAR	1	15	0	15	6	6	-
24	Groundnut	Farm Mechanization	Demonstration on Groundnut seed drill (ANGRAU model)	Kharif 2023	Rainfed	ICAR	1	10	0	10	4	4	-
25	Paddy	Farm Mechanization	Demonstration of Agricultural Drone	Kharif 2023	Irrigated	ICAR	1	0	10	10	4	4	-
26	Pearl Millet	Farm Mechanization	Demonstration of Millet Planter	Kharif 2023	Rainfed	ICAR	1	10	0	10	4	4	-
27	Traditional Rice	Value Addition	Demonstration on value added products from traditional rice (Black Kavuni)	-	-	ICAR	1	5	0	5	-	-	-

Feedback from farmers:

S. No	Feed Back
1	The establishment of Balaji Lime was 96%.
2	Foliar nutrition of Banana Special gave a good quality fruits with increased bunch weight.
3	Little Millet Variety – ATL 1 recorded higher yield than the old traditional variety. The grains were superior in quality and have good market value.
4	Newly released Castor Hybrid Variety – YRCH 2 recorded higher bean yield, more number of effective spikes, more number capsule per spikes, very less incidence to leaf hoppers and resistance to wilt diseases. The castor bean quality were superior in quality and have good market value.
5	A high yield Finger Millet Variety – ATL 1 recorded higher yield than the old traditional variety. The grains were superior in performance and it has some desirable attributes like easy threshability, synchronized maturity non-lodging and attractive colored grains with good nutrition and cooking qualities.
6	Brinjal variety –VRM (Br) 2 gave higher yield than the private hybrid due to less pest and disease problem. The fruits were tender and preferred in market due to its attractive colour
7	Chilli Hybrid Arka Saanvi gave higher yield than the private hybrid. The diseases incidence was less than in Arka Saanvi. The fruits were preferred in market due to its attractive colour and freshness
8	French Beans Arka Sukomal gave higher yield than the private hybrid due to less pest and disease problem. The fruits were tender and preferred in market
9	Foliar nutrition in mango for the micronutrients gave a good quality fruits besides the increase in yield. Also the fruitfly management using traps is very effective in controlling the fruitflies
10	Foliar nutrition of Banana Special gave a good quality fruits with increased bunch weight.
11	The button shedding got reduced due to the root feeding of coconut tonic. Also, the yield has got improved.
12	ICM with off season flowering techniques in Jasmine fetched better Price in market.
13	The vegetable planter (manually) efficiently addresses labor shortages, lowers labor costs, facilitates easy operation by women, and ensures consistent plant spacing and depth, effectively reducing drudgery in planting processes.
14	Need bio control agents for sucking pests and also new molecule for borers.
15	Probeds EC supplementation for native chicken helps reduce mortality and also improved bodyweight. This is a new technology for use to improve performance of native chicken.
16	TANUVAS Aseel had better body weight gain when compared to native breed and also adoptable for backyard condition. This improved breed can be reared as it was acceptable in market with increased income.

17	Mixed fodder cultivation had higher fodder yield. Leguminous fodder velimassal acts as protein source for cattle which enhances milk yield. In 10 cent we can cultivate different fodder varieties to feed balanced fodder for dairy cattle. We came to know about multicut fodder Sorghum CO31 and Velimassal.
18	Namakkal Gold Quail was adoptable and gives a marginal income in addition to other livestock farming. Feed cost and marketability is the major challenge.
19	Fetched income through sale of vegetable and greens and improved the livelihood enhancement.
20	The palmyra pulp blended with other fruits enriched for jam preparation and squash was nutritious with good shelf life and enterprise development to women.
21	Good color with good shelf life and aroma for culinary purpose.
22	TNAU Mobile Application System support them to make the right decisions at right time for Coconut Cultivation
23	Little Millet Variety – ATL 1 gives higher yield than the farmers practice old traditional variety. The grains were superior in quality and have good market value.
24	Yield increased by doing the necessary operations in appropriate time, was able to sow the seeds before the soil moisture evaporate, Machines were user and gender friendly, Saved time, cost and labour.
25	The utilization of drones in agriculture optimizes crop management, reduces labor requirements, enables precise monitoring of crops, and enhances overall farm efficiency.
26	The millet sowing machine streamlines sowing processes, mitigates labor shortages, promotes efficient seed placement, and contributes to higher crop yields.
27	Gained awareness on utilization of traditional rice (Black Rice). And higher returns through sale of value added food products with better taste and consumer preference.

Feedback of the Scientist:

S. No	Feed Back
1	The establishment of Balaji Lime was 96%.
2	The foliar nutrition with Banana special resulted in 20% yield increase and a BCR of 4.01 in the demonstration fields over the farmer's practice.
3	Little Millet Demo Variety ATL 1 average grain yield of 13.99 qtl /ha and farmers check (traditional variety) 11.73 qtl /ha. ATL 1 variety was withstand drought during the crop period and it attains uniform maturity over 95 days and also found not lodged even in harvesting time.
4	Castor hybrid YRCH 2 variety recorded average bean yield of 17.47 qtl /ha and the farmers check (Non-descriptive type) 12.97 qtl /ha. YRCH 2 variety matured with the duration of 185 Days and triple bloom, non-shattering capsules, basal branching type, semi-dwarf and high basal branching types. This variety is compact plant type suitable for Intercropping also.

5	Finger Millet Demo Variety ATL 1 average grain yield of 24.37 qtl /ha and farmers check (traditional variety) 19.80 qtl /ha. ATL 1 variety matured over 110 days and also found to be 8 to 9 incurved fingers per ear head and 4 to 5 productive tillers based on color, appearance, flavor, texture and taste ATL 1 variety is highly preferable by farmers moderately resistant of leaf, neck and finger blasts. No serious pest incidence
6	Brinjal variety –VRM (Br) 2 gave 15 % higher yield than the private hybrid. The Shoot and Fruit Borer incidence was 35.19% less than in local Non-descript varieties. BC ratio was 3.28 compared to 2.70 in farmers practice.
7	Chilli Hybrid Arka Saanvi gave 17.29 % higher yield than the private hybrid. The Chilli Viral diseases were incidence was 34.98 % less than in Private hybrid. BC ratio was 1.99 compared to 1.66 in farmers practice
8	French Beans Arka Sukomal gave 15.5 % higher yield than the private hybrid. The Yellow Vein Mosaic virus incidence was 28 % less than in private hybrid. BC ratio was 2.13 compared to 1.70 in farmers practice
9	The foliar nutrition with mango special resulted in 24% yield increase and a BCR of 2.70 in the demonstration fields over the farmer's practice
10	The foliar nutrition with banana special resulted in 25% yield increase and a BCR of 4.71 in the demonstration fields over the farmer's practice
11	The root feeding with coconut tonic resulted in 23% yield increase and a BCR of 4.75 in the demonstration fields over the farmer's practice
12	ICM with off season flowering techniques in Jasmine fetched better Price in market during off season. It gave 45 % higher profit than the normal practice. BC ratio was 3.54 compared to 2.27 in farmers practice.
13	The vegetable planter saves around 50% of the cost for sowing the seedlings compared to traditional manual methods, offering a significant economic advantage to farmers.
14	More installation of Tuta Lures were effective for the management for pinworm.
15	Supplementation of Probeads EC had improved the Average body weight at 12 th week by 1.085 kg with livability Percentage 94.5 %. Probeads Supplemental feeding can be recommended for Native chicken rearers for improved benefit and decrease mortality.
16	The average body weight of TANUVAS Aseel chicken at 12 th week was 1.15 kg and the marketability, income was better. It can be recommended to farmers to rear for better income and nutritional security.
17	Green Fodder Yield was increased by 18 % on adoption of TANUVAS 10 cent multicrop fodder production model. Mixed fodder provides balanced nutrition to dairy cows with increased milk yield and also marginally reduces the feeding cost.
18	Namakkal Gold Quail recorded Average body weight of 236.9 gm at 5 th week with livability percentage of 94.6%, which shows the adoptability and also provides nutritious meat. It will be a alternate livestock farming to provide nutrition security.
19	Nutritional status and security to the farm women through consumption of fresh vegetables and green, rich in antioxidants grown organically.
20	Utilization of the palm dehydrated products with millet papad and bakery items for diversified products will be viable to women.

21	Dehydrated products are suitable for shelf-life enhancement with good organoleptic characteristics.
22	TNAU Coconut Expert System mobile application has proved again that ICT had the potential to satisfy the knowledge and information needs of the farmers, and support them to make the right decisions at right time, which ultimately leads to attaining significant livelihood growth.
23	Little Millet Demo Variety ATL 1 average grain yield of 13.60 qtl /ha and farmers check (traditional variety) 11.16 qtl /ha. ATL 1 variety was withstand drought during the crop period and it attains uniform maturity over 90 days and also found not lodged even in harvesting time.
24	Power operated decorticator machine can be included in custom hiring Centre at KVK.
25	Promote through more number of demonstrations for trees such as Mango, Coconut & etc., Drones can be included in custom hiring Centre.
26	The millet planter efficiently completes the sowing operation for small, tiny seeds before the soil moisture evaporates, ensuring optimal seed germination and crop establishment.
27	Highly palatable with therapeutic use for malnourished women, with good color and delicious for geriatric.

