

ANNUAL REPORT OF KVK ARIYALUR
(1st January 2022 to 31st December 2022)

1. GENERAL INFORMATION ABOUT THE KVK

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

a) Name of the KVK as per office records (MoU)	:	Ariyalur KVK
b) Address	:	ICAR Krishi Vigyan Kendra, (Hosted by CREED) Cholamadevi Post, Jayankondam (Via), Udayarpalayam Taluk, Ariyalur District, Tamil Nadu – 612902
c) Official Mobile No.	:	9751280089
d) Email ID	:	kvk.Ariyalur@icar.gov.in creedkvk@gmail.com

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

a) Name of the Host Organization as per office records	:	Centre for Rural Education and Economic Development (CREED)
b) Status of the Host Organization	:	Non – Governmental Organization
c) Address	:	23, Aranganathan Nagar, Near Chinna Market Chidambaram – 608001, Cuddalore District, Tamil Nadu
d) Landline Phone No.	:	04144-224987
e) Fax No.	:	---
f) Email	:	creed.ngo@gmail.com
e) Name of the Chairperson	:	Dr.V.Nadanasabapathy
e) Mobile No.	:	9443262222
f) Email ID	:	vnsabapathy@gmail.com

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

a) Name of the SS&H:	:	Dr.G.Alagukannan
b) Residential Address:	:	No.1, Sri Nagar, Jayankondam, Ariyalur District - 612802
c) Mobile No	:	9629246586
d) Email	:	gakannan@rediffmail.com

1.4. Year of sanction of the KVK (as per Official Order): 2009

1.5. Month and year of establishment: 23.03.2009

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

S. No.	Item	Area (ha)
1	Under Buildings	0.13
2.	Under Demonstration Units	0.02
3.	Under Crops	5.76
4.	Orchard/Agro-forestry	12.86
5.	Others (specify)	1.24
	Total	20.01

1.6. Infrastructural Development:

A) Buildings

S.No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs. In Lakhs)	Starting Date	Plinth area (Sq.m)	Status of construction (Completed/ in progress/ to be initiated)
1	Administrative Building	ICAR	31.03.2011	550	71.75381	---	---	---
2	Farmers Hostel	ICAR	31.03.2011	305	49.77500	---	---	---
3	Staff Quarters (No.)							
	1	ICAR	31.03.2011	399.96	55.58500	---	---	---
	2	ICAR						
	3	ICAR						
	4	ICAR						
	5	ICAR						
	6	ICAR						
4	Demonstration Units (add rows if required)							
	1. Goat -1	ICAR	31.03.2011	80	4.00	---	---	---
	2. Nursery-1	ICAR	31.03.2011	80	4.00	---	---	---
	3. Poultry-3	RF	25.10.2018	954	7.0	---	---	---
	5. Cattle shed -1	RF	24.03.2020	363	3.5	---	---	---
5	Fencing	ICAR	31.03.2012	1500 m	10.00	---	---	---
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 31.12.2022	Present status
Jeep	2020	8,00,000	51947	Good
Tractor	2020	8,00,000	910.9	Good
Power Tiller	2010	1,50,000	----	Not in working condition
Two wheeler(2)				
Bajaj Pulsar	2010	1,00,000	---	Condemned
Bajaj Platina	2010	1,00,000	---	Condemned

C) Equipment & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Computer dual core	Jan. 2010	50,000	Good
Xerox cum printer	Jan. 2010	70,000	Good
Camera	March 2010	25,000	Good
Generator	March 2011	1,00,000	Good
PUSA STFR Meter	March 2017	73,000	Good
Mini soil testing unit – Mridaparikshak	March 2017	80,000	Good
Computer i3 (2 Nos.)	March 2017	75,000	Good
UPS 2.0 KW (Battery and Inverter)	March 2017	29,000	Good
LED Projector (3200 lumens)	March 2017	29,000	Good
Portable PAS	March 2017	12,000	Good
Digital camera	March 2017	7,000	Good
Handy cam (Video camera)	March 2017	22,000	Good
Refrigerator	March 2017	16,000	Good
Fire extinguisher	March 2017	3,000	Good
Computer i5 and Epson Printer	March 2023	84,400	Good

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

S.No.	Date	No of Participants	Salient Recommendations
1.	25.01.2023	28	<ul style="list-style-type: none"> Farmers database numbers may be increased Invite and give trainings to new farmers instead of training regular and old farmers. Utilize revolving funds to develop new infrastructures and for other activities. Follow KVK, Namakkal model to bring up more revolving fund by producing fodder seeds. If possible KVK sales counter may be opened in rental building in main area. More concentration may be given to value addition. Medicinal plants cultivation and essential oil extraction may be promoted as entrepreneurship among rural youth. Concentrate on entrepreneurship development that includes complete enterprise from production to market tie-up. Promote Commercial Flower crop cultivation. Create awareness among farmers about

			<p>government schemes in all trainings.</p> <ul style="list-style-type: none"> • Always focus on government flagship programmes • Promote News on AIR app and Kisan II app among farmers • Do follow up, record output and impact for all trainings. • Give SAC action taken presentation crop-wise. • Cover all block, all crops and all categories of people. • Promote Bio-mineralisers for Soil Health Management • Cultivate all variety of millets in one acre and record performance of millets suitable for this district and promote among farmers. • Open sales counter and sell other products also other than own production like veterinary products, bio mineralisers, etc., • More trainings may be given to rural youths • Promote traditional crop varieties and give trainings • Value addition as ready to eat products • Implement all or maximum programs in KAVIADP village • Promote inland fish farming • Update KVK websites frequently, should be farmer friendly. Instead of photos more technologies may be given • Active in social medias viz., Facebook, Whatsapp, YouTube, Twitter • Promote seed production activity among farmers • Display Uzhavan App Board in KVK premise. • Promote good Banana variety suitable for Ariyalur district • Get technology and license for BANANA Micro nutrients production or else promote through PPP mode. • Promote STRC (Soil Test Crop Result) – NRCB is ready to work along with KVK to conduct demonstrations • Promote green manure to maintain / increase soil fertility • ADT 1 Sunn hemp variety is released as an alternate to Daincha may be promoted • Popularize ADT 7 Paddy variety alternate to ADT 3 variety. • Popularize ADT 58 Paddy variety alternate to ADT 39 suitable for Late samba / Thaladi season. • Popularize enriched Karuppukavuni Co57 TNAU variety which is suitable for all 3 seasons.
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			<ul style="list-style-type: none"> • Resource persons from Centre of Excellence in Millet, Athiyanthal may be invited for trainings. • To double the farmers' income and to reduce the cost of cultivation, reduce the chemical fertilizers and go for Integrated Nutrient Management to get high yield. • Arrange exposure visit to Ariyalur farmers to visit innovative IFS unit developed by RRS. • Create awareness among farmers to cultivate green manure crops to increase soil fertility • More trainings on Piggery farming and promotion of piggery farming • Floriculture, Sericulture, Apiculture training to Self Help Groups and follow the trainees as it serves as supporting income. • Give training on Fish culture and establish demo units. • Value addition training to SHGs' on meat products, milk products • Tie-up with department and do more soil test, mainly in KAVIADP village. • Bring barren land under cultivation by framing strategies and supporting points. • Promote traditional paddy consumption along with Mahalir Thittam project by campaign. • Programme on disease management in Poultry. • Create awareness on vaccination from day one and regular deworming. • Ensure availability of quality mushroom spawn at affordable price • Update technologies and information in website. • Ensure availability of H1 Cashew seedlings to farmers • Recommend suitable intercrop in Cashew as an alternate to Blackgram • Suitable package for Tea Mosquito Bug management may be tested • Give more awareness on IFS and give more advisories • Coordinate 50 farmers and form Natural Farming cluster. Create one model in one block by giving natural farming training and do follow up. • Give more training on Value Addition in Cashew and milk to Producer Club. • Promote Value addition in Millets • Create awareness and training on millet cultivation. • Millet trainings should be conducted with expertise • Trainings on Water conservation technologies
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			<ul style="list-style-type: none"> • Value Addition in milk can be focused. • Create awareness among school students about Agricultural and related courses. • Do follow up after trainings and record success cases of the farmers. • Promote traditional Paddy variety which has market demand. • KVK may develop millet demo unit at KVK farm along with TNAU and sensitize farmers on millet cultivation. • Both grant and loan available in (NABKISAN) NABARD for FPOs'. So do guidance regards attractive branding, labelling, marketing. • Promote nano technology samples and sales options. Give more training on new and latest technologies. • Subsidies available in department for Custom Hiring Centre for FPO, FIG and individuals. Create awareness and include much needed machineries. • More demos and trainings may be given along with Dalmia. • Initiate Millet Park with complete organic package of practice at KVK. • Disseminate Organic fertigation tank model to all KVKs'. • Supply of quality spawn material at affordable price. • More support and trainings to SHG's on milk value addition and IFS. • Promote millet cultivation and value addition. • Technologies and management practices for algae problem in Paddy and Root rot problem in Groundnut. • Promote organic inputs and collect feedback.
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** Attached a copy of SAC proceedings along with list of participants in Annexure-1*

2. DETAILS OF DISTRICT (2022)

2.0. Operational jurisdiction of KVKs

District	New districts governed by the KVK after division of the district, if applicable	Taluks/Tehsils and/or Mandals under the KVKs jurisdiction
Ariyalur	Not Applicable	

2.1. Major farming systems/enterprises

Classification	First crop	Second crop	Third crop
Wet land	Paddy (Kuruvai) (June-Oct.)	Paddy (Thaladi) (Oct. to Feb.)	Paddy (Navarai) (Jan – May)
	Paddy (Kuruvai) (June-Oct.)	Paddy (Thaladi) (Oct. to Feb.)	Blackgram (Feb to May)
Garden land	Groundnut (Jun to Sep)	Groundnut (Oct-Jan)	Groundnut (Feb-May)
	Groundnut (Jun to Sep)	Vegetable (Oct – Jan)	Blackgram (Feb-May)
	Groundnut (Jun to Sep)	Groundnut (Oct – Jan)	Blackgram (Feb-May)
Dry land	Fallow	Maize (Aug-Sep)	Fallow
	Fallow	Cotton (Aug-Sep)	Fallow
	Fallow	Sorghum/Varagu (Aug-Sep)	Fallow

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

S. No	Agro-climatic Zone	Characteristics
1	North Eastern Zone	Ariyalur district is located in Northern eastern part of TamilNadu. The climate in the zone basically semi-arid tropical with an average rainfall of 954 mm. The soil p ^H is ranging from 6.5 to 8.0. Ferruginous red loam occurs
S. No	Agro ecological situation	Characteristics
1	North Eastern portion of VIII Agro ecological Zone of India	The maximum precipitation is contributed by North East Monsoon. The soil texture is usually loamy, the colour varying from red at the surface to yellow at the lower horizon. Black soil favours the cultivation of rainfed crops viz., cotton, maize in a larger area.

2.3. Soil types

S. No	Soil type	Characteristics	Area in ha
1	Red Soil	Rich source of Fe, Mn, High P fixation capacity due to the presence of kaolinitic clay along with sesquioxides, low organic matter & clay.	66,315
2	Black Soil	More than 30% clay, Mn adding black color to the soil. High CEC with high pH range, abundant source of Mo and Boron.	49,550

2.4. Area, Production and Productivity of major crops cultivated in the district for 2022

Kharif

S. No	Crop	Area (ha)	Production (q)	Productivity (q/ha)
1	Paddy	9,860	42,101	45.5
2	Maize	18,239	90,756	64.1
3	Cotton	10,850	16,136	15.8
4	Black gram	6,435	5,718	8.23
5	Sorghum	1,531	3,368	22.0
6	Bajra	1,425	4,674	32.8
7	Kodo millet	285	427	15.0
8	Finger millet	35	63	18.0

Rabi

S. No	Crop	Area (ha)	Production (q)	Productivity (q /ha)
1	Paddy	24,143	1,03,090	42.7
2	Groundnut	18,450	39,800	22.0
3	Sugarcane	7,440	6,89,865	860.9
4	Banana	167	80,160	308.3
5	Watermelon	85	23,800	357.1
6	Brinjal	122.5	24,500	500
7	Chillies	30	3,600	833.3
8	Bhendi	65.89	9,240	713.1
9	Ash gourd	30.02	6,604	454.5
10	Drumstick	1,166.25	2,33,250	500

Summer

S. No	Crop	Area (ha)	Production (q)	Productivity (q /ha)
1	Cashew nut	30,345	13,655	4.50
2	Sesame	1,660	614	3.70

2.5. Weather data

Month	Rainfall (mm)	Temperature°C		Relative Humidity (%)
		Maximum	Minimum	
January 2022	72.00	26.3	23.6	63.4
February 2022	13.00	32.5	25.7	72.5
March 2022	8.00	37.6	27.3	63.5
April 2022	45.00	35.4	27.3	72.7
May 2022	83.00	37.6	28.8	70.9
June 2022	72.00	28.3	26.4	58.3
July 2022	110.00	29.5	27.7	57.4
August 2022	138.00	29.4	27.3	63.9
September 2022	80.00	28.6	26.7	62.3
October 2022	120.00	24.4	22.3	62.2
November 2022	106.00	25.2	24.1	72.7
December 2022	162.00	26.4	23.7	75.7
Total/Average	1009.00	30.1	25.91	66.29

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district (2022)

Category	Population	Production	Productivity
Cattle			
Cross breed	98,507	3.2 Lakh lit.	10 lit /cow
Goats	2,78,427	12.98 Lakh Kgs.	18 kg/goat
Pigs			
Indigenous	7,603	23,540 kg	20 kg/ Pig
Poultry			
Desi bird	90,346	58,800 kg	1 kg/bird

Category	Area (ha.)	Production (q.)	Productivity (q/ha.)
Fish	357	8,354	23.4

2.7. Details of Adopted Villages (2022)

Sl. No.	Taluk / Mandal	Name of the block	Name of the village	Year of inception	Major crops & enterprises	Major problems identified	Identified Thrust area
1	Udayarpalayam	T.Palur	Keelakudikadu	2022	Paddy, Sesame, Blackgram, Dairy, Goat & Poultry	Sesame <ul style="list-style-type: none"> Poor yield (6.25 q/ha) Repeated cultivation of existing variety (VRI 1 & TMV 3) Unaware of high yielding drought tolerant new varieties 	Varietal introduction and ICM
2	Udayarpalayam	T.Palur	Kasankottai	2022	Paddy, Groundnut, Blackgram, Greengram, Drumstick, Dairy, Goat & Poultry	Groundnut <ul style="list-style-type: none"> Fungal infection occurs on stem, pegs, and pods Yield losses reported 27% or more 	Disease management
3			Suthamalli	2022			

4			Naduvalur	2022		Drumstick Lack of awareness on value addition in moringa leaf and flower.	Value addition
5						Maize <ul style="list-style-type: none"> • Low productivity with the existing private Maize hybrid (65q/ha) • Non – availability of early maturity hybrids (below 100days) • Stem rot – 18% yield loss 	Varietal introduction and ICM
6						Field crops <ul style="list-style-type: none"> • High cost involved for pesticides and sprayman • Poor adoption of timely spraying during critical period • Drudgery for sprayman 	Drone introduction
7			Keelakudikadu	2022	Paddy, Blackgram, Sesame, Dairy, Goat & Poultry	Paddy <ul style="list-style-type: none"> • Increased level of salinity in ground water upto pH 8.7 and EC > 4 dsm⁻¹ in clay soils causes 	Problematic soil management and varietal introduction

						<p>algae occurrences which leads stunted crop growth and yield loss (40 %)</p> <ul style="list-style-type: none"> • Yield reduction up to 20% from existing paddy varieties namely BPT 5204, CO 43 and CR 1009 due to salinity • Increased cost of cultivation (20%) due to imbalanced fertilizer application for crop growth 	
8			Kodalikar ppur	2022		<p>Paddy High labor wage, demand for labors during season, time consumption musculo-skeletal disorders</p>	Drudgery reduction
9			Cholama devi	2022	Paddy, Groundnut, Blackgram, Greengram, Drumstick, Dairy, Goat & Poultry	<p>Green manure</p> <ul style="list-style-type: none"> • Non Availability of seeds at right time • No seed grower 	Integrated Crop Management
10			Kodalikar uppur	2022			
11			Karaikuri chi	2022		<p>Cluster Bean</p> <ul style="list-style-type: none"> • Less yield due to incidence 	Varietal introduction and ICM

						of pest and diseases (35%)	
12	Ariyalur	Ariyalur	Keelakolathur	2022	Sorghum, Cotton, Castor, Redgram, Groundnut, Chilli, Brinjal Dairy, Goat and Poultry	Chilli <ul style="list-style-type: none"> • Fruit borer and flower dropping 25 – 30%. • Yield losses due to Thrips 20 - 25%. 	Integrated Pest Management
13						Brinjal <ul style="list-style-type: none"> • Shoot and fruit borer incidence (30 %) • White fly incidence (32 %) • Incidence of little leaf(8%) • Low yield (15-16 t/ha.) per plant 	Integrated Pest Management
14						Dairy <ul style="list-style-type: none"> • Heavy Ecto-parasitic infestation during summer & rainy season • Poor weight gain (250 Kg at 2.5 years), Anemia • Reduced performance like decreased milk yield (3-4 L/day) & Increased intercalving period (25 months) 	Disease management

						<ul style="list-style-type: none"> • Mortality due to vector borne disease like babesiosis & theileriosis 	
15	Ariyalur	Ariyalur	Periyanaalur	2022		Dairy <ul style="list-style-type: none"> • Decreased milk yield (4-5 L/day) with less milk fat (2.5%) and SNF (6.5%) • Feeding more rice gruel causes SARA (Sub acute Rumen Acidosis) 	Health Management
16			Alanthuraiyarkattalai	2022	Cotton, Maize, Dairy, Goat & Poultry	Cotton <ul style="list-style-type: none"> • Lack of early maturity of short duration variety that escape from rain • High inter cultural cost upto Rs.60,000 /ha. 	Varietal introduction and High density planting
17			Aranur	2022		Cotton <ul style="list-style-type: none"> • Unexpected heavy rain leads crop failure 	Flood management

						<ul style="list-style-type: none"> • Lack of knowledge on post flood nutrient management practices • Lack of knowledge on IPDM practices after flood • Crop loss up to 70-80% (During 2016,2018,2020 & 2021) 	
18	Ariyalur	Thirumanur	Thirumanur	2022	Paddy, Sugarcane, Banana, Vegetables, Dairy, Goat, Poultry and Fish	Sugarcane <ul style="list-style-type: none"> • Pokkah boeng serious devastating disease in many part of sugarcane and maize growing area • The average losses due to this disease is around 30 to 40%. 	Disease management
19						Vegetables Poor Shelf life of fruits and vegetables because of	Post harvest mangement

						its perishable nature and lack of refrigerated transport and cold storage facilities for food manufacturers and sellers.	
20						Chilli <ul style="list-style-type: none"> • Low yield (1.2t/ha Dry pod) due to flower drop, fruit borer, <i>spodoptera</i> pest and damping off disease. • Yield loss upto 30-35%. • Low income and net profit 	Varietal assessment
21			Aranman aikuruchi	2022	Paddy, Sugarcane, Vegetables, Dairy, Goat, Poultry and Fish	Sugarcane <ul style="list-style-type: none"> • Lack of awareness, availability of services and their sources were not known to farmers 	ICT
22						Sugarcane <ul style="list-style-type: none"> • Unawareness about intercrop in sugarcane cultivation 	Cropping system
23			Athukuru chi	2022	Paddy, Sugarcane, Vegetables, Flowers, Dairy, Goat, Poultry and Fish	Paddy <ul style="list-style-type: none"> • Existing practising variety highly susceptible to false 	Disease management

						smut disease • Causes 15% yield loss at grain pre harvesting stage	
24				2022		Dairy • Low Conception rate (70 %) • Farmers forced to attempt AI or Natural service repeatedly • Non adoption of recent technology in breeding management • Infertility due to repeat breeding • High cost (Rs.1500/treatment) involvement of invasive hormonal treatment	Fertility management

DFI villages							
Sl. No .	Taluk / Mandal	Name of the block	Name of the village	Year of inception	Major crops & enterprises	Major problems identified	Identified Thrust area
1	Udayarpalayam	T.Palur	Venmankondan	2022	Paddy, Groundnut, Blackgram, Greengram, Banana, Drumstick, Dairy, goat & Poultry	Green gram • MYMV causes yield loss up to 35 % • Lack of knowledge on green gram	Varietal assessment

						<p>cultivation as it is higher values than black gram</p> <ul style="list-style-type: none"> • Less productivity due to its cultivation as intercrop in groundnut and not as sole crop. 	
2						<p>Elephant Yam</p> <ul style="list-style-type: none"> • Low yield (4t/ha) due to collar rot and leaf spot disease. • Yield loss upto 30-35%. • Low income and net profit. 	Varietal assessment
3						<p>Nutrigarden</p> <ul style="list-style-type: none"> • Lack of Knowledge in multi nutritive value of greens and vegetables. • Improper utilization of waste water • Increased cost of vegetables • Poor uptake of nutritious vegetables 	Nutri garden
4						<p>Lambs/Kids</p> <ul style="list-style-type: none"> • Zero to minimum feeding of concentrate feed leads 	Feed management

						<p>to milk production in desi does especially during twinning</p> <ul style="list-style-type: none"> • Increased mortality of kids (5%) due to less mother milk or orphaned kid • Use of alternate milk like cow milk leads to diarrhoea and gastro-intestinal problems 	
5						<p>Dairy</p> <ul style="list-style-type: none"> • Difficulty in timely message • Time consuming process for farmers meeting experts 	ICT
6	Sendurai	Sendurai	Veerakkan	2022	Cashew, Groundnut, Finger millet, Blackgram, Chilli, Dairy, Goat and Poultry	<p>Blackgram</p> <ul style="list-style-type: none"> • Due to storage beetle damage farmers selling blackgram immediately after harvest for low price. • Due to beetle damage farmers getting less market 	Post harvest management

						preference for produce and low price.	
7						Poultry <ul style="list-style-type: none"> Increased incidence (25%) of coccidiosis in birds reared in deep litter system during rainy season High mortality (90%), if not treated or prevented earlier 	Disease management
8						Poultry <ul style="list-style-type: none"> Unavailability of information sources during peak hours 	ICT

