TAMIL NADU AGRICULTURAL UNIVERSITY

PROCEEDINGS

43rd Oilseeds Scientists Meet
(12th June, 2024)

Lead Centre
Regional Research Station
Vriddhachalam – 606 001

Directorate of Research
Tamil Nadu Agricultural University
Coimbatore - 641 003

2024

PROCEEDINGS

43rd Oilseeds Scientists Meet

(12th June, 2024)

The 43rd Oilseeds Scientists Meet was held on June 12, 2024 at Tamil Nadu Agricultural University, Coimbatore. Prior to this, pre-review meetings were held on 11.06.2024 by the respective Technical Directors.

Dr. V. Geethalakshmi, Vice Chancellor, TNAU, Coimbatore chaired the session. Madam suggested to develop end to end mechanization package for major oilseed crops. It was insisted to intensify research on value addition in groundnut and sesame oils. Breeding trials with special reference to screening may be done in the permanent structured blocks to avoid losses caused by birds in oilseeds like sesame and sunflower.

Dr. M. Raveendran, Director of Research, TNAU, Coimbatore welcomed the gathering and presented about the oilseeds scenario of India. It was suggested to intensify research on development of salinity and herbicide tolerant sesamum varieties. Biotechnological approaches for genetic improvement and biotic stress tolerance in oilseed crops may be initiated.

The Action Taken Reports on the proceedings of 42nd Oilseeds Scientists' Meet and Action Plan for 2024-25 were presented by **Dr. R. Ravikesavan**, Director (CPBG), **Dr. M. Kalarani**, Director, Crop Management, **Dr. P. Balasubramaniam**, Director, NRM and **Dr. M. Shanthi**, Director, CPPS. The 43rd Oilseed Scientists meet ended up with the formal vote of thanks by **Dr. R. Baskaran**, Professor and Head, Regional Research Station, Vriddhachalam.

The proceedings of the 43rd Oilseeds Scientists Meet are furnished below in the following headings:

I. CROP IMPROVEMENT

A. Entries for variety release proposal /OFT/ART/MLT
B. Action plan projects
C. Research projects and remarks

II. CROP MANAGEMENT

A. Technologies for adoption/OFT/ information
B. Action plan projects
C. Research projects and remarks

III. Natural Resource Management

A. Technologies for adoption/OFT/ information
B. Action plan projects
C. Research projects and remarks

IV. CROP PROTECTION

A. Technologies for adoption/OFT/information
B. Action plan projects
C. Research projects and remarks

V. REMARKS

VI. LIST OF PARTICIPANTS

I. CROP IMPROVEMENT

A. Entries for variety release proposal/ART/OFT/MLT (2024-25)

A1. Variety Release

Virginia Groundnut CTDG 1501

Parentage	{(ICGV 92069 x ICGV 93184) SIL 4} x (ICGS 44 x ICGS 76)]	Special features
Duration (in days)	110-115	Moderately resistant to early leaf spot (Grade:2), Late leaf spot (Grade:3) and rust diseases (Grade: 2)
Yield (kg/ha)	2169 kg/ha	
Shelling outturn (%)	68.0	
Oil content (%)	47-48	
% Yield increase	12.61% superior over CO 6 (1926	

Sesame VS 15014

Parentage	TMV 7 x Mutant 699	Special features
Duration	80-85	Moderately resistance to dry root rot and Phyllody diseases
Yield (kg/ha)	828 kg/ha	
Seed colour	Brown	
Oil content (%)	48-50	
% Yield increase	18.9% and 17.7% superior than TMV 7 (714 Kg/ha) and VRI 3 (703 Kg/ha) respectively.	

Castor YRCH 19014

Parentage	DPC 9 x JI 220	Special features
Duration (in days)	170	Tolerant to lepidopteron pests and green leaf hopper.
Yield (kg/ha)	2425 kg/ha	
Oil content (%)	48-50	
% Yield increase	19.4% superior than YRCH 2.	

A2. Groundnut: ART

1. Crop: Groundnut

Season: *Kharif* 2024 and *Rabi* / Summer 2024-25 Spacing: 30 x 10 cm

S. No.	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	Special attributes
1.	VG 18089 (R)	ICGV 00348 x ISK-2013-1	90-95	2080	Early
2.	COG 17007 (R)	TMV 13 X ICGV 06146	105-110	2266	High yield
3.	TVG 17180 (R)		105-110	2108	High yield
Checks: VRI 9, VRI 10, BSR 2, TMV 14					

Locations: 96

Season	*Kharif* 2024 and *Rabi* /Summer 2024-25
Districts	Thiruvallur, Kancheepuram, Villupuram, Vellore, Thiruvannamalai, Cuddalore, Salem, Namakkal, Erode, Coimbatore, Thiruchirappalli, Perambalur, Karur, Pudukkottai, Tanjore, Madurai, Theni, Virudhunagar, Sivagangai, Thirunelveli (80 Trials – Four trials in each Dt.)
KVK	KVK, Sandiyur, KVK, Vridhachalam, KVK, Tinidvanam, KVK, Erode, KVK, Paparapatti, KVK, Perambalur, KVK, Vamban, KVK, Karur (16 Trials –2 trials in each KVK)

2. Crop: Sesame

Season: *Rabi* 2024-25 and Summer 2024-25 Spacing: 30 x 10 cm

S. No.	Entries/ Checks	Pedigree	Duration (Days)	Seed yield (kg/ha)	Special attributes
1.	VS 19018	SVPR 1 x JCS 1942	80-85	881	Black seed, Branching
Checks: VRI 3 and VRI 4					

Locations: 96

Season	*Rabi* 2024-25 and Summer 2024-25
Districts	Villupuram, Vellore, Kanchipuram, Tiruvallur, Thiruvannamalai, Cuddalore, Dharmapuri, Krishnagiri, Salem, Namakkal, Coimbatore, Tirupur, Erode, Trichy, Perambalur, Ariyalur, Karur, Pudukkottai, Madurai, Theni, Dindigul, Virudhunagar, Sivagangai, Thanjavur, Tiruvarur, Nagapattinam, Thoothukudi, Kallakurichi, Tenkasi, Chengalpattu, Tirupathur, Ranipet, Mayiladuthurai and Thirunelveli (170 Trials – five trials in each district)
KVK	Vamban, Sirugamani, Kuntrakudi, Madurai, Virudhachalam, Tindivanam, Vrinjipuram, Santhiyur, Paparapatti and Tirur (40 trials - Four trials in each KVK)

3. Crop: Castor

S. No.	Entries/ Checks	Pedigree	Duration (Days)	Seed yield (kg/ha)	Special attributes
1.	YRCH 19016 (R)	DPC 9 x SKI 215	2340	180	Early, wilt resistant and Basal branching
Checks: YRCH 1, YRCH 2, DCH 519 & ICH 66					

Locations: 60

Season	***Kharif* 2024**
Districts	Salem, Namakkal, Karur, Erode, Dharmapuri, Tiruppur, Dindugal, Thiruvannamalai, Perambalur and Tirunelveli (50 Trials – five trials in each Dt.)
KVK	Vamban, Virudhachalam, Tindivanam, Santhiyur and Paparapatti (10 trials - 2 trials in each KVK

A4. MULTI LOCATION TRIAL (MLT)

1. Groundnut: Habit Group: Spanish Bunch

Season: *Kharif* 2024 &*Rabi* / Summer 2024-25 Replication: Three
Spacing: 30 cm x 10 cm Plot size: 4.0 x 3.0 m^2

Features of the proposed culture

S. No.	Culture	Parentage	Duration (days)	Seed yield (kg/ha)
1.	VG 19817 (R)	VRI 6 x VG 13127	105-110	3342
2.	COG 17006 (R)	TMV 13 x ICGV 06146	105-110	3287
3.	VG 21021 (N)	VG 13154 x KDG 123	110-115	3286
4.	VG 23115 (N)	TMV 2 x Dharani	90-95	2859
5.	VG 23119 (N)	TMV 7 x TG 51	90-95	2924
Checks: VRI 9, VRI 10, GG 7, CO 8, TMV 14				
Testing centres (11): Vriddhachalam, Tindivanam, Coimbatore, Bhavanisagar, Vazhavachanur, Aliyarnagar, Sandhiyur, Killikulam, Chettinad, Pattukkottai and Paiyur				

*The seed materials sent for *Kharif* season should be used for *Rabi* season sowing. Seeds will not be sent separately for *Rabi* season sowing.

Observations to be recorded

(1) Days to maturity. (2) Pod yield (kg/plot) (replication-wise), (3) Kernel yield (kg/plot) (replication-wise), (4) Shelling % (5) Dry pod yield (kg/ha) and (6) Kernel yield (kg/ha).
Note: Screening for the pests and diseases will be carried out by RRS, Vriddhachalam, Dept. of Oilseeds, TNAU, Coimbatore and CRS, Aliyarnagar.

Name of the centre	Pests	Diseases
RRS, Vriddhachalam	√	√
Dept. of Oilseeds, TNAU, Coimbatore	-	√
CRS, Aliyarnagar	-	√

2. Sesame: Multilocation Trial (MLT)

Season: *Rabi* 2024-25 and Summer 2025 Replication: Three
Spacing: 30 cm x 30 cm Plot size: 4.0 x 3.0 m^2

Features of the proposed culture

S. No.	Culture	Parentage	Duration (days)	Seed yield (kg/ha)	Special features
1.	VS 21-060 (R)	Paiyur 1 x AT 348	80-85	950	Black
2.	VS 20-027 (N)	TMV 7 x AT 374	80-85	1135	Black
3.	VS 20-054 (N)	TMV 3 x AT 328	80-85	990	Black

4.	VS 21-036 (N)	CO 1 x AT 375	80-85	1040	Brown
5.	TSS 2404 (N)	SVPR1 x RT 125	80-85	1066	White
Checks: TMV 7, VRI 3 and VRI 4					
Locations (9): Vridhachalam, Tindivanam, Coimbatore, Srivilliputhur, Killikulam, Madurai, Bhavanisagar, Vazhavachanur, Pattukkottai and Kumulur (*Rabi* 2024-25 and Summer 2025)					

Observations to be recorded

(1) Days to maturity, (2) Number of branches per plant, (3) Number of capsules per plant, (4) Seed yield (kg/plot) (replication-wise) and (5) Seed yield (kg/ha)

Note: Screening for the pests and diseases will be carried out by RRS, Vriddhachalam

Name of the centre	Pests	Diseases
RRS, Vriddhachalam	Leaf hoppers, Shoot and capsule borer	Phyllody, Root rot, Powdery mildew and *Cercospora* lead spot

3. Sunflower: Multilocation Trial (MLT)

Season: *Kharif* 2024 &*Rabi* / Summer 2024-25 Replication: Four

Spacing: 60 x 30 cm Plot size: 4.0 x 3.0 m^2

Features of the proposed cultures

S. No.	Culture	Parentage	Duration (days)	Seed yield (kg/ha)
1.	CSFH 21136 (N)	RCR CMS 38A x CSFI14569-1	90-95	3003
2.	CSFH 21102 (N)	COSF 12A x CSFI 17024	90-95	3028
3.	CSFH 22026 (N)	COSF 16A x CSFI 1862	85-90	2851
Checks: COH 3, COH 4, Tilhan Tech SUNH 1 & GK 2002				
Testing centres (8): Coimbatore, Bhavanisagar, Vridhachalam, Killikulam, Veppanthattai, Tindivanam (*Rabi*), Kovilpatti (*Rabi*) and Yethapur *(Rabi)*				

Observations to be recorded

(1) Days to 50% flowering, (2) Head Diameter (3) Seed yield (kg/plot) (replication-wise) and (4) Seed yield (kg/ha).