Extension activities on the FLD:

S. No.	Activity	No. of activities organized	Date	Number of participants	Remarks
1	Field days	7	6-Jan-23, 2-Feb-23, 6-Mar-23, 28-Mar-23, 07-Jun-23, 26-Sep-23, 03-Nov-23	342	-
2	Farmers Training	31	On Campus Trainings (13-Jun-23, 27-Jul-23, 11-Aug-23, 01-Sep-23, 04-Sep-23, 06-Sep-23, 13-Sep-23, 20-Sep-23, 06-Oct-23, 05-Oct-23, 28-Oct-23, 20-Nov-23, 23-Nov-23) Off Campus Trainings (25-May-23, 08-Jun-23, 15-Jun-23, 11-Jul-23, 18-Jul-23, 26-Jul-23, 10-Jul-23, 26-Aug-23, 11-Aug-23, 04-Sep-23, 07-Sep-23, 15-Sep-23, 21-Sep-23, 13-Sep-23, 17-Oct-23, 06-Nov-23, 22-Nov-23, 01-Dec-23)	613	-
3	Media coverage	2	11-Oct-23	NA	-
4	Training for extension functionaries	2	13-Oct-23, 17-Nov-23	60	-

Extension Studies

1. Impact of CFLD Oilseeds on yield, economics and spread of technology in Krishnagiri district:

In Tamil Nadu, the area under groundnut is about 3.38 lakh hectares. The soils in the entire Tamil Nadu are sandy loam. In Tamil Nadu, it is an important and major oilseed crop, covering an area of 338300 hectares with a production of 783200 tonnes. Out of which 70% of the area is covered under rainfed crop and the remaining 30% is under irrigated conditions. Groundnut is an important oil seed crop in Krishnagiri and cultivated in area of 10,037 hectares & with a production of 2.1 lakh qtl.

The technology gap is a major constraint in increasing yield and sustainability due to poor knowledge on the latest improved technologies among farmers in groundnut cultivation in the district. Cluster Frontline Demonstrations (CFLDs) is a unique approach with the main objective of conducting demonstration in larger area on the farmers' field and creating awareness on the latest crop production technologies among the farmers.

In keeping view of this, KVK, Krishnagiri had conducted Cluster Frontline Demonstrations with improved technologies in groundnut under different farming situations with monitoring of the KVK Scientists which helps in increasing productivity, economic returns, and sustainability.

Methodology

Cluster Frontline Demonstrations (CFLDs) were conducted by Krishi Vigyan Kendra, Krishnagiri, with the latest improved crop production technologies in groundnut during two consecutive rabi seasons i.e. from 2021-22 to 2022-23. The CFLDs were conducted in selected Villages in Krishnagiri district i.e. Naganoor, Puliampatti, Athipallam, Goundanoor, Puthr, Elumichangiri, Athipallam, Sanarahalli, Goundanoor and Kodipatti of different farming situations under National Mission on Oilseeds and Oil Palm (NMOOP). The selection of beneficiaries was through meetings, group discussions, and field diagnostic visits. A total of 175 demonstrations were conducted in five consecutive rabi seasons i.e. from 2020-2021 (50No.), 2021-22 (25 No.) to 2022 -23(100 Nos.).

The improved technology was demonstrated in one-acre area of selected farmers' field and adjacent one acre was considered as control plot of same the farmer. To study the yield gap between potential and actual yields, beneficiaries were selected through group discussions. The selected beneficiaries were given pre- seasonal training and briefed about the improved package of practices for successful implementation of CFLDs, and provided the need based critical inputs for an area of one acre viz., groundnut seed of TCGS 1043 and given Technological information on seed treatment with *Trichoderma viride*@10g/kg, *Bacillus subtilis* @10g/kg seed, Imidacloprid @ 1 ml/1litre of water for one kg seed, rhizobium @ 10 g/kg seed, pheromone traps @ 10/ha for monitoring of Spodoptera and TNAU Pulse wonder 2kg/acre and Gypsum 160 kg/acre. The percent yield comparison of improved practice with local check, district and state averages were calculated and also assessed the yield impact, impact of adoption and horizontal area spread. The technology gap, technology index, and economic parameters were compared with farmers' practice.

Technology gap = Potential yield - Demonstration yield

Extension gap = Demonstration yield - Farmers yield

Impact on horizontal spread area (change %) = $\frac{\text{Area after demonstration} - \text{Area before Demonstration}}{\text{Area before Demonstration}} \times 100$

1. Productivity, technology gap and Extension gap in Groundnut under Cluster Front line demonstration

Year	Area (ha.)	No. of farmers	Potential yield (q/ha.)	Yield (q/ha.)		% increase over FP	Technology gap (q/ha.)	Extension gap (q/ha.)
				Demo. Field	Farmer Field			
2020-2021	20	50	33.00	26.66	22.74	17.23	6.34	3.92
2021-2022	10	25	33.00	28.20	23.15	21.81	4.80	5.05
2022-2023	40	100	33.00	28.92	22.8	27.92	4.08	6.12

2. Economic of groundnut in Demonstration practices (DP) and farmer's practices (FP) under cluster front line demonstration

Year	Gross return (Rs. Ha.)		Net return (Rs. Ha.)		BCR	
	Demo. Field	Farmer Field	Demo. Field	Farmer Field	Demo. Field	Farmer Field
2020-2021	138606	111436	78768	51636	2.32	1.86
2021-2022	157920	115760	93258	53556	2.44	1.86
2022-2023	159066	125396	96381	51467	2.54	1.70
Mean	151864	117531	89469	52220	2.43	1.81

SALIENT FINDINGS

- The Cluster Frontline Demonstrations organized by KVK, Krishnagiri had significantly increased yield in groundnut and rapid horizontal spread in 13,500ha in the district.
- The pod yield of groundnut was increased upto 22.32% in improved practices over the farmers' practice.
- The gross returns (Rs. 151864/-) net returns (Rs. 89469/-) and benefit-cost ratio 2.43 were higher in demonstrations as compared to the farmers' practice. The additional gross returns, net returns, additional cost with incremental benefit-cost ratio were high in improved practice.
- The groundnut varieties TMV 13 replaced by TCGS 1043 through large scale demonstrations in long run.
- CFLDs have made a significant impact on horizontal spread of area under groundnut in the district over the last 3 years and it has been observed that the area under groundnut in 2022-23 is 13,500 ha.

Technology Week Celebrations

Types of Activities	No. of Activities	Number of Participants	Related crop/ livestock technology
Gosthies	-	-	-
Lectures organized	3	164	Lectures delivered on 1) INM, IPM, ICM in Field Crops, 2) Fodder Management, Dairy and Livestock, 3) Canopy Management in Horticultural Crops and Nursery, 4) Post-harvest Technology and Value Addition.
Exhibition	3	164	1) Farm Machinery Tools, 2) Traditional Nutrigarden Seed Kit, 3) Plant Materials, 4) Value Added Products.
Film show	2	80	IPM in Field Crops
Fair	-	-	-
Farm Visit	3	164	Farm Visit 1) Vermicompost, 2) Coconut Farm, 3) Banana Farm, 4) Mango Nursery, 5) High Density Planting Unit.
Diagnostic Practical	-	-	-
Distribution of Literature (No.)	-	-	-
Distribution of Seed (q)	-	-	-
Distribution of Planting materials (No.)	-	-	-
Bio Product distribution (Kg)	-	-	-
Bio Fertilizers (q)	-	-	-
Distribution of fingerlings	-	-	-
Distribution of Livestock specimen (No.)	-	-	-
Total number of farmers visited the technology week	3	164	-

Training/workshops/seminars etc. attended by KVK staff:

Name of the staff	Title	Dates	Duration	Organized by
Mrs. S. Poomathi	Genetic Diversity Fair and International year of millets	14.03.23	1 Day	Islamiya Arts and science college for women, vaniyampadi, Thirupathur District
Mr. S. Udhayan	Interface Workshop	15.05.23	1 Day	State Department of Agriculture, Krishnagiri
Mr. S. Udhayan	State Extension Work Plan (SEWP), 2023 - 24	20.06.2023	1 Day	Department of Agriculture at TNAU, Coimbatore
Dr. T. Sundarraj, Mr. T. I. Ramesh Babu	Underutilized Fruit	06.06.2023	1 Day	IIHR, Bangalore
Mr. S. Senthilkumar	ISEE National Seminar	21 to 23.06.2023	3 Days	UAS, Bangalore
Mr. S. Karthikeyan	Effective Farm Management	03 & 04.08.2023	2 Days	TNAU, Coimbatore and ICAR-ATARI Zone X, Hyderabad
Mr. S. Udhayan	Tree cultivation techniques for higher economic returns	20 to 22.09.2023	3 Days	IFGTB and TNAU under Ministry of Environment Forest and Climate Change, Coimbatore
Mr. T. I. Ramesh Babu	Natural Farming Project and Capacity building workshop	15 & 16.12.2023	2 Days	ATARI Zone X, Hyderabad

Details of collaborative / externally funded / sponsored projects / programmes implemented by KVK. (2023)

S. No	Title of the programme / project	Sponsoring / collaborating agency	Objectives	Duration	Amount (Rs)
1	Coconut Cultivation	TNVKP	To create awareness on coconut cultivation	3 Days	Rs. 28,000
2	Scientific Management Practices to Augment Productivity of Dairy Cows	NIVEDI	To improve socioeconomic status of selected dairy farmers of Scheduled caste	2 Days	Rs. 3,95,000
3	Adoption of Scientific Management Practices to Augment the Productivity of Dairy Cows	NABARD	To impart technical knowledge/skills on integrated scientific dairy management practices among dairy farmers	3 Days	Rs. 1,83,000
4	Scientific Goat Farming	TNVKP	To create awareness on Scientific Goat Farming	3 Days	Rs. 26,564
5	Backyard Poultry Farming	TNVKP	To create awareness on Backyard Poultry Farming	3 Days	Rs. 23,415

1. Coconut Cultivation:

Tamil Nadu Rural Transformation Project, Krishnagiri and ICAR-Krishi Vigyan Kendra, Krishnagiri jointly conducted 3 days (20.1.23,23.1.23 and 24.1.23) Coconut SPARK training programme to Spark Trainers (TOT) at ICAR- KVK, Krishnagiri. The Senior Scientist and Head, KVK - Krishnagiri, inaugurated the Coconut SPARK training programme on 20.1.23 and explained the importance and need SPARK Training to the participants.

During the training period 20.1.23,23.1.23 and 24.1.23, the participants were trained in the following topics on Varieties, Soil Field Preparation and in Coconut, Pest and Disease in Coconut, Integrated Nutrient Management in Coconut, Mechanization and Irrigation Management in Coconut, Value Addition in Coconut by KVK Scientists.

Final day (24.1.23) on Coconut SPARK training programme, participants given their feedback on the training programme. Thirty Participants were benefitted in the training programme.