2.8. Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy	Varietal Assessment, Integrated Crop Management, Disease Management and Drudgery Reduction
Groundnut	Disease Management
Sesame	Varietal Introduction and Integrated Crop Management
Blackgram	Varietal Introduction with Integrated Crop Management, Post harvest Management
Cotton	Varietal Introduction and Integrated Pest Management
Sugarcane	Intercrop with Integrated Crop Management, Disease Management and ICT
Daincha	Integrated Crop Management with Seed production
Vegetables	Post Harvest Management, Waste Management, Drudgery Reduction and Nutrition Management
Drumstick	Value addition
Brinjal	Integrated Pest Management
Chillies	Varietal Assessment, Integrated Crop Management and integrated Pest Management
Elephant foot yam	Varietal assessment and Integrated Crop Management

Cluster Bean	Varietal introduction and Integrated Crop Management
Flower	Health and Nutrition
Dairy	Reproductive Management, Disease Management and ICT
Goat	Feed Management
Poultry	Disease Management and ICT
Fish	Varietal Introduction
Mechanization	Introduction of drone in agriculture

3. Salient Achievements

Achievements of Mandated activities (1st January 2022 to 31st December 2022)

S.No	Activity	Target	Achievement
1.	Technologies Assessed and refined (No.)	---	---
2.	On-farm trials conducted (No.)	11	8
3.	Frontline demonstrations conducted (No.)	28	22
4.	Farmers trained (in Lakh)	1620	2814
5.	Extension Personnel trained (No.)	300	99
6.	Participants in extension activities (in Lakh)	0.09404	0.11873
7.	Production and distribution of Seed (in Quintal)	40	43.88
8.	Planting material produced and distributed (in Lakh)	112000	49250
9.	Live-stock strains and finger lings produced and distributed (in Lakh)	2055	5009
10.	Soil samples tested by Mini Soil Testing Kit (No)	500	500
11.	Soil samples tested by Traditional Laboratory (No)	---	--
12.	Water, plant, manure and other samples tested (No.)	500	104
13.	Mobile agro-advisory provided to farmers (No.)	960	49926
14.	No. of Soil Health Cards issued by Mini Soil Testing Kits (No.)	500	500
15.	No. of Soil Health Cards issued by Traditional Laboratory (No.)	1000	901

Salient Achievements by KVK during the year 2022

- Our KVK farm in 20 ha is a certified organic farm serves as model to 389 organic farmers and promoting on-site input production among 2,586 farmers in 226 villages.
- Technological products viz., seeds (43 q), Planting materials (49,250), Bio products (926 kg), Chicks (980 Nos.) were distributed benefitting 9,463 farmers.
- Mechanized sowing is facilitated to overcome labour shortage in Maize (2,400 ha), Groundnut (8,500 ha) and Paddy (1,780 ha).
- 612 ha. of area brought under fodder crops to ensure health of animals in the District.
- 196 ha. of farm ponds brought under fisheries and 296.5 tonnes fish production ensured.
- As a pilot programme pest repellent spray was undertaken in 966 acres using drone and it become familiar among the farmers.
- Promotion of high end technologies viz., use of assorted sexed semen in Dairy, Black Soldier Fly in Poultry, Genetic upgradation in goat, Biofloc fish rearing are being initiated by the project funded by DST, New Delhi.
- Emphasize is being given to conserve natural resources viz., land, water, and environment. Distributed 926 kg of Bio products covering 4,247 ha. by 3,506 farmers, promoted Waste decomposer in 520 ha. by 432 farmers.
- Water saving technologies like drip and sprinkler irrigation facilitated in 4188 ha through department subsidies, irrigation scheduling by water meter (Pani-pipe) and Soil Moisture Indicator, alternate wetting and drying is being practiced in 42 ha by 262 farmers by our interventions.

- Water harvesting structures like staggered trenches in Cashewnut (4,890 ha), renovation of eight village water bodies paved the way for increased area under irrigated Agriculture.
- Promoting Group Action by Farmers Clubs (21 Nos.), Farmers Associations (3 Nos.) and FPOs (2 Nos.) comprising of 2,950 farmers.
- Special programmes DST were implemented to cover 1,000 SC and ST farmers to ensure social inclusion.
- Our KVK has created wide awareness on Government priority programmes viz., Revamped PMFBY, DFI, Soil Health Management, Livestock Management and Swachhta Hi Sewa among 32,247 farmers.
- We could reach 54,000 farmers by mass propagation of technologies through Farmer Friend, Whatsapp, mKisan, Voice messages, YouTube, Facebook, Radio and TV talks.
- Involved in documentation and validation of innovation of 8 farmers.
- Wild animal problem is big menace now a days and we have promoted Wild Animal Repellent (Herboliv plus) and rescued the crops in an area of 1,420 ha.
- We have promoted drone spray in an area of 460 ha. and solved the labour scarcity.

4. TECHNICAL ACHIEVEMENTS

Details of target and achievements of mandatory activities by KVK during 2022

OFT (Technology Assessment)

No. of OFTs		Number of technologies		Number of locations (Villages)		Total no. of Trials / Replications / Beneficiaries	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
11	8	22	16	11	8		38

FLD (crop/enterprise/CFLDs)

No of Demonstrations		Area in ha		Number of Farmers / Beneficiaries / Replications	
Targets	Achievement	Targets	Achievement	Targets	Achievement
28	22	55	47	265	215

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

Number of Courses			Number of Participants	
Clientele	Targets	Achievement	Targets	Achievement
Farmers and Farm Women	108	110	1,620	2,814
Rural youth	18	8	285	226
Extn. Functionaries	15	5	300	99

Extension Activities

Number of activities		Number of participants	
Targets	Achievement	Targets	Achievement
757	436	9,404	11,873

Seed Production (q)

Target	Achievement	Distributed to no. of farmers
40	43.88	404

Planting material (Nos.)

Target	Achievement	Distributed to no. of farmers
1,12,000	49,250	993

Technology Assessments (OFTs) in Detail

1. OFT on Assessment of Greengram varieties for Ariyalur district

1. Thematic area: Varietal evaluation

2. Title: Assessment of Greengram varieties for Ariyalur district

3. Scientists involved: SMS (Agronomy), SMS (Plant protection) & SS&H

4. Details of farming situation:

Soil type is Red sandy loam, cultivation being under rainfed situation in Rabi season only. Method of seed sowing is broadcasting

5. Problem definition / description:

- MYMV causes yield loss up to 35 %
- Lack of knowledge on green gram cultivation as it is higher values than black gram
- Less productivity due to its cultivation as intercrop in groundnut and not as sole crop

6. Technology Assessed:

Technology option 1 (TO 1)	VCN 5 (TNAU, 2022) Duration : 70 – 75 days, Yield : 870 kg/ha (rainfed), Parentage : VCN(Gg)2 x ML 1451 Resistant to Mung bean Yellow Mosaic Virus, Suitable for kharif, rabi and summer seasons
Technology option 2 (TO 2)	WGG 42 (PJTSAU, 2016) Duration : 60 days, Resistance to MYMV, Synchronized maturity, Photo -insensitive, short stature, Yield -1200-1500 Kg/ha
Farmer practices	VCN 2 Duration: 65-70 days, Yield : 750kg/ha (Rainfed)

7. Critical inputs given:

S.No	Particulars	Quantity
1	Greengram VCN 5 seed	4 kg
2	Greengram WGG 42 seed	4 kg
3	<i>Bacillus subtilis</i>	1 kg
4	TNAU Pulse wonder	2 kg

8. Results:

Table :Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net returns (Rs./ha)	B:C	*Duration (Days)	*MYMV infestation (%)	* Pod borer infestation (%)
Farmers Practice	5	6.8	28,000	2.21	65	10	16
Technology 1(Greengram VBN 5)		7.4	33,000	2.46	70	6	14
Technology 2(Greengram WGG 42)		7.9	38,250	2.82	65	5	8

9. Constraints: Nil

10. Feedback of the farmers involved:

- Both the varieties VBN 5 & WGG 42 perform very well under rainfed situation
- WGG 42 green gram seeds are bold in nature. It has very demand in market than VBN 5 green gram.
- Pest and disease occurrence is very less (<10%) in both the varieties.
- WGG 42 is highly demand among the farmers who visited the trial plots.

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

- WGG 42 performs very well under rainfed situation also and hence recommend to rainfed areas.
- WGG 42 is highly resistant to MYMV and other pest infestation.

OFT 2. Assessment of Elephant foot yam varieties for higher yield

1. Thematic area : Varietal Evaluation

2. Title : Assessment of Elephant foot yam varieties for higher yield

3. Scientists involved: SMS (Horticulture) & SS&H

4. Details of farming situation:

Land condition is Irrigated upland situation. Soil type is Clay loam soil, cultivation is done in Rabi season only.

5. Problem definition / description:

Major variety in Elephant foot yam is local which is Low yield (14t/ha) due to collar rot and leaf spot disease. Yield loss upto 30-45%. Low income and net profit.

6. Technology Assessed:

Technology option 1 (TO 1)	Cultivation of hybrid chilli Arka Tanvi Duration 5 months, Average yield 75q/ha, Suitable for all the Chilli growing areas in Tamilnadu.
Technology option 2 (TO 2)	Cultivation of TNAU hybrid chilli CO 1 Duration 6.5 months, Average yield 67.5q/ha, Suitable for all the Chilli growing areas in Tamilnadu. Tolerant to chilli leaf curl virus.
Farmer practices	Cultivation of private hybrids Duration 5 months, Average yield 50q/ha

7. Critical inputs given:

Corm (Elephant foot yam CO 1) 200kg @ Rs.2000 , *Azospirillum* 10 kg @ Rs.500, Phosphobacteria 10 kg @ Rs.500, *T.viride* 10kg @ Rs.1,000, Arka Microbial consortium 10kg @ Rs.1,050, corm special 10litre @ Rs.3,300, Corm (Elephant foot yam Sri Padma) 200kg @ Rs.9,375, Field board 5Nos. @Rs.2000.

8. Results:

Table : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net returns (Rs.)	B:C ratio	Collar rot disease incidence (%)
Farmers Practice –Local variety	5	166.44	92,017	2.24	14.2
Technology 1 Cultivation of Elephant foot yam CO 1		240.4	1,61,927	3.06	1.4
Technology 2 Cultivation of Elephant foot yam Sri Padma		213.58	1,35,275	2.73	4.3

9. Constraints: Nil

10. Feedback of the farmers involved:

Elephant foot yam CO 1 variety gave higher yield than sree padma and local variety. Collar rot disease incidence was very less.

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

Performance of Elephant foot yam variety CO 1 was very good. It is very well suitable for cultivation in Ariyalur district.

OFT 3. Assessment of Chilli hybrids for higher yield

1. Thematic area: Varietal Evaluation

2. Title: Assessment of Chilli hybrids for higher yield

3. Scientists involved: SMS (Horticulture) & SS&H

4. Details of farming situation: Irrigated

5. Problem definition / description:

Chilli is cultivated in about 200 ha in the district in which 150 ha is irrigated. Major variety in Chilli is local which is Low yield (1.2t/ha Dry pod) due to flower drop, fruit borer, *Spodoptera* pest and Damping off disease. Yield loss upto 30-35%. Low income and net profit.

6. Technology Assessed:

Technology option 1 (TO 1)	Cultivation of hybrid chilli Arka Tanvi Duration 5 months, Average yield 75q/ha, Suitable for all the Chilli growing areas in Tamilnadu.
Technology option 2 (TO 2)	Cultivation of TNAU hybrid chilli CO 1 Duration 6.5 months, Average yield 67.5q/ha, Suitable for all the Chilli growing areas in Tamilnadu. Tolerant to chilli leaf curl virus.
Farmer practices	Cultivation of private hybrids (VNR 303) Duration 5 months, Average yield 50q/ha

7. Critical inputs given:

Arka Tanvi chilli seed 200g @ Rs.6,130, TNAU hybrid chilli CO 1 200g @ Rs.4,860, *Azospirillum* 10 kg @ Rs.500, Phosphobacteria 10 kg @ Rs. 500, *Bacillus subtilis* 10 kg @Rs.1,000, IIHR Vegetable special 20 kg @ Rs.3,200, Field board 5Nos. @Rs.2000.

8. Results:

Table : Performance of the technology

Technology Option	No. of trials	Dry pod Yield (q/ha)	Net Returns (Rs./ha)	B:C	Fruit borer incidence (%)
Farmers Practice Cultivation of private hybrids	5	32.50	212180	2.88	14.5
Technology 1 Cultivation of hybrid chilli Arka Tanvi		36.20	243169	3.05	7.2
Technology 2 Cultivation of TNAU hybrid chilli CO 1		43.76	318835	3.68	6.1

9. Constraints: Nil

10. Feedback of the farmers involved:

TNAU hybrid chilli CO 1 gave higher yield than other two hybrids. Fruit borer incidence was less in CO 1.

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

The Performance of TNAU hybrid chilli CO 1 was very good. It is very well suitable for cultivation in Ariyalur district.

OFT 4. Assessment of pod rots management in Groundnut

- 1. Thematic area:** Integrated diseases management
- 2. Title:** Assessment of pod rots management in Groundnut.
- 3. Scientists involved:** SMS (Plant protection) and SS&H
- 4. Details of farming situation:** Irrigated

5. Problem definition / description:

Pod rot is a fungal disease occurs during the pod growing and maturation stage resulting in blackening and rotting of pods leads to unfilled/disqualified seeds

- 6. Technology Assessed:**
- TO1- Seed treatment with fungicides and soil application of castor and neem cake
 - TO2- Summer ploughing, seed treatment with Tebuconazole, Soil drenching with neem cake and bio-fungicides, spot application with carbendazim
 - FP - No seed treatment, No neem cake application

- 7. Critical inputs given:** *Trichoderma asperellum* 1kg, Tebuconazole 50g, Carbendazim 100g, Castor cake 50 kg.

- 8. Results:** Comparing to the two tests, the T2 is proved to be highly effective in the management of pod rot disease due to administration of control tools in several ways.

Table : Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs./ha)	BC Ratio	No of plants /m ²	No of pods/ plant	Percentage of pod rot incidence
Farmers Practice	5	12.4	47360	1.85	31	28	38
Technology 1 Seed Treatment and Soil application of castor and neem cake		14.1	62510	2.09	25	40	25
Technology 2 Summer ploughing, Seed treatment with Tebuconazole, Soil application of Neem cake, Spot drenching with Carbendazim		15.56	74760	2.30	24	54	12

9. Constraints: Nil**10. Feedback of the farmers involved:**

The practices done as per KVK experts gave good control of pod rot and we got good yield as before.

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

The selected T.Palur block area are repeatedly threatened by pod rot disease and reduced the yield up to 35-40% in every cropping season. Among the two technologies tested T2 found very effective in the control of the pod rot disease and improves the yield from 12.4 q to 15.56 q/ha.

OFT 5. Assessment of different types of herbal powder incorporated instant nutria-drink**1. Thematic area:** Value Addition**2. Title:** Assessment of different types of herbal powder incorporated instant nutria- drink**3. Scientists involved:** SMS (Home Science), SMS(Horticulture) & SS&H

4. Details of farming situation:

Hibiscus and *Clitoria ternatea* are edible flowers has high medicinal value which is locally available being underutilized.

5. Problem definition / description:

Hibiscus and *Clitoria ternatea* are edible flowers which is locally available being underutilized. Lack of awareness on medicinal and nutritive value of these flowers and processing technology.

6. Technology Assessed:

Technology options	
TO-1	Hibiscus incorporated herbal drink
Source and year	TNAU, 2021
Description (short)	Shade dried Hibiscus incorporated herbal drink. Solar dried Hibiscus incorporated herbal drink and colorant agent from hibiscus. The hibiscus is rich in antioxidants such as beta-carotene, vitamin C and anthocyanin
TO-2	<i>Clitoria ternatea</i> incorporated herbal drink
Source and year	DBT, 2008
Description (short)	Shade dried <i>Clitoria ternatea</i> incorporated herbal drink. Solar dried <i>Clitoria ternatea</i> incorporated herbal drink and colorant agent from <i>Clitoria ternatea</i> . It has natural antioxidants, helps improve blood circulation, helps prevent hair loss and graying. It also cleanses blood, improves night vision and revitalizes skin and hair.
Farmers Practice	No value addition

7. Critical inputs given:

All the inputs were utilized and availed locally for trial purpose and no inputs were given. The samples have been tested at NIFTEM food lab.

8. Results:

Table: Performance of the technology

Technology Option	No. of trials	Consumer acceptability	Shelf life	Nutritional information
Hibiscus incorporated herbal drink	5	Good	30 days at refrigerated condition	Energy – 1.79 Kcal Total Fat – 0.0g Carbohydrate – 0.42g Protein – 1.72g Sugar – 0.0mg
<i>Clitoria ternatea</i> incorporated herbal drink		Good	30 days at refrigerated condition	Energy – 0.79 Kcal Total Fat – 0.0g Carbohydrate – 0.2g Protein – 1.02g Sugar -0.0mg
Farmers Practice		Nil	-	-

9. Constraints:

Locally very few flowers only can be collected. For commercialization of technology, we need to promote farmers for herbs cultivation. But farmers do not showing much interest in herbs cultivation.

10. Feedback of the farmers involved:

Juice is suitable for only domestic purpose as it has less shelf life. They also said that it is difficult to market juice. Tea dip and dried flower can have more market preference.

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

OFT 6. Assessment of drudgery reduction of different weeders in Rice

1. Thematic area: Farm Mechanization

2. Title: Assessment of drudgery reduction of different weeders in Rice

3. Scientists involved: SMS (Home Science), SMS(Agronomy) & SS&H

4. Details of farming situation:

Cauvery delta canal dependent irrigated and clay loamy soil type. Farmers are doing manual weeding and some are using cono weeder.

5. Problem definition / description:

High labor wage, demand for labors during season, time consumption musculo-skeletal disorders

6. Technology Assessed:

TO-1	Cono Weeder
Source and year	TNAU, 2016
Description (short)	Uprooting and burying of weeds in between standing rows of rice crop in wetlands. Two truncated rollers one behind other are fitted at the bottom of a long handle. The conical rollers have serrated blades on the periphery. A float provided in front portion prevents the unit from sinking into the soil. The cono weeder can also be used for trampling green manure crop in addition to weeding operation. It disturbs the top soil and increases aeration also. The equipment is operated in standing posture thus avoiding bending involved during uprooting of weeds by hands in traditional practice.
Potential yield/income	120 m ² /hr can be covered per labour
TO-2	Modified Cono Weeder
Source and year	Farmer Innovation, 2021
Description (short)	Uprooting and burying of weeds in between standing rows of rice crop in wetlands. The equipment is operated in standing posture thus avoiding bending involved during uprooting of weeds by

	hands in traditional practice.
Potential yield/income	160 m ² /hr covered per labour
Farmers Practice	Hand weeding

7. Critical inputs given:

Cono weeder: 3 Nos. @ Rs.2,000/No.

Modified Rotary Weeder: 3 Nos. @ Rs.2,000/No.

8. Results:

Table: Performance of the technology

Technology Option	No. of trials	Yield (q/ha)	Net Returns (Rs./ha)	B:C Ratio	Weeding efficiency (%)	Plant damage (%)
Hand weeding	3	50	10,000	1.10	99	0
Technology 1 (Cono weeder) 6kg		50	14,500	1.16	78	1
Technology 2 (Modified Cono weeder) 5 kg		50	17,500	1.20	89	1

9. Constraints:

Suitable only if soil moisture content is opt. Suitable only for clay sandy loam soil
The average row spacing and hill to hill spacing should followed (30cm and 10cm).

10. Feedback of the farmers involved:

Weeding cost in modified cono weeder is less as compared to hand weeding and TNAU cono weeder. It is less weight (5 kg) can be operated easily by unskilled labours. It is most economical viable and effective for marginal to medium farm holding farmers.

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

The Modified cono weeder gives better performance even in the later stages of weeding. TNAU Cono weeder gives better performance on initial stages of weed growth. If the weeds are matured the TNAU Cono weeder just rolls over the weeds with minimum uprooting and inversion. The soil inversion capacity of modified rotary weeder results in higher weeding efficiency.

OFT 7. Assessment of small ruminant specific mineral mixture on production performance of goats in Ariyalur District

1. Thematic area: Nutrient Management

2. Title: Assessment of small ruminant specific mineral mixture on production performance of goats in Ariyalur District

3. Scientists involved: SMS (Animal Science), SMS (Agricultural Extension) & SS&H

4. Details of farming situation:

Extensive Farming (Grazing)

5. Problem definition / description:

- Lack of specific minerals like Cu, Co, P and Ca in soil and fodder leads mineral deficiency in grazing livestock
- Poor body weight gain at market age (15kg at 8 months)
- Poor milk yield for kids from does

6. Technology Assessed:

Technology options	
TO-1	Aerated film dried technology (AFDT) based mineralized salt lick
Source and year	TANUVAS, 2020
Description	AFDT based salt lick was developed by TANUVAS in 2020 to address the mineral deficiency in livestock. The mineral salt will be evenly distributed in the salt lick by this technology and can easily indigested on licking the block.
Potential yield/income	20% increase in body weight and 25% increase in milk yield
TO-2	Goatmin
Source and year	NIANP, 2018
Description	The mineral mixture is formulated to address the specific needs of goats. It has a balanced proportion of minerals to avoid antagonistic reactions.
Potential yield/income	20% increase in body weight and 25% increase in milk yield
Farmers Practice	Sodium Chloride (1%)
Farmers yield	Body weight of 15 kg at 8 month, 100 ml of milk yield in does and 2.5 kg body weight in kids

7. Critical inputs given:

AFDT salt lick (2 kg/animal/6month- 5 animals/trial); 10kg x 200 = Rs 2000,
Goatmin (2 kg/animal/6month- 5 animals/trial); 10kg x 100 = Rs 1000,
Dewormer-500 ml - Rs.500

8. Results:

Table: Performance of the technology

Technology Option	No. of trials	Yield (kg/goat)	Net Returns (Rs./goat)	B:C Ratio	Twinnig / Triplet %
Farmers Practice	5 (5 goats / trial)	12.5	3555	1:2.2	10.5
Aerated film dried technology (AFDT) based mineralized salt lick		15.5	4530	1:2.16	18.5
Goatmin		13.8	4030	1:2.294	13.0

9. Constraints: Nil

10. Feedback of the farmers involved:

The preference of goats for AFDT based mineralized salt lick is very high and they are very active

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

As it is the good technology its material should be available easily throughout the year.