Note: Screening for the following pests and diseases will be carried out by Dept. of Oilseeds, Coimbatore

Name of the centre	Pests	Diseases
Dept. of Oilseeds, Coimbatore	Leaf Hopper, Head borer	Necrosis, Powdery mildew and *Alternaria*

4. Castor: Multilocation Trial (MLT)

Season: *Rabi* 2024-25 Replication: Four

Spacing: 120 cm x 120 cm Plot size: 4.8 x6.0 m^2

Features of the proposed cultures

S. No.	Hybrids	Parentage	Seed yield (kg/ha)	Duration (Days)	Special features
1.	YRCH 2321 (N)	DPC 24 x YRCS 2302	2630	180	R2SP, Wilt Resistant
2.	YRCH 2352 (N)	DPC 16 x YRCS 2302	2691	180	R2SP, Wilt Resistant
3.	YRCH 19016 (R)	DPC 9 x SKI 215	2340	180	R2ssp, Wilt Resistant
Checks: YRCH 1, YRCH 2, ICH 66					
Testing centres (6): Yethapur, Vridhachalam, Tindivanam, Kovilpatti, Killikulam, Santhiyur					

Observations to be recorded

(1) Days to 50% flowering, (2) Days to maturity, (3) Seed yield (kg/plot) (replication-wise) and (5) Seed yield (kg/ha)
Note: Screening for the following pests and diseases will be carried out by TCRS, Yethapur

Name of the centre	Pests	Diseases
TCRS, Yethapur	Semilooper, Capsule Borer, Leaf hopper, White fly and Flower thrips	Botrytis Grey Mold & Wilt

SEED REQUIREMENT FOR CONDUCTING ART / MLT 2024-25

S. No.	Name of the Entry / Check	Quantity of seed required (kg)		Centre responsible for supply
		Kharif	***Rabi*/ summer**	
GROUNDNUT				
1.	TVG 17180 (R)	150	150	Tindivanam
2.	VG 18089 (R)	150	150	Vriddhachalam
3.	COG 17007 (R)	150	150	Coimbatore
4.	VRI 9 (Ch)	150	150	Vriddhachalam
5.	VRI 10 (Ch)	150	150	Vriddhachalam
6.	BSR 2 (Ch)	150	150	Bhavanisagar
7.	TMV 14 (Ch)	150	150	Tindivanam
8.	VG 19817 (R)	12	-	Vriddhachalam
9.	COG 17006 (R)	12	-	Vriddhachalam
10.	VG 21021 (N)	12	-	Vriddhachalam
11.	VG 23115 (N)	12	-	Vriddhachalam
12.	VG 23119 (N)	12	-	Vriddhachalam
13.	VRI 9 (Ch)	12	-	Vriddhachalam
14.	VRI 10 (Ch)	12	-	Vriddhachalam
15.	GG7 (Ch)	12	-	Vriddhachalam

16.	CO 8 (Ch)	12	-	Coimbatore
17.	TMV 14 (Ch)	12	-	Tindivanam
SESAME				
1.	VS 19-018	20.0	20.0	Vriddhachalam
2.	VRI 3 (Ch)	20.0	20.0	Vriddhachalam
3.	VRI 4 (Ch)	20.0	20.0	Vriddhachalam
4.	TMV 7 (Ch)	20.0	20.0	Tindivanam
5.	VS 21-060 (R)	1.0	1.0	Vriddhachalam
6.	VS 20-027 (N)	1.0	1.0	Vriddhachalam
7.	VS 20-054 (N)	1.0	1.0	Vriddhachalam
8.	VS 21-036 (N)	1.0	1.0	Vriddhachalam
9.	TSS 2404 (N)	1.0	1.0	Vriddhachalam
10.	TMV 7 (Ch)	1.0	1.0	Tindivanam
11.	VRI 3 (Ch)	1.0	1.0	Vriddhachalam
12.	VRI 4 (Ch)	1.0	1.0	Vriddhachalam
SUNFLOWER				
1.	CSFH 21136 (N)	1.0	1.0	Coimbatore
2.	CSFH 21102 (N)	1.0	1.0	Coimbatore
3.	CSFH 22026 (N)	1.0	1.0	Coimbatore
4.	COH 3 (Ch)	1.0	1.0	Coimbatore
5.	COH 4 (Ch)	1.0	1.0	Coimbatore
6.	Tilhan Tech SUNH 1 (Ch)	1.0	1.0	Coimbatore
7.	GK 2002 (Ch)	1.0	1.0	Coimbatore
CASTOR				
1.	YRCH 19016 (R)	-	10	Yethapur
2.	YRCH 1	-	10	Yethapur
3.	YRCH 2	-	10	Yethapur
4.	DCH 519	-	10	Yethapur
5.	ICH 66	-	10	Yethapur

Important Dates in conduct of MLT and ART

Activities	Season	Last date for receipts	Date of Despatch
Seed material of the proposed ART entries	*Kharif*	24.07.2024	29.07.2024
	Rabi	16.09.2024	23.10.2024
	Summer	30.12.2024	10.02.2025
Seed material of the proposed MLT entries	*Kharif*	24.07.2024	29.07.2024
	Rabi	16.09.2024	23.10.2024
	Summer	30.12.2024	10.02.2025
Sowing report	*Kharif*	15.08.2024	-
	Rabi	30.11.2024	
	Summer	31.03.2025	
Visit of MLT/monitoring teams	*Kharif*	Sep. 2024	-
	Rabi	Dec. 2024	
	Summer	May. 2025	
Date for receiving the trial results at	*Kharif*	15.12.2024	-

Vriddhachalam /Coimbatore / Yethapur for compilation	*Rabi*	28.02.2025	
	Summer	30.06.2025	

Monitoring team to visit MLT 2024-25

Scientist	Crop	Season	Centres
Dr. K. Bharathi Kumar, Assoc. Prof. (PBG), RRS, VRI Dr. A. Mahalingam, Asst. Prof. (PBG), RRS, VRI Dr. V. Ravichandran, Assoc. Prof. (Pl Path.), RRS, VRI Dr. P. Indiragandhi, ASP (Ag. Ento.), RRS, VRI	Groundnut Sesame Sunflower Castor	*Kharif* 2024 and *Rabi* / Summer 2024-25	Coimbatore Tindivanam Paiyur Veppanthattai
Dr. R. Kalaiyarasi, Prof. (PBG) & Head, TNAU, CBE Dr. R. Sasikala, Asst. Prof. (PBG), CBE Dr. S. Harish, Assoc. Prof. (Pl. Path.), CBE	Groundnut Sesame Sunflower Castor	*Kharif* 2024 and *Rabi* / Summer 2024-25	Vriddhachalam Bhavanisagar Aliyarnagar Yethapur
Dr. S.R. Venkatachalam, Professor, TCRS, Yethapur Dr. R. Kanchanarani, Asst. Prof. (PBG), ORS, Tindivanam Dr. B. Geetha, Prof. (Ag. Ento.), RRS, VRI	Groundnut Sesame Sunflower Castor	*Kharif* 2024 and *Rabi* / Summer 2024-25	Sandhiyur Vazhavachanur Kumulur Chettinad
Dr. P. Arutchenthil, Professor (PBG), TCRS, Yethapur Dr. M. Paramasivan, ASP (Pl. Path.), RRS, VRI Dr. B. Geetha, Professor (Ag. Ento.), RRS, VRI	Groundnut Sesame Sunflower Castor	*Kharif* 2024 and *Rabi* / Summer 2024-25	Killikulam Srivilliputhur Kovilpatti Madurai

B. Action Plan (2023 – 2026)

The action plan will be continued for the second year with identified scientists towards achieving the deliverables in crop improvement.

Theme No 1	**Development of pre-breeding lines of groundnut**			
Theme Leader	Dr. K. Bharathi Kumar, Associate Professor (PBG), RRS, Vriddhachalam			
Name of the scientists and centre	**2023-24**	**2024-25**	**2025-26**	**Deliverables /expected out come**
Vriddhachalam Dr. K. Bharathi Kumar	Hybridization VRI 2, VRI 6, VRI 9, VRI 10 x *Arachis spp*.	Hybridization VRI 2, VRI 6, VRI 9, VRI 10 x *Arachis spp*.	Hybridization VRI 2, VRI 6, VRI 9, VRI 10 x *Arachis spp*.	Development of new groundnut genetic stocks
	Evaluation of F_1 & segregating populations *viz*., F_2, F_3, F_4, F_5, F_6 and F_7	Evaluation of F_1 & segregating populations *viz*., F_2, F_3, F_4, F_5, F_6 and F_7	Evaluation of F_1 & segregating populations *viz*., F_1, F_2, F_3, F_4, F_5, F_6 and F_7	
Theme No. 2	**Development of high oleic groundnut breeding lines**			
Theme Leader	**Dr. N. Manivannan, Professor (PBG), CEMB, CPBG, Coimbatore**			
Name of the scientists and centre	**2022-2023**	**2023-2024**	**2024-2025**	**Deliverables/ expected out come**

Coimbatore Dr. N. Manivannan Vriddhachalam Dr. K. Bharathi Kumar	Evaluation of BC_3F_1 (CBE)	Evaluation of high Oleic breeding lines for yield performance under PRYT at Vriddhachalam	Nomination and evaluation of high yielding, high Oleic breeding lines under PYT	Identification of high yielding, high oleic groundnut breeding lines
	Evaluation and identification of BC_3F_2 progenies with high oleic content	Evaluation of high oleic breeding lines for yield performance under PRYT at Vriddhachalam	Evaluation of high yielding, high oleic breeding lines under PYT	

Theme No. 3	**Evolution of high yielding black seeded sesame variety to replace TMV 3**			
Theme Leader	Dr. A. Mahalingam**,** Assistant Professor (PBG), RRS, Vriddhachalam			
Name of the scientists and centre	**2022-2023**	**2023-2024**	**2024-2025**	**Deliverables/expected out come**
Vriddhachalam Dr. A. Mahalingam, Coimbatore Dr. M. Umadevi Tindivanam Dr. R. Kanchanarani Bhavanisagar Dr. S. Utharasu Srivilliputhur Dr. R. Thangapandian Vazhavachanur Dr. A. Bharathi	MLT – I (7 centres: VRI, TVM, CBE, BSR, VVNR, SVPR, TRY-KUM) (June - July)	OFT / ART – I (June - July)	Large scale OFT / Seed multiplication	Development of black seeded sesame variety
	MLT – II (7 centres: VRI, TVM, CBE, BSR, VVNR, SVPR, TRY-KUM) (Dec -Jan)	OFT / ART – II (Dec -Jan)	Submission of variety release proposal	

Multilocation Trial – Black seeded sesame

S. No.	Entries	Pedigree	Duration (Days)	Seed yield (kg/ha)	Special attributes
1.	VS 20-041	VRI 2 x GT 10	80-85	889	Black seed
2.	VS 20-053	VRI 2 x EC 346393	75-80	856	Black seed
3.	VS 21-012	CO 1 x AT 377	80-85	914	Black seed
4.	VS 21-023	CO 1 x RMT 485	80-85	937	Black seed
Check: TMV 3					

Theme No. 4	**Evolution of high yielding early duration sesame variety suitable for rice follow ecosystem**
Theme Leader	**Dr. Dr. A. Mahalingam, Asst. Prof. (PBG), RRS, Vriddhachalam**

Name of the scientists and centre	2022-2023	2023-2024	2024-2025	Deliverables/ expected out come
Vriddhachalam Dr. A. Mahalingam Aduthurai Dr. M. Dhandapani IOA- Kumulur Dr. K. Thiyagu Sirugamani	Seed multiplication of VS 20-001, VS 20-002, VS 21-012, VS 21-014, VS 21-078 and VRI 1 (VRI)	Seed multiplication of promising entry	Seed multiplication	Release of early maturing, high yielding sesame variety for rice follow ecosystem
Dr. M. Sakila Killikulam Dr. S. Juliet Hepziba Tirur Dr. S. Banumathi KVK, Needamangalam Dr. V. Radha Krishnan	MLT – (6 centres: ADT, NDM, IOA-TRY, SGM, TKM, KKM) under rice follow system (Dec -Jan)	OFT / ART (Dec -Jan) under rice follow system at Thanjavur, Thiruvarur and Nagapattinam districts	Submission of variety release proposal	

Multilocation Trial – Rice fallow sesame

S. No.	Entries	Pedigree	Duration (Days)	Seed yield (kg/ha)	Special attributes
1.	VS 20-001	CO 1 x AT 324	65-70	889	Early, Black seed
2.	VS 20-002	CO 1 x AT 324	65-70	856	Early, Brown seed
3.	VS 21-012	CO 1 x AT 377	70-75	914	Early, Black seed
4.	VS 21-078	Paiyur 1 x AT 324	70-75	937	Early, Black seed
Check: VRI Sv 1					

Theme No. 5	**Development of castor hybrids / varieties suitable for synchronized maturity / mechanical harvesting**			
Theme Leader	**Dr. S.R. Venkatachalam, Professor (PB&G), TCRS, Yethapur**			
Name of the scientists and centre	**2022-2023**	**2023-2024**	**2024-2025**	**Deliverables / expected out come**
Yethapur Dr. S.R. Venkatachalam, Professor (PB&G) and Head Dr. P. Arutchenthil Professor (PB&G)	1. Identification of castor genotypes for monospike and synchronized maturity. 2. Hybridization with monoecious lines JM6, RG 392 to develop pistillate x pistillate, pistillate x monoecious, monoecious x	Evaluation of F_1s and backcross with JM 6 and RG 392	Evaluation of promising hybrids and segregating generations	Identification of hybrids / varieties suitable for synchronized maturity / mechanical harvesting

	monoecious hybrids			
Theme No. 6	**Exploration of new oilseed crops for Tamil Nadu**			
Theme Leader	Mustard & Safflower: Dr. R. Ravikesavan, DCPBG, Dr. R. Kalaiyarasi, Professor (PB&G) and Head Niger: Dr. A. Mahalingam, Assoc. Prof. (PB&G), RRS, Vriddhachalam			
Name of the scientists and centre	**2022-2023**	**2023-2024**	**2024-2025**	**Deliverables / expected out come**
Mustard Coimbatore R. Kalaiyarasi Bhavanisagar Dr. S. Utharasu Vaigaidam Dr. C. Parameswari Paiyur Dr. K. Geetha	Evaluation of high yielding varieties *viz*., Pusa Mustard 25, Pusa Mustard 28, Pusa Mustard 30, Pusa Mustard 31, Pusa Mustard 32 and identification of suitable varieties	Evaluation of high yielding varieties *viz*., Pusa Mustard 25, Pusa Mustard 28, Pusa Mustard 30, Pusa Mustard 31, Pusa Mustard32 and identification of suitable varieties	Evaluation of high yielding varieties *viz*., Pusa Mustard 25, Pusa Mustard 28, Pusa Mustard 30, Pusa Mustard 31, Pusa Mustard32 and identification of suitable varieties	Exploring the feasibility for cultivation of mustard, niger and safflower in Tamil Nadu.
Niger Vriddhachalam Dr. A. Mahalingam **Vazhavachanur** Dr. A. Bharathi Paiyur Dr. K. Geetha **Safflower** Coimbatore R. Kalaiyarasi Dr. D. Shoba Dr. A. Bharathi Dr. R. Kanchanarani Dr. M. Jayaramachandran	Collection, evaluation and identification of high yielding Niger & Safflower varieties	Collection, evaluation and identification of high yielding Niger & safflower varieties	Collection, evaluation and identification of high yielding Niger & safflower varieties	