S. No	Particulars		Amount (Rs)
1	Food & refreshment @ Rs. 150/ farmer X 35 farmers X 3 days	:	13,500
2	Hall rent with Projector @ Rs. 1500/day X 3 days	:	4,500
3	Honorarium to resource person @ Rs. 500/ class X 15 class	:	7,500
4	Demonstration Material	:	2,500
Total			28,000

2. Scientific Management Practices to Augment Productivity of Dairy Cows:

Introduction

ICAR – Krishi Vigyan Kendra organized and conducted two days training programme on “**Scientific Management practices to augment the productivity in dairy cows**”. The training project was sponsored by ICAR – National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI), Bengaluru under Development Action plan for Scheduled castes (DAPSC/SCSP). The programme was conducted at ICAR – Krishi Vigyan Kendra, Krishnagiri on 23.03.2023 and 30.03.2023 for 40 selected dairy farmers of Scheduled caste.

Objectives:

The training programme was organized and conducted with the following objectives:

- To demonstrate good management practices in Nutritional and disease management in dairy cattle.
- To impart technical knowledge to adopt scientific dairy management practices among dairy farmers
- To improve socioeconomic status of selected dairy farmers of Scheduled caste.

Beneficiaries of the project:

No of dairy farmers: 40 small holder dairy farmers of Scheduled Caste (Men: 14, Women: 26)

Villages covered : 1. Dasiripalli village, 2. Arasampatti Village, 3. Pasipatti village, 4. Valluvapuram village

Blocks covered : Covered two blocks – Krishnagiri and Kaveripattinam block of Krishnagiri District, Tamil Nadu

SCHEDULE OF THE TRAINING PROGRAMME CONDUCTED:

NO. OF DAYS : TWO DAYS (23.03.2023 and 30.03.2023)

Day	Session	Course
Day 1	I	Inauguration
	II	Selection of dairy animals, Fodder crops - classification and cultivation practices
	III	Nutrition and feeding Management of dairy animals, Use of Azolla as feed to dairy cows
	IV	Breeding management, Calf management practices, Importance of mineral mixture

Day 2	I	Disease management in dairy cows - management of mastitis and control, Metabolic disease in dairy cattle
	II	Clean milk production, Importance of Deworming and vaccination
	III	Ethno veterinary practices in dairy cattle management, Value addition in Milk
	IV	Valedictory and Feedback – Inputs distribution and Certificate distribution

INAUGURATION OF TRAINING PROGRAMME:

The training programme was inaugurated by **Dr. T. Sundarraaj, Senior Scientist and Head, Krishi Vigyan Kendra, Krishnagiri on 23.03.2023**. During his inaugural address he stressed about the importance of this exclusive training intended for Scheduled caste dairy farmers supported by ICAR – NIVEDI, Bengaluru and motivated them to learn from Subject Matter Specialists and technical experts in order to adopt the scientific interventions and to augment the productivity of dairy cows. During the Inaugural session Dr. N. Muniappan, Asst Professor, Veterinary University Training and Research Centre, Krishnagiri and Subject matter Specialists of Krishi Vigyan Kendra have participated. As per schedule of the programme, the subjects were covered by experts

TECHNICAL SESSION CONDUCTED

Technical sessions were handled by ICAR – Krishi Vigyan Kendra - Subject Matter Specialist (Animal Science, Agricultural Extension, Home Science), the experts from Veterinary University Training and Research Centre (VUTRC), Krishnagiri and Veterinary Assistant Surgeon, Krishnagiri

Day 1:

First day of training was conducted at ICAR- KVK, Krishnagiri on 23.03.2023

Dr. S. Ramesh, Subject Matter Specialist (Animal Science) initiated the session with the outline of the two days training sessions. Initially the farmers were instructed about the selection of dairy animals and the important points to be considered during selection. The farmers were explained about the fodder crops and cultivation, types of fodder for dairy cattle and their nutritive value to enhance the milk yield. The farmers were also explained about TANUVAS 10 cent mixed fodder production model. The farmers were also emphasized about the importance of concentrate feed and the feeding method based on milk yield. Also, the use of Azolla, its cultivation method and benefits to dairy animals were explained in detail.

Dr. N. Muniappan, Assistant Professor, VUTRC explained about infertility / reproductive management- Signs of oestrus and Artificial insemination. He covered the care and management of pregnant animals, Care and management of calf, the importance of Mineral mixture, the daily dose and its benefits for dairy cows, the important disease/metabolic diseases affecting dairy cows, its symptoms and preventive measures to be taken.

Mr. S. Senthil Kumar, Subject Matter Specialist (Agrl. Extension) explained about the web applications like TANUVAS feed calculator and made awareness about the websites available like TANU Agri portal –Dairy Expert system etc to update the knowledge and skills of the participants. The technical videos on fodder cultivation, mastitis control, Milk fever were shown to translate the technology and to update their knowledge and skills.

Day 2:

Second day of training was conducted at ICAR- KVK, Krishnagiri on 30.03.2023

Dr Srividya, Veterinary Asst Surgeon had delivered lecture on vaccination programme implemented by Department of Animal Husbandry. She had explained about the importance of preventive measures like deworming from calf to adult dairy animals and about vaccination. The vaccination schedule for dairy cows was explained in detail to the farmers and also informed about the ongoing Foot and Mouth Disease Vaccination campaign in the district. The importance of Brucella Vaccine to calf once in lifetime and the availability of the vaccine with Dept of Animal Husbandry was also informed to farmers. **Dr. S. Ramesh, Subject Matter Specialist (Animal Science)** explained about the ethno veterinary practices in dairy cattle disease management, Mastitis control and management, Udder health and hygiene and about Clean Milk Production practices to be followed by farmers. **Mrs. S. Poomathi, Subject Matter Specialist (Home Science)** explained the farmers about importance of Milk to childrens and Elders. She described about the Value addition in milk and milk products to the participant farmers.

The project aims to adopt scientific practices through critical inputs to be given to selected 40 dairy farmers.

Dr Ramesh explained about the following technologies to the farmers as follows:

a. Year round Mixed fodder production with Azolla Production

The farmers were explained about mixed fodder production model like TANUVAS 10 cent mixed fodder production. In this model, farmers need to cultivate combination of grass fodder (4 cent), Cereal type (3 cent), Legume fodder (3 cent) and Tree fodder (border) for balanced nutrition for dairy cows.

b. Good Management Practices for Clean milk production

The farmers were explained about the clean milk production practices. To maintain Udder health the farmers were described about the use of Potassium Permanganate solution for udder wash before milking and use of Teat Protect Spray after milking. TANUCHEK SCC Kit – a farmers friendly kit to check the Somatic Cell count in milk in order to prevent and control Mastitis and Udder related problems.

c. Calf care management practices

The farmers were explained about the importance of Mineral Mixture, Mineral lick to dairy calves in order to reduce metabolic disorders and to improve reproductive efficiency in dairy animals. The farmers

were advised to use mineral mixture on regular basis for improved production and productivity, also to improve conception rate. The importance of dewormer to calf was also explained to the farmers.

VALEDICTORY SESSION

The Valedictory session was presided over by **Dr. Mariam Sundar, Deputy Director, Department of Animal Husbandry, Krishnagiri District.** and **Mr. T. I. Ramesh Babu, Subject Matter Specialist (Horticulture), KVK - Krishnagiri.** The Deputy Director interacted with the participant farmers about the training sessions given by KVK and emphasized them to adopt the practices learnt in the training. He stated that the critical inputs given were useful to the dairy farmers and advised the farmers to make use of the technological knowledge provided by KVK in association with ICAR – NIVEDI, Bengaluru during the training. He also informed about the government schemes and vaccination campaigns of Animal Husbandry department like FMD campaign during March 2023. He advised the farmers to vaccinate calves against Brucellosis (Brucella vaccine).

RELEASE OF BOOKLET FOR PARTICIPANTS

Booklet on “Scientific Management Practices in dairy farming” was released by Deputy Director, Dept of Animal Husbandry, Krishnagiri and given to all the participant famers of the training.

INPUTS DISTRIBUTION TO DAIRY FARMERS

The following inputs were distributed to 40 selected dairy farmers of Scheduled Caste under DAPSC programme of ICAR – NIVEDI, Bengaluru by Deputy Director, Dept of Animal Husbandry, Krishnagiri Dist

S. No	Scientific Practices	Inputs provided to farmers
A	Year round Multi fodder production with Azolla Production	<ul style="list-style-type: none"> ❖ Fodder Slips CO5, Fodder Sorghum CO31 seed, Hedge Lucerne seed, Fodder Maize seed, Agathi Seed ❖ Azolla Cultivation bed
B	Good Management Practices for Clean milk production	<ul style="list-style-type: none"> ❖ “Mastiguard” - Teat Protect Spray and TANUCHEK SCC Kit (Technology by TRPVB- TANUVAS, Chennai) ❖ Cow Mat, Milk cans
C	Calf care management practices	<ul style="list-style-type: none"> ❖ TANUVAS Mineral Mixture, Mineral Lick, Dewormer bolus, Tincture iodine and Scissors

CERTIFICATE DISTRIBUTION

At the end of the Valedictory Session Participation Certificates were distributed to all the 40 participant farmers by Deputy Director of Animal Husbandry Department, Krishnagiri District. The Subject Matter Specialists of KVK, Krishnagiri and veterinary Asst Surgeon of Dept of Animal Husbandry were present during the valedictory Session of the training programme

OUTCOME AND FEEDBACK FROM PARTICIPANTS:

The farmers expressed their feedback about the training programme and are as follows

1. We were unaware of mastitis cause and control methods before, now we are informed about mastitis prevention and control in dairy cattle. Also, we know about latest technologies available for control like spray after milking and tips to be taken by farmers to take care of udder health, hand hygiene and use of potassium permanganate solution before milking
2. We are now well aware of latest fodder varieties and its cultivation. We were not known about these varieties before. Now we aware of mixed fodder varieties and its benefits to reduce the feed cost and improve balanced nutrition to dairy cows. We will cultivate these latest varieties and feed to our dairy cows
3. Also, we came to know about Azolla cultivation and its benefits to livestock.
4. We are now aware of use of mineral mixture, Mineral lick and its benefits for dairy cows
5. We came to know about the major diseases and their symptoms and about the important Ethno veterinary medicines for dairy cattle. In the booklet, we had few Ethno veterinary combinations which will be useful to practice when in need
6. We came to know about alternatives for tick control and about deworming, vaccination to calves and adult cattle.
7. We all thank for the opportunities given by KVK And Research institute in Bengaluru (ICAR – NIVEDI) for the training and also the inputs for our dairy cows to reduce the cost and improve our income