OFT 8. Assessment of different ecto-parasiticial for managing ecto-parasite infestation in dairy

1. Thematic area: Disease management

2. Title: Assessment of different ecto-parasiticial for managing ecto-parasite infestation in dairy

3. Scientists involved: SMS (Animal Science), SMS (Agricultural Extension) and SS&H

4. Details of farming situation:

Extensive Farming (Grazing)

5. Problem definition / description:

- Heavy Ecto-parasitic infestation during summer & rainy season
- Poor weight gain (250 Kg at 2.5 years), Anemia
- Reduced performance like decreased milk yield (3-4 L/day) & Increased intercalving period (25 months)
- Mortality due to vector borne disease like babesiosis & theileriosis

6. Technology Assessed:

Technology options	
TO-1	Tickshield
Source and year	TANUVAS, 2021
Description (short)	Its Ivermectin based preparation applied as spot on application topically. Its effective against all ecto-parasite and less toxic.
Potential yield/income	25% increase in body weight & performance and 20% decrease in disease and anemia.
TO-2	Megatex-Liquid spray
Source and year	CIRG, 2018
Description (short)	Herbal extract based liquid used for control for ecto-parasiticide like ticks and lice. This technology was developed by CIRG in 2018 and it is commercialized.
Potential yield/income	25% increase in body weight & performance and 20% decrease in disease and anemia.
Farmers Practice	Amitraz - Spraying
Farmers yield	Body weight of 250 kg at 2.5 years, milk yield 3-4 L/day

7. Critical inputs given:

Tickshield – 5ml (3 bottle/Animal/3months: Applied topically has spot-on weekly basis) 3 bottle x Rs150: Rs 450

Megatex spray- 100 ml (3 bottle/Animal/3months: Applied topically on weekly basis) 3 bottle x Rs150: Rs 450

8. Results:

Table: Performance of the technology

Technology Option	No. of trials	Yield (lit/cow/day)	Net Returns (Rs./cow/lactation)	B:C Ratio	Reduction in Infestation (%)
Farmers Practice	5	5.0	18200	1:2.85	16
TO1 - Tickshield		5.8	20880	1:3.0	78
TO 2 - Megatex-Liquid spray		5.45	19620	1:2.90	46

9. Constraints: Nil

10. Feedback of the farmers involved:

There is very minimum ticks on the animals applied with Tickshield. Moreover they are healthy and heat comes on time for the next insemination.

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

Effective against all kinds of ecto parasites.

Frontline Demonstrations in Detail

FLD 1. Demonstration of ICM in Sesame variety TMV (Sv) 7

Crop: Sesame

Thematic area: Integrated crop management

Technology demonstrated:

- Sesame TMV (Sv) 7 variety @ 5 kg/ha
- Seed treatment with *Trichoderma viride* @4g/kg of seed
- Seed Pelleting
- Soil test based fertilizer application
- Soil application of TNAU MN mixture @7.5kg/ha.
- Basal application of Mgso4 @ 5kg/ha and ZnSo4 @ 5 kg/ha for Nutritional disorders
- Nipping operation @ 25 DAS
- Weed management PE application of Pendimethalin @ 1 kg a.i./ha. followed by hand weeding on 25 DAS
- Foliar spraying of neem seed kernel extract 5% for sucking pest management

Season and year: Summer, 2022

Farming situation: Rainfed area with clay loamy soil type of Cauvery delta of Ariyalur district.

Source of fund: KVK Main

No of locations (Villages): 2

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- Highly preferable brown seeded TMV (Sv) 7 sesame at market.
- Growth and yield of the crop is higher than expected.
- Irrigation interval has reduced from 4 to 2 than existing practicing varieties.
- Reduced root rot disease incidence (<10% only) than existing variety (>15%).

Feedback of the Scientist:

- TMV (Sv) 7 sesame variety is highly suitable for drought condition and delta region in summer season.
- Kindly promote the variety for delta regions of TN as summer crop for increasing sesame productivity.

Extension activities on the FLD:

Farmers training- 2 Nos., Diagnostic visit- 5 Nos. & Field day- 1Nos.

FLD 2. Demonstration of Blackgram as intercrop in Sugarcane

Crop: Sugarcane

Thematic area: Integrated Crop management – Inter cropping system

Technology demonstrated:

- Intercrop with Blackgram variety VBN 8
- Seed treatment with *Bacillus subtilis* @ 10g/kg of seed & Rhizophos @ 20 g/kg of seed
- Foliar spraying of TNAU pulse wonder @ 5kg/ha

Season and year: Rabi, 2021-22

Farming situation: Bore well irrigated area with black soil type

Source of fund: Main

No of locations (Villages): 2

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- Reduced intercultural operations like weeding up-to 70 days (Saved Rs.10,000/ha).
- Easy to monitor sucking pest infestation during sugarcane early stage.
- Increased net income and reduced cost of cultivation helps increased in additional area comes for cultivation.

Feedback of the Scientist:

- Black gram as intercrop in sugarcane works well on the basis of saving production cost by the way of reduced intercultural operations, reduced use of pesticides and increased additional average income of Rs. 25,000/ha.

Extension activities on the FLD:

Farmers training- 3 Nos., Diagnostic visit- 4 Nos. & Field day- 1 No.

FLD 3. Demonstration on Paddy TRY 5 variety for saline soil in Ariyalur District

Crop: Paddy

Thematic area: Varietal introduction

Technology demonstrated:

- Demonstration of TRY 5 paddy variety for salinity issues fields
- Seed treatment with *Bacillus subtilis* @ 10g/kg of seed and Azophos @ 6g/kg of seed
- Application of Gypsum @ 250kg/ha

Season and year: Late Samba, 2022

Farming situation: Borewell, irrigated lowland, clay loamy soil

Source of fund: KVK Main

No of locations (Villages): 1

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- Highly tolerant to salinity.
- >95% survivability even under 8 days of submerged condition
- Less pest infestation like Stem borer (<15%) and less incidence of Brown leaf spot (<12%) causes better yield than check variety of IR 20.
- Marketability & cooking quality is good.

Feedback of the Scientist:

- TRY 5 paddy variety is highly recommended for areas with high salinity issues.
- Highly preferred cooking quality than other Trichy paddy varieties.

Extension activities on the FLD:

Farmers training- 2 Nos., Diagnostic visit- 5 Nos. & Field day- 1 No.

FLD 4. Demonstration on Cotton variety CO 17 under HDP system in Ariyalur district

Crop: Cotton

Thematic area: Varietal introduction with cropping system

Technology demonstrated:

- Demonstration of Cotton variety CO 17
- Seed rate 12.5 kg/ha
- Adoption of sowing space 60x15 cm
- Seed treatment with *Trichoderma viride* @ 4g/kg of seed
- Foliar application of TNAU Cotton plus @ 12.5kg/ha.

Season and year: Summer, 2022

Farming situation: Irrigated low land, clay sandy loam soil

Source of fund: Main

No of locations (Villages): 2

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- Synchronized maturity helps the crop to harvest at earliest (50 days than check) and allows the field to next crop as green manure cultivation for samba paddy cultivation.
- HDP system reduced intercultural operation from 3 to 1 and Saving Rs. 8000/ha
- The pest infestation like Whitefly and Hoppers are very less (<10%) than existing hybrids.
- Growth, yield and BCR are on par with normal hybrid cotton.

Feedback of the Scientist:

- HDP system is more suitable for summer cotton under delta region

Extension activities on the FLD:

Farmers training- 2 Nos., Diagnostic visit- 5 Nos. & Field day- 1 No.

FLD 5. Demonstration on Post flood nutrient management practices for Cotton

Crop: Cotton

Thematic area: Integrated crop management

Technology demonstrated:

- Spray of growth retardant of 500 ppm cycocel/ Mepiquat chloride 5% AS for arresting apical dominance and thereby promoting growth of laterals
- Foliar spray of 2% DAP + 1% KCl (MOP)
- Spray of 40 ppm NAA for controlling excessive pre-mature fall of flowering/buds/young developing fruits and pods.
- Foliar spray of 0.3 % Boric acid + 0.5 % ZnSO₄ + 0.5 % FeSO₄ + 1.0 % urea during critical stages of the stress.
- Soil Application of Gypsum @ 500kg/ha

Season and year: Rabi, 2022

Farming situation: Rainfed upland, Clay sandy loam soil

Source of fund: Main

No of locations (Villages): 2

No. of demonstrations (replications/farmers/beneficiaries): 5

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 2

Actual area (ha): 2

Justification for shortfall if any: Nil

Feedback from farmers:

- Post flood management capsules helps the crop to rescue during monsoon (>7 rainy days) and allow to >90% survivability.
- Spray of growth retardant arrest the excess terminal shoot growth and allows more monopodial branches and got normal yield even during heavy monsoon.

Feedback of the Scientist: Nil

Extension activities on the FLD:

Farmers training- 3 Nos., Diagnostic visit- 5 Nos. & Field day- 1 No.

FLD 6. Demonstration of Maize hybrid COH(M) 8

Crop: Maize

Thematic area: Varietal introduction

Technology demonstrated:

- Demonstration of Maize hybrid COH(M)8
- Seed treatment with Cyantraniliprole +Thiamethoxam @ 4g/kg of seed
- Soil application of TNAU MN Mixture @ 30 kg/ha
- Foliar Application of TNAU Neem oil @ 2ml/litre

Season and year: Late Kharif , 2022

Farming situation: Rainfed upland, Clay sandy loam soil

Source of fund: Main

No of locations (Villages): 2

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- ICM technologies with COH (M) 8 perform very well and get more yield than existing private hybrid cultivation.
- Non-lodging character helps the crop to harvest without any harvest loss.
- The tops of the crop color green retain still harvest. It may useful for cattle feed.

Feedback of the Scientist:

- COH (M) 8 non-lodging maize hybrid highly suitable for rainfed situation in late kharif season.
- High drought tolerant hybrid promises the higher yield than private hybrids.

Extension activities on the FLD:

Farmers training- 2 Nos., Diagnostic visit- 5 Nos. & Field day- 1 No.

FLD 7. Demonstration of seed production techniques in Daincha

Crop: Daincha

Thematic area: Integrated crop management

Technology demonstrated: Seed production in Daincha

Season and year: Rabi , 2022

Farming situation: Irrigated, Clay sandy loam soil

Source of fund: Main

No of locations (Villages): 2

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

No of SC/ST Farmers and women farmers: 2

Area proposed (ha): 4

Actual area (ha): 4

Justification for shortfall if any: Nil

Feedback from farmers:

- ICM technologies helps to get quality seeds with higher yield
- Capsule borer infestation has minimized (<8%) in demo than check
- Weed population has reduced for succeeding crops
- Net income is higher than expected in one hectare of land.
- Marketability is good on this quality seed.

Feedback of the Scientist:

- ICM Capsules well received among farmers for promoting more seed grower.
- Need new varieties in Daincha with higher yield potential for up-coming years.

Extension activities on the FLD:

Farmers training- 3 Nos., Diagnostic visit- 5 Nos. & Field day- 1 No.

FLD 8. Demonstration of Cluster bean variety MDU 1

Crop: Vegetable

Thematic area: Varietal Introduction

Technology demonstrated: Demonstration of Cluster bean variety MDU 1

Season and year: Rabi, 2022

Farming situation: Irrigated

Source of fund: KVK Main

No of locations (Villages): 1

No. of demonstrations (replications/farmers/beneficiaries): 5

No of SC/ST Farmers and women farmers: 0

Area proposed (ha): 1

Actual area (ha) : 1

Justification for shortfall if any: Nil

Feedback from farmers:

MDU 1 Cluster bean variety gave higher yield than local variety. Powdery mildew disease incidence was less in MDU 1.

Feedback of the Scientist:

The Performance of MDU 1 Cluster bean variety was very good. It is very well suitable for cultivation in Ariyalur district. Hybrids can be released in cluster bean to get higher yield.

Extension activities on the FLD:

Group meeting – 1, Method demonstration – 1, Field visit – 4

FLD 9. Demonstration on False smut disease management practices in samba paddy

Crop : Paddy

Thematic area : IDM

Technology demonstrated :

Adoption of ADT 51 Moderately resistant variety, Seed treatment with *Bacillus subtilis* @ 10g/kg of seed, Foliar application of Propiconazole 1ml/ litre, Foliar application of *Bacillus subtilis* @ 10g/litre and spraying of Copper oxychloride 2.5 g/litre

Season and year : Kharif, 2022

Farming situation : Irrigated

Source of fund : KVK Main

No of locations (Villages) : 1

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha) : 4ha

Actual area (ha) : 4ha

Justification for shortfall if any : Nil

Feedback from farmers

We only followed chemical methods for management it required high costs. The demonstrated technologies are affordable and effective against the false smut disease and additionally improved yield up to 12 quintals (26%).

Feedback of the Scientist

The proposed technologies are highly effective, low cost and can be easily adopted by the farmers. It has reduced the disease incidence up to 80-85% and increased yields 2 fold as well. Paddy straw quality also improved.

Extension activities on the FLD : Field day-1

FLD 10. Demonstration on Integrated pest management in Chilli

Crop : Chilli

Thematic area : IPM

Technology demonstrated :

- Timely practices of following technologies depends on the crop stage,
- Maize - Sesbania as border crop/Intercrop Agathi
- Seed treatment with imidacloprid - 70 WS 2ml/kg of seed
- Application of TNAU Pest repellent
- Blue sticky trap 12 No./ha
- Pheromone trap 12 No./ha
- Solar Light trap @ 1 No./ha
- Dimethoate 30 EC 1.0 ml/lit.

Season and year : Kharif, 2022

Farming situation : Irrigated

Source of fund : KVK Main

No of locations (Villages) : 1

No. of demonstrations (replications/farmers/beneficiaries): 5

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha) : 2 ha

Actual area (ha) : 2 ha

Justification for shortfall if any: Nil

Feedback from farmers

All the insect traps are cheap in price but catches significant number of pest population. Border crops attracted natural enemies that indirectly reduced insect pest that increases the fruit yield up to 25 percent.

Feedback of the Scientist

Sucking pests are highly controlled using insect traps. The flower shedding also seems reduced by these technologies. TNAU pest repellent wards off the pests. Leaf curling symptoms has not observed in the field. Yield arose from 46.53q to 58.50q by adopting these IPM strategies.

Extension activities on the FLD : Field day-1, Farmers training-2

FLD 11. Demonstration on Pokka boeng disease management in Sugarcane

Crop : Sugarcane

Thematic area : IDM

Technology demonstrated :

Sett treatment with Carbendazim 0.1%. Spraying of 0.1% carbendazim (1 g/ lit. of water) or 0.2% Copper oxychloride or 0.3% Mancozeb (3 g/ lit. of water) two to three spraying with an interval of 15 days interval. Diseased canes should be rouged out. Basal dose of *T.viride* and *Bacillus subtilis* @ each 1 kg + 250 kg FYM.

Season and year : Kharif, 2022

Farming situation : Irrigated

Source of fund : KVK Main

No of locations (Villages) : 1

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha) : 4 ha

Actual area (ha) : 4 ha

Justification for shortfall if any : Nil

Feedback from farmers:

Reduced disease frequency, flourished with new green leaves, stunted plants also developed again, sugarcane tonnage also increased up to 25 percent.

Feedback of the Scientist

The ratoon crops are highly affected by this disease. So, farmers cut only single harvest that increases the production cost but also upsurge the cost of newer planting. Adoption of these technologies reduced the disease incidence and improved the number ratooning up to 3 cuttings thereby the cane yield and sugar recovery percentage also increased.

Extension activities on the FLD : Field day-1, Farmers training-2, Media coverage-3, Training to Extension Functionaries-2

FLD 12. Demonstration on IPM in Brinjal

Crop : Brinjal

Thematic area : IPM

Technology demonstrated :

TNAU pest repellent, Yellow sticky trap, Pheromone Trap, *Bacillus thuringiensis*, border crop-Chrysanthemum. Release of *Trichogramma chilonis* @50,000/ha. @10 days interval 6 times

Season and year : Rabi, 2022

Farming situation : Irrigated

Source of fund : KVK Main

No of locations (Villages) : 1

No. of demonstrations (replications/farmers/beneficiaries): 5

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha) : 2 ha

Actual area (ha) : 2 ha

Justification for shortfall if any: Nil

Feedback from farmers

We use chemical pesticides for the management of pests in brinjal, but these organic methods are low cost, good at insect control, increased fruit quality, number of shoot and fruit damages also reduced. The yield increased up to 25% (196 q/ha) compare to conventional method (153 q/ha).

Feedback of the Scientist

Farmers can get high yield with low production cost by organic pest control strategies. The fruits are also residue free from insecticides that sold at higher value in the market.

Extension activities on the FLD : Field day-1, Farmers training-1, Media coverage-1

FLD 13. Demonstration on Foliar application of chemicals by Drones for field crops

Crop : Drone technology

Thematic area : IPM

Technology demonstrated : Drone spray

Season and year : Kharif, 2022

Farming situation : Irrigated

Source of fund : KVK Main

No of locations (Villages) : 1

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

No of SC/ST Farmers and women farmers: Nil

Area proposed (ha) : 4 ha

Actual area (ha) : 4 ha

Justification for shortfall if any: Nil

Feedback from farmers:

Spraying operation done within 45 minutes/ha. Low spraying cost Rs.1500/ha where as Rs.5000/ha required if by manual spraying. Pesticide usage has reduced up to 40 percentages. Spray volume also decreased, required only 25 litres/ha for groundnut. Pest population controlled up to 85% in groundnut. Grain yield improved from 20 to 25q/ha.

Feedback of the Scientist:

Farmers can perform timely operation without waiting for the manpower. Human health hazards have prevented. Even distribution of spray fluid is possible with this technology, farmers saves cost by curtailing production expenses.

Extension activities on the FLD: Field day-1, Farmers training-1

FLD 14. Demonstration of Nutrition Garden in DFI village

Crop: Vegetables and Fruits

Thematic area: Nutritional Security

Technology demonstrated: Creating awareness about nutritional, medicinal, economical and health aspects of nutri-garden / herbal garden

Season and year: Rabi, 2022

Farming situation:

- Lack of Knowledge in multi nutritive value of greens and vegetables.
- Improper utilization of waste water
- Increased cost of vegetables
- Poor uptake of nutritious vegetables

Source of fund: SCSP

No of locations (Villages): 1 (Veerakkan)

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

No of SC/ST Farmers and women farmers: SC farmers 10

Area proposed (ha): 0.2 ha

Actual area (ha): 0.2 ha

Justification for shortfall if any: No

Feedback from farmers:

From kitchen garden they are harvesting more vegetables that results in increased vegetable consumption rate. Also, they are giving vegetables for neighborhoods and relatives.

Feedback of the Scientist: Nil

Extension activities on the FLD: Farmers training, training to Extension functionaries

FLD 15. Demonstration of TNAU fruity fresh to improve shelf life of fruits and vegetables

Crop: Vegetables

Thematic area: Post Harvest Management

Technology demonstrated:

- Dilute 20 ml of fruity fresh formulation in one litre of water
- Dip fruits for five minutes in the diluted solution and dry the fruits before packing
- Post-Harvest dip in 2 % TNAU fruity fresh extends the shelf life of fruits by two weeks in ambient storage condition and upto 4 weeks under cold storage

Season and year: Rabi, 2022

Farming situation:

Cultivated in Sandy Soil in irrigated condition. Poor shelf life of fruits and vegetables because of its perishable nature and lack of refrigerated transport and cold storage facilities for farmers and sellers they get low income.

Source of fund: KVK Main

No of locations (Villages): 2

No. of demonstrations (replications/farmers/beneficiaries): 5

No. of SC/ST Farmers and women farmers: Nil

Area proposed (ha): -

Actual area (ha): -

Justification for shortfall if any: No

Feedback from farmers:

Initially it has severe odour later the odour goes off. Shelf life of Brinjal was extended upto 14 to 18 days

Feedback of the Scientist:

High odour in the fruity fresh may be cut off which makes farmers to think it has high chemical composition and it may have ill effects in human after consuming it.

Extension activities on the FLD: Farmers training, method demonstrations

FLD 16. Demonstration of super grain bag to store pulses

Crop: Blackgram and Groundnut

Thematic area: Post Harvest Management

Technology demonstrated: Super bags reduce the flow of both oxygen and water between the stored grain or seed and the outside atmosphere. When properly sealed, respiration of grain and insects inside the bag reduce oxygen levels from 21% to 5%. This reduction reduces insects to less than 1 insect/kg of grain without using insecticides - often within 10 days of sealing.

Season and year: Rabi, 2022

Farming situation:

- Storage beetle leads to damage of pulses upto 25-30% at storage
- Due to storage beetle damage farmers selling blackgram immediately after harvest for low price.
- Due to beetle damage farmers getting less market preference for produce and low price.