Theme No 7	**Development of high yielding and high oil sunflower variety better than CO (SFV) 5**			
Theme Leader	Dr. R. Sasikala, Assistant Professor (PB&G)			
Name of the scientists and centre	**2022-2023**	**2023-2024**	**2024-2025**	**Deliverables / expected out come**
Coimbatore Dr. R. Sasikala	Evaluation of F5 generation (selected lines from COSF	Generation advancement of F_6	Evaluation and identification of promising entries	Identification of superior varieties with high yield

	15B x IR6 cross) for desirable agronomic traits and also new crosses will be made (COSF6B x GMU764)	(COSF15B x IR $_6$) and F_1s and F2 generation (COSF6B x GMU 764)	with high yield and oil content from following crosses COSF15B x IR 6 COSF6B x GMU764	and oil content better than CO (SFV) 5

Seed Science and Technology

S. No.	Project No. & Title	Project Leader	Remarks
Action Plan			
1.	SEC/CBE/OIL/2023/001 Evaluation of efficacy of seed planter and drone for sowing of pelleted seeds in sesame	Dr. K. Raja, Professor (SST) Dr. C. Vanitha, Assoc. Prof. (SST) Dr. R. Jerlin, Professor (SST) Dr. P. Masilamani, Professor (SST) AEC&RI, Kumulur Dr. K. Natarajan, Assoc. Prof. (SST), RRS, Vridhachalam Dr. N. Thavaprakash	Project may be completed and completion report may be submitted
2.	DSC/CBE/SST/OILSEEDS/ 2023/194 Evaluation of performance of vacuum bagged groundnut kernels in farmer's holdings	Dr. K. Raja, Professor (SST) **Sub-Centre:** Dr. K. Natarajan, Assoc. Prof. (SST), KVK, Vridhachalam Dr. V. Vakeswaran, Assoc. Prof. (SST), ARS, Bhavanisagar	Project period extension proposal may be submitted
3.	DSC/BSR/SST/OILSEEDS/ 2023/223 Effect of mechanized seed production on initial seed quality and storability of groundnut	Dr. V. Vakeswaran, Assoc. Prof. (SST) ARS, Bhavanisagar Dr. K. Ramah, Assoc. Prof. (Agron), ARS, Bhavanisagar Dr. R. Jerlin, Prof. (SST), DSST, TNAU, CBE Dr. V. Manonmani, Professor and Head, DSST, TNAU, CBE Dr. K. Natarajan, Programme Coordinator, KVK, Vridhachalam	Project may be continued
University Research Projects			
1.	DSC/CBE/SST/OILSEEDS/ 2023/076 - Assessing the crop establishment and productivity of vacuum bagged groundnut kernels	Dr. K. Raja Professor (SST)	Project may be continued
2.	SEC/CBE/SST/OIL/2022/001 Studies on seed dormancy and storability in sunflower hybrid	Dr. R. Vigneshwari Asst. Prof. (SST)	Project may be continued

S. No.	Project No. & Title	Project Leader	Remarks
	COH 3 and its parental lines		
3.	SEC/YTP/SST/OIL/2022/01 Standardization of seed production techniques to improve genetic purity in castor hybrid YRCH 2	Dr. R. Vijayan Assoc. Prof. (SST)	Project may be continued
Externally funded scheme			
1.	PPV/SC/CBE/SST/2003/R001 DUS test for Rice and Sunflower under PPV & FR Authority at the Department of Seed Science and Technology, TNAU, Coimbatore	Dr. V. Manonmani Professor and Head Dr. R. Vigneshwari Asst. Prof. (SST)	Project may be continued
2.	AICRP/STR/CBE/SEP/001 AICRP on NSP Crops Seed Technology Research, Seed Centre, Coimbatore	Dr. C. Vanitha Assoc. Prof. (SST) Seed Centre, TNAU, Coimbatore	Project may be completed

C. Research Projects on Oilseeds

Centres	University Sub-Projects	AICRP projects	Externally funded projects	Total
GROUNDNUT				
Vriddhachalam	5	1	-	6
Tindivanam	2	1	-	3
Coimbatore	4	-	1	5
Kudimiyanmalai	1	-	-	1
Bhavanisagar	1	-	-	1
Vaigaidam	1	-	-	1
Vazhavachanur	1	-	-	1
Pattukkottai	1	-	-	1
Killikulam	-	-	2	2
Sub Total	**16**	**2**	**3**	**21**
SESAME				
Vriddhachalam	2	1	2	5
Srivilliputhur	1	**-**	-	1
Vazhavachanur	1	**-**	-	1
Chettinad	1	**-**	-	1
Sub Total	**5**	**1**	**2**	**8**
SUNFLOWER				
Coimbatore	2	1	2	5
Sub Total	**2**	**1**	**2**	**5**
CASTOR				
Yethapur	3	1	-	4
Sub Total	**3**	**1**	**-**	**4**
Grand Total	**26**	**5**	**7**	**38**

C. Ongoing URPs / AICRPs / Externally Funded Projects in Crop Improvement
LIST OF ONGOING RESEARCH PROJECTS AND ITS REMARKS

S. No.	Project No. and Title	Project leaders	Duration	Remarks
A. UNIVERSITY RESEARCH PROJECTS (URP)				
Groundnut				
1.	**CPBG/VRI/PBG/OILSEEDS/ 2023/096** Evolution of high yielding *Spanish* / *Virginia* bunch cultivars in groundnut	Dr. A. Mahalingam Assistant Professor (PB&G) **CO-PI:** Dr. K. Bharathi Kumar Associate Professor (PB&G)	February 2023 to January 2028	Segregating populations can be shared with ARS, Bhavanisagar. The project may be continued.
2.	**CPBG/VRI/PBG/OILSEEDS/ 2023/099** Maintenance, evaluation of genetic resources and interspecific hybridization in groundnut (*Arachis hypogaea* L.)	Dr. A. Mahalingam Assistant Professor (PB&G)	February 2023 to January 2028	The project may be continued.
3.	**CPBG/VRI/PBG/OILSEEDS/ 023/100** Nucleus and breeder seed production in Groundnut varieties	Dr. A. Mahalingam Assistant Professor (PB&G) **CO-PI:** Dr. K. Bharathi Kumar Associate Professor (PB&G)	February 2023 to January 2028	The target can be achieved without any shortfall. The project may be continued.
4.	**CPBG/VRI/PBG/Oil/2021/00 1** Development of high yielding drought and salinity tolerant groundnut breeding lines	Dr. A. Mahalingam Assistant Professor (PB&G)	July 2021 to June 2024	The project may be closed and submit the completion report.
5.	**CPBG/VRI/PBG/Oil/2021/00 2** Development of high Oleic content groundnut breeding lines	Dr. A. Mahalingam Assistant Professor (PB&G)	July 2021 to June 2024	Oil keeping quality of high oleic and low oleic groundnut varieties may be assessed. The project may be continued.
6.	**CPBG/ CBE/ PBG/ OILSEEDS/ 2023/184** Evolving groundnut varieties suited for groundnut growing tracts of Tamil Nadu	Dr. R. Kalaiyarasi Professor (PB&G) and Head	June 2023 to May 2028	The project may be continued.
7.	**CPBG/CBE/PBG/GNT/2020/ 002** Development of high oleic Spanish groundnut variety	Dr. N.Manivannan, Professor (PBG)	Nov. 2020 October 2025	The project may be continued.
8.	**CPBG/CBE/OIL/OIL/2023/0**	Dr. R. Kalaiyarasi	July 2022	The target can be

	01 Maintenance breeding in popular groundnut varieties of Tamil Nadu	Prof. & Head (Oilseeds)	to June 2027	achieved without any shortfall. The project may be continued.
9.	**CPBG/CBE/OIL/OIL/2023/002** Development of high yield and drought tolerant genotypes in groundnut	Dr. R. Kalaiyarasi Prof. & Head (Oilseeds) Dr. K. Vanitha Assistant Professor (Crop Physiology)	July 2022 to June 2027	The project may be continued.
10.	**CPBG/TVM/PBG/GNT/2018/001** Evolution of bunch groundnut varieties tolerant to early-stage drought situations	Dr. R. Kanchanarani Associate Professor (PB&G)	June 2018 to May 2023	The project may be closed and submit the completion report. New project may be proposed.
11.	**CPBG/TVM/PBG/OIL/2018/001** Maintenance Breeding and Breeder Seed Production of groundnut Sesame, Castor and Pulses varieties released from TNAU	Dr. R. Kanchanarani Associate Professor (PB&G)	Sept. 2023 to Dec. 2025	The target can be achieved without any shortfall. The project may be continued.
12.	**CPBG/KDM/OIL/2022/001** Breeder seed production in groundnut and pulses	Dr. V. Thiruvengadam Associate Professor (PB&G) and Head	Nov. 2021 to October 2024	The target can be achieved without any shortfall. The project may be continued.
13.	**CPBG/VGD/PBG/BSP/2020/001** Maintenance Breeding in Groundnut and Pulses	Dr. C. Parameswari, Associate Professor (PBG)	October 2020 to Sept. 2025	Utmost care should be taken to maintain 100% genetic purity. The project may be continued.
14.	**CPBG/BSR/PBG/2020/001** Maintenance breeding in oilseed crop varieties released by TNAU	Dr. S. Utharasu Asst. Professor (PB&G)	Sept. 2020 - August 2025	The target can be achieved without any shortfall. The project may be continued.
15.	**CPBG/PAT/PUL/2023/001** Breeder seed production in Pulses and Groundnut	Dr. L. Subha Asst. Professor (PB&G)	Nov. 2022 to October 2025	The target should be achieved without any shortfall
16.	**CPBG/ VAZ/ PBG/ OIL/ 2021/ 001** Evolution of high yielding drought tolerant groundnut genotypes	Dr. A. Mothilal, Professor (PBG)	Sept. 2021 to August 2026	Breeding materials generated should be handed over to Vriddhachalam and Cbe centers.

Sesame				
17.	**CPBG/VRI/PBG/SES/2019/001** Evolution of high yielding sesame varieties with resistance to *Macrophomina* root rot	Dr. K. Bharathi Kumar, Assoc. Prof. (PBG) Dr. M. Paramasivan, Assoc. Prof. (Pl. Patho.)	Sept. 2018 to August 2023	All the breeding materials generated should be transferred to the new project. Segregating materials may be shared with AC & RI, Vazhavachanur
18.	**CPBG/VRI//PBG/OILSEEDS/2023/094** Production of genetically pure nucleus and breeder seeds of sesame varieties	Dr. K. Bharathi Kumar, Assoc. Prof. (PBG) **Co- Project Leader** Dr. A. Mahalingam, Asst. Prof. (PBG)	February 2023 to January 2028	The target can be achieved without any shortfall. The project may be continued.
19.	**CPBG/ VAZ/ OIL/ 2023/ 001** Evolution of high yielding sesame varieties suitable for North East Zone of Tamil Nadu.	Dr. S. Suganthi Asst. Prof. (PBG)	October 2022 to Sept. 2027	The available segregating materials from RRS, Vriddhachalam and IOA, Kumulur may be collected for evaluation.
20.	**CPBG/SVR/OIL/2022/001** Evaluation of segregating materials and advance cultures of sesame genotypes suitable for southern districts of Tamil Nadu.	Dr. G. Anand, Assoc. Professor (PBG) Dr. R. Thangapandian, Professor (PBG)	February 2022 to January 2024	The project may be closed and submit the completion report. New project may be proposed.
21.	**CPBG/CHE/OIL/2023/001** Evolving phyllody resistant sesame variety through induced mutilation	Dr. M. Jayaramachandran, Assoc. Prof. (PB&G) Dr. K. Manonmani Assoc. Prof. (Pl. Pathology) Dr. J. Ram Kumar Assoc. Prof. (Agrl Entomology)	October 2022 to Sept. 2024	The project may be closed and submit the completion report. New project may be proposed.
Sunflower				
22.	**CPBG/CBE/PBG/OIL/2021/001** Evolution of high yielding sunflower hybrids	Dr. R. Sasikala, Assistant Professor (Plant Breeding)	January 2021 to Dec. 2025	The project may be continued.
23.	**CPBG/CBE/PBG/OIL/2022/001 Maintenance** and Evaluation of germplasm in Sunflower	Dr. R. Sasikala, Assistant Professor (Plant Breeding)	January 2022 to Dec. 2024	The project may be continued.
Castor				
24.	**CPBG/ YTP/ PBG/ CAS/**	Dr. S. R.	Nov. 2020	The project may