ABSTRACT OF EXPENSES

Components	Particulars	Cost Details	Expenses	Total Expenses
Critical Inputs	Mastitis Kit	TANUVAS - TRPVB (Teat Protect Spray, SCC kit)	24440	345268
		Towel	4400	
		Cow mat	119416	
		Milk cans	28084	
		Kit bag (with name printed)	18000	
	Fodder seeds/ Azolla bed	Fodder Seed (Fodder Sorghum Co31, Hedge Lucerne, Fodder Maize, Agathi Seed and Co 5 Fodder slips)	53200	
		Azolla bed with culture	62000	
	Calf care kit	Dewormer/ Tr Iodine /Scissors/ Salt lick	24200	
		TANUVAS Min Mixture	6000	
		Transport and other expenses	5528	
Training	Booklet	Booklet	19712	39712
	Trainings	Training - 2 days	20000	
Miscellaneous Expenses	Miscellaneous	Miscellaneous	10070	10070
Total Expenses (Rs.)				395050

**SCIENTIFIC MANAGEMENT PRACTICES TO AUGMENT THE PRODUCTIVITY OF
DAIRY COWS - PHOTOGRAPHS**





Input Distribution - Fodder and Calf Care Kit



Input Distribution - Milk Can



Input Distribution - Azolla Bed and Mastitis Kit



Release of Booklet and Distribution of Booklets



Certificate Distribution



Feedback from Participants



Concluding Remarks by Deputy Director, Dept. of AHD, Krishnagiri



Group Photographs

3. Adoption of Scientific Management Practices to Augment the Productivity of Dairy Cows:

Introduction:

ICAR – Krishi Vigyan Kendra, Krishnagiri conducted Capacity building for Adoption of Technology (CAT) training programme on “**Adoption of Scientific Management practices to augment the productivity of dairy cows**”. The training project was funded by National Bank for Agriculture and Rural Development (NABARD) under Farm Sector Promotion Fund (FSPF).

Two training programme were conducted for 50 selected women dairy farmers (25 members in each batch) of Tirupattur Freedom FPO at Vengalapuram and Pudurnadu village of Tirupattur District from 26.06.2023 to 28.06.2023.

Objectives:

The training programme was conducted with the following objectives:

- a) To impart technical knowledge/skills on integrated scientific dairy management practices among dairy farmers
- b) To train farmers to adopt cost effective technologies among dairy farmers (TANUVAS technologies like 10 cent fodder production model, Mineral mixture supplementation etc.,)
- c) To improve socioeconomic status of the FPO members through integrated dairy farming.

Beneficiaries of the project:

Farmers : 50 small holder women dairy farmers from Tirupattur Freedom FPO, Tirupattur District

Block covered : Tiruapptur and Alangayam Block of Tirupattur District

SCHEDULE OF THE TRAINING PROGRAMME CONDUCTED:

Training : TWO DAYS (26.06.2023 and 27.06.2023)

Exposure Visit : ONE DAY (28.06.2023)

Day	Session	Course
Day 1 (26.06.23)	Inauguration of Training programme	
	I	Selection of dairy animals
	II	Fodder crops – Classification and cultivation practices, Use of Azolla as feed to dairy cows,
	III	Nutrition and feeding Management of dairy animals, Calf management practices
	IV	Housing and Breeding management, Importance of mineral mixture
Day 2 (27.06.23)	I	Disease management in dairy cows – management of mastitis and control, Metabolic disease in dairy cattle
	II	Clean milk production, Importance of Deworming and vaccination, Ethno veterinary practices in dairy cattle management
	III	Manure Management – compost and Vermicompost
	IV	Value Addition in Milk, Milk Products and <i>Entrepreneurial Opportunities in Dairy Sector</i> through FPO
Day 3 (28.06.23)	Exposure Visit to ICAR – National Dairy Research Institute, Bengaluru	

INAUGURATION OF TRAINING PROGRAMME:

The training programme was inaugurated by **Mr. Rajan, Lead Bank Manager (INDIAN BANK), Tirupattur District**, Dr. T. Sundarraj, Senior Scientist and Head, Krishi Vigyan Kendra, Krishnagiri and Mr Ramachandiran, Director- Tirupattur Freedom FPO on 26.06.2023 at two locations for two batches at Vengalapuram, Tirupattur block and Pudurnadu, Alangayam block of Tiruapattur district respectively.

During his inaugural address Mr Rajan LDM, Tirupattur stressed about the importance of this exclusive training intended for women dairy farmers of Freedom FPO members which was organized by ICAR – Krishi Vigyan Kendra, Krishnagiri and supported by NABARD, Chennai. Dr Sundarraj, Senior Scientist and Head motivated the farmers to learn from Subject Matter Specialists / technical experts to adopt the scientific technologies for improved productivity in dairy cows.

Mr Ramachandiran, Director- Tiruappatur Freedom FPO had emphasized the FPO members to make use of the opportunity and learn the scientific practices from experts/scientists for improving their livelihood. During the Inaugural session Subject matter Specialists of various discipline from Krishi Vigyan Kendra of Krishnagiri had participated.

RELEASE OF BOOKLET FOR PARTICIPANTS

Booklet on “**Scientific Management Practices in dairy farming**” was released by **Mr. Rajan, Lead Bank Manager - Indian Bank, Tirupattur District**, and given to all the participant famers of the training. On release of the Booklet he advised the farmers to use the skill and knowledge given during training programme.

TRAINING PROGRAMME - TECHNICAL SESSION CONDUCTED

Training programme was conducted in two batches for 25 farmers each in Vengalapuram taluk of Tirupattur block and Pudhurnadu of Alangayam block of Tirupattur district

Technical sessions were handled by ICAR – Krishi Vigyan Kendra - Subject Matter Specialists (Animal Science, Soil Scientist, Horticulture, Agronomy and Home Science), the experts - Veterinary Assistant Surgeon, Tirupattur district.

BATCH I - Technical Session, Venue: Vengalapuram, Tirupattur Block

Day 1:

Dr. S. Ramesh, Subject Matter Specialist (Animal Science) initiated the session with the outline of the two days training sessions. Initially the farmers were taught about the selection of dairy animals and the important points to be considered during selection.

Mr Udhayan, Subject Matter Specialist (Agronomy) explained about the fodder crops and cultivation, types of fodder for dairy cattle and their nutritive value to enhance the milk yield. The farmers were also explained about TANUVAS 10 cent mixed fodder production model. Also, the use of Azolla, its cultivation method and benefits to dairy animals were explained in detail.

Mr Gunasekar, Subject Matter Specialist (Soil Science) emphasized about Manure management in dairy farming. He explained about composting and Vermicompost using cow dung to improve soil health and reduce the use of fertilizers in fodder crops and for other agriculture crops.

Dr Sivakumar, Veterinary Asst Surgeon delivered technical talk on infertility / reproductive management - Signs of oestrus and Artificial insemination. He indicated about the care and management of pregnant animals, the importance of Mineral mixture and its benefits for dairy cows. Also explained about the important diseases /metabolic diseases affecting dairy cows, its symptoms and preventive measures to be taken.

DAY 2:

Dr. S. Ramesh, Subject Matter Specialist (Animal Science) had explained about the importance of preventive measures like deworming from calf to adult dairy animals and about vaccination. The vaccination schedule for dairy cows was explained in detail. The importance of Brucella Vaccine to calf once in lifetime, about vaccine for Lumpy Skin Disease (LSD) and the availability of the vaccine with Dept of Animal Husbandry was also informed to farmers. The farmers were taught about the ethnoveterinary practices in dairy cattle disease management, Mastitis control and management, Udder health and hygiene, the farmers were emphasized about Clean Milk Production practices to be followed. The farmers were also emphasized about the importance of concentrate feed and its ration, water requirements for dairy cattle based on milk yield.

Mrs. S. Poomathi, Subject Matter Specialist (Home Science) explained the farmers about importance of Milk and its nutritive value to children and elders. She described about the different value-added products from milk and its recipe. She also provided insight about the entrepreneurial opportunities in dairy sector in small scale which can be initiated by FPO Members. She also stressed about the clean milk production practices to be followed by dairy farmers for benefit of children and all consumers.

BATCH II - Technical Session (Venue: Pudhur Nadu, Alanagayam Block)

Day 1:

Mr Gunasekar, Subject Matter Specialist (Soil Science) informed about the the outline of the two days training sessions. He explained about Manure management in dairy farming. As The most farmers rear native cattle breeds, he indicated the importance of composting and Vermicomposting of cattle manure to enrich the soil health.

Mr Udhayan, Subject Matter Specialist (Agronomy) explained about the fodder crops and cultivation, types of fodder for dairy cattle and their nutritive value. The farmers were also explained about TANUVAS 10 cent mixed fodder production model, Azolla cultivation method and its benefits to dairy animals.

Dr. S. Ramesh, Subject Matter Specialist (Animal Science) taught about the dairy cattle breeds, Selection of animals, importance of preventive measures like deworming and vaccination. The vaccination schedule for dairy cows was explained in detail. The farmers were emphasized about Clean Milk Production

practices to be followed. The farmers were taught about the ethnoveterinary practices in dairy cattle disease management, Mastitis control and management.

DAY 2:

Dr Sivakumar, Veterinary Asst Surgeon delivered technical talk about reproductive and disease management in dairy cows. He also informed about the importance of Mineral mixture and its benefits for dairy cows/calves and heifers. He explained in detail about the important disease/metabolic diseases affecting dairy cows, its symptoms and preventive measures to be taken.