Source of fund: KVK Main

No of locations (Villages): 1

No. of demonstrations (replications/farmers/beneficiaries): 5

No. of SC/ST Farmers and women farmers: Nil

Area proposed (ha): -

Actual area (ha): -

Justification for shortfall if any: No

Feedback from farmers:

Groundnut and blackgram were stored in Pro-harvest bag immediately after harvest. According to Groundnut, farmer stored it for 7 months as kernel for seed purpose and oil extraction purpose. No insects affected the oilseed. Also oil content was good but there was slight color change in kernel which has no effect in germination, taste and oil content.

Blackgram stored for two months and no pulse beetle affected seeds. Germination was good (95 %).

Feedback of the Scientist:

This technology can be popularized as it is highly useful for farmers to store seeds for next season.

Extension activities on the FLD: Farmers training, method demonstrations

FLD 17. Demonstration of Arka Herbi Wash

Crop: Fruits and Vegetables

Thematic area: Nutritional Security

Technology demonstrated:

Arka herbi wash is a simple and completely safe herbal product to be used to wash fruits and vegetables with, in order to remove surface residues of pesticides from fruits and vegetables to an extent of 30% or more, than that is possible by running water wash.

Season and year: Rabi, 2022

Farming situation:

Spraying high dose of pesticides leaves surface residues of pesticides on fruits and vegetables which cause health issues in humans.

Source of fund: SCSP

No of locations (Villages): 1

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

No. of SC/ST Farmers and women farmers: 10 women farmers

Area proposed (ha): -

Actual area (ha): -

Justification for shortfall if any: No

Feedback from farmers:

It is simple process to wash fruits and vegetables. No odour in the product and it does not affect cooking quality and taste of vegetables.

Feedback of the Scientist:

This technology can be popularized.

Extension activities on the FLD: Farmers training, method demonstrations

FLD 18. Demonstration of value added products in Moringa

Crop: Moringa

Thematic area: Value Addition

Technology demonstrated:

The technology involves preparation of moringa (PKM 1) value added products – moringa leaf and pod dehydrated powders, moringa leaf soup mix, rice mix, leaf pickle, moringa flower pickle, moringa flower rice mix, its packaging, labeling and marketing techniques.

Season and year: Rabi, 2022

Farming situation:

Lack of awareness on value addition in moringa leaf and flower.

Source of fund: SCSP

No of locations (Villages): 1

No. of demonstrations (replications/farmers/beneficiaries): 5

No. of SC/ST Farmers and women farmers: 10 women farmers

Area proposed (ha): -

Actual area (ha): -

Justification for shortfall if any: No

Feedback from farmers:

We don't use leaves and flowers. We cut the tree after harvest. Now it is highly useful for us to fetch added income by utilizing under utilized resources (leaves) from value addition techniques. Marketing linkages may be created through KVK.

Feedback of the Scientist: More value addition technologies may be developed.

Extension activities on the FLD: Farmers training, method demonstrations

FLD 19. Demonstration on Prosyn NC in augmenting fertility through estrous synchronization in dairy cows

Crop: Dairy

Thematic area: Nutrient Management

Technology demonstrated:

Prosyn NC- a non-invasive, farmer friendly method which can be applied on the skin without the need of veterinary assistances. It induces ovulatory heat within 5-7 days of application thereby facilitating artificial insemination.

Season and year: 2022

Farming situation:

- High cost invasive hormonal therapy
- Less Conception rate and irregular oestrus (Repeat breeder)
- High cost (Rs 2000/treatment) involvement of invasive hormonal treatment
- Non-adoption of recent technology

Source of fund: SCSP

No of locations (Villages): 1

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

No of SC/ST Farmers and women farmers: 10 SC Farmers

Area proposed (ha): 20 animals

Actual area (ha): 20 animals

Justification for shortfall if any: No

Feedback from farmers:

Cows comes to heat. Even the animals where no regular heating symptoms also comes to heat by this treatment

Feedback of the Scientist: Nil

Extension activities on the FLD: Farmers training, training to Extension functionaries

FLD 20. Demonstrations of rumen bypass fat to meet out the energy deficiency in dairy

Crop: Dairy

Thematic area: Nutrient Management

Technology demonstrated:

Demonstrations of Rumen bypass fat. This fat resists lipolysis and biohydrogenation in rumen by rumen microorganisms, but gets digested in lower digestive tract. Thereby maintain rumen pH and increase fat and SNF in milk

Season and year: 2022

Farming situation:

- Feeding Rice Gruel
- Decreased milk yield (4-5 L/day) with less milk fat (2.5%) and SNF (6.5%)
- Feeding more rice gruel causes SARA (Sub acute Rumen Acidosis)

Source of fund: SCSP

No of locations (Villages): 1

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

No. of SC/ST Farmers and women farmers: 10 SC farmers

Area proposed (ha): 20 animals

Actual area (ha): 20 animals

Justification for shortfall if any: No

Feedback from farmers:

About 750 ml to 1 lit increased milk yield was obtained.

Feedback of the Scientist: Nil

Extension activities on the FLD: Farmers training, method demonstrations

FLD 21. Demonstration on milk replacer for lambs/kids

Crop: Goat

Thematic area: Nutrient Management

Technology demonstrated:

Milk replacer is a special feed containing quality ingredients that are highly digestible and designed for supporting the nutritional needs of young nursing lambs in achieving optimum growth and health.

Season and year: 2022

Farming situation:

- Zero to minimum feeding of concentrate feed leads to milk production in desi does especially during twinning
- Increased mortality of kids (5%) due to less mother milk or orphaned kid
- Use of alternate milk like cow milk leads to diarrhoea and gastro-intestinal problems

Source of fund: KVK Main

No of locations (Villages): 1

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

No. of SC/ST Farmers and women farmers: 10 SC farmers

Area proposed (ha): 20 animals

Actual area (ha): 20 animals

Justification for shortfall if any: No

Feedback from farmers:

The goat kids prefers milk replacer very well when fed using the feeding bottle. Good input to save the goat kids where the mother expires or there is no sufficient milk. Good weight gain in shorter period observed in goat kids by use of milk replacer

Feedback of the Scientist: Good technology

Extension activities on the FLD: Farmers training, method demonstrations

FLD 22. Demonstration on AMS beads in control of coccidiosis in desi birds

Crop: Poultry

Thematic area: Disease Management

Technology demonstrated:

AMS beads - It's a enteric coated nanoparticle made of Aluminum magnesium silicate which specifically deliver the drug to intestine and prevent coccidiosis outbreak in poultry
Season and year: 2022

Farming situation:

- Extensive (Grazing) & Intensive
- Increased incidence (25%) of coccidiosis in birds reared in deep litter system during rainy season
- High mortality (90%), if not treated or prevented earlier

Source of fund: SCSP

No of locations (Villages): 1

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

No. of SC/ST Farmers and women farmers: 10 women farmers

Area proposed (ha): 250 birds

Actual area (ha): 250 birds

Justification for shortfall if any: No

Feedback from farmers:

There is less mortality in chicks and healthy.

Feedback of the Scientist:

Timely and easy availability must be ensured.

Extension activities on the FLD: Farmers training, method demonstrations

FLD 23. Demonstration of Sugarcane Expert System in Android mobile app

Technology

Crop	Sugarcane
Thematic area	ICT
Technology demonstrated	Demonstration of Sugarcane Expert System in Android mobile app
Season and year	Rabi and 2022
Farming Situation	Sugarcane is being cultivated in around 8000 ha under irrigated condition. The farmers are big land holders and scattered hence the reach the technologies is slow
Source of Fund	KVK Main
No. of locations(Villages)	1
No. of demonstration	10
No. of SC/ST farmers and women farmers	1 and 1
Area proposed (ha)	4ha
Actual area (ha)	4 ha
Justification for shortfall if any	Nil
Feedback from farmers	The Sugarcane Expert system app is very useful during the pandemic situation without expecting the experts physically
Feedback of the scientist	The app should be updated every year for knowing new technology and as per the new problem emerges
Extension activities on the FLD	Group meeting – 1 Method demonstration – 1 Field visit – 4 Feedback collection - 1

FLD 24. Demonstration of Sugarcane Expert System in Android mobile app

Technology

Crop	Sugarcane
Thematic area	ICT
Technology demonstrated	Demonstration of Sugarcane Expert System in Android mobile app
Season and year	Rabi and 2022
Farming Situation	Sugarcane is being cultivated in around 8000 ha under irrigated condition. The farmers are big land holders and scattered hence the reach the technologies is slow
Source of Fund	KVK Main
No. of locations(Villages)	1
No. of demonstration	10
No. of SC/ST farmers and women farmers	1 and 1
Area proposed (ha)	4ha
Actual area (ha)	4 ha
Justification for shortfall if any	Nil
Feedback from farmers	The Sugarcane Expert system app is very useful during the

Feedback of the scientist	pandemic situation without expecting the experts physically The app should be updated every year for knowing new technology and as per the new problem emerges
Extension activities on the FLD	Group meeting – 1 Method demonstration – 1 Field visit – 4 Feedback collection - 1

FLD 25. Demonstration of Android based ICAR - IASRI Backyard Poultry Farming app

Technology

Livestock	Backyard Poultry
Thematic area	ICT
Technology demonstrated	Demonstration of Android based ICAR - IASRI Backyard Poultry Farming app
Season and year	2022
Farming Situation	---
Source of Fund	SCSP
No. of locations(Villages)	1
No. of demonstration	25
No. of SC/ST farmers and women farmers	20 and 5
Justification for shortfall if any	Nil
Feedback from farmers	The ICAR - IASRI Backyard Poultry Farming app is very useful to poultry farmers during critical situation
Feedback of the scientist	The app should be updated every year for knowing new technology and as per the new problem emerges
Extension activities on the FLD	Group meeting – 1 Method demonstration – 1 Field visit – 5 Feedback collection - 1

FLD 26. Demonstration of TANUVAS Android based Feed calculator app for cattle

Technology

Livestock	Dairy
Thematic area	ICT
Technology demonstrated	Demonstration of TANUVAS Android based Feed calculator app for cattle
Season and year	2022
Farming Situation	
Source of Fund	SCSP
No. of locations(Villages)	1
No. of demonstration	25
No. of SC/ST farmers and women farmers	10 and 15
Justification for shortfall if any	Nil
Feedback from farmers	The TANUVAS Android based Feed calculator app is very useful to Dairy farmers for increasing milk yield through feed

	calculator
Feedback of the scientist	The app should be updated every year for knowing new technology and as per the new problem emerges
Extension activities on the FLD	Group meeting – 1 Method demonstration – 1 Field visit – 5 Feedback collection - 1

Extension Studies

Extension Study 1 - Impact study on CFLD - Pulses (Blackgram) on Yield, Economics and adoption of technologies in Blackgram cultivation

Introduction

Pulses are the important sources of proteins, vitamins and minerals and are popularly known as “Poor man’s meat” and “rich man’s vegetable”, which contribute significantly to the nutritional security of the country. Besides, pulses possess several other qualities such as improvement on soil fertility and physical structure, fit in mixed/inter-cropping system, crop rotations and dry farming and provide green pods for vegetable and nutritious fodder for cattle as well. India is the largest producer (26%) of world’s production and consumer (30%) of total pulses of the world. The frequency of pulses consumption in the country is much higher than any other source of protein, which indicates the importance of pulses in their daily food habits (Rajet *al.* 2013). The domestic production of about 23 million tonnes during 2016-17 shall be still less than the future estimated demand of 29-30 million tonnes. The targeted production and productivity is possible by way of harnessing this yield gap by growing pulses in new niches, precision farming, quality inputs, soil test based INM and mechanized method of pulse cultivation complimented with generous governmental policies and appropriate funding support to implementing states/stake holders (Tiwari and Shivhare, 2017). According to the Vision-2030 document prepared by the ICAR-Indian Institute of Pulses Research (IIPR), Kanpur, a growth rate of 4.2% has to be ensured in order to meet the projected demand of 32 million tonnes of pulses by 2030. This will, however, require a paradigm shift in research, technology generation and dissemination, popularization of improved crop management practices and commercialization along with capacity building of the stakeholders in frontier areas of research.

In India, pulses, therefore, have always received due attentions both in terms of requirement by consumers and adequate programmatic support from the government at the production front. Addressing this concern of significance, the Ministry of Agriculture and Farmers Welfare, Govt. of India had initiated a nation-wide cluster frontline demonstration (CFLD) programme on pulses under National Food Security Mission-Pulses (NFSM-Pulses) since 2015-16. The basic strategy of the Mission is to promote and extend improved technologies, i.e., seed, micro-nutrients, soil amendments, integrated pest management, farm machinery and implements, irrigation devices along with capacity building of farmers.

The ICAR through its Krishi Vigyan Kendras (KVKs) across the country has been implementing this CFLD programme on different pulse crops to boost the production and productivity of pulses with improved varieties and location specific technologies.

Despite great scope and better opportunities for pulses production in Northeast region of India (including the niche areas of rice fallow), the growth rate is low due to many intricate and interrelated factors right from soil/climate related constraints to technological hick ups and extension oriented hick ups. Besides, shrinkage in land holding, growing population pressure, increasing food/pulse demand and poor soil health are the key constraints (Praharajet *al.* 2018). The major pulses grown in the region are green gram (*Vigna radiata*), black gram (*V. mungo*), pigeon pea (*Cajanuscajan*), cowpea (*V. unguiculata*), french bean (*Phaseolus vulgaris*), chickpea (*Cicer arietinum*), lentil (*L. culinaris*) and field pea (*Pisum sativum*). In hills, other beans such as faba bean (*V. faba*),

adzuki bean (*Vigna angularis*), moth bean (*V. aconitifolia*) and broad bean (*Dolichos lablab*) are also used as pulses.

The ICAR Krishi Vigyan Kendra, Ariyalur have been successfully implementing this programme since rabi from 2016-17 to 2021-22 by conducting cluster frontline demonstrations in a systematic manner on farmers' field under the close supervision of their scientists to show the worth of new/ proven varieties with technological packages in their respective districts for enhancing production and productivity of pulse crops. With this background, the present investigation was undertaken with the specific objectives to assess the performance of CFLD on pulses in terms of grain yield, extension gap, technological gap and economic gains by the farmers so that the findings the study will be helpful to the concerned policy makers and other stakeholders to focus on the way forward for improving pulses production in the region, vertically and horizontally as well.

Materials and Methods

Cluster front line demonstrations (CFLDs) are one of the most powerful tools of extension because farmers, in general, are driven by the perception that "Seeing is believing". The main objective of cluster frontline demonstrations is to demonstrate newly released crop production and protection technologies and its management practices in the farmer's field under the micro-farming situation. Under centrally sponsored scheme on pulses production and protection technology under National Food Security Mission scheme, Krishi Vigyan Kendra, Ariyalur had conducted the cluster front line demonstrations on pulse crops during rabi season 2016-17 to 2021-2022. The Krishi Vigyan Kendra had organized 150 CFLDs on blackgram in the four blocks of Ariyalur district viz., Jayankondam, T.Palur, Sendurai and Andimadam. The total area of 60 ha was covered for the Blackgram demonstrations. A list of farmers was prepared from group meeting and specific skill training was imparted to the selected farmers regarding different aspects of recommended production and protection technologies. The technological interventions on pulse crops were comprised of suitable improved varieties of Blackgram and demonstrated with full package of practices viz. proper tillage, proper seed rate, time of sowing, sowing method, balanced dose of fertilizer (18 kg Nitrogen 46 kg P₂O₅/ha), *Trichoderma* and *Rhizobium* culture @ 5 g/kg of seed as seed treatment, proper irrigation, weed management and improved plant protection measure were applied at farmers' fields. In this demonstration control plot was also kept where farmers practices were carried out (use of non-descriptive varieties, broadcasting sowing method, blanket use of fertilizer, one hand weeding and indiscriminate use of plant protection chemicals). The demonstrations on farmers' fields were monitored by scientists of Krishi Vigyan Kendra, Ariyalur right from sowing to harvesting and made to guide them. These visits were also utilized to collect feedback information for further improvement in research and extension programme. The yield data were collected from the demonstrations and control plots and analyzed with the suitable statistical tools for different parameters using following formula as given below: -

Extension gap	= Demonstrated yield – farmer's practice yield
Technology gap	= Potential yield – Demonstration yield
Additional return	= Demonstration return – farmer's practice return
Technology index	= Potential yield-Demonstration yield *100

Results and Discussion

The improved package and practices is more important with technological intervention for productivity and profitability of pulses. Detailed package of practices with technological intervention for recommended practice is furnished in Table 1, 2 and 3. It was also observed that farmer's use injudicious and unrecompensed insecticides and mostly didn't use fungicides.

Grain yield and gap analysis of black gram

The grain yield and gap analysis of black gram in demonstrated field's and farmer's practice is presented in Table 2. The results revealed that average grain yield of Black gram under cluster frontline demonstrations were 6.1q/ha, 7.34q/ha, 7.4q/ha, 6.7q/ha, 6.4q/ha and 7.18 q/ha as compared to 4.9 q/ha, 5.6 q/ha, 5.7q/ha, 5.3q/ha, 5.2q/ha and 5.03 q/ha recorded in farmer's practice and average yield increase of 24.48 percent, 31.07 percent, 29.82 percent, 26.41 percent, 23.07 percent and 42.74 per cent respectively for the year 2016-17 to 2021-22. The extension gap and technology from 2016-17 to 2021-22 was 1.2,1.74,1.7,1.4,1.2,2.15q/ha and technology index are 190, 66, 60, 130, 160, 82 percent respectively for the above years.

The observed technology gap may be attributed dissimilarity in soil fertility status, rainfall distribution, disease, insect, pest infestations and weed intensity well as the change in the locations of cluster frontline demonstration sites. The technology index shows the feasibility of the variety at the farmer's field. The lower value of technology index more is the feasibility of technology. This indicates that a gap existed between technology evolved and technology adoption at farmer's field

Economics analysis of black gram

Economic performance of Black gram under cluster frontline demonstration was explained in table 3. The economic analysis results revealed that the black gram recorded higher total return from recommended practice (CFLD's) were Rs.79367 ha⁻¹ in 2016-17 and Rs.29360 ha⁻¹. The net returns were Rs.47,980 ha⁻¹ in 2016-17 in comparison to Rs.16581 ha⁻¹ in farmer's practice. It was economically observed that additional returns were Rs.31,399. The benefit cost ratio also recorded higher in recommended practice with 2.52 compared to 1.53 in farmer practice.

Table.1 Differences between technological intervention and farmers practices under CFLD on Black gram

Particulars	Technological intervention in CFLD	Farmer Practice	Gap
Variety	VBN 6 & VBN 8	Local/Own seed	Full gap
Seed rate	20kg/ha	25kg/ha	High seed rate
Sowing Method/Spacing	30 X 10 cm, Tractor drawn seed drill sowing	Broad casting, uneven plant population	Partial gap
Time of Sowing	August 20 th	August 20 to 30 th	Partial gap
Seed treatment	Seed treatment with <i>Trichoderma viride</i> @ 4g/kg of seed	Seed treatment was not done	Full gap

Fertilizer Dose	20:40:40 NPK Kg/ha & Soil test based fertilizer application Pulse wonder spray @4kg/ac.	Blanket use of fertilizer No MN Spray	Partial gap
Weed Management	Pendimethalin 30% EC@ 3.3lit/ha at 3DAS	No weeding	Full gap
Plant Protection Measures	Installation of Yellow sticky & Pheromone traps, foliar spraying of TNAU neem oil 0.2% and spraying of <i>Bacillus subtilis</i> @ 1%	Spraying of Profenophos 25% EC@2.5ml/lit & spraying of Mancozeb @2g/lit	Partial gap

Table : 2. Grain yield and gap analysis of cluster frontline demonstration of Blackgram
N = 150

Year	No.of Demonstrat ration	Average yield/ha		% increase yield	Extension gap (q/ha)	Technology gap(q/ha)	Technology Index(%)
		Demonstration (q/ha)	Farmer Practice (q/ha)				
2016-17	25	6.1	4.9	24.48	2.4	1.9	190
2017-18	25	7.34	5.6	31.07	2.84	0.66	66
2018-19	25	7.4	5.7	29.82	3.5	0.6	60
2019-20	25	6.7	5.3	26.41	1.4	1.3	130
2020-21	25	6.4	5.2	23.07	1.2	1.6	160
2021-22	25	7.18	5.03	42.74	2.15	1.18	118
Mean		8.22	5.28	29.59	1.5	1.14	114.67

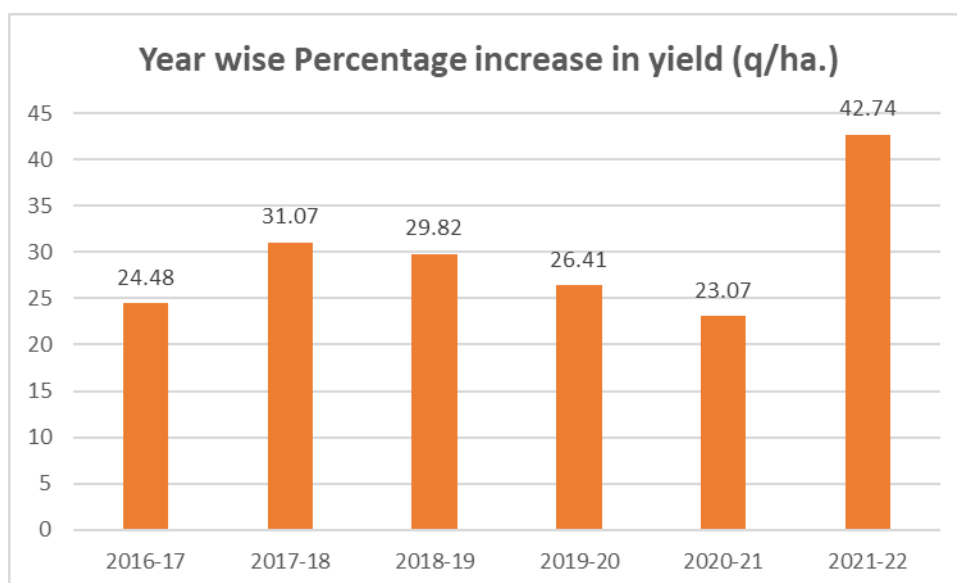
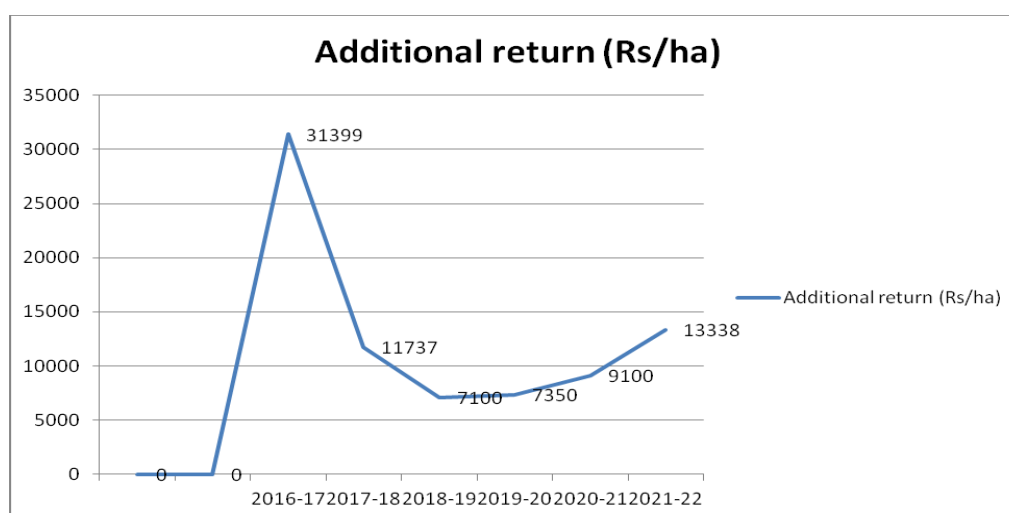


Table.3. Economic analysis of the cluster frontline demonstrations on Blackgram

Year	Gross Returns (Rs/ha)		Gross Cost (Rs/ha)		Net Return (Rs/ha)		Additional return (Rs/ha)	BC ratio	
	Demo	Farmer Practice	Demo	Farmer Practice	Demo	Farmer Practice		Demo	Farmer Practice
2016-17	79367	47658	31386	31076	47980	16581	31399	2.52	1.53
2017-18	29360	18627	16500	17500	12860	1127	11737	1.77	1.06
2018-19	43546	24560	31386	19500	12160	5060	7100	2.98	1.26
2019-20	40200	31800	21550	20500	18650	11300	7350	1.87	1.55
2020-21	44800	36400	18900	19600	25900	16800	9100	2.37	1.86
2021-22	46803	32690	17495	16720	29308	15970	13338	2.67	1.96



Impact of CFLDs on adoption of blackgram production technologies

Data on adoption of blackgram production technologies by the beneficiary farmers are presented in table 4. It was found that a number of adopters for improved variety (VBN 6 & VBN 8) and seed rate of 20 kg ha⁻¹ of blackgram were 6.67% before demonstrations, which increased to 100.00% after cluster frontline demonstrations in adopted villages.