	2020/ 001 Genetic diversification for development of Stable wilt resistant pistillate lines in castor	Venkatachalam, Professor (PB&G)	to October 2025	be continued
25.	**CPBG/ YTP/ PBG/ CAS/ 2021/ New:** Evolution of Monoecious variety / male line in castor for earliness and wilt disease resistance	Dr. P. Arutchenthil Professor (PB&G), Dr. V. Ravichandran Assistant Professor (Pl. Path)	Sept. 2021 to August 2024	The project may be continued.
26.	**CPBG/YTP/OIL/CAS/2022/001** Maintenance Breeding in Castor	Dr. P. Arutchenthil Professor (PB&G)	Sept. 2021 to August 2024	The project may be continued
B. AICRP projects				
27.	**AICRP/PBG/VRI/GNT/021** All India Evaluation of advanced breeding lines belonging to Spanish / Virginia bunch group through co-ordinated experiments.	Dr. K. Bharathi Kumar Associate Professor (PB&G)	Continuous	The project may be continued
28.	**AICRP/PBG/TVM/GNT/019** AICRP – Oilseeds Groundnut ORS, Tindivanam	Dr. R. Kanchanarani, Assistant Professor (PB&G)	Continuous	The project may be continued
29.	**AICRP/PBG/VRI/SES/021** All India Coordinated Research Project on Sesame	Dr. A. Mahalingam Assistant Professor (PB&G)	Continuous	The project may be continued
30.	**AICRP/PBG/CBE/SUN/020** AICRP on Oilseeds (Sunflower)	Dr. R. Sasikala, Asst. Professor (PBG	Continuous	The project may be continued
31.	**AICRP/PBG/YPR/CAS/022** All India Coordinated Research Project on castor – Breeding (D.32.C.I)	**Senior Breeder:** Dr. S.R. Venkatachalam Professor (PB&G). **Junior Breeder:** Dr. P. Arutchenthil Professor (PBG) Tapioca and Castor Research Station, Yethapur	Continuous	The project may be continued
C. EXTERNALLY FUNDED PROJECTS				
32.	**DST/CPBG/CBE/PBG/2021/R001** Development of high oleic Spanish bunch groundnut variety through marker assisted backcross	Dr. N. Manivannan, Professor (PBG) **CO – PI** Dr. A. Mothilal, Professor (PBG)	30.12.2020 to 29.12.2023	The project may be continued
33.	**DBT – NBPGR / CPBG / VRI / OIL / 2020 / D003** Mainstreaming sesame germplasm for productivity enhancement and sustainability through genomics	Dr. A. Mahalingam, Assistant Prof. (PB&G) Dr. G. Senthilraja, Assistant Prof. (Pathology)	01.04.2020 to 31.03.2025	The project may be continued

	assisted core development and trait discovery			
34.	**DST – SERB / ADT / VRD / PBG / 2021 / R001** Marker Assisted backcross breeding for the improvement of dry root rot disease resistance in the popular sesame varieties TMV 3 and TKG 22" (E28AGT)	Dr. A. Mahalingam, Asst. Prof. (PBG) **Co-PI:** Dr. N. Manivannan Professor (PBG) CPBG, TNAU, Coimbatore Dr. G. Senthilraja, Assistant Prof. (Pathology)	December 2021 to December 2024	The project may be continued.
35.	**DST SERB/CPBG/OIL/2021/ R001** Redesigning of healthy fatty acid profile in sunflower by developing high oleic inbreds through MABC approach (E28AGQ)	**PI:** Dr. R. Sasikala Assistant Professor (Plant Breeding) **Co-PI:** Dr. N. Manivannan (Mentor) Professor (PBG) CPBG, TNAU, Coimbatore Dr. M. Raveendran Prof. & Head Dept. of Plant Biotechnology, CPMB, TNAU, Coimbatore	December 2021 to December 2024	The project may be continued.
36.	**ICAR-DAC/CPBG/CBE/OIL/ 2022/ R001** Revival of Sunflower cultivation	Dr. R. Sasikala Asst. Prof. (PBG), Dr. R. Kalaiyarasi, Prof. & Head **CO-PIs:** Dr. S. Harish, Assoc. Prof. (Patho) Dr. M. Senthivelu Assoc. Prof. (Agron.)	-	The project may be continued.
37.	**BE/SSP/CPBG/OIL/ CBE/ 2023/ R001** Evaluation of newly developed sunflower hybrids suitable for Tamil Nadu	Dr. R.Sasikala Asst. Prof.(PBG), Dr. S.R. Venkatachalam Professor (PBG)	-	The project may be continued.
38.	Marker assisted breeding for increasing oleic acid content in Groundnut (*Arachis hypogaea* L.)	Dr. S. Saravanan Assoc. Prof. Dr. M. Arumugam Pillai Prof. and Head Dr. M. Raveendran Director of Research	-	-

II. CROP MANAGEMENT

A. Technologies for Adoption/OFT/Information

A1. For Adoption

1. **Effect of green manure incorporation on yield of subsequent Groundnut crop**
   - Green manure (Sunhemp) incorporation one month prior to groundnut sowing and application of 75% RDN (19 kg N/ha) recorded higher pod yield of 2168 kg/ha (38%) and BCR (2.17). Green manure incorporation added 12 t/ha of biomass which in turn added 25 % N to the succeeding groundnut crop.

2. **Optimizing nutrient requirement for monostem sesame VRI 5**
   - Application of 35:23:23 kg NPK/ha + foliar application of 1% 19:19:19 NPK + 0.5% K_2SO_4 and $MnSO_4$ at 30 & 45 DAS recorded higher seed yield (739 kg/ha) and B:C ratio (2.42).

A2. For Information

1. **Effect of suitable chemical formulation to arrest late formed flowers and enhance the yield of Groundnut**
   Foliar application of hormonal formulation @ 250 ml/ha at 60 DAS reduced (85.5%) the number late formed flowers, changed the flowering pattern and recorded higher pod yield 2141 kg/ha (24%) and B: C ratio 2.3.

2. **Evaluation of Sulphur Oxidizing Bacterial (SOB) Inoculum on Sunflower Productivity and Profitability**
   Application of RDF (60:90:60:20 kg NPKS ha^{-1} + Soil application of SOB @ 2 kg ha^{-1} recorded higher seed yield (2173 kg ha^{-1}), net return (₹59030 ha^{-1}) and B: C ratio (2.10).

3. **Assessment of mono stem Sesame VRI 5 for abiotic stress tolerance**
   Mono-stem sesame VRI 5 is tolerant to drought and high temperature stress, however it is highly susceptible to salinity stress.

4. **Weed management in Sesame**
   Application of ready-mix pre-emergence herbicide Pendimethalin 30% EC + Imazethapyr 2% SL @ 250 g a.i./ha at 3 DAS followed by Post emergence herbicide Quizalofop ethyl 5% EC @ 50 g a.i/ha at 25 DAS recorded higher weed control efficiency (90.8 %) which resulted in higher seed yield (775 kg/ha) and BCR (2.82).

B2. On Farm Testing (OFT)

OFT 1 Response of Groundnut to foliar nutrition of nano urea

Objective

- To study the effect of foliar application of nano urea on pod yield and quality of groundnut.

Treatments

T_1 - 100% RDN through Granular Urea (50% as basal 25% at Flowering and 25% at Peg Formation stages

T_2 - 50% RDN through granular urea as basal + 30% RDN through nano urea (165 ml) at flowering stage+ 20% RDN through nano urea (110 ml) at peg formation stage

Coordinating Centre:

RRS, Vridhachalam

Dr. R. Baskaran, Professor (Agronomy) and Head

Sub- Centres:

ORS, Tindivanam

Dr. S. Thiruvarassan, Assoc. Prof. (Agronomy) and Head

KVK, Needamangalam

Dr. V. Karunakaran, Asst. Prof. (Agronomy)

Dept. of Oilseeds, TNAU, Coimbatore

Dr. M. Senthivelu, Assoc. Prof. (Agronomy)

ARS, Kovilpatti

Dr. S. Manoharan, Asst. Prof. (Agronomy)

DARS, Chettinad

Dr. C. Umamaheswari, Professor (Agronomy)

Season: *Kharif* 2024

Observations to be recorded

- Pod Yield (kg/ha)
- Oil content (%)
- Nutrient Use Efficiency
- Economics

OFT 2 Assessment of liquid Groundnut rich through drone application on yield enhancement in Groundnut

Treatments

T_1 - Control

T_2 - Liquid Groundnut Rich (3 %)

Objectives

- To assess the effect of liquid groundnut rich through drone application on pod yield of groundnut.

Coordinating Centre:

Dept. of Crop Physiology, TNAU, Coimbatore
Dr. R. Sivakumar, Professor (Crop Physiology)

Sub-Centres:

RRS, Vriddhachalam
Dr. R. Baskaran, Prof. (Agronomy) and Head
ORS, Tindivanam
Dr. S. Thiruvarassan, Assoc. Prof. (Agronomy) and Head
ARS, Bhavanisagar
Dr. K. Ramah, Associate Professor (Agronomy)

Season: *Kharif* 2024

Observations to be recorded

- Pod yield (kg/ha)
- Economics

OFT 3: Effect of pre and post emergence herbicides on weed management in groundnut

Treatments

T_1 - Diclosulam 84 WDG @ 25 g a.i ha^{-1} (PE) fb Quizalofop Ethyl 5% EC 50 g a.i.ha^{-1} (POE) at 35 DAS
T_2 - Pendimethalin 30% E.C.@ 1.0 kg a.i. ha^{-1} (PE) fb Quizalofop Ethyl 5% EC 50 g a.i. ha^{-1} (POE) at 35 DAS
T_3 - Weedy check

Objectives

- To study the effect of pre and post emergence herbicides on weed management in groundnut
- To work out the economics of pre and post emergence herbicides on weed management in groundnut

Coordinating Centre:

RRS, Vridhachalam
Dr. R. Baskaran, Professor (Agronomy) and Head

Sub- Centres:

ORS, Tindivanam
Dr. S. Thiruvarassan, Assoc. Prof. (Agronomy) and Head
KVK, Needamangalam
Dr. V. Karunakaran, Asst. Prof. (Agronomy)
Dept. of Oilseeds, TNAU, Coimbatore
Dr. M. Senthivelu, Assoc. Prof. (Agronomy)

AC & RI, Killikulam
Dr. M. Joseph, Professor (Agronomy)
DARS, Chettinad
Dr. C. Uma Maheswari, Professor (Agronomy)
ADAC & RI, Trichy
Dr. S. Rathika, Assoc. Prof. (Agronomy)

Season: *Kharif* 2024

Observations to be recorded

- Pod Yield (Kg/ha)
- Weed control efficiency
- Economics

OFT 4 Influence of nutriseed pack placement on growth and yield of different castor hybrids under irrigated condition

Objectives

- To study the effect of nutriseed pack placement on growth and yield of castor hybrids
- To analysis the economics of nutriseed pack techniques in castor hybrids

Treatments

T_1 – Nutriseed pack with 100 % RDF (90: 45: 45 kg NPK/ha)
T_2 – Recommended practices as per CPG 2020

Coordinating Centre:

TCRS, Yethapur
Dr. S.K. Natarajan, Assoc. Prof. (Agronomy)

Sub-Centres:

RRS, Vriddhachalam
Dr. C. Harisudan,Assoc. Prof. (Agronomy)
ORS, Tindivanam
Dr. S. Thiruvarassan, Assoc. Prof. (Agronomy) & Head
ARS, Bhavanisagar
Dr. N. Sakthivel, Prof. (Agronomy) & Head
ADAC & RI, Trichy
Dr. S. Rathika, Assoc. Prof. (Agronomy)
ARS, Kovilpatti
Dr. S. Manoharan, Asst. Prof. (Agronomy)

Season: *Kharif* 2024

Observations to be recorded

- Scorching effect

- Seed yield (kg/ha)
- NUE
- Economics

C. RESEARCH PROJECTS AND REMARKS

S. No.	Projects	Groundnut	Sesame	Sunflower	Castor	Total
1.	Agronomy	13	6	4	8	**31**
2.	Crop Physiology	1	2	1	-	**4**
	Total	**14**	**8**	**6**	**8**	**35**