Mrs. S. Poomathi, Subject Matter Specialist (Home Science) explained the farmers about importance of Milk and its nutritive value to children. She described about the different value-added products from milk and its recipe. She emphasized about the small scale entrepreneurial opportunities in dairy sector that can be initiated by FPO Members.

EXPOSURE VISIT TO ICAR – NDRI, BENGALURU

On completion of two-day training for two batches, the participant farmers visited ICAR – National Dairy Research Institute, Southern Regional office, Adugodi, Bengaluru as part of the training programme on **28.6.2023** along with Subject matter Specialists of KVK, Krishnagiri.

Technical Session – Interaction with NDRI Scientists:

Dr Devi, Principal Scientist had delt session on Clean Milk Production Practices and had interaction with farmers about the problems faced in field due to mastitis and udder related infections.

Dr Manimaran, Senior Scientist had explained about major diseases affecting dairy cows and preventive measures to be taken.

Dr Subhash, Senior Scientist delivered about Entrepreneurship development in dairy sector., He informed about the scope for value addition in milk, Milk products through FPO.

Farm Visit at NDRI campus:

The farmers visited the dairy farm and had interaction with scientists in farm. The farmers had visited native cattle breed units, Fodder production units, Hydroponic fodder cultivation methods

Dr Siddaraman, Assistant chief technical officer explained the history of the ICAR – National Dairy Research Institute, Southern regional Station, its genesis and daily farm routine. He also explained about the Fodder production plots for feeding dairy cows and the breeds maintained in the farm.

Dr Jeyakumar, Principal Scientist had interacted with the participant farmers on their present feeding methods, lessons learnt in two days training. He gave few management tips in maintaining dairy cows. He showed the hydroponic fodder production unit and explained in detail about seed soaking, tray preparation etc. He also informed them about the sex sorted semen for Artificial Insemination in dairy cows.

FOLLOWUP VISIT AND DOCUMENTATION

The Subject Matter Specialists of KVK, Krishnagiri had visited the farmers after the completion of training. Follow up visit was made during the month of July to ensure the adoption of technologies learnt and also documentation on the feedback of training from participant farmers during the month. The farmers had given positive feedback on the technologies learnt.

During follow up visit and documentation the farmers expressed the adoption of few technologies learnt from the training

- a. Few Farmers purchased Fodder seeds like Hedge Lucerne (Velimassal) and Fodder Sorghum CO31 seed for sowing during this season.
- b. Some farmers are willing to include new fodder varieties during the current year in their field once the monsoon starts.
- c. Few farmers changed the method of feeding like part feeding after milking as preventive measure for Mastitis in dairy cows.
- d. Women farmers had initiated deworming of their calf and adult dairy animals. They had not practiced deworming of dairy animals pre and post monsoon before.
- e. Farmers expressed that they were not aware of quantity of green fodder to feed and the quantity of drinking water required based on milk yield of a particular dairy cow.
- f. Also expressed that they did not follow the Chopping of green fodder into small pieces before, and now they are aware of the importance and started adopting these methodologies in feeding dairy cows.

VALEDICTORY SESSION

The Valedictory session was conducted on **27.07.2023** which was presided by **Dr.Sundarraaj, Senior Scientist and Head, ICAR-KVK, Krishnagiri and Mr.Praveen Babu , DDM-NABARD- Salem Cluster office and Mr.Rajan, Lead Bank Manager – INDIAN BANK, Tirupattur district** were the chief guest for the occasion. Mr.Ramachandiran, Director- Freedom FPO participated in the event. Introductory Speech delivered by Senior Scientist and Head about three day training programme conducted for FPO members. The **DDM, NABARD** had interacted with the participant farmers about the training sessions given by KVK and emphasized them to adopt the practices learnt in the training. He advised the farmers to make use of the technological knowledge provided by experts of KVK and the scientists from NDRI, Bengaluru during the training. The farmers gave feedback about the training and exposure visit during the interaction session with participant farmers. The **Lead Bank Manager, Indian Bank** delivered special address and had appreciated the efforts of KVK Krishnagiri in imparting skills and technical knowledge to small holder dairy farmers. He stressed the farmers to use this linkage with experts of KVK to improve their economic status by adopting scientific interventions in cost effective manner. He also informed about various Schemes / loan for livestock and other insurance schemes to the participant farmers as they were FPO members.

Participation Certificate to Women farmers:

At the end of the Valedictory Session Participation Certificates were distributed to all the **50 participant farmers (25 farmers in 2 batches)** by Mr.Praveen Babu, DDM-NABARD- Salem Cluster office and Mr.Rajan, Lead Bank Manager – INDIAN BANK, Tirupattur district and Dr.T.Sundarraaj, Senior Scientist and Head. The Subject Matter Specialists of KVK, Krishnagiri were present during the valedictory Session of the training programme.

OUTCOME AND FEEDBACK FROM PARTICIPANTS:

The farmers expressed their feedback about the training programme and are as follows

1. Farmers were unaware of mastitis, cause and control methods before, and after the training informed about mastitis prevention and control in dairy cattle. Also, opined that they know about latest technologies available for control like spray after milking and care to be taken by farmers for udder health, hand hygiene and use of potassium permanganate solution before milking, feeding method after milking etc., from the training.
2. They are now well aware of latest fodder varieties and its cultivation. We were not known about these varieties before. Now we aware of mixed fodder varieties and its benefits to reduce the feed cost and improve balanced nutrition to dairy cows. We will cultivate these latest varieties and feed to our dairy cows
3. Also, they came to know about Azolla cultivation and its benefits to livestock.
4. They came to know about Velimassal seed (Hedge Lucerne seed) which is rich in protein for dairy cows and other livestock. We were unaware of this seed before the training. Now we are planning to cultivate for feeding of dairy cows along with other feed.
5. They are now aware of use of mineral mixture and its benefits for dairy cows
6. They came to know about the major diseases and their symptoms and about the important Ethno veterinary medicines for dairy cattle. In the booklet, we had few Ethno veterinary combinations which will be useful to practice when in need
7. They came to know about alternatives for tick control and about deworming, vaccination to calves and adult cattle.
8. They visited the Research Institute at Bengaluru for the first time and came to know about clean milk production practices, hydroponic fodder cultivation methods and shown different native cattle breeds
9. They all thank for the opportunities given by KVK, Krishnagiri, NABARD and Freedom FPO for the training and visit arrangements to all farmers.

ABSTRACT OF EXPENSES

Particulars	Cost details	Expenses (Rs.)
Travel cost for farmers Exposure visit		
A. Vehicle hire charges for Exposure visit	70000	100000
B. Meals and refreshment for farmers	20000	
C. Travelling allowance for farmers	10000	
Boarding and Lodging	30000	30000
Study Material (training material, Training manual and Documentation)		
A. Booklet /manual printing	9000	15000
B. Stationary /training material kit	6000	
Cost of travel, Boarding of expert and Honorarium	12000	12000
Honorarium / Institutional charges for the technology provider	16000	16000
Compensation for the KVK/Service provider to undertake follow up visit	10000	10000
Miscellaneous / Contingency	10000	10000
		193000
Farmers Contribution	50 farmers @ Rs.200/-	10000
Total Expenses made (Rs.)		183000

Glimpse of Project Activities

Inauguration of Training Programme



Batch I



Batch II

Release of booklets for participants



Inaugural address



**Senior Scientist and Head,
ICAR-KVK, Krishnagiri**



**Lead Bank Manager - Indian Bank,
Tirupathur District**

Training Programmes

Technical Sessions for Batch I & II



Dr. S. Ramesh, SMS (Animal Science)



Dr. Sivakumar, Veterinary Assitant Surgeon (Veterinary Expert)



Mr. T. I. Ramesh Babu, SMS (Horticulture)

Mr. K. Gunasekar, SMS (Soil Science)



Mr. S. Udhayan, SMS (Agronomy)

Mrs. S. Poomathi, SMS (Home Science)

**Exposure Visit to ICAR - National Dairy Research Institute,
Southern Regional Office, Bengaluru**

Technical Sessions



Dr. Devi, Principal Scientist



Dr. Manimaran, Senior Scientist



Dr. Subash, Senior Scientist



Dr. Siddaraman, Asst. Chief Tech. Officer

Farm Visit



Dr. Jeyakumar, Principal Scientist - Dairy Farm Visit and Hydroponic Fodder



Training participants at NDRI Campus

Follow up visit and documentation



Feedback and video documentation

Valedictory Programme



**Introductory Speech by
Dr. T. Sundarraj, Senior Scientist & Head**

**Presidential Address by
Mr. Praveen Babu, DDM-NABARD**



**Special Address by
Mr. Rajan, LDM, Tirupathur**

Certificate Distribution



Batch I Participants

Batch II Participants

4. Scientific Goat Farming:

Introduction

ICAR – Krishi Vigyan Kendra organized three days training programme on “Scientific goat farming” sponsored by Vaalndhu Kattuvom Project (TNRTP). The programme was conducted from 03.07.2023 to 05.07.2023 which benefitted 17 SPARK trainers of VKP (TNRTP), Krishnagiri district. The programme was inaugurated by Senior Scientist and Head, KVK – Krishnagiri and District Executive Officer - Vaalndhu Kattuvom Project (TNRTP) on 03.07.2023 at ICAR – Krishi Vigyan Kendra, Krishnagiri. Training programme was conducted for two days at KVK, Krishnagiri and on third day of training programme the SPARK trainers had visited Mecheri Sheep research Station, TANUVAS, Salem District.



Objectives:

The training programme was organized with the following objectives:

- To impart knowledge on selection of goats, Goat breeds and to enhance Knowledge on Feed and fodder crops for goats
- To impart knowledge on housing management, breeding management, disease management, care and management of goat kids, Fattening of goat kids

SCHEDULE /COURSE MODULE:

NO. OF DAYS : THREE DAYS (03.07.2023 to 05.07.2023)

Day	Session	Course
Day 1	I	Inauguration
	II	Scope of goat farming as profitable venture, Fodder crops - classification and cultivation practices
	III	Nutrition and feeding of goats/ kids, Tree fodder/crop residue in goat feeding
	IV	Concentrate feeding and Care and management of goat kids
Day 2	I	Housing Management in goat farming, Manure value and Management
	II	Breeding management in goat farming
	III	Care and management of goat kids, Fattening of goat kids
	IV	Disease management- Importance of Deworming and vaccination
Day 2	-	Mecheri Sheep Research Station – Exposure Visit

Dr Ramesh, Subject matter Specialist (Animal Science) had explained about Selection of goats and scope of Goat Farming.