The number of adopters for application of N: P: K (20:40:40 kg ha⁻¹) fertilizers and insect management by using pesticide viz. Profenophos 50% EC 1.0 lit ha⁻¹ were increased significantly during pre and post demonstrations period from 21.30 to 93.33% and from 15.30 to 96.67%, respectively. The cercospora leaf spot diseases infestation were found due to continuous heavy rainfall and high relative humidity at reproductive stage which controlled by Mancozeb 75 WP @ 1 kg ha⁻¹.

In this line, it was found that majority of the participant farmers in CFLDs program had full adoption of improved practices viz., land preparation, use of high yielding varieties, sowing time and application of manures and fertilizers. These results are in close conformity with the findings recorded in the same crop (Sahare et al., 2018). Significant difference was observed between the adoption of CFLDs beneficiary farmers and non-beneficiary farmers towards blackgram production technology.

Table.4 Impact of CFLDs on adoption of blackgram production technologies

S.No.	Technology	Number of adopters(N=150)		Change in No. of adopters
		Before Demonstration	After Demonstration	
1	Variety	10 (6.67)	150 (100)	+40
2	Seed rate	22 (14.66)	146 (97.33)	+124
3	Sowing Method/Spacing	28 (18.67)	130 (86.67)	+102
4	Time of Sowing	54 (36)	140 (93.33)	+86
5	Seed treatment	26 (17.33)	132 (88.00)	+106
6	Fertilizer Dose	32 (21.30)	140 (93.33)	+108
7	Weed Management	14 (9.33)	112 (74.67)	+98
8	Plant Protection Measures	23 (15.30)	145 (96.67)	+122

Figure in the parenthesis indicates percentage

It is concluded that the CFLD programme is an effective tool for increasing the production and productivity of pulses and changing the knowledge, attitude and skill of farmers. The increment in yield of pulses to the extent of 6.1q/ha to 7.34q/ha and additional return from Rs.7100 to Rs. 31399 in Black gram over the farmers practice created greater awareness and motivated the other farmers to adopt the improved package of practices of pulses. These demonstrations also built the relationship and confidence between farmers and scientists. The beneficiary farmers of FLDs also play an important role as source of information and quality seeds for wider dissemination of the high yielding varieties of pulses for other nearby farmers.

Salient Points:

- KVK, Ariyalur conducted CFLD on Blackgram (Pulses) from 2016-17 to 2021-2022 (6 Years) at four blocks of Ariyalur District. Totally 150 such demonstration conducted in 150 acres with 150 farmers.
- An impact study was conducted by collecting the needy information in a pre-tested questionnaire using all the 150 participants of FLD (Respondents)
- Extension gap (1.5q/ha), Technology gap (1.14q/ha) and technology index (114.67%) were studied in respect of all the six years
- There was the increase of 24.5 % yield in 2016-17 in demo plots over check and it reaches the maximum of 42.7 % during 2021-22. It was due to the adoption of recommended practices to get higher yield.
- The Technology gap was 1.9q/ha during 2016-17 and it was reduced to 0.82 q/ha during 2021-2022 by adoption of ideal practices.

Extension Study – 2 Impact Assessment of FFS intervention on Groundnut cultivation with special reference of IPDM practices in Ariyalur District

Introduction

Ariyalur district of Tamil Nadu is located in North eastern part of Tamil Nadu which has the potential of cultivating wet land, garden land and rainfed crops. Paddy is the major wet land crop while groundnut and blackgram are the important garden land crops. Pearl millet, maize, cashew and cotton are the rainfed crops raised in red sandy loam and black cotton soils during north east monsoon season. The literacy level of farmers and the technical know-how on advanced crop production practices was poor due to the non-reach of technologies to the farmers at last mile. Groundnut is an important oilseed crop cultivated in an area of more than 17,500 ha in rabi season (November-December) under garden land condition mainly in five blocks of Ariyalur district viz., T.Palur, Jayankondam, Andimadam, Ariyalur and Sendurai with borewell irrigation. Important varieties under cultivation are CG7, VRI2, JL24 for domestic use and also for local marketing. The groundnut farmers were less assured of their crop due to the socio economic factors viz., less affordability towards high cost of inputs, biotic and abiotic stresses, improper marketing mechanisms etc.

The Farmer Field School (FFS) approach is a participatory methodology of technology development and dissemination, which gives the farmer an opportunity to learn through practical field activities. The special feature of FFS is field based learning and acts as a primary venue of learning for farmers. The FFS programme also empowers the farmers to take economically viable decisions by adopting the practices of Integrated Crop Management (ICM). The aim of the FFS is to build the capacity of farmers to analyze their production systems, identify problems, test possible solutions and eventually adopt the practices that is most suitable to their farming system. FFS approach is designed to create capacities in farmers so that they can analyze their productive systems, identify their problems, test solutions and choose the most appropriate operation according to their agricultural system. Consequently, their productivity and profitability will increase.

Training in FFS seeks to assist farmers to develop their ability to make critical and informed decisions that will render their crop production systems more productive, profitable and sustainable. For the success of any programme, there should be a periodical appraisal and evaluation of what is being done, so that suitable changes can be made for effective functioning. Hence, Krishi Vigyan Kendra, Ariyalur organized farmer field schools on Integrated crop management in Groundnut. The KVK focused its Farmers Field School (FFS) in the five blocks of Ariyalur from 2010-11 to 2019-20 (10 years) to improve the knowledge level of farmers and adoption of advanced Integrated pest and disease management technologies pertaining to groundnut cultivation. The KVK demonstrated various IPM technologies through series of interventions in the form of Farmers Field school classes at different blocks. The present study was undertaken to ascertain the gain in knowledge level among the respondents and to study the adoption level of various interventions on groundnut and also to find out the reasons for non-adoption of certain technologies and to suggest suitable alternatives to enhance the income level out of Groundnut cultivation.

Each meeting of FFS consisted of the following set pattern of activities:

1. Agro-ecosystem field observation, analysis and presentations;
2. Discussion on special topics
3. Group dynamics

Materials and Methods

Though most of the Farmers Field School interventions were carried out in five blocks, but only two blocks viz., T.Palur and Andimadam were selected for the study. For the selection of respondents, list of beneficiaries of Participants of Farmers Field school of KVK during last ten years (2010-11 to 2019-20) was prepared. Out of 250 beneficiaries, only 100 farmers were selected by simple random sampling procedure from T.Palur and Andimadam with 50 farmers from each block. A questionnaire was prepared and the data were collected through personal interviews with the respondents. The data collected were processed, tabulated, classified and analysed in terms of percentage. Totally 11 practices were selected as criteria to evaluate the farmers for extent of knowledge gained and adoption of groundnut integrated pest and disease management technologies as results of various intervention of Farmers Field School.

Results and Discussion

Gain in knowledge

Most of the farmers were traditional in nature and have less access to resource centres like KVK before the inception of CREED KVK during 2009. It is presumed that the knowledge of farmers to a larger degree relies upon the extent of exposure given to them through tools like trainings, demonstrations, exposure visits, etc. The data presented in Table 1 reveals the increased knowledge gain on various technologies of IPM due to the series of intervention of KVK. The highest gain of 54 percent was observed in knowledge on seed treatment with *Trichoderma viride* @ 10g/kg. of seed to control the seed borne disease like root rot and stem rot. This could be due to the frequent trainings classes and demonstrations conducted by the KVK and because of the easiness of technology in seed treatment. Installation of pheromone traps @5/ha for monitoring and trapping of *Sopdoptera litura* and *Helicoverpa armigera* recorded the knowledge gain to the tune of 46 per cent and it could be due to the trainings and method demonstration organized by KVK at the farmer's field under Farm Field School programme. The beneficiary farmers realized the usefulness of the technology by seeing the performance of groundnut crop under IPM measures followed and by interaction with the successful farmers. Forty percent gain in knowledge was observed towards soil application of *Trichoderma viride* 10 kg/ha. to avoid the soil borne diseases like dry root rot and stem rot. Need based application of Imidacloprid 17.8% SL @120 ml/kg to groundnut field recorded the knowledge gain of 38 percent as it is very effective, cheaper and easily available. The least gain in knowledge was observed for crop rotation as the 32 percent of the farmers knew the crop rotation and the rest of the 20 percent of the respondents alone understand the need of crop rotation after KVK's intervention. The technologies viz., Installation of light trap @1 No./5 ha, collection and destruction of egg masses and spraying of Hexaconazole 5% EC in 15 days interval revealed 30 percent of knowledge of gain due to the interventions of KVK as the exposure to these technologies might be less.

Extent of Adoption

The data (Table 2) revealed that 56 percent of the farmers adopted seed treatment with *Trichoderma viride* @10g/kg of seed, 44 percent of the farmer installation of each pheromone traps @5/ha and 42 percent of the farmers adopted spraying of Hexaconazole 5% EC. The reason for higher adoption of these technologies could be the beneficial effect of these technologies to control seed borne diseases and pests and thereby increased level of

yield. Seed treatment, installation of pheromone trap and spraying of Hexaconazole technologies to control the pest and diseases resulted in high yield and hence the farmers impressed upon these technologies and its adoption was also high. Likewise, the sucking pest and leaf defoliators are the major pest in groundnut cultivation and by series of intervention of KVK, the spray of Imidacloprid @ 125ml/ha and spraying of chloripyriphos 20% EC recorded higher adoption percentage of 30. Though the deep ploughing in summer is essential technique, 55 percent of the farmers were adopting this technology even before the KVK's intervention. It was noted that gain in knowledge about soil application of *T.viride* among the farmers was to an extent of 34 percent and its effects on control of soil borne disease like root rot, leaf spot and rust. Besides, it is effective, low cost and available throughout the year in KVK itself and it facilitated the farmers to use it regularly. About 12 percent of the farmers were taking collection and destruction of egg masses before KVK's influence as it was effective and easy for control of leaf eating caterpillar. The farmers used to take the samples like pest and disease to the nearby agro centre and the shopkeeper recommends chemicals but after KVK's intervention in the form of FFS, farmers were familiar in handling the IPM in groundnut.

Knowledge Acquisition Vs Extent of adoption

The gain in knowledge depends on various factors like easiness of technologies, educational background of the participating farmers, extension approaches handled in technology transfer, farmers' attitude, ability of extension personnel, teaching and learning situation etc. Likewise the extent of adoption of a particular technology relies mainly on easiness and usefulness of the technology besides the socio economic status, access to the technological inputs and its low cost. The present study on percentage gain in knowledge and percentage adoption could certainly generate some useful information for future line of study or the charges needed in existing system of cultivation of groundnut. About deep ploughing in summer season, 88 percent of the respondents gained knowledge on summer ploughing and it was adopted by 78 percent of the respondents. The similar trend was also noticed in the case of soil application of neem cake @ 250kg/ha. In contrary to that, crop rotation was known to the farmers to an extent of 52 percent after KVK interventions but its adoption was less (18 %).

This could be due to preference of the farmers to the groundnut in terms of income over the other crops. Similarly the gain in knowledge in respect of installation of light traps was 42% but only 12 percent of farmers adopted installation of light trap due to non-availability of light traps in local and its high cost. The other technologies like installation of pheromone trap, seed treatment with *Trichoderma viride*, spraying of Hexaconazole, Imidacloprid and Chloripyriphos exhibited the similar trend of comparatively higher level of acquisition of knowledge and also adoption among the participating farmers by the various interventions of KVK. In contrary to that the knowledge acquired by the beneficiary farmers was high but its adoption was less for the technologies viz., collection and destruction of egg masses of leaf eating caterpillar and soil application of *T.viride*. This implies that still more awareness on this technology has to be imparted to the farmers and easy availability of *T.viride* in right time should be ensured.

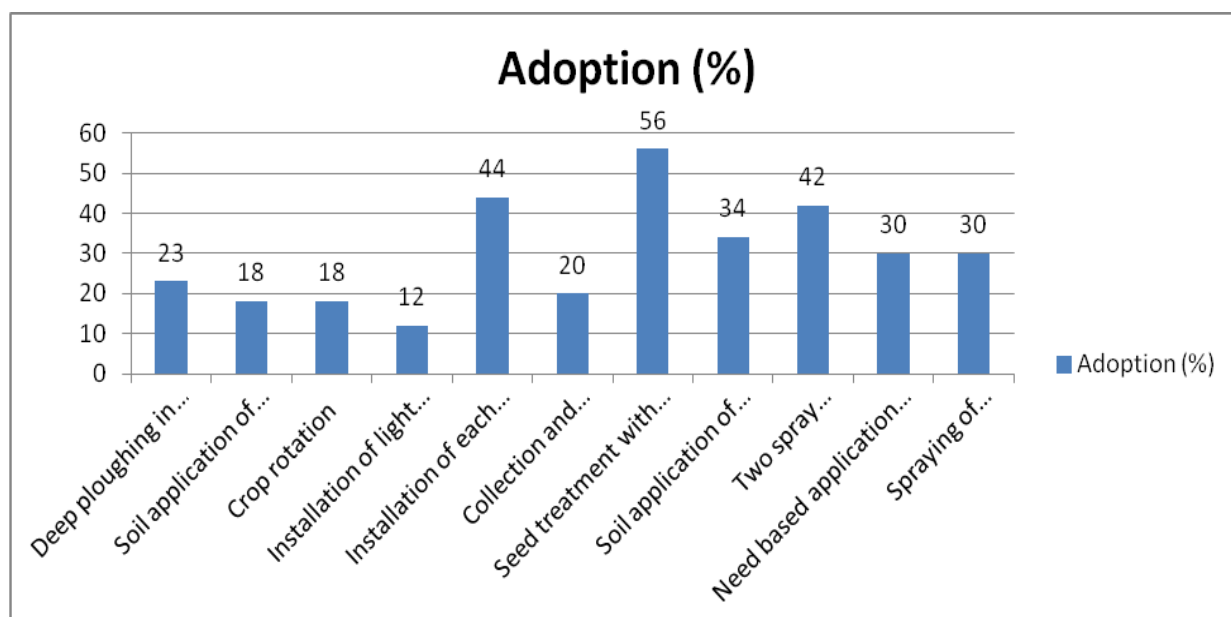
Table 1. Gain in knowledge level with respect to IPDM practices in Groundnut cultivation due to the intervention of CREED KVK at Ariyalur District of Tamilnadu

due to the intervention of CREED KVK at Arriyalur District of Tamilnadu				
Sl. No	IPM Technology	Knowledge Level		
		Before KVK intervention	After KVK intervention	Gain in knowledge (%)
a. Cultural practices				
1	Deep ploughing in summer to expose soil	60	88	28
2	Soil application of Neem cake @200kg/ha	25	60	35
3	Crop rotation	32	52	20
b. Mechanical practices				
4	Installation of light traps 1 No./5 ha.	12	42	30
5	Installation of each pheromone traps @5No./ha. for monitoring and trapping of <i>S.litura</i> and <i>H.armigera</i>	20	46	66
6	Collection and destruction of egg masses of leaf eating caterpillar	8	38	30
c. Biological control of pest and diseases				
7	Seed treatment with <i>T.viride</i> 10g/kg of seed	24	78	54
8	Soil application of <i>T.viride</i> @10 kg/ha	20	60	40
d. Chemical control				
9	Two spray Hexzaconazole 5% EC @1500 ml/500 lit. of water at 15 days interval	45	75	30
10	Need based application of Imidacloprid 17.8@ SL @125ml/ha. for managing sucking pest of Groundnut	32	70	38
11	Spraying of chloripyriphos 20%EC @1500ml/500 lit. of water for managing defoliators	48	80	32

Table 2. Change in adoption level with respect to IPDM practices in Groundnut cultivation due to the intervention of CREED KVK at Ariyalur District

Cultivation due to the intervention of CREED KVK at Ariyalur District				
Sl. No	IPM Technology	Adoption Level		
		Before KVK intervention After KVK	After KVK intervention	Adoption (%)
a. Cultural practices				
1	Deep ploughing in summer to expose soil	55	78	23
2	Soil application of Neem cake @200kg/ha	22	40	18
3	Crop rotation	3	56	18

b. Mechanical practices				
4	Installation of light traps 1 No./5 ha.	10	22	12
5	Installation of each pheromone traps @5No./ha. for monitoring and trapping of <i>S.litura</i> and <i>H.armigera</i>	18	62	44
6	Collection and destruction of egg masses of leaf eating caterpillar	12	32	20
c. Biological control of pest and diseases				
7	Seed treatment with <i>T.viride</i> 10g/kg of seed	16	72	56
8	Soil application of <i>T.viride</i> @10 kg/ha	22	56	34
d. Chemical control				
9	Two spray Hexaconazole 5% EC @1500 ml/500 lit. of water at 15 days interval	38	80	42
10	Need based application of Imidacloprid 17.8@ SL @125ml/ha. for managing sucking pest of Groundnut	35	65	30
11	Spraying of chloripyriphos 20%EC @1500ml/500 lit. of water for managing defoliators	44	74	30
	Average			29.72



Conclusion and Recommendation

The findings of the present study reveals that the interventions in the form of FFS input of CREED KVK, certainly facilitated the knowledge acquisition by the farmers and adoption at higher level availability in groundnut cultivation with respect to the technologies

viz., summer ploughing, soil application of neem cake, installation of pheromone trap, seed treatment with *T.viride*, soil application of *T.viride*, spraying of Hexaconazole, Imidacloprid and Chlorpyrifos to control various pests and diseases and to get higher yield. The present study also suggests the need of alternatives or timely availability of critical inputs like light traps could be ensured and some more awareness is required on use of light trap, crop rotation and collection and destruction of egg masses techniques. The extension system should be further invigorated using ICT tools to improve the knowledge acquisition and adoption of technologies in Groundnut cultivation at Ariyalur District.

Salient Points:

- To impart the scientific knowledge on Groundnut cultivation to the farmers of Ariyalur district. KVK, Ariyalur conducted Farmers Field School from 2010-11 to 2019-20 (10 Years) involving 250 farmers from 5 blocks.
- The study is to evaluate the impact of FFS involving 100 randomly selected respondents from two blocks were personally interviewed with questionnaire.
- About 11 practices in groundnut cultivation was taken to study the knowledge gain and extent of adoption by the farmers.
- The study reveals that the practices viz., installation of pheromone trap (66%), seed treatment with *Trichoderma viride* (54%), soil application of *Trichoderma viride* (40%), need based application of chemical pesticides (38%) showed the highest knowledge gain than other practices.
- The practices that are being highly adopted by the farmers are seed treatment with *Trichoderma viride* (56%), installation of pheromone trap (44%) and Hexaconazole spray (42%).
- It is concluded that FFS conducted by KVK, Ariyalur in Groundnut during the last 10 years improved the groundnut yield by high adoption of recommended practices.