ACTION PLAN PROJECTS

S. No.	Project No. & Title	Project leaders	Duration	Remarks
1.	DCM/VRI/AGR/Oilseeds/2023/001 Response of groundnut (*Arachis hypogaea*) to foliar nutrition of nano urea	Dr. R. Baskaran Prof. (Agron.) & Head Dr. S. Thiruvarassan Assoc. Prof. & Head	July 2022 to June 2024	• Granular urea should be mentioned • The results may be given for OFT
2.	Effect of pre and post emergence herbicides on weed management in groundnut	Dr. R. Baskaran Prof. (Agron.) & Head Dr. S. Thiruvarssan Assoc. Prof. & Head Dr. M. Senthivelu Assoc. Prof. (Agron.) Dr. V. Karunakaran Asst. Prof. (Agron.)	May 2023 to June 2024	• The results may be given for OFT
3.	Assessment of liquid groundnut rich through drone application on yield enhancement in groundnut	Dr. R. Sivakumar, Professor (CRP) Dr. R. Amutha, Professor (CRP) Dr. R. Ananthi, Asst. Prof. (CRP) Dr. J. Rajkumar, Asst. Prof. (CRP)	May 2023 to June 2025	• The results may be given for OFT
4.	DCM/VRI/AGR/Oilseeds/2023/198 Optimizing nutrient requirement for mono stem sesame culture VRI 5	Dr. C. Harisudan, Assoc. Prof. (Agron.) Dr. S. Thiruvarassan Assoc. Prof.& Head	June 2022 to May 2024	• Pooled data of two years and two centers may be given • The results may be given for adoption
5.	Assessment of mono stem sesame culture VS 19036 for abiotic stress tolerance (Drought, high temperature and salinity)	Dr. R. Sivakumar, Prof. (Crop Physiology) Dr. R. Karthikeyan	June 2022 to May 2024	• The results may be given as information

S. No.	Project No. & Title	Project leaders	Duration	Remarks
		Assoc. Prof. (Agron.)		
6.	Effect of suitable chemical formulation to arrest late formed flowers and enhance the yield of Groundnut	Dr. S. Sriniinvasan, Prof. & Head Dr. C. Harisudan, Assoc. Prof. (Agronomy) Dr. S. Thiruvarassan, Assoc. Prof. (Agronomy) Dr. N. Sakthivel, Prof. & Head Dr. J. Rajkumar, Asst. Prof. (CRP)	May 2021 to June 2023	• Field experiment may be carried out with the inclusion of NAA 200 ppm as a treatment along with Seed Technologist and Agronomist in ARS, Bhavanisagar
7.	Physiological interventions to improve yield in Sunflower	Dr. S. Sriniinvasan, Prof. & Head Dr. R. Sivakumar, Professor (CRP) Dr. J. Rajkumar, Assoc. Prof. (CRP)	June 2023 to May 2025	• The project may be continued with field experiment for confirmation of physiological and yield traits
8.	Performance of maize harvester in different crop spacing of hybrid castor (YRCH 1)	Dr. S. Manickam, Dean & Prof. (Agron.) Dr. P. Veeramani, Asst. Prof. (Agronomy)	2023-2024	• The results may be given for information • The project may be closed.

UNIVERSITY RESEARCH PROJECTS

Groundnut				
1.	**DCM/KDM/AGR/OILSEEDS/2023/117** - Maximizing the yield of groundnut through integrated phosphorous management in red soil	Dr. K. Venkatalakshmi Assoc. Prof. (Agron.) Dr. D. Janaki Assoc. Prof. (SS&AC) Dr. M. Sundar Prof. (Agrl. Micro)	January 2023 to January 2025	• The project may be continued with mid-term correction
2.	**DCM/KDM/AGR/Oilseeds/2023/112** - Studies on weed management strategies on the productivity of irrigated groundnut (*Arachis hypogeae* L.)	Dr. N. Senthil Kumar Assoc. Prof. (Agron.)	2023 - 2025	• The project may be continued with midterm correction
Sesame				
3.	**DCM/CBE/CRP/OILSEEDS/2023/182** Assessing physiological responses of sesame genotypes to waterlogging stress and developing suitable technology to mitigate water	Dr. M. Djanaguiraman, Assoc. Prof. (CRP) Dr. S. Geethanjali Assoc. Prof. (PBG)	September 2023 – December 2025	• The results may be given for information • The project may be continued

	logging stress			
4.	**AICRP/PBG/VRI/SES/021** Evaluation of pre-emergence and post emergence weed management in sesame (An Alternative to Pendimethalin)	Dr. C. Harisudan Assoc. Prof. (Agron)	June 2021 to May 2024	• The OFT may be continued • Toxicity effect of ready mix Pendimethalin + Imazethapyr on sesame may be studied
Castor				
5.	**DCM/YTP/NON/2022/001** Influence of Nutriseed pack placement on growth and yield of different castor hybrids under irrigated condition	Dr. S.K. Natarajan Assoc. Prof. (Agron.)	June 2022 to May 2025	• NUE efficiency may be given • The results may be given for OFT • Scorching effect by nutriseed pack may be evaluated
6.	**DCM/YTP/AGR/OIL/2023/001-** Evaluation of Pre and Post emergence chemical weed management for castor	Dr. S. Elankavi Assoc. Prof. (Agron.)	2023-2025	• The project may be continued with midterm correction

AICRP Projects

GROUNDNUT				
1.	**AICRP/PBG/VRI/GNT/017** Integrated weed management in Rabi/summer groundnut with Diclosulam	Dr. R. Baskaran Prof. (Agron.) & Head	2021-22 to 2023-24	• Project to be continued
2.	**AICRP/PBG/VRI/GNT/017** Sustainable groundnut production through crop diversification and tillage systems	Dr. R. Baskaran Prof. (Agron.) & Head	2021-22 to 2023-24	• Project to be continued
3.	**AICRP/PBG/VRI/GNT/017** Evaluation of rhizobia for enhancing BNF and yield of kharif and rabi-summer groundnut	Dr. R. Baskaran Prof. (Agron.) & Head	2022-23 to 2023-24	• Project to be continued
4.	**AICRP/PBG/VRI/GNT/017** Response of groundnut (*Arachis hypogaea)* to foliar nutrition of nano urea and urea phosphate	Dr. R. Baskaran Prof. (Agron.) & Head	2022-23 to 2023-24	• Project to be continued
5.	**AICRP/PBG/VRI/GNT/017** Organic farming experiment on permanent basis in prominent cropping system of the respective region	Dr. R. Baskaran Prof. (Agron.) & Head	2022-23 to 2023-24	• Project to be continued
6.	**AICRP/PBG/VRI/GNT/017** Evaluation of Zinc solubilizing bacteria for enhancing availability and uptake of Zinc and yield of	Dr. R. Baskaran Prof. (Agron.) & Head	2022-23 to 2023-24	• Project to be continued

	groundnut			
7.	**AICRP/PBG/VRI/GNT/017** Evaluation of potash solubilizing bacteria for enhancing availability and uptake of K and yield of groundnut	Dr. R. Baskaran Prof. (Agron.) & Head	2022-23 to 2023-24	• Project to be continued
8.	**AICRP/PBG/TVM/GNT/019** Response of groundnut to limited irrigation during post rainy/summer season	Dr. S. Thiruvarassan Assoc. Prof. (Agron.) & Head	2021 to 2024	• To be closed
9.	**AICRP/PBG/TVM/GNT/019** Integrated weed management in Kharif Groundnut	Dr. S. Thiruvarassan Assoc. Prof. (Agron.) & Head	2019-21	• To be closed
SESAME				
10.	**AICRP/PBG/VRI/SES/021** Optimization of nutrient requirement for AVT genotypes	Dr. C. Harisudan Assoc. Prof. (Agron)	July 2019 to May 2023	• To be closed
11.	**AICRP/PBG/VRI/SES/021** Development of full Organic package of practice for export quality Sesame	Dr. C. Harisudan Assoc. Prof. (Agron)	June 2021 to May 2024	• To be continued
12.	**AICRP/PBG/VRI/SES/021** Evaluation of pre-emergence and post emergence herbicide for weed management in sesame (An Alternative to Pendimethalin)	Dr. C. Harisudan Assoc. Prof. (Agron)	June 2021 to May 2024	• To be continued
13.	**AICRP/PBG/VRI/SES/021** Comparative nutrient management options for organic sesame production	Dr. C. Harisudan Assoc. Prof. (Agron)	June 2021 to May 2024	• To be continued
14.	**AICRP/PBG/VRI/SES/021** Assessment of effect of nano urea in sesame	Dr. C. Harisudan Assoc. Prof. (Agron)	June 2021 to May 2024	• To be continued
SUNFLOWER				
15.	**AICRP/DCM/CBE/AGR/SNF/2020/002** Performance evaluation of Sulphur Oxidizing Bacterial (SOB) Inoculums on Sunflower	Dr. M. Senthivelu Assoc. Prof. (Agron)	June, 2021 - May, 2023	• To be closed
16.	**AICRP/DCM/CBE/AGR/SNF/2020/003** Response of Sunflower to Nano-Nitrogen	Dr. M. Senthivelu Assoc. Prof. (Agron)	June, 2021 - May, 2024	• To be continued
17.	**AICRP/DCM/CBE/AGR/SNF/2020/003** Screening of Pre and Post Emergence Herbicides in Sunflower	Dr. M. Senthivelu Assoc. Prof. (Agron)	June, 2023 - May, 2024	• To be continued

18.	**AICRP/DCM/CBE/AGR/SNF/2020/003** Good Agricultural Practices for Sustainable Productivity of Cropping System Involving Sunflower (Cropping System: Groundnut - Sunflower)	Dr. M. Senthivelu Assoc. Prof. (Agron)	June, 2021 - May, 2023	• To be closed
CASTOR				
19.	**AICRP/PBG/YTR/CAS/022** Yield maximisation of castor through Best Management Practices	Dr. S. Manickam Dean & Prof. (Agron.)	June 2022 to May 2023	To be closed
20.	**AICRP/PBG/YTR/CAS/022** Development of Conservation Agricultural practices in Castor	Dr. S. Manickam Dean & Prof. (Agron.)	June 2022 to May 2023	To be closed
21.	**AICRP/PBG/YTR/CAS/022** Developing technology package for castor-cucurbits relay cropping for resource conservation and profit maximization	Dr. S. Manickam Dean & Prof. (Agron.)	June 2022 to May 2023	To be closed
22.	**AICRP/PBG/YTR/CAS/022** Efficacy of nano urea on growth, yield and quality of rainfed castor	Dr. S. Manickam Dean & Prof. (Agron.)	June 2022 to May 2023	To be closed
23.	**AICRP/PBG/YTR/CAS/022** Evaluation of pre-emergence herbicide molecules in castor	Dr. S. Manickam Dean & Prof. (Agron.)	June 2022 to May 2023	To be closed

New Action Plan for 2024-25

No.	Title	Centre and Scientists	Period
Assessment of abiotic stress tolerance of groundnut variety VRI 11			
Objectives: To assess the abiotic stress (Drought and flooding) tolerance capacity of newly released groundnut variety VRI 11			
Centre & Scientist In-charge		**Directorate of Crop Management, TNAU, Coimbatore** Dr. R. Sivakumar, Professor (Crop Physiology) Dr. R. Karthikeyan, Associate Professor (Agronomy)	June 2024 to May 2026

❖ **Experiment detail:** Pot culture study

- Season: *Kharif/ Rabi*
- Drought imposition – withdrawal of irrigation at flowering stage (20 days)
- Flooding imposition – Water logging at maturity stage (5 days)

❖ **Observations:**

- Agronomical, Physiological and Biochemical traits associated with abiotic stress tolerance
- Growth and yield parameters

No.	Title	Centre and Scientists	Period
Evaluation of complete mechanization in sesame cultivation			
Objectives: To evolve appropriate mechanization package in sesame cultivation To increase the sesame productivity and profitability through sesame mechanization To increase the energy use efficiency through sesame mechanization			
Centre & Scientist In-charge		**RRS, Vridhachalam** Dr. C. Harisudan, Assoc. Professor (Agronomy)	June 2024 to May 2026

Treatments

Main Plot (Crop Establishment)

M_1 - Line sowing (conventional)

M_2 - Hand push seeder

M_3 - Multicrop seeder

Sub Plot (Weeding and Harvesting)

S_1 - Hand weeding (HW) * + Manual

S_2 - Weeding through nail weeder* + Harvest through reaper cum binder

S_3 - Weeding through power weeder* + Harvest through reaper cum binder*@ 15 & 30 DAS

Season: *Kharif* 2024

Design: Split plot

Replication: 3

Plot size

Gross plot size: 6.0 m x 4.2 m = 25.20 m^2

Net plot size: 5.2 m × 3.0 m = 15.6 m^2

Observations

Biometric observations

1) Germination percentage (%)
2) Vigour index
3) Plant population
4) Plant height (cm)
5) Leaf Area Index (LAI)

Weed components

1) Weed density
2) Weeding efficiency (%)

Yield & yield components

1) No. of productive branches/plant
2) No. of capsules/plant
3) No. of seeds/capsule
4) Test weight (g)
5) Seed yield (kg/ha)

Energetics

1) Energy Use Efficiency (EUE) or Energy ratio
2) Specific energy
3) Net gain energy
4) Energy productivity