Mr Udhayan explained the farmers about the fodder crops and cultivation, type of fodder for goat and its nutritive value. The farmers were also informed about importance of concentrate feed and use of Azolla, its cultivation method and its benefits to goats.

Dr Ramesh explained the farmers the about care and management of pregnant animals, Care and management of goat kids. He also informed the farmers about the importance of Mineral mixture/ Mineralised lick to kids and adult goats. Also, the farmers were informed about the important disease affecting dairy cows, its symptoms and preventive measures to be taken. The importance of deworming and vaccination was explained.

The trainers were explained about the importance of manure and its value. The trainers were informed about composting farm waste and manure, vermicompost production and its benefits to reduce the cost of production in crops.

Mr Senthil Kumar, Subject Matter Specialist (Agrl Extension) informed farmers about the mobile apps in goat farming by TNAU and TANUVAS

On third day of training programme the SPARK trainers had visited Mecheri Sheep research Station, TANUVAS, Salem District. The SPARK trainers had interaction the faculty of MSRS, Salem during the visit. Dr Muralidhran, Professor and Head, MSRS had given introduction about the Research Station and about the Salem black goat breed.

Dr Sankar had emphasized about the fodder cultivation models and given importance for Agroforestry model fodder cultivation in goat farming. Also visited the agroforestry models and the units in MSRS Farm. The trainers were informed about the fattening of goat kids as profitable venture.

A Booklet on “Scientific Goat farming” was given to participant trainers.

Feed Back from Participants:

The farmers expressed their feedback about the training programme.

1. We were informed about goat breeds, Selection of goats and informed about fodder varieties and its cultivation. We were not known about these varieties before.
2. We came to know about Azolla cultivation and its benefits to livestock.
3. We came to know about Tree fodder /crop residues in goat farming, disease and its symptoms and about the important Ethno veterinary medicines for livestock
4. We were well informed fattening of goat kids and its benefits, also about vermicomposting method for enriching goat manure

5. Backyard Poultry Farming:

Introduction

ICAR – Krishi Vigyan Kendra organized three days training programme on “**BACKYARD POULTRY FARMING**” sponsored by Vaalndhu Kattuvom Project (TNRTP). The programme was conducted on 05.09.2023, 07.09.23 and 08.09.2023 which benefitted 11 SPARK trainers of VKP (TNRTP), Krishnagiri district. The programme was inaugurated by Senior Scientist and Head, KVK – Krishnagiri and District Executive Officer - Vaalndhu Kattuvom Project (TNRTP) on 05.09.2023 at ICAR – Krishi Vigyan Kendra, Krishnagiri. Training programme was conducted for two days at KVK, Krishnagiri and on third day of training programme the SPARK trainers had visited Collge of poultry Production and Managemen (TANUVAS), Mathigiri, Hosur, Krishnagiri District.



Objectives:

The training programme was organized with the following objectives:

- To impart knowledge on Backyard poultry farming and to enhance Knowledge on Brooding management in chicks
- To impart knowledge on housing management, Nutrition and disease management, Vaccination and Ethnoveterinary practices

SCHEDULE /COURSE MODULE:

NO. OF DAYS : THREE DAYS (05.09.2023, 07.09.2023 and 08.09.2023)

Day	Session	Course
Day 1	I	Inauguration
	II	Scope and advantages of Backyard poultry production system
	III	Improved native chicken varieties
	IV	Housing Management for native chicken
Day 2	I	Brooding management of chicks
	II	Nutrition Management, Azolla Cultivation
	III	Disease management- Importance of Deworming and vaccination
	IV	Vaccination for Chicks. Growers and Method of administration Ethnoveterinary Practices
Day 3	-	College of Poultry Production and Management, Hosur – Exposure Visit

Dr Ramesh, Subject matter Specialist (Animal Science) had explained about Scope and advantages of Backyard poultry Production system

Also explained the farmers about the Improved native chicken varieties and Housing Management for native chicken. The farmers were also informed about Nutrition management and use of Azolla, its cultivation method and its benefits to native chicken.

Dr Ramesh explained the farmers the about Brooding management of chicks and showed the method in KVK poultry unit. He also informed the farmers about the importance of light during brooding period.

Also, the farmers were informed about the important disease, its symptoms and preventive measures to be taken. The importance of deworming and vaccination was explained. Vaccination schedule to be followed during this stage was informed to trainers

Method demonstration was done about the vaccine administration to chicks during brooding. Also showed them how to reconstitute the vaccine and informed them about the precaution to be taken for storage of vaccine

On third day of training programme the SPARK trainers had visited College of Poultry Production and Management, Hosur. The SPARK trainers had interaction with the faculty of CPPM, Hosur during the visit. Dr Selvan, Dean, CPPM had given introduction about institute.

Dr Shamsuddin, Professor and Head had emphasized about Brooding Management, Hatchery management and Biosecurity measures to be taken. The trainers also visited Quail Farm in CPPM.

On completion of training programme, Certificate with Booklet on “Backyard Poultry farming” was given to each participant.

Feed Back from Participants:

The farmers expressed their feedback about the training programme.

1. We were informed about Brooding management practices
2. We came to know about Nutrition Management, Azolla cultivation and its benefits to livestock.
3. We came to know about the disease and its symptoms and about the important Ethno veterinary medicines/practices for poultry
4. We visited CPPM college, Hosur and had interacted with professors about the practical problems and solutions in backyard poultry farming which useful for beginners

Success stories

A. NUTRI GARDEN:

1. Situation analysis/Problem statement:

In Krishnagiri district, Schedule caste and Scheduled Tribes population spread over Krishnagiri, Bargur, Veppanapalli, Kelamangalam and Thally blocks. Out of total population, there are 14.22% Scheduled Caste and 1.19 % Scheduled Tribe living in Krishnagiri district.

The social economic condition of Scheduled Tribes is poor and majority of the population depends only on forest resources and agriculture for their livelihood. Malnutrition and nutrition related disorders are common health related issues found among all age groups. Vitamin A deficiency and iron deficiency (Anaemia), Low Body Mass Index are wide spread in the tribal women, lactating and pregnant mothers. The reason behind this low intake of vegetables, fruits and other healthy foods. The other factors are poor purchasing power, poor access market, social taboos, ignorance, social cultural habits, large family size, illiteracy, poor knowledge on the concept of healthy diet are the reason. More over tribal women faced several health issues, nutritional disorders. Hence the demonstration of nutri garden model is one of the best approaches to attain nutritional security, balanced intake of fruit and vegetables helps to overcome such nutritional disorder and malnutrition problem.

Mrs. V. Nagammal W/o. Venkatesh, Javukupallam Village of Bargur Block, Krishnagiri District poor intake of balanced diet. Her health got deteriorated. Tribal women are economically backward and need to be give more awareness on balanced diet and proper consumption of fruit and vegetables, proper training on Nutri Garden concept and its benefits, for reducing risk of malnutrition among the groups in the tribal families. Hence, the KVK has planned to promote nutri garden in Javukupallam villages for the economically weaker section.

2. Plan, Implement and Support:

During 2022-23, Fifteen Scheduled tribal farmers were selected for conducting nutritional survey in Javukupallam village of Bargur block and provided with critical input like native seeds (Brinjal, Tomato, Bhendi, Gourds, Chillies, Cluster beans, Cowpea, Amaranthus, Raddish), Seedlings (Moringa, Papaya, Amla, Guava), Vermicompost and grow bag kits of various dimensions distributed to the selected tribals of Javukupallam Village. They were regularly supported with technical guidance through various training programmes. The training programmes were emphasised with organic method of cultivation, preliminary maintenance of soil health by organic manures like farmyard manure, vermicompost, water management. Training conducted on nutri garden are as follows:

Sl. No	Date	Topic	No. of participants
1	23-Jul-23	Nutrigarden	24
2	18-Aug-22	Nutrigarden	30
3	09-Sep-22	Nutritional Campaign and Tree Plantation Programme (Poshan Abhiyan)	200
4	16-Sep-22	Nutrigardening and its Importance	21

3. Output:

Mrs. Nagammal, based on the nutritional status such as body weight, BMI improved for the past 9 month study. An additional, sustainable net income Rs.980/- per month also get from the sales of vegetables and greens which satisfies other family needs. At present, she act as a trainer in and around the tribal areas to promote the concept of nutri garden for maintaining proper health and nutritional security.

4. Outcome:

Sl. No	Name of the tribal women	Area	One Crop cycle			
			Yield	Gross Income (Rs.)	Net return (Rs.)	BCR
1	Mrs. V. Nagammal W/o. Venkatesh, Javukpallam Village, Bargur Block, Krishnagiri	200 m ²	2.40 q/ha	6850	3950	2.36

5. Impact:

- Nutritional security - improved in terms of bodyweight and HB level of all age groups.
- Home environment clean and eco-friendly,
- Increase in savings due to cultivation of nutri garden,
- Need long term study results to observe the health status among the vulnerable peoples.

6. Photographs



Training and Distribution of critical inputs



Field Visit

B. HIGH INCOME FROM DHARANI (TCGS 1043) VARIETY:

1. Background/ existing problem:

Groundnut is an important oil seed crop in most part of the Krishnagiri district. It is cultivated in an area of 10,000 ha as rain fed and irrigated condition. Mr. G. Murugesan S/o Govindhasami, Kodipathy village is a small groundnut grower. He cultivated groundnut in his 1 acre land. Due to the repeated cultivation of TMVGn 13 existing variety the yield was low. So, he participated in Cluster Frontline Demonstration programme.

2. Process and methods through which interventions by KVK was made:

During 2022-23, Krishi Vigyan Kendra was conducted Cluster Front line demonstrations in Kodipathy Village of Mathur block in Krishnagiri district. In this Cluster FLD, farmer was supplied with the required seeds, bio-fertilizers and supported with the technical guidance. On campus and off campus training programmes were conducted to impart knowledge and skills on ICM among the farmer. During the training programmes and field visits emphasis was given on ICM technologies.