Technology Week Celebrations - Nil

Training/workshops/seminars etc. attended by KVK staff

Trainings attended in the relevant field of specialization

Name of the staff	Title	Dates	Duration	Organized by
Mr.M.Thirumalaivasan	Cotton cultivation technologies	16.02.22	1 day	CRS, Veppanthattai
Dr.A.Rajkala	Online training on National Facilitators Development Program for Agricultural Extension Management	21.02.22 to 26.02.22	6 days	MANAGE, Hyderabad
Mr.M.Ashokkumar	Kisan Drone	02.05.22	1 day	NASC Complex, Pusa, New Delhi

Mr.M.Ashokkumar	Drone Demonstration	26.07.22	1 day	Annamalai University, Chidambaram
Mr.M.Thirumalaivasan	West Zonal Review Meet	28.07.22	1 day	TamilNadu Agricultural University, Coimbatore
Mr.S.Prabu	Natural Farming	16.09.22 to 18.09.22	3 days	Karur
Mr.M.Thirumalaivasan	Webinar on Importance on Seed quality assurance for farming community	28.09.22	1 day	ASCI, Bangalore
Mr.M.Thirumalaivasan	Millet Multi stakeholders workshop cum Seminar	11.10.22	1 day	MSSRF, Namakkal
Dr.G.Alagukannan	Refresher training on Recent technologies in Agriculture with special focus on Natural Farming for the Scientist of KVK	08.11.2022 to 10.12.22	3 days	TamilNadu Agricultural University, Coimbatore
Mr.M.Thirumalaivasan	Refresher training on Recent technologies in Agriculture with special focus on Natural Farming for the Scientist of KVK	14.11.22 to 16.11.22	3 days	TamilNadu Agricultural University, Coimbatore

Mr.Y.Raja joslin	Refresher training on Recent technologies in Agriculture with special focus on Natural Farming for the Scientist of KVK	21.11.22 to 23.11.22	3 days	TamilNadu Agricultural University, Coimbatore
Mr.M.Ashokkumar	National Workshop on natural farming	1.12.2022 to 10.12.2022	10 days	Gwalior
Dr.A.Rajkala	Training Programme on "Extension Next: Changing roles and Innovations in Agricultural Extension	12.12.2022 to 16.12.2022	5 days	TamilNadu Agricultural University, Coimbatore

Details of sponsored projects/programmes implemented by KVK

S. No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Agri based S&T Backstopping towards Socio-economic improvement of SC people of Ariyalur district, Tamilnadu	Department of Science and Technology, New Delhi	To field test, demonstrate and disseminate high end technologies like assorted sexed semes, Black Soldier Fly larvae production, genetic upgradation of goat etc. to improve the livelihood status of SC people in the district	3 years	19,00,000

Detailed report of the project

Title: Agri based S & T backstopping towards socio-economic improvement of SC people of Ariyalur district, Tamil Nadu

Budget : Rs. 71,31,000/-

Duration: 3 years (August,2021 to July,2024)

Objectives:

- To establish Science Technology and Innovation (STI) hub to showcase the technologies that could improve the productivity of livelihood activities suitable for SC population
- To built the capacity of 1000 SC people on various Science and Technology based entrepreneur activity that are novel.
- To develop 300 SC landless and migrant workers into entrepreneur on Science and Technology based activities
- To improve the socio-economic status of SC population by paving the way employment and income generation.

Expected Deliverable

- Establishment of STI hub at host premises with the relevant infrastructure to serve the SC farmers
- Standardization of Artificial Insemination procedures using sexed semen
- Standardization of operating procedures for the production of Black Soldier Fly (BSF) and its product refining strategies
- Optimization of BSF feed supplement with the conventional feed by series of field experiments
- Development of hatchery that could be affordable to SC landless women i.e. Less than Rs.3000/- cost
- Development of lure or antagonistic agent (either fungal or bacterial or insect) for Tea Mosquito Bug
- Capacity building of 1,000 SC people including women and migrant workers on the proposed five technologies

Remarks : An exclusive programme for inclusive development of SC/ST people

Success Stories

Title : IFS adopted by Mr.Annamalai – A new model for other Farmer

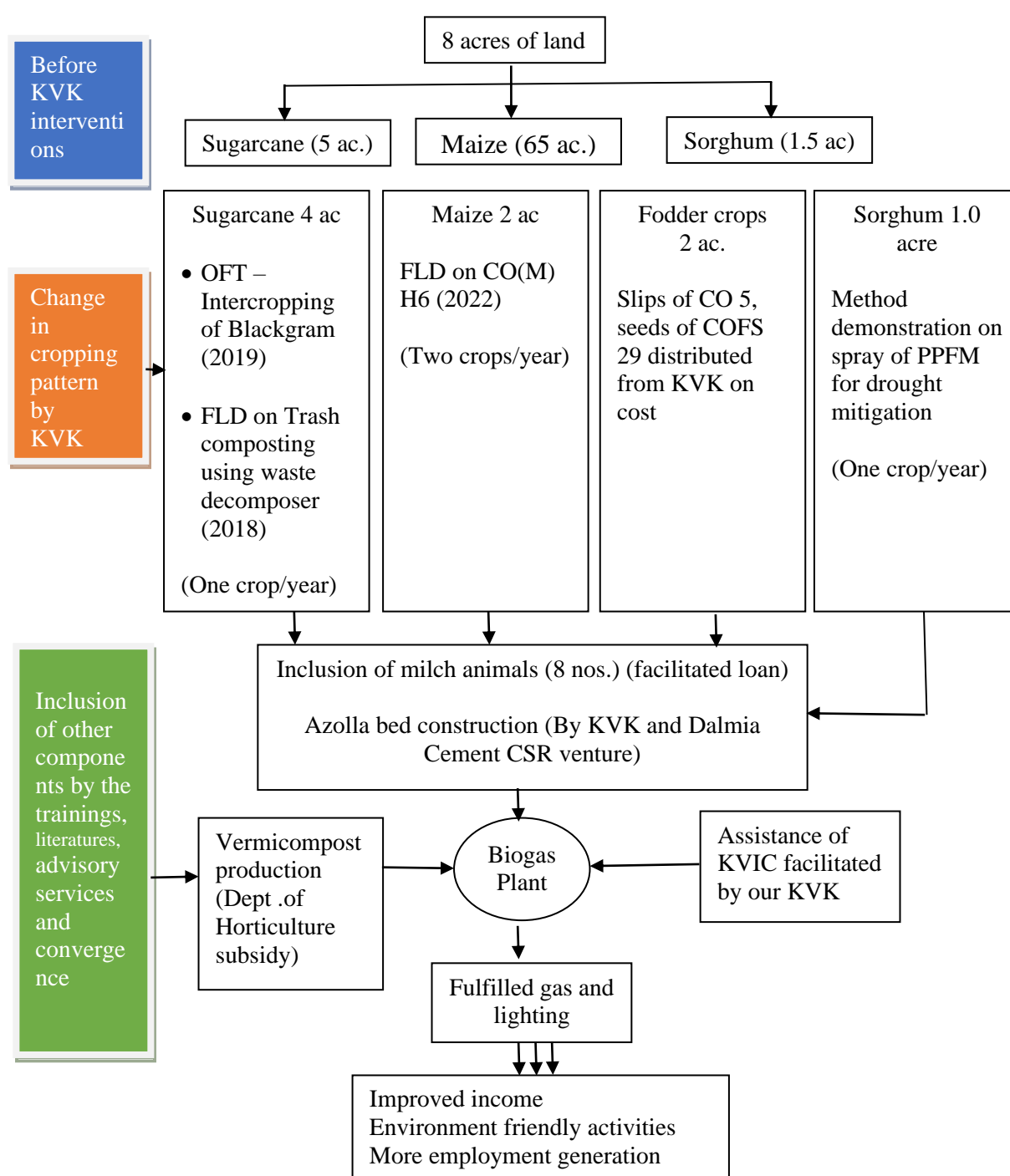


1. Situation analysis

Mr. Annamalai, S/o.Ganesan (52) residing at Eluppaiyur village and doing farming for the past 25 years in his 8 acres of land. He usually cultivate Sugarcane, Maize and Sorghum and reaps only a meagre income of around Rs.36,705/ acre/annum. Due to the lack of animal components he could not able to maintain the soil organic status and thus yields were also affected.

2. Plan, Implement and Support

Mr.Annamalai got introduced with KVK, Ariyalur during 2019 as the Chairman of Ariyalur Arima FPO, Ariyalur. Since then he used our KVK services to strengthen his farm activities and to turn his farming a profitable venture. The sequence of inclusion of different components in his farming is depicted in the following flow chart.



3. Output

Output in terms of increased yield and enhanced income is presented in the following table.

Sl. No.	Component	Before KVK intervention		BCR	After KVK intervention		BCR
		Yield /ha	Net income/ha.		Yield /ha	Net income/ha.	
1	Sugarcane (MT)	112.50	1,28,700	2.08	141.50	2,03,760	2.5
2	Maize (q)	60.00	60,200	2.30	72.00	86,500	2.9
3	Sorghum (q)	22.00	39,600	2.20	28.00	67,200	2.5
4	Fodder (MT)	35.00	42,000	2.50	42.00	54,600	2.85
5	Milch animals (lit./lactation)	1050	18,144	1.92	1280	20,500	2.49
6	Azolla (kg)	---	---	---	420	13,440	---
7	Vermicompost (MT)	---	---	---	20	42,000	---
8	Milk society* (lit./day)	100-120	5,000	---	160-180	8,000	---

* His wife now running a Milk collection centre and collect 100-120 lit. of milk/day and hand over to Tamil Milk Depot thus earning a monthly income of Rs.5,000/-.

As he serves as a Chairman of one FPO well functioning at Ariyalur he has wide farmers contact. He is serving as a model for IFS farm to 25 other fellow farmers in his village. He could improve his soil fertility by the application of vermicompost, sugarcane trash composting using waste decomposing microbes, biogas slurry etc. Besides he is getting the required gas for cooking and lighting purpose thus saving the cost on commercial gas and electricity.



4. Outcome

His practices are being adopted in 6 villages by 25 farmers especially milch animal rearing, ideal sugarcane cultivation practices in an area of 120 acres, Azolla feeding by 18 farmers to 65 milch animals to the tune of 22 tonnes every year. Thus dependency on chemical fertilizers, concentrate feed reduced among these 25 farmers.

5. Impact

- 30 acres of land brought into cultivation of green fodder that could feed 300 cattle thus the health of animal ensured.
- Intercropping of blackgram in sugarcane is being practiced by 15 farmers in 52 acres and thus 130 q of blackgram produced additionally in the district
- Waste decomposer spray is being done to decompose sugarcane trashes after harvest in 75 acres and have



burning in-situ is being avoided. It leads to healthy soil eco system, and environment preserved.

- By enhanced income 6 of such farmers could construct new houses and 3 renovated the old one.
- 12 of their wards are sent to perceive University education.

Title : Desi Cow rearing revives the happy farming to the migrant worker

1. Situation analysis

Mr. Kasinathan, S/o. Annadurai belongs to Eluppaiyur village of Ariyalur block of Ariyalur district. He studied 12th standard and worked as plumbing assistant at abroad for 12 years. At the time of Corona pandemic and its lockdown he returned to his native and looked after farming in his 7 acres of land. His main crops are Sugarcane and Paddy and there was less income and employment to his family members.



2. Plan and Support

ICAR-KVK, Ariyalur team happened to meet him in an online training conducted by the Kendra on 20.07.22 about Profitable Dairy Farming. Then he consulted our Kendra and requested to guide him to start a agri based entrepreneurship to secure his income. We had suggested him to go for doing entrepreneurship with cross bred cows. But his vision was to conserve the native breed and then he bought 10 (1 bull, 9 heifer) of Kankrej breed from Rajasthan @Rs.1.0 lakh/animal. He has constructed the perfect shed with the advisories of our KVK experts. He also raised fodder (CO5, Super Napier, Dwarf Napier) in 1.5 acres of land with the setts sold by our KVK at 50% subsidized price in lieu of covid pandemic.

3. Output

He and his brother are looking after the dairy farm with due care in rearing those high cost animals. Each animal gives 8 lit. milk/day and 5 animals are regularly in milking to get 40 lit. per day and selling @Rs.100 at Ariyalur town. Being country cow milk there is good demand for the milk and it is being home delivered.

His wife Mrs. Deepa (36) was trained on value addition in milk by our Kendra and she is doing production of ghee (Rs.2500/kg), paneer (RS.100/kg) and selling butter milk @Rs.40/lit. from the excess milk. They also produce panchakavya to the tune of 250 lit/month and sells at Rs.100/lit. The support from Dalmia Bharath Foundation has been facilitated to him to establish Azolla unit and thus about 8-10



kg of Azolla daily fed into their cows. They have started vermicompost production recently and our KVK advised them to go for microbes enriched vermicompost and guiding to use e-platform for marketing like Amazon.

4. Outcome

Their current monthly income from dairy is presented below :

Sl. No.	Product	Monthly production	Sale price	Gross income	Expenditure (Rs.)	Net income
1	Milk	800 lit.	100	80,000	36,000	44,000
2	Ghee	10 lit.	2,500	25,000	5,000	20,000
3	Panneer	20 kg.	1000	20,000	7,000	13,000
4	Butter milk	150 lit.	40	6,000	2,000	4,000
5	Panchakavya	250 lit.	100	25,000	8,000	17,000
Total				1,56,000	58,000	98,000

Gross income : Rs.1,56,000

Gross Expenditure : Rs. 58,000

Net income : Rs. 98,000

BCR : 1 : 2.7

- Employment generated :1095 days / year
- Annual income / family : Rs.11,76,000/year
- Around 50 families are being nourished with quality milk as he is not applying any chemical fertilizers to the fodder crop

5. Impact

- His family members really thank Corona pandemic as it paved the way for a happy family in the native village itself otherwise he was at abroad only.
- By his effort 200 lit of organic stimulant panchakavya sprayed to atleast 100 acres hence chemical spray avoided. He is serving as model for other dairy budding enterprises and guided 12 rural youth so far.

Title : Porter sons became prestigious Farmers – Pride of a SC mother by KVK, Ariyalur

1. Situation analysis

Ariyalur district of Tamil Nadu is backward in socio economic condition of people living here. Though agriculture occupies of the rural labour force, the land owned by the SC people are meagre or they are landless. The District comprises by six blocks of which Thirumanur and part of T.Palur block comes under Cauvery delta zone and hence potential for irrigated agricultural small land holdings, less adoption of technologies, high cost of farm inputs, climate adversities etc. most of the time resulted in poor net income from agriculture that led continuation of poverty among the SC poor people.



Mrs.Vembu, W/o.Khandasamy residing at Anaikudam village of T.Palur block is the enthusiastic women farmer having connection with KVK, Ariyalur since 2018. She is having 2.5 acres of land and used for groundnut cultivation during Nov.-Dec with the water available from neighbours bore well on cost basis. She got a meagre income of Rs.58,800 from 2.5 acres of land by Groundnut cultivation. Due to the poor family income, her two sons were working at Coimbedu, Chennai market as porters.

2. Plan and Support

During 2018-19 she was one of the beneficiaries of SCSP project and advised her to go for integrated farming including all other components viz., dairy, goat, poultry, azolla, fish ponds. She readily accepted and bought two buffaloes, 5 goats and 40 desi poultry birds. Dugged a fish pond in an area by 25 cents with the assistance of Dept. of Horticulture. She was the beneficiary of OFT on assessment of specific mineral mixture for small ruminants (Goats) and the technology gave better performance interm of weight gain in goat kids. FLD on milk replacer for lambs was also carried out with her 4 goat kids. The critical inputs like specific mineral mixture (5 kg) and milk replacer (10 kg) was supplied as critical inputs. She has attended the following trainings at our KVK.



1. Integrated farming system Dt. 14.06.2022
2. Milch cow rearing Dt. 10.08.2022
3. Goat rearing Dt. 18.10.2022

Our KVK expert made periodical field visits to her farm for disease diagnosis in animal components and plant protection and other advisories in crops cultivation. She was supported with a manual hatchery worth Rs.5,500 and her two cows were done with artificial insemination with assorted sexed semen at free of cost under DST project run by our KVK.

3. Output

To carry out all the farm operations, she called back her sons from Chennai market and now 5 family members are completely involved in the following farm operations.

- Planning of cropping pattern
- Sowing, weeding, spraying, harvesting and marketing
- Milch animal grazing, fodder collection, milking and milk selling at society
- Feeding of goat, poultry disease management
- Fish pond care

Gain in knowledge and skill

Due to our KVK intervention and especially by SCSP components her complete family members are well versed in the following knowledge and skill.



- Nutrient management in Groundnut
- IPDM in Groundnut
- Intercropping of Blackgram in groundnut
- Azolla production and utilization and hence commercial feed replacement thus reduced cost
- Regular deworming, vaccination in dairy animals, goats and poultry
- Scientific feed management in fish rearing
- Marketing of milk in cooperative society and groundnut kernel in regulated market gave better price than other farmers

Improvement in quality of the produce

- Well filled groundnut bold pods, due to the better management of nutrients in groundnut. Rich sprays fetches good price
- Improvement in SNF content from 4.5 % to 6.5 %
- Weight gain of 18-20 kg in goat kids at 8th month of marketing age
- Zero mortality in kids and poultry mother birds due to timely vaccination and feed care.

Economic al benefits

Sl. No.	Component	Numbers/area		Yield(Nos./litre/kg)		Expenditure		Net income		BCR	
		Before	After	Before	After	Before	After	Before	After	Before	After
1	Groundnut	2.5 ac.	2.5 ac.	2450	2950	88200	76500	58800	100500	1.6	2.3
2	Goat	2	5	2 Nos.	8 Nos.	12000	18000	6000	58000	1.5	2.2
3	Dairy	0	2	--	2880 lit	--	25000	--	69000	--	4.6
4	Chicks	10	40	25 Nos.	400 Nos.	1000	2500	1500	10000	3.5	5.0
5	Fishery	--	25 cents	--	150kg	--	7000	--	11000	--	2.5
						101200	129000	66300	248500	1.6	2.4

4. Outcome and Impact

Mrs.Vembu is success in adopting IFS components in novel technologies is becoming popular in her village Anaikudam. Neighbouring 16 farmers are adding IFS components in their farms. Now these technologies are being adopted in 45 acres by both SC and other category farmers. As Vembu is producing vermi compost and on-site inputs like panchakavya, jeevamirth and buying pest repellent from KVK her usage of pesticides for crops are nil or very minimum. She is using FYM and vermi compost to replenish soil and thus 60% of chemical fertilizers are cut down. Soil test based fertilizer application is also the

reason for reduced chemical fertilizer. Due to the use of ideal inputs she could harvest good quality, bold groundnut kernels fetches premium price of Rs.85-100/kg at regulated market. Milk quality is increased due to fat content and hence she is selling milk between Rs.35-38/lit.

In nutshell she could earn a net income of Rs.2,48,500/ annum which was only Rs.66,300 / annum before adoption of IFS. The important point here is her two sons struggled as porters now becoming prestigious farmers. Last year she paid Rs.4.0 lakh to get EB connection in Tatkal mode and waiting for the same. They also bought a tractor now and her one son is earning through tractor hire one son got married and house construction is going on.

Title : A new way of employment and Income – Smiling SC Landless women

1. Present situation

Sendurai block of Ariyalur district is rainfed and its red loamy soil favours the cultivation of cashewnut both as rainfed and irrigated crop. About 40,000 acres are under cashewnut with the average productivity of 240 kg nuts / ha. ICAR-KVK, Ariyalur selected one of its village namely Veerakkan to effect various intervention as the model village for DFI from 2017-2022. The total population of the village is 750 of which 165



(22%) are SC people. They are completely landless and the men from all the families are landless working in various places in construction, porters, drivers etc. The women members in the family engaged in MNREGS for only 40-55 days in a year and agriculture wage workers for 30-40 days. Most of the days they are idle without any income. Their total family



income comes to Rs.75,000 to 80,000/annum. Hence their living condition and socio-economic status is very poor.

2. Plan and Support

By considering the poor condition of SC people at Veerakkan villages, FLD on Poultry (Nandhanam 4) has been conducted during 2020-21. 50 chicks were distributed per family to rear and collect eggs for family consumption and hatching. Training on vaccination of poultry birds, feed and disease management were given to 50 SC women member. Five



manual hatcheries (120 eggs capacity) were distributed to the members for chicks production under DST project of our KVK. As the part of Dalmia Bharath Foundation's CSR activity, they were given with azolla bags to produce azolla and use as feed to poultry birds.

As cashew is the predominant crop here, our KVK promoted women entrepreneur Mrs.Uma, already running a cashew processing unit at medium scale (60 MT by procured cashew nuts/year). During 2022-23, our KVK has provided them with 10 cashew shelling machine under the scheme of SCSP. Ten machines were placed at Mrs.Uma's processing unit and 20 SC women members are using that machine on shift basis. Trainings with

demonstration of safe shelling of cashewnut have been given by trained persons. They felt that the manual machineries is very easy and drudgery free even working after 6 hours.

The illiterate SC women belongs to all age could shell nuts to earn a regular income. Now they are planned to form a JLG to start their own processing unit.

3. Output

They can shell 2 kg of raw nuts / hour, so that one woman gets Rs.300-350/day as wage. Thus year round employment is being guaranteed to the tune of 7200 mandays/year. Thereby SC women landless labourers learn to shell cashewnut and earn an income Rs.350/day by shelling 15 kg nut. As this is the year round employment opportunity they are getting employment for 300 days in a year. They could get MGNREGA employment days, labour days from agricultural lands and also cashewnut shelling in night hours. By this way they can get a net mandays of 300 days thus earns Rs.70,000/year, earlier it was only rs.43,750/year by 175 days.