Economics

1) Cost of cultivation
2) Gross return
3) Net return
4) B:C ratio

No.	Title	Centre and Scientists	Period
Exploring economically viable IWM options for maximizing the sunflower productivity			
Objectives: To explore the economically viable integrated weed management options for maximizing the sunflower productivity			
Centre & Scientist In-charge		**Dept. of Oilseeds, TNAU, Coimbatore** Dr. M. Senthivelu, Assoc. Prof. (Agronomy) **RRS, Vridhachalam** Dr. A Karthikeyan, Asst. Prof. (Agronomy) **ARS, Kovilpatti** Dr. S. Manoharan, Asst. Prof. (Agronomy) **ARS, Vagarai** Dr. T. Selvakumar, Assoc. Prof. (Agronomy) and Head	June 2024 to May 2027

Treatments

T_1 - Pendimethalin 30EC 1.0 kg a.i ha^{-1} at 3 DAS fb HW @ 30-35 DAS
T_2 - Pendimethalin 30EC + Imazethapyr 2EC (Ready-mix) 0.25 kg a.i ha^{-1} at 3 DAS fb HW @ 30-35 DAS
T_3 - Pendimethalin 30EC + Imazethapyr 2EC (Ready-mix) 0.50 kg a.i ha^{-1} at 3 DAS fb HW @ 30-35 DAS
T_4 - Pendimethalin 30EC + Imazethapyr 2EC (Ready-mix) 0.75 kg a.i ha^{-1} at 3 DAS fb HW @ 30-35 DAS
T_5 - Flumioxazin 50% SC 50g a.i. ha^{-1} as PE at 3 DAS fb HW @ 30-35 DAS
T_6 - Flumioxazin 50% SC 75g a.i. ha^{-1} as PE at 3 DAS fb HW @ 30-35 DAS
T_7 - Flumioxazin 50% SC 100g a.i. ha^{-1} as PE at 3 DAS fb HW @ 30-35 DAS
T_8 - Quizalofop ethyl 5EC @ 0.50kg a.i ha^{-1} + Imazethapyr 10SL @ 0.50kg a.i ha^{-1} (Tank-mix) at 15-20 DAS fb HW @ 30-35 DAS
T_9 - Hand weeding twice 15 & 30 DAS
T_{10} - Weed free check
T_{11} - Weedy check

Design: RBD **Replications**: Three **Season**: *Kharif* 2024

Observations to be recorded

- Seed yield (kg/ha)
- Weed control efficiency
- Weed density
- Economics

No.	Title	Centre and Scientists	Period
Evaluation of Banana – Castor intercropping system for profit maximization			
Objectives: To assess the economic viability of introducing castor as intercrop in banana			
Centre & Scientist In-charge		**Co-ordinating centre:** **TCRS, Yethapur** Dr. S. K. Natarajan, Assoc. Prof. (Agronomy) **Sub-Centres:** **ARS, Bhavanisagar** Dr K. Ramah **AC&RI, Killikulam** Dr. K. Bhuvaneshwari **ORS, Tindivanam** Dr. S. Thiruvarassan, Assoc. Prof. and Head Dr. K. Sathiya, Assoc. Prof. (Agronomy)	June 2024 to May 2026

Treatments: Main Plot:

M_1 - Banana as sole crop
M_2 - Castor as sole Crop
M_3 - Banana + Castor

Sub plot:

S_1 - Control
S_2 - Nipping at 10^{th} node
S_3 - Nipping at 12^{th} node
S_4 - Chemical nipping with mepiquate chloride @ 200 g a.i. ha^{-1}

Design: Split **Replications**: Three **Season**: *Kharif* 2024

Observations to be recorded

- Growth and yield parameters of both sole crop and intercrop
- Yield and economics
- Initial and post-harvest soil analysis
- LER, IER, ATER and RCC

Action plan 5. Response of different genotypes of sunflower for organic farming

Objectives:

- To evaluate the response of sunflower genotypes in terms of yield and economics under organic production system

- To study the quality parameters of sunflower varieties in response to organic management practices

Varieties:

- Sunflower varieties, hybrids and pre-release cultures of TNAU

Packages of practices for organic sunflower cultivation

- Basal application of well decomposed FYM @ 12.5 t /ha or vermicompost 4 t/ha.
- Seed treatment with *Bacillus subtilis* @10 g/ ha + *Trichoderma viride* @ 4g / kg + Rhizobium @ 30 g/kg + Phosphobacteria @ 30 g /kg + Potash bacteria @ 30 g /kg
- Soil application of Rhizobium @ 2.5 kg + Phosphobacteria 2.5 kg + Potash bacteria @ 2.5 kg / ha mixed with each of 25 kg of FYM and applied before sowing
- Top dressing with vermicompost @ 0.5 t/ha at 30 days after sowing
- Application of Panchagavya @ 3 % twice at 40 and 60 DAS as organic foliar nutrition
- Need based application of Neem Seed Kernel Extract @ 5% / Neem oil @ 3% as foliar spray for the management of insect pests.
- Need based foliar application of liquid *Bacillus subtilis* @ 0.5% to ward off foliar diseases.

Observations to be recorded

- Initial and post-harvest soil physio-chemical properties
- Growth and yield parameters: Plant height at harvest (cm), No. of seeds/head, Test weight (g), Head diameter (cm), Seed weight/head (g), Seed yield (kg/ha) and Stalk yield (kg/ha)
- Economics: Cost of cultivation, Gross returns, Net returns and BCR

Co ordinating centre: NOFRC, TNAU, Coimbatore
Scientist in-charge: Dr. R. Krishnan, Prof. & Head, Dr. M. Suganthy, Prof (Agrl. Ento.).

III. NATURAL RESOURCE MANAGEMENT

A. Technologies for Adoption/OFT / Information

A1. For Adoption

Soil Science and Agricultural Chemistry

1. Organic acids coated multi-nutrient fertilizers for improving the yield and nutrition of groundnut on calcareous soils

Application of NPK+10% humic acid coated multi- nutrient fertilisers @ 12.5 kg ha^{-1} can be recommended for higher pod yield (2769 kg ha^{-1}) & BCR (2.91), Nutrient availability (15-35%) & uptake and fertilizer cost saving of Rs.1881/- over blanket recommendation and Rs.2017/- over Farmers' practice. Mechanism of action for enhancing the yield may be given.

2. Sulphur Recommendation for Yield Maximization in Sesame under Sesame-Greengram/Blackgram Cropping Sequence

Seed yield and quality of sesame followed by pulse crop (greengram/blackgram) in a cropping sequence were improved by the application of S @ 45 kg ha^{-1} as gypsum (Seed Yield :14.1 % increase over standard check). Sesamin, Sesamolin and S containing amino acids in sesamum seeds were improved by S application @45 kg ha^{-1}. With regard to sulphur fractions, application @ 45 kg ha^{-1} increased the available S, water soluble S and adsorbed S in post-harvest soil of Sesame and Pulse crops.

3. STCR-IPNS based Fertilizer Recommendation for Hybrid Castor on Alfisol

Fertilizer prescription equations (FPEs) were developed and validated for Hybrid castor (YRCH 1) under IPNS on Yethapur soil series (Red non-calcareous) of Tamil Nadu (furnished below). Targeting of 2.75 t ha^{-1} under STCR-IPNS is ideal in terms of seed yield (2.76 t ha^{-1}), Response Ratio (5.92 kg kg^{-1}) and BCR (2.78) with an increase of 17.4% seed yield due to STCR-IPNS over blanket + FYM. Fertilizer saving of 43:23:21 kg ha^{-1} of Nitrogen, P_2O_5 & K_2O & in terms of Urea: 93 kg SSP: 144 kg, MOP: 35 kg could be achieved.

FN	=	10.38 T – 0.70 SN – 0.69 ON
FP_2O_5	=	4.62 T – 3.60 SP – 0.89 OP
FK_2O	=	6.30 T – 0.44 SK - 0.60 OK

AGRIULTURAL MICROBIOLOGY

1. Evaluation of Zinc Solubilizing Bacteria as bioinoculant for Groundnut in Zn deficient soil

In Groundnut application of Zinc solubilising bacteria @ 1 kg/ha as seed treatment and 2kg/ha for soil application along with 12.5 kg/ha $ZnSO_4$ with STCR based fertilizer

recommendation in Zinc deficient soil, recorded maximum pods/plant (38.5) and pod yield with 2475 kg/ha.

2. Evaluation of Zinc Solubilizing Bacteria as bioinoculant for Sesame in Zn deficient soil

In sesame application of Zinc solubilizing bacteria @ 1 kg/ha as seed treatment and 2kg/ha for soil application along with 12.5 kg/ha $ZnSO_4$ with STCR based fertilizer recommendation in Zinc deficient soil, recorded maximum no of capsules/plant (154.5) and yield of 862 kg/ha (7.2%) over application of $ZnSO_4$ (25 kg/ha) with STCR based fertilizer.

A2. For Information

Soil Science and Agricultural Chemistry

1. Management of Alkali water (High RSC) for enhancing the growth and yield of sesame

Field experiment was initiated at farmers' field with Sesame variety VRI 4 as test crop with the treatments *viz.,* T_1- Control (Untreated alkali water), T_2 – Soil application of Gypsum @ 500 kg ha $^{-1}$, T_3 – Irrigation with gypsum treated alkali water with the RSC level of < 1.25 meq l^{-1} ,T_4 - Irrigation with gypsum treated alkali water with the RSC level of 1.25 – 2.5 meq l^{-1}, T_5 - Irrigation with gypsum treated alkali water with the RSC level of 2.5 – 4 meq l^{-1}, T_6 - $T_2 + T_3$, T_7 - $T_2 + T_4$ and T_8 - $T_2 + T_5$. The initial soil had a pH of 8.9, EC of 1.21 dS m^{-1} and ESP of 26 and the RSC of irrigation water was 6.7 meq. L^{-1}. The results revealed that 90 kg of gypsum is required per ha to reduce 1 RSC unit per irrigation.

2. Influence of Organic and Inorganic Nutrients on Soil Fertility and Productivity of Groundnut in Red Lateritic Soils

Combined application of biochar @ 2.5 t ha^{-1} and PSB (2 kg ha^{-1}) with STCR-based NPK recorded higher pod yield (3451 kg ha^{-1}) with an increase of 21% over STCR-IPNS and recorded more B:C ratio of 2.69. With regard to nutrient availability and microbial population, the same combination recorded significantly higher available N (213 kg ha^{-1}), Mn (10.6 mg kg^{-1}), Zn (2.6 mg kg^{-1}) & Cu (3.7 mg kg^{-1}) and recorded more no. of bacteria (48.0 X 10^6 CFU/g soil) and fungi (42.0 X 10^4 CFU/g soil).

3. Optimization of Calcium requirement for Groundnut in Sandy loam soil (Alfisol-Typic Haplustalfs) of Thiruvannamalai District under irrigated condition

STCR with Ca @ 120 kg ha^{-1} as 50% at basal and 50% at 45th DAS recorded a maximum pod yield (2,875 kgha-^{1}) with BC ratio of 2.86 and 18.9 % increase in yield followed by STCR + Ca @ 90 kgha^{-1} as 50% basal and 50% at 45th DAS (2,855 kgha^{-1}) with BC ratio of 2.77 and 15.5% increase in yield.

AGRIULTURAL MICROBIOLOGY

1. Permanent Manurial Experiments on Rainfed Groundnut and Cold weather Gingelly

Permanent Manurial Experiment at ORS, Tindivanam revealed that application of INM - 100% NPK + FYM@12.5 t ha^{-1} + herbicide application in Groundnut has recorded maximum yield of 1102 kg ha^{-1} than the other treatments with organic or inorganic source alone. Similar trend was observed in Gingelly with maximum yield of 405 kg ha^{-1} with integrated nutrient management.