3. Output:

The Cluster Frontline demonstrations results showed that he got highest yield in adoption of Dharani variety (32.08 q/ha) followed by existing variety TMVGn 13 (23.28 q/ha). The net return was highest in Dharani variety in demonstrated field was (Rs. 1,12,713/-) than compared to the farmers practice (Rs. 48,263/-). Yield increase percentage was 37.81% in of Dharani variety compare to Dharani.

4. Outcome:

From the Custer FLDs conducted during the 2022-23 it was found that of Dharani (TCGS 1043) variety was best suited for the Krishnagiri district. The Dharani (TCGS 1043) variety is Drought tolerant, withstands up to 35 days dry spell, Uniform maturity, High SMK%, Attractive pods, Moderate stature, Tolerant to low light conditions.

5. Impact:

The Dharani (TCGS 1043) variety was well received by the farmers due Uniform maturity, Attractive pods and high yielding in nature. The farmers from the other blocks of Krishnagiri has also been made aware of the suitability and performance of the variety through various extension means viz., trainings, front line demonstrations and mass media coverage. Around 500 ha of area extended under the cultivation of Dharani (TCGS 1043) variety in Krishnagiri district.

6. Photographs



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

a. Fruitful utilization of social media networks for the transfer of technology:

As the most of the farmers are using smart phones, our KVK initiated a step to utilizing for the effective transfer of technology for which one of the major social media networks namely ‘WhatsApp’ has been taken as a tool to interact with the target group of farmers. We created WhatsApp group called “KVK Krishnagiri” on 13.11.2017 with a member of 950 progressive (5 Groups) farmers across the district. The group is very much active with the participants of almost all the farmers who share the information on latest technologies on agriculture and allied subjects including the marketing and value addition. It is very much helpful to the farmers for field diagnostic problems through which the farmers interact with the scientists and get the solutions for their field problems. Outbreak of pest and diseases information also forecasted.

- b. A YouTube channel "<https://www.youtube.com/@ICARKVKKRISHNAGIRI>" was created by KVK and Success stories and few latest technologies have been webcasted.
- c. A Facebook profile "<https://www.facebook.com/kvk.krishnagiri/>" for posting Ongoing activity, Past event, Future event and providing relevant details of marketing products of KVK Krishnagiri.
- d. A Twitter profile for "<https://twitter.com/IcarKendra>" post sharing events and Trending Hash Tag to popularize the activity or programme.
- e. A Website for KVK Krishnagiri "www.krishnagirikvk.org" for our KVK Profile and more details.

Details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development - NIL

Impact of KVK activities

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs. /Unit)	After (Rs. /Unit)
Management of mango fruit fly	4720	45	12,000	20,000
Foliar nutrition supplementing of micro nutrient	634	70	10,000	18,000
Preparation of value addition	352	25	-	10,000/Month
Fodder production techniques	573	30	2,000	7,000

Impact of five select technologies assessed/demonstrated/popularized by the KVK in the district

Sl. No.	Name of specific technology/skill transferred	Source of technology	No. of farmers	Extent (ha)	Increase in net return Rs/ha	Economic Impact /benefit (Rs) (5X6)	KVK Intervention OFTs/FLDs/ Trainings	Convergence /Partners involved in up scaling of technology	Remarks
1	2	3	4	5	6	7	8	9	10
1	Management of Mango Fruit Fly	IIHR	25,862	18,376	22,495	41,33,68,120	<ul style="list-style-type: none"> ✓ 16 Front Line Demonstration conducted covering 68 ha and 160 Farmers. ✓ Organized 50 Training were covering 937 Farmers 	State Department of Horticulture, NABARD - Krishnagiri	Yield increased 43.18%
2	Micronutrient Management in Mango	IIHR	11,267	9,615	46,225	44,44,53,375	<ul style="list-style-type: none"> ✓ Conducted 13 Front Line Demonstration Conducted 22 methods demonstration ✓ Conducted 25 trainings for Extension Officials ✓ Provided 18 mobile advisory service to farmers ✓ Spread of this technology through Newspapers 	State Department of Horticulture - Krishnagiri	Yield increased 29.4%
3	Integrated Crop Management in Finger Millet	UAS	19,486	10,125	21,668	21,93,88,500	<ul style="list-style-type: none"> ✓ Conducted Front Line Demonstration and Trainings 	State Department of Agriculture - Krishnagiri	Yield increased 16.44%
4	Farm Mechanization in Paddy	TNAU	6,845	9,748	40,425	39,40,62,900	<ul style="list-style-type: none"> ✓ Training and Demonstration 	State Department of Agriculture - Krishnagiri	Yield increase 22.86%
5	Farm Mechanization in Groundnut Cultivation	TNAU	11,758	8,755	28,340	24,81,16,700	<ul style="list-style-type: none"> ✓ Training and Demonstration 	State Department of Agriculture - Krishnagiri	Yield increase 6.74%

Box item for APR 2023

Since for the past few years, I am cultivating old existing Redgram variety which was highly susceptible to wilt, sterility mosaic disease and pod borer pest incidence leads to low yield (12.33 qtl/ha) and income (Rs.20,375/- per acre). So, I am not able to get good yield and profitable income in 1 Acre. After that I get trained on Integrated Crop Management in Redgram under CFLD 2022-23 from KVK Krishnagiri. They gave new variety seed LRG 52, MN Mixtures, and IPM kits new high yield varieties and other latest cultivation practices also paved the way for marketing also. Due to the intervention of latest technology yield also increased (15.88 qtl/ha) and income also doubled (Rs. 50,875/-).

Mr. Tamil Mani S/o. Rajigounder,
K. Papparapatti village, Krishnagiri District.



I had been selected for FLD programme for TANUVAS Aseel under backyard condition. KVK had given training about Scientific management practices for Aseel birds rearing. Through the FLD, I came to know about this improved breed TANUVAS Aseel. The body weight at 12th week and 6th month was 1.13 kg and 2.3 kg respectively. The mortality was also very less when compared to desi chicken. The TANUVAS Aseel breed was adaptable and had fetched good market price with net return of Rs. 9475/-.

Mr. R. Chakravathi S/o Ranger,
Arasampatti Village, Krishnagiri District



I attend the vocational training programme on millets in KVK Krishnagiri during 2022-23 on preparation of organic food products through this training I got motivated and empowered to start the business in the brand name of MRS Millet Food Products. Through the business I earn the monthly income of Rs. 1,50,000/-. Through technical back up and support from KVK I fetched good market support through Mahalir Thittam Complex at Collectorate Krishnagiri, College Bazaar, Weekly Marabu Santhai.

Mrs. Ranjini W/o. Murugan,
Sembadamuthur Village, Krishnagiri District.



Entrepreneurship development of Millet based Food Product:

KVK Krishnagiri has been playing a primary role in imparting training to farm women on vegetable preservation and millet food products.

BACKGROUND OF THE INTERVENTION:

Mrs. Ranjini aged 42 was a resident of Sempadamuthur village graduated having one daughter and one son living with her husband in a remote village, and is downtrodden. Initially she finds difficult to educate her children due to poor income through sale of mango pickles. She faced many problems initially to market her products. She approached the KVK during 2020, and got technical guidance and participated in several vocational training programmes on vegetable preservation and millet-based food products.

Through cultivation of ragi in organic method, in her own field, of small holding, she utilizes for production of millet based ladoos, millet murukku, millet snacks and millet sweets and marketed through different outlets and fetched more profit.

Progress achieved by the entrepreneur on vegetable preservation and millet food products:

Year	KVK support	Intervention
2020	Training on preparation of pickles and vegetable preservation	Participated in the training Programme
2021	Training on dehydrated products	Got motivated to start the enterprise
2022	Interaction with DIC, for enterprise development	Branded the product in the name of MRS and marketed in the collectorate Mathi complex
2023	Marketing avenues for development	Through college bazaar, through Marapu sandai, Seasonal mango exhibitions and Weekly grievance day programme at Collectorate and Bangalore Market

Impact:

Mrs. Ranjini utilized the brand name of MRS for selling the products, of millet Based and mango pickles, tomato pickles, pirandai thokku, and products are liked by the consumers due to the taste, acceptance and organoleptic characteristics of the products. The additional income of Rs. 1,50,000/- generated through the sale of Millet based product and vegetable food products. Increased the livelihood to the family through entrepreneurship.



Cases of large-scale adoption/impact of specific technologies

MANAGEMENT OF MANGO FRUITFLY

Introduction

Krishnagiri district situated in the North Western zone of Tamil Nadu is bestowed with varied agro climate, which is highly favorable for the cultivation of large number of horticultural crops. This district ranks first in the cultivation and production of Mango in Tamil Nadu. Of the total area 1,20,000 hectares under mango in Tamil Nadu, 40,000 hectares (35%) is in Krishnagiri district. The annual production is about 3.8 lakh tones. Above 70 percent of total production is used for processing into mango pulp. Bangalora and Alphonso are the major varieties used for the production of pulp.

There are around 40 pulping units in the district. Above 2,500 containers of mango pulp is processed every year which is about 40 percent of the total mango pulp production in our country. A brand “KRISHMA” has been formed by the District Administration for the development of quality mango production of the district. Keeping this in view, Government of Tamil Nadu has declared this region as ‘Agri Export Zone’ especially for Mango.

Situation analysis

The average rain fall of the district is 830 mm. spread over an average of 71 rainy days in a year. The maximum rainfall occurs during August to October and lowest during January. The maximum temperature ranges between 20⁰ C to 40⁰ C during April to May and the lowest temperature 15⁰ C to 28⁰ C observed during December and January. The low night temperature during the flowering season helps in better fruit set. The low rainfall and low humidity (60% to 70%) helps in low spread of diseases.