4. Outcome and Impact



A landless SC woman was facilitated to access year round income and employment by cashew shelling. By seeing this activity, the remaining 65 SC women are seeking the same help. Our KVK is talking with M/s.Shiva Cashews, Kulamangalam (An exporting large scale cashew industry) which is located 8 km away from that SC villages. The owner of Shiva Cashews has consented to extend a satellite shelling unit at Veerakkan village to support the SC people by giving employment by Cashew shelling.

In future, it is planned to form JLGs and FPCs consisting of SC population to start their own cashew processing unit at small scale.

Case study 1

Title : *Trichoderma viride* – A boon to Groundnut farmers

1. Problem statement

Groundnut is being cultivated in 18,000 ha. at Ariyalur district in four blocks viz., T.Palur (12,000 ha.), Jayankondam (3,000 ha.), Andimadam (2,000 ha.) and Sendurai (1,000 ha.). Root rot was the small problem in Groundnut resulted in death of seedlings upto 20 days to the tune of 5-30 percent that was managed by the farmers at little higher seed rate. From 2020, it became the root rot wilt and pod rot problem led to mortality of plants upto harvest and pods are heavily affected. The disease affected pods are decayed and still remain in the soil after harvest resulted in 40-50% yield loss. It goes upto 60-70% loss where groundnut is cultivated without any rotation.

2. Plan and Support

To safeguard the farmers by taking prophylactic measures in management of pod rot our KVK underwent series of interventions as below :

- Awareness creation by village level meetings, news paper news, radio talks, lectures and seed treatment demonstrations in Kisan Ghoshis organized by ATMA, WhatsApp message etc. It could be possible to reach 3750 groundnut farmers during 2021-2022.
- Distributed handouts in 35 major Groundnut growing villages.
- Conducted OFT and FLDs on pod rot management covering 15 farmers and 73 farmers participated in field days.
- Our KVK has produced and sold 1076 kg of *Trichoderma viride* from our lab and it covers 200 ha. during 2021 and 230 ha. during 2022.
- As per request Agriculture department labs and private dealers also sold sizeable quantum of *Trichoderma viride*.

3. Output

- 4500 farmers directly educated about pod rot management practices
- By production and distribution of 960 kg. *Trichoderma viride* from all sources for groundnut seed treatment 180 ha. and 210 ha. was under prophylactic measures against pod rot during 2021 and 2022.

4. Outcome

- A total of 390 ha. was free of root rot and pod rot problems since beginning to till harvest.
- The normal yield of 2200 kg/ha. was restored.
- Farmers reaped a high net income of Rs.58,000 /ha, in 105 days.
- Haulm yield also normal yield and used for their cattle

5. Impact

- Mass awareness created about the groundnut pod rot among the farmers in the district.
- Yield loss / loss in district groundnut pods was saved upto 858 MT in during 2022 and expected to rise year by year.
- The farmers are happy by getting a net income of Rs.40,000/acre by spending Rs.100/kg of *Trichoderma viride* to save the crop completely.

Case study 2

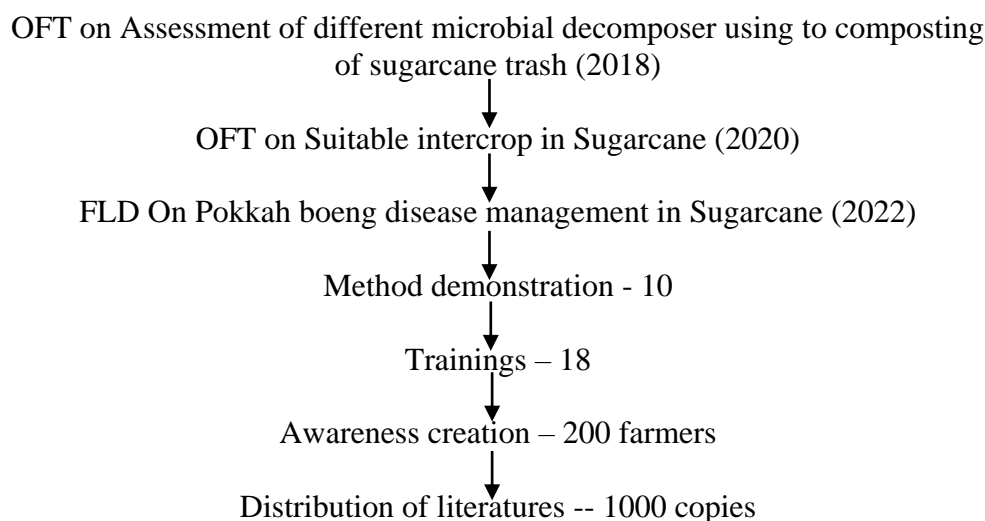
Title : “Thirumalapadi” – Proud to be a zero burning village by KVK Ariyalur

1. Problem statement

Ariyalur district comprising of six blocks and the Thirumanur block comes under Cauvery delta area favours the cultivation of paddy and Sugarcane. Sugarcane is being cultivated in 9600 ha. across the district and 3100 ha. at Thirumalapadi village. They permit sugarcane for 5-6 ratoons to get good remuneration out of sugarcane cultivation. The farmers practice was to burn the sugarcane crop stubbles after every harvest to make the field clean and they believe that “burning and potash to the soil and good for crop”. But burning causes death of flora and fauna in soil ecosystem and leads to global warming.

2. Plan and Support

ICAR-CREED KVK has took relentless effort by series of interventions to educate the farmers about the ill effects of burning in crop field.



3. Output

OFT was conducted using the waste decomposer developed by National Centre of Organic Farming and TNAU Bio mineralizer. The results revealed that waste decomposer is fast in decomposing Sugarcane trash in 45 days. Then it was taken in FLD and the results were also promising. By OFT and FLDs, 12 acres were covered and avoided burning. Mass awareness also created by WhatsApp, Newspaper, Radio talks, Handouts and also two extension personnel of agriculture department and sugar industry were sensitized. Demand for waste decomposer comes from farmers and it was made available to farmers from our KVK. One bottle of culture costs Rs.40 is enough for spraying in one acre. Its low cost is also the reason for gaining popularity among the farmers.

4. Outcome

- Sugarcane trashes from 1650 ha. was safely decomposed using beneficial microbes.
- Paved the way for improved soil fertility as average NPK available in the soil after decomposition was 98.4: 47.2: 117 kg/ha.

- As Sugarcane trash act as mulch the weed population gets reduced or nil and thereby saving to the tune of Rs.2000/ac. (weeding cost) was curtailed.

5. Impact

- The emission from 1650 ha. has been avoided
- The microflora in the soil eco system preserved and hence sustainable sugarcane cultivation ensured.
- Weeding cost of Rs.2,500/acre saved and hence total saving for 10,000 ha. was achieved by 65 sugarcane farmers
- Average of 15.5 % yield increase achieved and it comes to an additional yield of 11,550MT of canes in the district was realized.
- Proud of our KVK that one model village on zero burning was developed
- Now the technology spreads the neighbouring 6 villages Kulamanikum, Sembiyakudi, Pudukottai, Aranmanikuruchi and Thirumanur in an area of 875 ha.

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

1. Resorting pest repellent sprays using Kisan Drone

ICAR CREED KVK is forerunner in taking innovative and advanced technologies for the welfare of farmers. Wild animals (monkey, deer, wild boar and peacock) become the menace in crop cultivation and its damage to the crops resulted in crop loss upto 20-30 percent. Our KVK promoted a wild animal repellent namely Herboliv Plus (An organic product of Mivipro company) since 2017 to ward off / repel wild animals from crop fields. Though its an organic product its efficacy was excellent and there was huge preference among the farmers to mitigate wild animal problems. Farmers' take up Herbolive spray with the sprayers till 2020. During 2022, we launched Kisan drone to resort Herboliv sprays at larger areas and we could cover 478 acres of paddy and groundnut in kharif and rabi season. Apart from wild animal menace, there was a reduction in rat damage, pest infestation and disease incidence. By considering our pro-activeness in use of drones, Government of India sanctioned Drone project for our KVK this year and covered 250 ha. under drone sprays.

2. Rural Youth – Retired Youth (RY-RY model)

Our KVK has maintained the potential of rural youth and planned innovatively to bring them into mainstream of agriculture. We have formed Rural Youth Club and they were capacitated on various agricultural and allied aspects to enter into the income generating activities. As they are lack of financial resources and facing hardship in availing credit facilities, they struggled to start their ventures. Here our KVK think and act differently to bring resourceful and resource less persons in a common platform. We approached retired persons and we formed a club named “Retired Youth Club” which 60 persons are members currently. They are contributing money every month and the lumpsum amount collected will be disbursed to youth members to start their agricultural activities. Currently and amount of Rs.5,30,000 lakhs mobilised such a way to disbursed to 16 members. They were regularly repaying their loan with bank interest.

3. Abridging Resource less and Resourceful

This is an innovation of our KVK to bring uncultivated land into cultivation. The lands owned are sometimes unable to do agriculture due to several reasons viz., over age. No follower (Son / Daughter), working abroad, etc. by having very close association with the farmers our KVK could identify such a resourceful (Land Water) persons and links them with potential youth members. The youth members are identified from our youth club, so far by this kind of linkage 42 ha. Uncultivated area brought under cultivation benefitting 10 farmers and youth members. They will pay the nominal lease to the land owners. Our KVK is technically supporting the youth besides availing them the land resource.

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

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Pulses	Keeping Notchi leaves with dry chilli in seed storage gunny bags.	To control storage pests.
2	Fisheries	Basal application of Lime with Turmeric powder	To use as disinfectant
3	Paddy	Foliar application of 5 % cow dung solution	To control Bacterial leaf blight
4	Millet	Thresh the seeds from panicle by use of paired cow and wooden sticks	To preserve good quality seed
5	Red gram	Red soil grain Pelleting	To store the grains in long-term without pest
6	Dairy and Goat	Application of Custard apple leaf with neem oil in wound places	To cure wound
7	Cashew	1 kg goat meat + 1 kg cow meat+ 1kg pig meat + 1 kg desi chicken meat + 1 kg fish waste +1 kg blackgram flour+ 1 kg jaggery + 50 lit of water. mixed well. Kept for fermentation for 40 days stirring in morning and evening two times done. 1 litre gunapanjajam mixed with 30 litres of water and sprayed as nutrient for crops and also soil application. It will improve the growth of cashew plants traditionally.	Growth regulator
8	Vegetables	Cow urine and dung are collected, mixed with water and fermented for few days. After fermentation, the content is sieved to control pests. Cow urine act as germicide and cow dung provides nutrients to the crops.	To control the pest
9	Paddy	Soaking the paddy seeds in diluted cows urine before sowing.	To improve the seed germination percentage and early vigour of the seedlings.

10	Paddy	Bunds are strengthened with weeds and stubbles collected from the fields, bunds are plastered with mud.	To prevent rat holes and their damage.
11	Paddy	Placing bird perches in the field to allow birds to sit and predate on the pests.	To control all kinds of larvae.
12	Paddy	Storing of grains on a mud pot of more than 6 feet height.	To control storage pests.
13	Paddy	Keeping neem leaves and pungam leaves extracted solutions soaked gunny bags.	To control storage pests.
14	Duck rearing	Duck rearing in Paddy field	To increase soil fertility and collected pupae in summer season
15	Poultry	Use of <i>Phyllanthus niruri</i> , cumin seeds, garlic extract, and turmeric is mixed with boiled rice and can be given as feed.	To contain ranikhet as prophylactic and after disease outbreak.

Impact of KVK activities

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs./ha.)	
			Before (Rs./Unit)	After (Rs./Unit)
Varietal introduction ADT 51 Paddy	62	90	65,200	74,500
Direct sown paddy with drum seeder	24	60	60,100	72,200
Mechanization of Transplanting in Paddy	90	95	56,500	69,500
Zero till seed drill for rice follow pulses	25	60	18,500	29,600
Introduction of Groundnut variety K-1812	64	80	25,600	42,400
Introduction of Sesame variety TMV 7	80	85	22,400	41,200
Foliar application of PPFM	65	70	18,000	39,000
Varietal introduction CO(R) 50 Paddy	86	80	18,090	29,600
MN Mixture application	45	75	39,660	54,300
Vegetable seedling production through protrait	60	82	1,18,300	1,48,500
ICM in cashew	95	72	18,000	34,000
Management of shoot and fruit borer in brinjal	35	48	52,300	76,400
Hi-Tech Tuberose cultivation	22	32	7,25,000	1,05,000
Seed treatment with <i>Bacillus subtilis</i> in paddy and Pulses	80	45	39,050	54,800
Seed treatment and enriched soil application of <i>Trichoderma viride</i> in Groundnut	60	82	16,500	45,600
Introduction of fodder CO (CN) 5 and CO(FS) 29	68	78	16,500	30,300

Soil test based fertilizer application	48	56	36,700	60,400
Integrated feed management in cattle	58	60	12,600/cow /lactation	26,500/cow /lactation
Integrated disease management in dairy and goat	42	22	6,000/dairy/goat	9,510/dairy/goat
Mixed fodder cultivation	35	46	26,000/acre	45,100/acre
Composite fish culture	45	40	75,000/ha.	1,60,000/ha.
Stunted fingerlings for seasonal ponds	35	40	80,000/ha.	1,30,500/ha.
Disease management in poultry birds	190	80	5,800/ 20 birds	8,300/ 20 birds
Spraying of Pulse wonder	650	72	6,100/ha	15,300/ha
Spraying of Groundnut rich	950	80	20,100/ha	36,300/ha
NCOF Water decomposer	110	58	1,05,000	1,32,000
Paddy AWD Pani pipe technology	140	54	18,600	32,300
Azolla cultivation	160	80	12,800/cow /lactation	24,400/cow /lactation

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

1. Large scale adoption of VBN Series of Blackgram

Problem

- Low yielding (5.8 q./ha.) Varieties (T9 & VBN 5) for long period
- Susceptibility to YMV (ADT5)
- Non adoption of foliar nutrient spray yield loss – 20%
- Non synchronized flowering and maturity

Intervention/ activity

- Introduction of high yielding Vamban Blackgram variety series – VBN 6,VBN 8, VBN 10 & VBN 11
- Seed treatment with *Bacillus subtilis* @ 10g/kg seed
- Foliar application of TNAU Pulse wonder @ 10 kg/ha
- Adoption of IPM modules

Parameter	Demo	Check
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	2,400	---
Productivity (in q/ha) in demo	7.6	5.9
Additional yield over check (in q/ha)	1.7	---
% increase in yield over check	29%	---
Gross returns (in Rs/ha)	58,400	45,300
Net Returns (Rs / ha)	39,200	26,900
Additional Net Returns in demo (demo – check)	12,300	---
B:C ratio	3.04	2.46

Outcome	
Area covered, spread in adopted villages (ha)	3890 ha. in 73 villages
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	4,78,47,000 (12,300 X 3890 ha.)
Area spread in district through convergence (ha)	2958 ha

Convergence: Promoted 92 Seed grower and supplied seeds to Department: 644.5 q/year
Area increased from 1350 ha. to 6848 ha. in 9 years

2. Large scale adoption of Paddy ADT 51

Problem

- Lodging of crop at harvest stage and flood situations.
- Low yield with existing variety CR 1009(5.1t/ha) and BPT-5204 (4.8 t/ha.)
- Incidence of bacterial leaf blight (8 %), leaf spot (12%), false smut (11 %) and stem borer (10%)

Intervention/ activity

- Introduction of ADT 51 paddy variety as alternate for CR1009
- Seed treatment with *Bacillus subtilis* @ 10g/kg of seed and Azophos @ 6g/kg of seed

Parameter	Demo	Check
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	8,500	---
Productivity (in q/ha) in demo	53.5	44.5
Additional yield over check (in q/ha)	9	---
% increase in yield over check	20.2	---
Gross returns (in Rs/ha)	1,19,300	1,01,100
Net Returns (Rs / ha)	70,400	52,570
Additional Net Returns in demo (demo – check)	17,830	---
B:C ratio	2.43	2.08

Outcome	
Area covered, spread in adopted villages (ha)	110 ha. in 4 villages
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	19,61,300 (17,830 X 110 ha.)
Area spread in district through convergence (ha)	180 ha

Convergence: Promoted 12 Seed grower and supplied seeds to Department: 504 q/year
Area increased from 4 ha. to 180 ha. in 2 years

3. Large scale adoption of Sesame TMV7

Problem

1. Poor yield (6.25 q/ha)
2. Repeated cultivation of existing variety (VRI 2 & TMV 4)
3. Unaware of high yielding drought tolerant new varieties

Intervention/ activity

- Introduction of ADT 51 paddy variety as alternate for CR1009
- Seed treatment with *Bacillus subtilis* @ 10g/kg of seed and Azophos @ 6g/kg of seed

Parameter	Demo	Check
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	8,200	---
Productivity (in q/ha) in demo	7.85	6.9
Additional yield over check (in q/ha)	0.95	---
% increase in yield over check	13.7	---
Gross returns (in Rs/ha)	66,725	58,650
Net Returns (Rs / ha)	44,225	33,150
Additional Net Returns in demo (demo – check)	11,075	---
B:C ratio	2.96	2.30

Outcome	
Area covered, spread in adopted villages (ha)	350 ha. in 24 villages
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	38,76,250 (11,075X 350 ha.)
Area spread in district through convergence (ha)	240 ha

Convergence: Promoted 31 Seed grower and supplied seeds to Department: 215 q/year
Area increased from 2150 ha. to 6580 ha. in 6 years

4. Low cost hatchery to augment chick production**Problem**

- Low egg yield from desi birds (55-70/year) due to brooding nature
- Poor disease management practices causes heavy mortality (>15%)
- Less income from backyard poultry
- Lack of other entrepreneurial scopes for rural youth

Intervention/ activity

- Low cost hatchery
- Low cost automatic hatchery capacity of 600 egg for SC-SP farm women group

Parameter	Demo	Check
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	8,000	---
Productivity (chicks/year) in demo	1,950	1,080
Additional yield over check (chick/year)	870	---
% increase in yield over check	80.5	---
Gross returns (in Rs/year)	87,750	48,600
Net Returns (in Rs / year)	57,000	21,200
Additional Net Returns in demo (demo – check)	25,800	---
B:C ratio	2.85	1.77

Outcome	
Area covered, spread in adopted villages	345 farmers in 28 villages
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of farmer)	89,01,000 (25,800 x 345 farmers)
Area spread in district through convergence (ha)	62 farmers

Self-sufficiency in chick production in the district – 6,72,750/year

Convergence: Supply of Desi birds to BPL and Landless farmers
An increase of Rs.87,000/year for a women maintaining 25 desi birds

5. Composite Fish rearing in Farm ponds

Problem

- Low weight gain by poor quality seed materials and poor feed management
- Poor disease management on Fox infestation at harvest stage
- Underutilization of farm ponds

Intervention/ activity

- Composite fish culture

Parameter	Demo	Check
Output		
Additional cost (+) of technology / intervention or saving (-) in demo (Rs) over check	18,500	---
Productivity (in q/ha.) in demo	36.00	23.5
Additional yield over check (in q/ha)	12.50	---
% increase in yield over check	47%	---
Gross returns (in Rs/ha.)	5,40,000	3,52,500
Net Returns (in Rs / ha.)	2,80,000	1,38,000
Additional Net Returns in demo (demo – check)	1,42,000	---
B:C ratio	2.07	1.64

Outcome	
Area covered, spread in adopted villages (ha)	16 ha. in 28 villages
Economic impact of KVK interventions (Rs) (Additional net returns in demo x no. of ha)	22,72,000(1,42,000 x 16 ha.)
Area spread in district through convergence (ha)	18 ha.

Net income per unit area increased upto Rs. 2,80,000/ha.

Convergence: Facilitation of farm ponds of about 34 ha. (170 farmers @ 25 cents)

Cases of large scale adoption/impact of specific technologies

Villages	Crop/ Enterprise	Technology	Treatment	% of Adoption
Throughout the District	Groundnut	Groundnut rich as foliar spray to improve the yield	KVK has recommended spraying of groundnut rich 10 kg/ha at the time of peak flowering stage 2 times for increasing the yield of groundnut by 18 percent.	72
Kelakudikadu, Thenkatchi peumal natham, Kodalikarupur & T.Palur	Paddy	Varietal introduction of ADT 51	Yield & Non logging performance attract huge number of farmers. From 4 ha demonstration now the area has come to 180 ha around the district.	85
Sembiyakudi, Thirumalapadi, K.Mettuthuru Nagamangalam	Paddy CO 50	Varietal introduction CO 50	After seeing the performance of CO@50 over CR1009. The farmers were very much interested in cultivation of CO@50. With the advice of our Kendra and by the demand from the farmers. The state agricultural department has itself started distribution of CO@50 paddy seeds in their depots. Now, it is being spread not only our operational area of village but also in other blocks.	80
Sembiyakudi, Kulamanikum, Thirumanur, Elakuruchi	Paddy	Mechanization of Transplanting in Paddy	Now, the farmers are carrying out transplanting operation in time at less cost.	72
Cholamadevi, Kodalikaruppur, Aanaikudam, Silal	All crops	MN Mixture application	Now the farmers have realized the importance of micro nutrients and started to regularly apply MN mixture through soil and foliar application.	81
Kasankottai,	Groundnut	Introduction of Groundnut variety Kathiri 1812	After the demonstration on Kathiri 1812, farmers are harvesting 2t/ac. And thereby the income level increased.	70
Puliyankuzhi	Sesame	Introduction of Sesame variety TMV 7	Now the farmers are familiarized in using certified seeds. They also harvest 15-20 % increased yield by cultivation of TMV 7 over the earlier varieties.	65
Devamangalam	Pulses	2% DAP spray in pulses	Farmers are regularly spraying 2% DAP at flowering and pod formation stage. So, they are obtaining	80

Villages	Crop/ Enterprise	Technology	Treatment	% of Adoption
			bold grains and thereby increased yield.	
Silal	Vegetables	Vegetable seedling production through protray	Now the farmers using good quality seedling raised in 92 portrays. So the initial establishment and yield is upto the expected level in all the transplanted vegetable like tomato, brinjal, chillies, etc.	54
Veerakkan	Cashew	ICM in cashew	The farmers are learned to manage the tea mosquito bug and stem borer by regular sprays and other management practices. Now the productivity has increased upto 250 kg/acre.	74
Karaikuruchi	Brinjal	Management of shoot and fruit borer in brinjal	Now the farmers are familiarized in usage of pheromone trap and other bio control measures in management of brinjal shoot and fruit borer. Now the infestation is reduced to 10-15 %	65
Kuvagam	Tuberose	Hi-Tech Tuberose cultivation	Farmers are now adopting the new variety of hybrid namely Prajwal with soil mulching techniques and nematode management practices to get higher yield.	51
Kasankottai	Paddy and groundnut	Seed treatment with Pseudomonas in paddy and groundnut	Farmers are doing seed treatment with Pseudomonas with 10g/kg of seed as prophylactic measures and also the soil application of 1 kg /acre and thereby good control of seed borne and soil borne diseases and ensured.	68
Across the district	Fodder	Introduction of fodder CO (CN)4 and CO(FS) 29	The farmers are well aware of importance of green fodder in management of cattle and also to improve the milk productivity. Now farmers practicing the cultivation of fodder CO(CN)4 and CO (FS) 29 in at least 10 cents.	68
Kasankottai	Groundnut	Mechanization in Groundnut	Now, the farmers are carrying out sowing operation in time at less cost.	85
Across the district	Cattle	Integrated feed management	Judicious use of green fodder cereal, legume and green fodder crops and concentrated	62

Villages	Crop/ Enterprise	Technology	Treatment	% of Adoption
		in cattle	feed along with minerals enhances health of animals	
Across the district	Cattle	Integrated disease management in sheep and goat	Ethno veterinary practices, animal health Camp	54
Across the district	Cattle	Mixed fodder cultivation	Judicious use of green fodder cereal, legume and green fodder crops and concentrated feed along with minerals enhances health of animals	44
Across the district	Fish	Composite fish culture	Intensive fish culture like catla, mirgal and rogu	38
Across the district	Fish	Stunted yearlings for seasonal ponds	Useful technology for short water bodies	30

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

The details of impact analysis carried out to assess the performance of our KVK mandated activities is presented hereunder as abstract.