Research Projects and Remarks

S. No.	Projects	Groundnut	Sesame	Sunflower	Total
1.	Agricultural Microbiology	3	1		**4**
2.	Soil Science and Agricultural Chemistry (OFT)	1	1	1	**3**
3.	Soil Science and Agricultural Chemistry (URP)	3	-		**3**
	Total	**7**	**2**	**1**	**10**

Remarks on the OFT/Ongoing University Research Projects

S. No.	Project No. and Title	Scientists involved	Period	Remarks
	On Farm Trial			
	SOIL SCIENCE AND AGRICULTURAL CHEMISTRY			
1.	Organic acids coated multi-nutrient fertilizers for improving the yield and nutrition of groundnut on calcareous soils	Lead centre Department of SS&AC, TNAU, Coimbatore Dr. T. Chitdeshwari, Prof. (SS&AC) Coordinating centres: AC&RI, Kudumiyanmalai Dr. M. Vijayakumar, Asst. Prof. (SS&AC), AC&RI, Vazhavachanur Dr. V. Arunkumar, Asst. Prof. (SS&AC) ORS, Tindivanam Dr. G. Gomadhi, Assoc. Prof. (SS&AC)	2023-24	• Mechanism of action for enhancing the yield may be given • Recommended for adoption
2.	Sulphur Recommendation for Yield Maximization in Sesame under Sesame-Greengram/	Lead Centre TNAU, Coimbatore Dr. M.R. Backiyavathy, Professor (SS&AC) Dr. K. Sathyabama, Professor (SS&AC) Sub Centre	2023-24	• Recommended for adoption

	Blackgram Cropping Sequence	ORS, Tindivanam Dr. M. Gomathi, Assoc. Prof. (SS&AC) ADAC & RI, Trichy, Dr. M. Baskar, Prof. & Head AC & RI, Killikulam Dr. K. Manikandan, Asst. Prof. (SS&AC)		
3.	STCR-IPNS based Fertiliser Recommendation for Hybrid Castor on Alfisol	Dept. of SS&AC, CBE Dr. R. Santhi, Professor (SS&AC) Dr. S. Maragatham, Professor (SS&AC) Dr. M. Gopalakrishnan, Assoc. Prof. (SS &AC) TCRS, Yethapur Dr. S.R. Venkatachalam, Professor and Head	2023-24	• Recommended for adoption
	AGRICULTURAL MICROBIOLOGY			
1.	Evaluation of Zinc Solubilising Bacteria as bioinoculant for Groundnut & Sesame in Zn deficient soil	Lead centre: ORS, Tindivanam Dr. E. Jamuna, Assoc. Prof. (AGM) Co-ordinating centres AC&RI, Killikulam Dr. K.G. Sabarinathan, Assoc. Prof. (AGM), Dr. Lenin raja, Assoc. Prof. (SS&AC), RRS, Vridhachalam Dr. G. Gayathry, Asst. Prof. (AGM) AC&RI, Vazhavachanur Dr. V. Arunkumar, Asst. Prof. (SS&AC)	2023-24	• Recommended for Adoption
	Action Plan Project			
	SOIL SCIENCE AND AGRICULTURAL CHEMISTRY			
1.	NRM/ TRY/ SAC/Oil seeds/ 2023/251 Management of Alkali water (High RSC) for enhancing the growth and yield of sesame	Dr. M. Baskar, Prof.& Head, Dept. of SS&AC, ADAC &RI, Trichy Dr. S. Rathika, Assoc. Prof. (Agronomy), ADAC &RI, Trichy Dr. D. Dhanushkodi, Assoc. Prof. (SS& AC), KVK, Needamangalam	May 2023 to Dec 2024	• To be continued
	AGRICULTURAL MICROBIOLOGY			
2.	Field evaluation of Potash Releasing Bacteria on the growth promotion and nutrient acquisition in	Lead centre: Dr. R. Brindavathy, Professor (Agrl. Microbiology), KVK, Tindivanam TNAU, Coimbatore Dr. R. Anandham, Assoc. Prof.	2023-24	• Given for adoption • Large scale demonstration to be taken up in 10 farmers'

	groundnut	(AGM) RRS, Vridhachalam Dr. C. Harisudan, Assoc. Prof. (Agronomy) Dr. G. Gayathry, Asst. Prof. (AGM), KVK, Dr. V. ArunKumar, Asst. Prof. (SS&AC)		fields • KRB culture can be recommended for Natural Farming (Comments received from VC, TNAU)
	University Research Project			
	SOIL SCIENCE AND AGRICULTURAL CHEMISTRY			
1.	NRM/KDM/SAC/Oilseeds/2023/51 Influence of Organic and Inorganic Nutrients on Soil Fertility and Productivity of Groundnut in Red Lateritic Soils	Dr. M. Vijayakumar, Asst. Prof. (SS&AC), AC&RI, Kudumiyanmalai	December 2022 to November 2024	• To be continued
2.	NRM/VAZ/OIL/2023/001 Optimization of Calcium requirement for Groundnut in Sandy loam soil (Alfisol-Typic Haplustalfs) of Thiruvannamalai District under irrigated condition	Dr. M. Babu, Prof. & Head, Dept. of SS & AC, AC & RI, Vazhavachanur		• To be continued
3.	NRM/TVM/SAC/PMT/2020/001 Permanent Manurial Experiments on Rainfed Groundnut and Cold weather Gingelly	Dr. E. Jamuna, Associate Professor, (Agricultural Microbiology)	November 2020 – June 2023	• The project may be continued.
	AGRICULTURAL MICROBIOLOGY			
1.	NRM/TVM/AGM/OIL/2022/002. Influence of potassium releasing bacterium *Paenibacillus mucilaginosus* (KRB-	Dr. R. Brindavathy, Professor (Ag. Micro.), ORS, Tindivanam Dr. G. Gomadhi, Assoc. Professor (SS&AC), KVK, Tindivanam	Jan. 2022 to Dec. 2024	• The findings given for information • Graded level of K minerals (25, 50, 75) when tested in pot culture

	9) and K rich mineral source on growth promotion and nutrient acquisition in Groundnut			studies, 75 per cent and 100% were found to be on par and effective. • The Project may be continued.
2.	NRM/TVM/AGM/SES /2021/001 Studies on the isolation of elite sulphur oxidising bacteria and its effect on the yield and quality of sesame in rice fallow system.	Dr. E. Jamuna, Assoc. Prof. (Agricultural Microbiology), ORS, Tindivanam Dr. G. Gomadhi, Assoc. Prof. (SS&AC), KVK, Tindivanam	Nov. 2020 to June 2023	• Comparison studies with existing cultures of SOB was carried out in pot culture experiment and field experiment. • Completion report may be submitted

New Action Plan Project for 2024-2025

Action Plan 1. Foliar application of TNAU water soluble fertilizer on yield maximization and quality improvement in oilseeds

Objective

- To assess the effect of foliar application of TNAU water soluble fertilizer on yield and quality of oilseeds

Crops: Groundnut & Sesame

Treatments

T_1 - 50 % NPK
T_2 - 75% NPK
T_3 - 100% NPK
T_4 - 50% NPK+TNAU WSF-1% Foliar Spray at Critical Growth Stages
T_5 - 75% NPK + TNAU WSF -1% Foliar Spray at Critical Growth Stages
T_6 - 100 % NPK + TNAU WSF-1% Foliar Spray at Critical Growth Stages
T_7 - TNAU WSF - 1% Foliar Spray at Critical Growth Stages
T_8 - Absolute control
RDF: Groundnut: 25:50:75 kg NPK/ha
Sesame: 35:23:23 kg NPK/ha
NPK: Soil test based NPK application

Design: RBD Replications: 3

Lead Centre:

Dept. of SS&AC, TNAU, Coimbatore
Dr. M. Gopalakrishnan, Assoc. Prof. (SS&AC)

Sub Centre

SRS, Sirugamani
Dr. D. Janaki, Assoc. Prof. (SS&AC). AC&RI, Vazhavachanur

Dr. V. Arunkumar, Assoc. Prof. (SS&AC), KVK, Vridahchalam
Dr. G. Gayathry, Asst. Prof. (AGM)
Dr. C. Harisudan, Assoc. Prof (Agronomy), RRS, Vridahchalam

Action Plan 2: Studies on Zinc solubilising bacteria in enhancing Zinc uptake efficiency in Groundnut

Project Period: 1 Year (2024-2026)

Objectives

- To assess the effect of Zinc solubilising bacteria in Zinc uptake with and without application of $ZnSO_4$

Treatment Details

T_1 - RDF + 25 kg $ZnSO_4$ /ha *
T_2 - RDF + 12.5 kg $ZnSO_4$ /ha *
T_3 - RDF + 25 kg $ZnSO_4$ /ha * + Zinc solubilising bacteria **
T_4 - RDF + 12.5 kg $ZnSO_4$ /ha * + Zinc solubilisnig bacteria **
T_5 - RDF + Zinc solubilising bacteria **
T_6 - RDF alone

* - One time application of $ZnSO_4$ for first year alone during the experimental trial
** - Application of Zinc solubilising bacteria for *Kharif* and *Rabi* crops
Design: RBD, Replication: Four

Scientists Incharge

ORS, Tindivanam
Dr. E. Jamuna, Assoc. Prof. (AGM), TNAU, Coimbatore
Dr. Suganya, Assoc. Prof. (SS & AC)

Observations to be recorded:

- Growth and Yield
- Soil Total Zinc content
- Available Zinc content
- Plant uptake in root, stem and grain

IV. CROP PROTECTION

A. TECHNOLOGY FOR ADOPTION /OFT / INFORMATION

I. For Adoption:

1. **Management of sesame phyllody vector - leafhopper**

Integrated pest and disease management (IPDM) module (seed treatment with imidacloprid 600 FS @ 7.5g/kg (2 h before sowing) + *Bacillus subtilis* (Bbv57) 10 g/kg (before sowing), installation of Yellow sticky trap (50/ha), roguing of infected plants, foliar spray with thiamethoxam 25 WG @ 5g/10 lit on 30 DAS and imidacloprid 17.8 SL @ 3ml/10 lit on 60 DAS) recorded minimum leafhopper population (0.53/plant), less phyllody incidence (3.08%), higher yield (648 kg/ha) and CB ratio (1:2.33)

II. For On Farm Testing

OFT 1. Management of leaf miner in groundnut (For Technology Release)

Treatment Details

T_1	• Application of neem cake @ 250kg/ha • Installation of light trap @ 1/ha (on 25 DAS) for adult mass trapping • Spraying of novaluron 10 EC 1000 ml/ha @ 2ml/lit (trapping of 100 moths consecutively for three days) two sprays at 15 days interval.
T_2	Recommended practice (Quinalphos 25EC @ 1000ml/ha
T_3	Control

Variety: Popular variety in the Region
Season: *Kharif* 2024 and *Rabi*/summer 2024-2025 (Two Trials)
Replication: Seven
Lead Centre: RRS, Vriddhachalam

Centres: [21 Nos.] Three villages in each centre.

Centres		Scientist identified
RRS, Vriddhachalam	:	Dr. B. Geetha, Professor (Entomology)
ORS, Tindivanam	:	Dr. P. Indiragandhi, Associate Professor (Entomology)
CRS, Aliyarnagar	:	Dr. P. Arulprakash, Associate Professor (Entomology)
KVK, Virinjipuram	:	Dr. A. Thirumurugan, Professor (Entomology)
KVK, Sandhiyur	:	Dr. M. Ravi, Associate Professor (Entomology)
AC&RI, Vazhavachanur	:	Dr. A. Sivaraman, Assistant Professor (Entomology)
TCRS, Yethapur	:	Dr. S. Jaya Prabhavathi, Associate Professor (Entomology)

Observations to be recorded

GLM larval population (Nos./plant), Adult catches in light trap (Nos./trap/week) and Damage (%), Natural enemies population, Yield, BCR

OFT 2. Location specific validation of CIB recommended insecticides on the management of defoliators and sucking insect pests in Groundnut

Treatments Details:

T_1- Thiamethoxam 12.6 + Lambda-cyhalothrin 9.5 ZC@ 0.3ml/l
T_2- Chlorantraniliprole 9.3 + Lambda-cyhalothrin 4.6 ZC @ 0.4 ml/l
T_3- Isocycloseram 9.2 DC (10% W/V) DC @ 1 ml/l
T_4- Quinalphos 25 EC @ 2 ml/l
T_5- Untreated check

Replications: 4
Design: RBD
Plot size: 5mx 5m
Season: *Kharif* | *Rabi* 2024-25
Treatments spray may be given as first spray at the initiation of insect incidence and second spray at 15 days intervals.