Only 20 percent of the mango produced is consumed for table purpose and 15 percent for pickles. The productivity of this district is very low (4.2 tonnes/ha.) compared to the national productivity (5.5 tonnes/ha). Even though the area under mango increasing, the productivity is decreasing. There are several reasons that can be attributed for low productivity. The major causes are cultivation of low yielding varieties, rainfed condition, age old trees and also pest and diseases.

Among various pests affecting mango fruit fly *Bactocera dorsalis* and *B.correctus* causes yield loss even up to 80%. The population of fruit fly is found to be more during the months of April to August. Custard apple found in the hilly regions is the main alternate host which helps in perpetuating the occurrence throughout the year. The female fruit fly lays eggs under the skin of the fruit. The egg hatches into whitish maggots that feed on the fruits which causes rotting resulting in great loss to the farmers. Use of chemicals for the control of fruit fly creates problem of the residual effects on fruits. Hence sex pheromones are the cheapest alternative for the management of the fruit fly in mangoes.

Technology

Indian Institute of Horticultural Research (IIHR), Bangalore has developed a low cost and ecofriendly technology of fruit fly trap. By keeping this traps @ 12 traps per ha during fruit development stage

considerably reduces the population of fruit flies. The cost of this trap is very low considering the commercial one. Using locally available material the trap can be produced and very easy to handle.

Intervention

More than 70 % of the farmers do not sell the produce directly and give their orchards on lease. So, these farmers do not take any specific measures in controlling this pest resulting in increasing the population year after another. Hence an OFT was conducted during 2005-06 and efficacy different types of pheromone traps for the management of fruit fly was assessed. From the results of the OFT, IIHR designed fruit fly trap was found to be more effective. Based on this OFT, Front Line Demonstrations was conducted continuously from 2006-2007 to 2022-2023. The KVK also initiated different extension teaching methods such as field demonstration, training, Farmers Scientist Interaction, group discussion, diagnostic visits etc., to promote this technology. KVK also published colourful pamphlets and distributed to the farmers.

A programme on fruitfly management was telecasted in 'Doordharsan' and this technology was also published through Newspaper regularly. Apart from above farmers were informed about this technology through SMS to increase the adoption rate.

The control of fruit flies is particularly difficult on the small orchards because of the constant migration of flies from nearby area. Hence community based, large scale demonstrations were conducted with sponsorship of NABARD under Farmers Technology Transfer Fund (FTTF) during 2010-11. Field demonstrations were organized in 30 hectares covering 75 farmers in two cluster villages. Field day was organized, trainings were conducted and extension literatures distributed under this programme. This led to greater impact on the management of fruit flies.

Impact

Scientist from IIHR visited the demonstration fields and collaborative demonstrations were conducted in another 60 ha. This made impact among the farmers and huge number of farmers enquires came from the farmers on pheromone trap for fruit fly management.

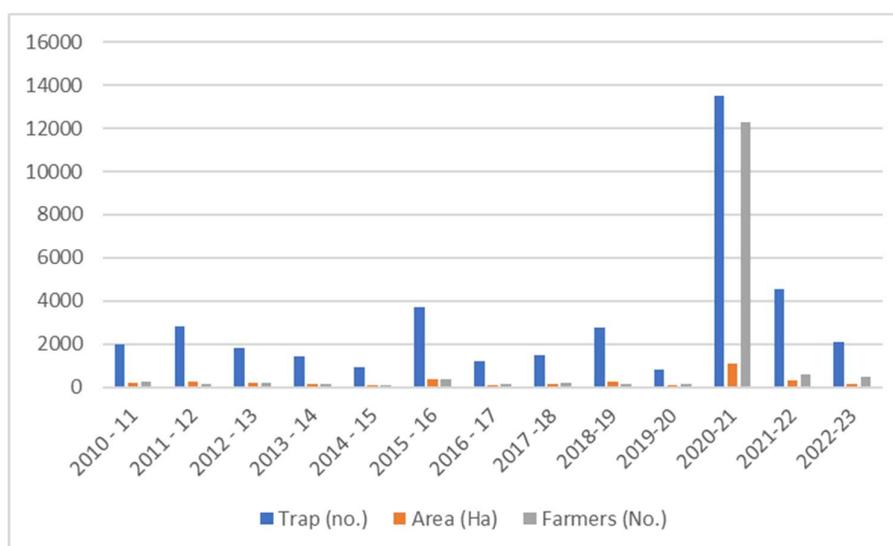
Technical presentations were done regularly during the meetings of Agricultural officials including monthly Zonal workshop. Commissioner of Agriculture allotted Rs.1,00,000 for conducting large scale demonstration of fruit fly management under ATMA programme during 2012-2013 in all blocks of the district. Because of the large-scale demonstration farmers could realize the importance of cheaper, ecofriendly technology and adopted it. While owing to the growing demand of the fruit fly traps by the mango growers, pesticide dealers started selling the same and thus it is now easily available in local market.

Regional Research Station, TNAU at Paiyur has supplied is free of cost to the farmers during 2014-2015 under the special scheme.

KVK is producing and supplying fruit fly traps at the nominal cost of Rs.80/- to the farmers whereas the commercial trap costs Rs.150 to Rs.180/-. By word-of-mouth farmers from neighboring districts is also purchasing the fruit fly trap from KVK.

Production and supply of Fruit fly trap by KVK

Year	Trap (no.)	Area (Ha)	Farmers (No.)
2010 - 11	1962	201	256
2011 - 12	2801	280	140
2012 - 13	1837	188	180
2013 - 14	1421	145	150
2014 - 15	927	98	92
2015 - 16	3702	370	395
2016 - 17	1181	119	132
2017 -18	1498	145	182
2018-19	2756	250	120
2019-20	791	65	124
2020-21	13503	1080	12287
2021-22	4567	336	590
2022-23	2082	138	482



Conclusion

Large scale demonstration of this technology has reduced the incidence of fruit fly and thereby increased the income of the farmers. Owing to the easiness, eco-friendly and cost effectiveness, this technology has spread over larger area. Survey conducted by KVK revealed that this technology is being adopted by about 45 % of the farmers in the selected villages. It is also estimated that 28 % of total area in the district under mango has been brought under this technology.

Linkages

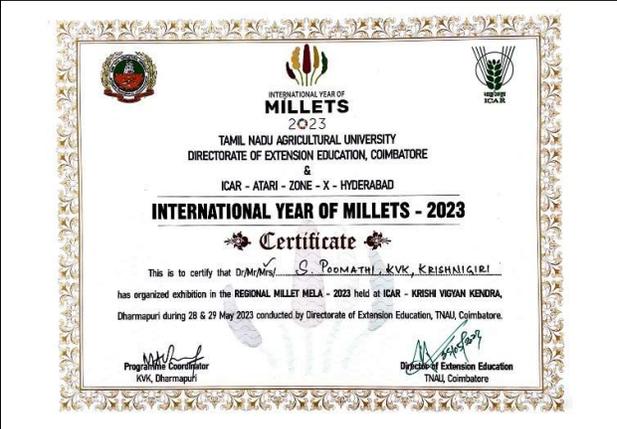
Functional linkage with different organizations

Name of the organization	Nature of linkage
Tamil Nadu Agricultural University	Technical guidance for FLDs and OFTs and other researchable issues
Indian Institute of Horticultural Research, Bangalore	Technical guidance for FLDs & OFTs collaboration in conducting demonstrations of IIHR technologies
Veterinary University Training and Research Centre (VUTRC), Krishnagiri	Technical guidance for FLDs and OFTs and sponsored mass contact programmes, Animal Health camps
Horticulture College and Research Institute, Krishnagiri	Joint diagnostic visit, Zonal meeting, Field visits, Technical guidance for FLDs and OFTs
College of Poultry Production and Management, Hosur	Training, Exposure visit and supply of birds
NABARD, Salem	Collaboration in conducting skill development initiative programme, Farmers Technology transfer fund programmes (FTTF), MEDP
Department of Agriculture and Farmers welfare, Krishnagiri	Trainings for farmers, Trainings for extension functionaries, ATMA programmes
Department of Horticulture, Krishnagiri	Trainings for farmers, Trainings for extension functionaries, ATMA programmes
Soil Testing Laboratory & Mobile Soil Testing Lab	Conducting soil sampling campaign
Department of Agricultural Engineering	Farm implements of Agricultural Engineering Department are being utilized for our demonstrations and trainings.
Department of Animal Husbandry	Sponsored and Joint veterinary camps, participating in Assistance to State Control of Animal Diseases (ASCAD) meetings, collaborative linkage for conducting “Kaalnadai Paadukappu Thittam” camps and vaccination programmes
Divisional Forest Office, Krishnagiri	Collaborative training on importance of tree planting, vermi composting, sponsored training programmes to the Farmers Discussion Group
District Industries Centre, Krishnagiri	Entrepreneurship development activity
Department of women and child welfare	Collaborative trainings on nutrition and value addition.
Department of Agribusiness and Marketing	Collaborative trainings on Value Addition
National bureau of agriculture insects resources (NBAIR)	Technology guidance for the demonstration of <i>Tuta absoluta</i> , <i>EPN</i> , and Rugose Spiral white fly
Valnthu Kattuvom Thittam (TNAVKP)	Collaborative linkage to conduct SPARK trainings and Farm School programmes.
Department of Sericulture	Field demonstration, Joint Diagnostic Field visits.
Department of Fisheries, Krishnagiri	Farmers training and demonstration

AWARDS and RECOGNITIONS



29th All India Mango Exhibition - Certificate of Appreciation - Mango Exhibition



Regional Millet Mela - Certificate for Exhibition - KVK Dharmapuri



International Millet Year Celebration - Certificate of Participation



KVK Contact Farmer - P. Narayana Reddy - Millionaire Farmer Award of India in 2023

Important Visitors to KVK during 2023



ATARI Director and DEE TNAU visit to KVK



The Executive Director, TNVKP participation in World Environment Day 2023 Programme

JDH, Krishnagiri distributed mariegold and rose seedling to farmers



Deputy Director of Animal Husbandry visit to KVK Nursery unit

Joint Director of Agriculture, Krishnagiri visit to KVK for Zonal Meet



Professor of Water Resource Development, Trichy

Joint Director of Agriculture, Tirupathur visit to KVK for Zonal Meet