1. Desi bird rearing towards sufficiency in chicks production

Impact of training conducted on desi bird rearing gained momentum with the average adoption rate of 64% for all the eight technologies taught and taken for impact analysis, The highest adoption was observed for selection of right breed (75%), timely vaccination (69%), feed management (64 %) and proper handling of hatchery (61%). Out of 406 trained 25 started poultry as an enterprise and they are earning a regular income of Rs.6,000 to Rs.8,000 per month.

2. Profitable Goat rearing

Training on Profitable Goat rearing has been conducted as the sponsored training to 15 rural youth and it was sponsored by MANAGE, Hyderabad. Among the 15 youth trained 9 were already engaged in goat rearing and 3 new entrepreneurs created. The adoption rate was high for the technologies like genetic upgradation by other variety bucks (72%), proper vaccination (63%), feed management (58 %) and kid care using milk replacer (43 %). The entrepreneurs earn a good income of Rs.17,000-20,000 / mother goat/year. So their livelihood secured.

3. FLD makes seed sufficiency at village level

FLD conducted on introduction of ADT-51 for Samba season gave good results in terms of yield (53.50/ha.), pest and disease tolerance and non lodging till harvest. The FLD was conducted in 4 ha. By 10 farmers and the grains harvested (214 q/ha.) are completely reserved for seed purpose by the entire village level. This will be sufficient for 180 ha. for the next samba season.

4. FLD on IPM in Brinjal leads to residue free

Brinjal is in cultivation in 420 ha. and the private hybrids are ruling. Shoot and fruit borer poses the yield loss upto 40-60%. Farmers use higher concentration of pesticides as per the recommendations of shop keepers. It results in hike in cost of cultivation but the pest infestation remains same. Hence, an FLD on IPM in Brinjal was conducted in 10 acres with 10 farmers. Adoption rate was high for the practices like basal application of Neem cake (64 %), installation of pheromone trap (56 %), spray of Neem oil (52 %), BT Spray (50%) and *Verticillium* for the control of other sucking pests (45 %). After adoption of IPM practices the infestation was only upto 8 %. Now these practices spread among fellow farmers and being practiced in 25 ha. at T.Palur block. KVK supplies organic pest repellent, Bt, pheromone trap, Neem oil for the continued use. So the chemical pesticides avoided and residue free brinjal reaches the consumers.

5. Drone made pesticide sprays easy and safe

Government of India allotted drone to our KVK during 2022. Initially there was reluctance among the farmers towards drone spray as they had the myth of high spray volume (200 lit./acre) required. After several awareness camps, discussion with farmers realized its practical utility and there is the much speedy horizontal spread was observed. Now farmers make advance booking for drone sprays in paddy, groundnut, sugarcane, cotton etc. Apart from our KVK drone, two more entrepreneurs were also motivated and they are serving the farmers at nominal cost (Rs.500-600/acre).

Linkages

Functional linkage with different organizations

ICAR-KVK, Hosted by CREED is having good rapport and functional linkage with all the stakeholders. The organization and its nature of linkage made are given below.

ICAR Institutes/ NARS

S.No	Name of Organization	Nature of linkage
1	ICAR - National Research Centre for Banana (NRCB), Trichy	Conducting Farmers Training, Sponsored training programmes, exposure visits, disseminating NRCB varieties and technologies through OFTs' and FLDs', member of SAC, serves as a resource person for training programmes.
2	ICAR - Sugarcane Breeding Institute (SBI), Coimbatore	Disseminating SBI released varieties, technologies at Ariyalur district through OFTs, FLDs, Exposure visits
3	ICAR - Indian Institute of Horticultural Research, Bangalore	Introduction of IIHR newly released varieties, technologies through demonstration, exposure visits and trainings
4	ICAR – Directorate of Cashew Research (DCR), Puthur	Obtaining new technologies for Cashew and exposure visits

5	Directorate of Groundnut Research, Junagadh, Gujarat	Popularization of new varieties through CFLD
6	ICFR – IFGTB	Conducting sponsored mela, trainings and obtaining technologies
7	IICPT, Tanjore	Obtaining value addition technologies through trainings and visits
8	CRRI, Cuttack	Introducing Bio fortified variety

Tamil Nadu Agriculture University (TNAU), Coimbatore and Research Stations

S.No	Name of Organization	Nature of linkage
1	TNAU, Coimbatore	Introducing new varieties through OFT, FLDs, technical guidance, Crop boosters, Mineral mixtures & biofertilizers, Exposure visit, publishing technologies in TNAU Magazines, resource person to trainings, SAC member, monitoring by DEE
2	Tamil Nadu Rice Research Institute (TRRI), Aduthurai	Introducing new varieties through OFT, FLDs, technical guidance
3	Regional Research Station (RRS), Virudhachalam	Introducing new cashew varieties, supply of planting materials, serves as resource person, exposure visits
4	Cotton Research Station (CRS), Veppanthattai	Technologies dissemination through OFT and FLDs, trainings, diagnostic visits with CRS scientists
5	National Pulse Research Centre, Vamban	Supply of seed materials

With other KVKs

S.No	Name of Organization	Nature of linkage
1	KVK, Karur	Exposure visits, serve as resource person, cross learning, supply of inputs, obtaining technologies
2	KVK, Perambalur	
3	KVK, Trichy	
4	KVK, Cuddalore	
5	KVK, Namakkal	
6	KVK, Salem	
7	KVK, Erode	
8	KVK, Thirunelveli	
9	KVK, Madurai	

Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), Chennai

S.No	Name of Organization	Nature of linkage
1	TANUVAS, Chennai	Obtaining technologies for FLD and OFTs and input purchase, Publishing articles in TANUVAS magazine

2	Veterinary University Training Research Centre (VUTRC), Perambalur	Scientist from VUTRC, Perambalur Serves as resource person, SAC Members, purchase of book materials
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Linkage with Line Departments

S.No	Name of Organization	Nature of linkage
1	Department of Agriculture	<ul style="list-style-type: none"> • Conducting Farmers Training at village level, Joint • diagnostic visits, ATMA sponsored training programmes. • Monthly Zonal meeting to identify the season oriented • problem, exposure visits, exhibitions, Kisan Mela, FFS, collection of district profiles, facilitating farmers to avail • departmental subsidy schemes, MSDA schemes
2	Department of Horticulture	Collection of District Profile on Horticultural crop production, NADP training programme, Precision farming training programme, facilitating farmers to avail schemes
3	Agricultural Engineering Department	Trainings on mechanization, facilitating farmers to avail subsidy and to hire farm machineries
4	Department of Animal Husbandry	Azolla seed supply for Free Goat and Dairy animal supply scheme beneficiaries, training for beneficiaries of the scheme, animal health camps, serves as resource person, identification of farmers for hydroponics scheme
5	Department of fisheries	Identification of beneficiaries for Fish pond scheme
6	Department of Sericulture	Training for farmers
7	Department of Forestry	Supply of tree saplings , Tree mela

Financial Institutions

S.No	Name of Organization	Nature of linkage
1	NABARD	Supporting two FPOs, capacity building programmes, exposure visits, MEDP trainings, Jal Dhoot programme, facilitating DEDS scheme, funding for publications, trainings
2	Tamil Nadu Grama Bank	RY-RY group account and credit linkages to rural youth, training certificate from KVK to avail agri loans
3	State Bank of India	Credit linkages, SAC member, participating in trainings to create awareness on schemes

Skill Development Organizations

S.No	Name of Organization	Nature of linkage
1	National Skill Development Corporation (NSDC) and ASCI	Long duration skill training programmes to rural youth
2	SBI – Rural Self Employment Training Institute (RSETI)	Conducting vocational trainings, exposure visits, women SHG, credit linkages
3	Mahalir Thittam (Women Development Corporation)	Capacity building programmes to SHG members, Community resource persons
4	National Commission for Women, New Delhi	Workshop to empower farm women for livelihood security

Science & Technology organizations

S.No	Name of Organization	Nature of linkage
1	Department of Science and Technology (DST), New Delhi	Special Projects to empower SC/ST farmers of Ariyalur district

CSR Companies

S.No	Name of Organization	Nature of linkage
1	RAMCO Cement	Problem analysis around cement factory areas, trainings to SHG members, farmers, technical support to CSR farmers club
2	Ultra Tech Cement	
3	Dalmia Cement	

Non Government Organizations (NGO)

S.No	Name of Organization	Nature of linkage
1	Reliance Foundation	Trainings, Collaborative programmes, TV programmes, Jio chats, voice messages
2	RISE	Trainings to SHG members, college students
3	JP Trust	
4	CREATE	
5	OSAI	

Technology Dissemination through mass media

S.No	Name of Organization	Nature of linkage
1	AIR, Trichy	Disseminating technologies through radio talk by farmers and KVK scientists
2	AIR, Karaikal	
3	Doordharshan	Disseminating technologies through TV programmes Pon Vilaiyum Boomi and Malarum Boomi by farmers and KVK scientists
4	Makkal TV	
5	Dailies and Magazines	Publishing training details and popular articles, post event news

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

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Rural Agriculture Work Experience	02.01.2022	Amirdha College Internship Training	64,500
Capacity building training	23.03.2022	ATMA, Ariyalur	10,000
Skill Training on Dairy farming	15.04.2022	SAMETI, Kudimiyanmalai	42,000
Training	28.07.2022	IFFCO Tokya, Ariyalur	7,500
Distribution of organic input kit	05.08.2022	Mahalir Thittam	9,400
Book publication	10.10.2022	NABARD, Chennai	1,00,000
CAT Training programme	12.11.2022	NABARD, Chennai	68,600
Exposure visit	29.11.2022	NABARD, Chennai	47,700
	Total		3,49,700

AWARDS and RECOGNITIONS – NIL

Important Visitors to KVKs during 2022



**Mr.Sivashankar, Minister of Transport,
TN – Visit to KVK Exhibition**



**Mr.Ka.So.Ka.Kannan, Member of Legislative
Assembly, Jayankondam – Attended PM Live
telecast and visited KVK**



**General Manager, CSR, Dalmia - Visit to
KVK for planning long term projects on
rural livelihood development**



**DDM, NABARD – Visit to KVK to discuss
project for Tribal Development**

Annexure – 1

Proceeding of SAC meeting minutes

Minutes of Tenth Scientific Advisory Committee Meeting held on 25.01.2022

Tenth Scientific Advisory Committee meeting of ICAR Krishi Vigyan Kendra, Ariyalur was held at the premises of ICAR KVK, Ariyalur District on 25.01.2023 by 10.00 AM. Among 28 SAC members, twenty members presented in the meeting. The SAC meeting was started with welcome address by Dr.V.Nadanasabapathy, Chairman, ICAR KVK and gave brief introduction about KVK activities.

Dr.G.Alagukannan, Senior Scientist and Head, presented the report of activities carried out in past year to SAC Members. After submission of report, the Scientific Advisory Committee members were interacted and gave their valuable suggestions to improve and strengthen the KVK activities. After interaction, finally chairman briefed all the suggestions given by Scientific Advisory Committee members and gave assurance to execute the suggestions given.

1. Principal Scientist, ICAR ATARI, Hyderabad

- Farmers database numbers may be increased
- Invite and give trainings to new farmers instead of training regular and old farmers.
- Utilize revolving funds to develop new infrastructures and for other activities.
- Follow KVK, Namakkal model to bring up more revolving fund by producing fodder seeds.
- If possible KVK sales counter may be opened in rental building in main area.
- More concentration may be given to value addition.
- Medicinal plants cultivation and essential oil extraction may be promoted as entrepreneurship among rural youth.
- Concentrate on entrepreneurship development that includes complete enterprise from production to market tie-up.
- Promote Commercial Flower crop cultivation.
- Create awareness among farmers about government schemes in all trainings.
- Always focus on government flagship programmes
- Promote News on AIR app and Kisan II app among farmers

2. The Director, Directorate of Extension Education, Tamil Nadu Agricultural University, Coimbatore

- Do follow up, record output and impact for all trainings.
- Give SAC action taken presentation crop-wise.
- Cover all block, all crops and all categories of people.
- Promote Bio-mineralisers for Soil Health Management
- Cultivate all variety of millets in one acre and record performance of millets suitable for this district and promote among farmers.
- Open sales counter and sell other products also other than own production like veterinary products, bio mineralisers, etc.,
- More trainings may be given to rural youths
- Promote traditional crop varieties and give trainings
- Value addition as ready to eat products
- Implement all or maximum programs in KAVIADP village

- Promote inland fish farming
- Update KVK websites frequently, should be farmer friendly. Instead of photos more technologies may be given
- Active in social medias viz., Facebook, Whatsapp, YouTube, Twitter
- Promote seed production activity among farmers
- Display Uzhavan App Board in KVK premise.

3. Principal Scientist, ICAR-National Research Centre for Banana, Trichy

- Promote good Banana variety suitable for Ariyalur district and NRCB is ready to supply planting materials.
- Get technology and license for BANANA Micro nutrients production or else promote through PPP mode.
- Promote STRC (Soil Test Crop Result) – NRCB is ready to work along with KVK to conduct demonstrations.

4. The Director, Tamil Nadu Rice Research Institute, Aduthurai

- Promote green manure to maintain / increase soil fertility
- ADT 1 Sunn hemp variety is released as an alternate to Daincha may be promoted
- Popularize ADT 7 Paddy variety alternate to ADT 3 variety.
- Popularize ADT 58 Paddy variety alternate to ADT 39 suitable for Late samba / Thaladi season.
- Popularize enriched Karuppukavuni Co57 TNAU variety which is suitable for all 3 seasons.
- Resource persons from Centre of Excellence in Millet, Athiyanthar may be invited for trainings.
- To double the farmers' income and to reduce the cost of cultivation, reduce the chemical fertilizers and go for Integrated Nutrient Management to get high yield.

5. The Professor and Head, Regional Research Station, Vridhachalam

- Arrange exposure visit to Ariyalur farmers to visit innovative IFS unit developed by RRS.
- Create awareness among farmers to cultivate green manure crops to increase soil fertility

6. The Associate Professor and Head, Veterinary University Training and Research Centre, Perambalur

- More trainings on Piggery farming and promotion of piggery farming
- Floriculture, Sericulture, Apiculture training to Self Help Groups and follow the trainees as it serves as supporting income.
- Give training on Fish culture and establish demo units.
- Value addition training to SHGs' on meat products, milk products

7. Joint Director of Agriculture, Dept. of Agriculture, Ariyalur District

- Tie-up with department and do more soil test, mainly in KAVIADP village.
- Bring barren land under cultivation by framing strategies and supporting points.
- Promote traditional paddy consumption along with Mahalir Thittam project by campaign.

8. Veterinary Assistant Surgeon, Dept. of Animal Husbandry, Ariyalur Dt

- Programme on disease management in Poultry.
- Create awareness on vaccination from day one and regular deworming.

9. Assistant Director of Horticulture, Dept. of Horticulture, Ariyalur District

- Ensure availability of quality mushroom spawn at affordable price
- Update technologies and information in website.

10. Ranger, Department of Forest, Ariyalur

- Ensure availability of H1 Cashew seedlings to farmers
- Recommend suitable intercrop in Cashew as an alternate to Blackgram
- Suitable package for Tea Mosquito Bug management may be tested

11. Assistant Project Officer, Mahalir Thittam, Ariyalur District

- Give more awareness on IFC and give more advisories
- Coordinate 50 farmers and form Natural Farming cluster. Create one model in one block by giving natural farming training and do follow up.
- Give more training on Value Addition in Cashew and milk to Producer Club.

12. Lead Bank Manager, State Bank of India, Ariyalur

- Promote Value addition in Millets
- Create awareness and training on millet cultivation.
- Millet trainings should be conducted with expertise
- Trainings on Water conservation technologies
- Value Addition in milk can be focused.
- Create awareness among school students about Agricultural and related courses.

13. DDM, NABARD, Trichy Cluster

- Do follow up after trainings and record success cases of the farmers.
- Promote traditional Paddy variety which has market demand.
- KVK may develop millet demo unit at KVK farm along with TNAU and sensitize farmers on millet cultivation.
- Both grant and loan available in (NABKISAN) NABARD for FPOs'. So do guidance regards attractive branding, labelling, marketing.
- Promote nano technology samples and sales options. Give more training on new and latest technologies.
- Subsidies available in department for Custom Hiring Centre for FPO, FIG and individuals. Create awareness and include much needed machineries.

14. Director, Subiksha NGO, Perambalur

- Ready to join hands with KVK for any activities in 2 blocks (Thirumanur and Ariyalur)

15. Field Director, CSR, Dalmia Bharat Foundation, Sendurai

- More demos and trainings may be given along with Dalmia.

16. Senior Scientist and Head, KVK, Sirugamani

- Initiate Millet Park with complete organic package of practice at KVK.
- Disseminate Organic fertigation tank model to all KVKs'.

17. Mrs.R.Sujatha, Women Entrepreneur, Udayarpalayam

- Supply of quality spawn material at affordable price.

18. Mrs.R.Devi, SHG Leader, Cholamadevi

- More support and trainings to SHG's on milk value addition and IFS.

19. Mr.D.Ramesh, Farmer, Karuppur

- Promote millet cultivation and value addition.
- Fixed rate for harvesters.

20. Mr.E.Thangadurai, Farmer, Keelakudikadu

- Technologies and management practices for algae problem in Paddy and Root rot problem in Groundnut.

21. Mr.Radhakrishnan, UYIRMAI Consultant

- Promote organic inputs and collect feedback.

List of Participants of 10th SAC Meeting

Sl.No.	Name	Designation and Department	Remarks
1	Dr.V.Nadanasabapathy	Chairman ICAR-CREED KVK	Direct
2	Dr.A.Bhaskaran	Principal Scientist, ATARI, Hyderabad	Direct
3	Dr.P.P.Murugan	Director of Extension Education, TNAU, Coimbatore	Direct
4	Dr.K.Subrahmaniyan	Professor and Head TRRI, Aduthurai.	Direct
5	Dr.N.Thavaprakaash	Professor and Head RRS, Virudhachalam	Direct
6	Mr.R.Palanisamy	Joint Director of Agriculture Ariyalur	Direct
7	Dr.C.Karpagam	Principal Scientist NRCB, Trichy	Direct
8	Dr.Murali Arthanari	PC, KVK, Trichy	Direct
9	Mr.N.M.Mohan Karthik	District Development Manager NABARD	Direct
10	Dr.R.Ravikumar	Assistant Professor and Head VUTRC, Perambalur	Direct
11	Dr.Gopitha	Assistant Director of Horticulture, Department of Horticulture, T.Palur	Direct
12	Dr.S.Vasuki	Veterinary Assistant Surgeon Department of Animal Husbandry Ariyalur	Direct
13	Mr.J.Lionel Benedict	LEAD Bank Manager, Ariyalur	Direct
14	Mr.S.Venkatraman	Assistant Project Officer, Mahalir Thittam	Direct
15	Mr.M.Selvamani	Forester, Dept. Of Forest, Jayankondam	Direct
16	Mr.S.Samynathan	Director, Subiksha NGO, Perambalur	Direct
17	Mr.V.Sambath	Field Director,CSR, Dalmia, Ariyalur	Direct
18	Mrs.R.Sujatha	Farm women, Udayarpalayam, Ariyalur Dt.	Direct
19	Mrs.R.Devi	SHG Leader, Chola madevi, Ariyalur Dt.	Direct
20	Mr.E.Thangadurai	Farmer, Keelakudikadu	Direct
21	Mr.D.Ramesh	Farmer, Chola madevi	Direct
22	Mr.Radhakrishnan	UYIRMAI FPO consultant	Direct
23	Dr.Raghupathy Matheyarasan	Special Invitee	Direct
24	Mrs.A.Vadivu	Managing Director, UYIRMAI FPO	Direct