Centres		Scientist identified
RRS, Vriddhachalam		Dr. B. Geetha, Professor (Entomology)
ORS, Tindivanam		Dr. P. Indiragandhi, Associate Professor (Entomology)

Observation to be recorded:

Leaf miner, other defoliators, sucking insects *viz*., leaf hoppers and thrips incidence Damage (%), Insect population reduction, Yield, BCR

OFT 3: Management of major diseases in Groundnut

T_1 - Seed treatment with Tebuconazole 2DS @ 1.5 g/kg + Foliar spray with Tebuconazole 50% +Trifloxystrobin 25% @ 0.1% @ 40 DAS & 65 DAS
T_2 - ST with *Bacillus subtilis* (Bbv57) @ 10 g/kg + Foliar spray with Tebuconazole 25.9 EC @ 0.1% @ 40 DAS & 65 DAS
T_3 - Standard check (ST with carbendazim 2 g /kg + Foliar spray chlorothalonil0.1 % @ 40 DAS & 65 DAS)
T_4 - Farmers Practice (Foliar Spray with mancozeb 0.2%)

Centres involved

Centre	Scientists identified
CRS, Aliyarnagar	Dr. B. Meena, Professor (Pathology)
RRS, Vriddhachalam	Dr. V. Ravichandran, Assoc. Prof (Plant Pathology) Dr. M. Paramasivan, Assoc. Prof (Plant Pathology)
AC&RI, Vazhavachanur	Dr. S. Sanjai Gandhi, Asst. Professor (Plant Pathology)
ORS, Tindivanam	Dr. V. Ravichandran, Assoc. Prof (Plant Pathology)

Observations to be recorded:
Disease incidence (Collar rot, Root rot, Stem rot, LLS and Rust), Yield, BC ratio

OFT 4: Location specific validation of CIB recommended fungicides on the management of foliar disease of groundnut

T_1 - Difenoconazole 25% EC 0.1%
T_2 - Carbendazim 12% + Mancozeb 63% WP 0.1%
T_3 - Propiconazole 25% EC 0.1 %
T_4 - Chlorothalonil 75% WP 0.1%
T_5- Control
First spray at the initiation of disease followed by IInd spray 15 after I spray

Replications: 4
Design: RBD
Season: *Kharif/ Rabi* 2024-25

Observations to be recorded:
Disease incidence (LLS and Rust), Yield, BC ratio

Centres involved

Centre	Scientists identified
Aliyarnagar	Dr. B. Meena, Professor (Pathology)
Vriddhachalam	Dr. V. Ravichandran, Assoc. Prof. (Plant Pathology)

OFT 5: Location specific validation of CIB recommended fungicides on the management of soil borne disease of groundnut

T_1 - Seed treatment with tebuconazole 2% DS @10 g/10 kg seed
T_2 - Seed treatment with Carbendazim 25%+ Mancozeb 50% WS @ 30g/10 kg seed
T_3 - Seed treatment with Carboxin 37.5%+ Thiram 37.5%WS @ 3.0 g/kg seed
T_4 - Seed treatment with Prochloraz 5.7% + Tebuconazole 1.4% w/w ES @ 3.0 ml/10 kg seeds
T_5- Control
Replications: 4
Design: RBD
Season: *Kharif/ Rabi* 2024-25

Centres involved

Centre	Scientists identified
Aliyarnagar	Dr. B. Meena, Professor (Pathology)
Vriddhachalam	Dr. V. Ravichandran, Assoc. Prof (Plant Pathology)

Observations to be recorded:
Disease incidence (Collar rot, Root rot, Stem rot), Yield, BC ratio

III. For information

A. Agricultural Entomology

- In groundnut, leafhopper population ranged from 4.2-6.8 Nos/plant, thrips population ranged from 3.21-16.0 Nos/plant. Leaf miner damage to the tune of 3.4 to 72.0% was recorded. Other defoliators damage ranged from 1.2 to 20.5% during 2023-2024. Mass trapping of leaf miner adults showed that maximum moth catches ranged from 910 to 2692 moths/trap/week during 3rd week of August -2nd week of September in *Kharif*, 2023. Leaf miner larval population was high during 25-55 days crop and adult catches were high from 2nd week of February to 1st week of March, 2024 in Rabi, 2023-24
- A total of 799 photographs of insect pests were documented for developing AI based diagnosis app.
- In Sesame leaf webber (2.8-3.4%), leafhopper (1.5-3.8 Nos/plant) and mirid bug (1.6-3.8 Nos/leaf) and hawk moth (2.6-3.5 %) were reported. In sunflower, capitulam borer (0.13-0.17 Nos/leaf) and Ash weevil (0.4-0.8 Nos/leaf) were recorded. In castor, leafhopper (2.8-26.8 nos/plant), Defoliators (0.1-3.4 nos/plant) and capsule borer (0.1-3.1%) were observed.
- Out of 60 germplasm and 10 MLT entries screened, VG 21017, VG 22013, VG 22024, VG 22130, VG 22029, VG 22056, VG 22161, VG 22151 and MLT GN 2023- 2, MLT GN 2023- 5, MLT GN 2023- 7, MLT GN 2023- 9, MLT GN 2023- 10 showed resistance reaction by recording 1-10% leafhopper, thrips and leaf miner incidence.
- Out of nine sesame MLT entries, four were free from insect pest and VS-20-008, VS-20-040, VS-20-012 were showed more than 20 trichomes/microscopic field, whereas VS-21-060 showed only 6.32 trichomes/ microscopic field.
- In sunflower out of 17 entries AHT 2024 and AHT 2025 showed moderately resistance reaction against Whitefly.
- In castor, RG 2309 and RG2320 showed moderately resistance reaction against leafhopper and capsule borer damage due to their triple bloom character.
- Physical compatibility of nano urea with pesticides was carried out through Jar Test. Components in the measuring cylinder were dispersed and the pesticide and nano urea fertilizer found compatible. No precipitation, sludge formation, heat development was observed. There was no phytotoxic effect on groundnut, sesame and sunflower.
- IPM module constituted neem cake @ 100 kg/acre + seed treatment with imidacloprid 600 FS @ 7.5 gm/kg + Yellow sticky trap (YST) @ 20/acre + cumbu as border crop (2 rows with zero spacing) and Foliar spray of Azadirachtin 1500 ppm @ 5 ml/lit on 30 DAS) recorded lesser leafhopper population (0.95/plant) in Sesame
- In groundnut, the highest percent reduction over control on larval population (86.42%) and leaf miner damage (82.44%) was recorded in Lambda-cyhalothrin 5 EC @ 15g a.i./ha followed by Quinalphos 20 EC @ 250 g a.i./ha (83.88%) and Spinosad 45 SC@ 100 g a.i. ha^{-1} (81.74%)
- Whitefly population per cent reduction over control was significantly higher in cyantraniliprole 10.3% OD @ 1ml/lit at 60 DAS and spinetoram 11.70 SC 1ml/lit at 75 DAS (96.71%)

B. Plant Pathology

Groundnut

- Disease scenario for oilseed crops in Tamil Nadu were recorded for the major diseases *viz.*, late leaf spot (24 - 85 PDI) and rust (14-33 PDI) in groundnut, root rot (5% -23%), phyllody (2% - 23%) and powdery mildew (7 - 40 PDI) in sesame, powdery mildew (4 - 48 PDI), leaf blight (2 - 21 PDI) in sunflower, grey mould (17-54 PDI) in castor.
- A total of 2976 photographs of groundnut, sesame and castor were documented for developing AI based diagnosis app.
- Based on 10 years weather data prevailed in Aliyarnagar, prediction model was developed for late leaf spot in groundnut.
- Groundnut MLT lines *viz*., MLT-GN 2023-09, MLT-GN 2023-10, 17006 were found to be resistant for late leaf spot and rust diseases.
- Among the 10 endophytic isolates of Coimbatore, GEB 6, GEB 7 and GEB 1 recorded 65.55 %, 63.33 % and 61.55 % inhibition of late leaf spot over control and also inhibited the uredospore germination of rust pathogen. GEB 1 and GEB 6 were identified as *Bacillus velezensis* and *B. pumilus*, respectively by 16S rRNA DNA sequencing. The effective isolates possessed the antibiotic biosynthesis genes *viz,* Iturin C, D and Fengycin A.
- Among the 12 endophytic isolates of Vriddhachalam, GE9 and GE11 were found promising against late leaf spot. GE9 and GE11 were identified as *Bacillus amyloliquefaciens and B. tequilensis* based on 16s rRNA sequence respectively.
- Among 20 seed endophytic bacterial isolates, GSE11 was effective in inhibiting the mycelial growth of *Aspergillus niger* and promotes seed germination and seedling vigour in groundnut. GSE11 was identified as *Bacillus* spp. by using 16S rRNA gene specific primers.
- Seed treatment with *B. amyloliquefaciens* (B-0175) @ 10g/kg seed followed by foliar spray of *B. amyloliquefaciens* (B-0175) @ 5.0 g/l at 45 & 60 DAS was effective in managing the late leaf spot and rust diseases of groundnut

Sesame

- Out of 41 Sesame entries, MP-6 and MP-11 showed resistant reaction to root rot.
- Out of 10 TNAU MLT entries, MLT-SI-R-20-09 was identified as moderately resistant to root rot.
- Out of 67 IVT and AVT entries screened IVT 23-11 moderlately resistant to Phyllody and root rot in sesame.
- Seed treatment with *Trichoderma asperellum* @ 4 g/kg + soil application of *T. asperellum* (2.5 kg/ha) + B. subtilis (Bbv57) 2.5 kg/ha as basal and soil drenching with carbendazim @1 g/l @ 30 DAS recorded lesser root rot incidence (6.8%) with higher yield (686 kg /ha) and BC ratio (2.69).
- Soil drenching and foliar spray of brown seaweed Sargassum myricocystum extract (5%) at 30 and 45 DAS effectively reduced leaf spot (20.12 PDI), powdery mildew (24.27 PDI) and root rot (30.45%) incidence in sesame.

Sunflower

- Sunflower entry, SPK-2301 showed moderately resistant reaction to Alternaria leafspot and PM-3 and PM-4 powdery mildew diseases.
- Foliar application of *Ampelomyces quisqualis* @ 4 ml/lit during the onset of powdery mildew and 15 days later effectively reduced disease incidence 52.7 % and 43.2 % in sunflower and sesame respectively.
- Seed treatment with salicylic acid @100 ppm; neem oil @ 3% during 30 DAS; foliar spray of zineb + hexaconazole @ 2.5 g/lit during 45 and 60 DAS recorded lesser incidence of powdery mildew (6.97 PDI), Alternaria leaf spot (8.52 PDI), necrosis disease (0.66 %) with higher yield (1743 kg / ha) and BC ratio of 2.33

Castor

- Seed treatment with *B. subtilis* (Bbv57) @ 10g/kg and foliar spray with propiconazole 25 EC @ 1ml/lit at onset of gray mold and 15 days later recorded lower incidence (23.8 PDI) with higher yield of 1697 kg/ha and BC ratio of 2.82.

B. Action Plan Projects

Theme 1. Surveillance and Monitoring of pests in Oilseed crops

Action Plan 1. Monitoring insect pests of groundnut, sesame, castor and sunflower

Theme leaders	**Dr. P. Indiragandhi, Associate Professor (Entomology), RRS, Vriddhachalam**		
Activity	**Name of the Scientist(s) and Centre(s)**	**Observations to be made**	**Deliverables**
Monitoring the regular and emerging pests of oilseeds *In situ* assessment of insect pests and natural enemies Fixed and roving survey during specific crop season On campus fixed plot study in identified crops at mentioned centres Colleciton of insect pest and their symptoms photographs for development of AI based diagnosis.	**RRS, VRI (Roving & Fixed plot survey)** Dr. B. Geetha, Professor (Entomology) (Groundnut - Cuddalore, Villupuram and Kallakurichi districts) Dr. P. Indiragandhi, Associate Professor (Entomology) (Sesame - Cuddalore, Villupuram and Kallakurichi districts) **TCRS, YTP (Roving & Fixed plot survey)** Dr. S. Jaya Prabhavathi, Assoc. Prof. (Entomology) (Castor-Salem district) **TNAU, CBE (Fixed plot survey)** Dr. E. Sumathi, Professor (Ento.) (Sunflower & Groundnut – Coimbatore district) **CRS, Aliyarnagar (Roving survey)** Dr. P. Arulprakash, Assoc. Prof. (Ento.) Groundnut – Erode and Coimbatore District	• Recording of insect pests during *Kharif* / *Rabi*/ summer in weekly intervals and correlation with weather parameters. • Development of forewarning model with available data [Dr. P. Indiragandhi, Assoc. Prof (Ento)] • Collection of 500 images for each crop by all the identified scientists and send to aiphotoscpps@tnau.ac.in	**2024-2026:** Correlation of weather data with pest incidence **2026-2027:** Development of forewarning models for major insect pests of oilseeds.

Action plan: 2 Monitoring of diseases in oilseeds and data set collection for AI based diagnosis

Theme leader	**Dr. B. Meena, Professor (Plant Pathology), CRS, Aliyarnagar**		
Activity	**Name of the Scientist(s) and Centre(s) - Proposed**	**Observations to be made**	**Deliverables**
Monitoring the incidence of important pests and diseases through fixed and roving surveys.	**Groundnut** Dr. B. Meena- CRS, Aliyarnagar Dr. V. Ravichandran, RRS, Vridhachalam	• Monitoring of diseases in both fixed plot and roving survey • Correlation with weather parameters.	**2024-2026:** • Correlation of weather data with disease incidence

Collection of data sets for AI based disease diagnosis	**Sesame** Dr. M. Paramasivan, RRS, Vriddhachalam **Castor** Dr. A. Sangeetha, TCRS, Yethapur **Sunflower** Dr. S. Harish, Dept. of Oilseeds, TNAU, Coimbatore	• Revalidation of thumb rule determined by the Aliyarnagar centre in all centres • Collection of a minimum of 500 images for each major diseases in each crop covering all the seasons / varieties	**2026-2027:** • Development of forewarning models for major diseases of oilseeds.

Theme 2: Identification of resistant sources for oilseeds

Action Plan 3. Identification of resistant sources and mechanisms of resistance for insect pests

Theme leader	**Dr. B. Geetha, Professor (Entomology), RRS, Vriddhachalam**		
Activity	**Name of the Scientist(s) and Centre(s)**	**Observations to be made**	**Deliverables**
Identification of resistant sources for defoliators and sucking pests	**RRS, VRI** Dr. B. Geetha, Professor (Entomology) (Groundnut) **RRS, VRI** Dr. P. Indiragandhi, Assoc. Professor (Entomology) (Sesame) **CRS, ALR** Dr. R. Arul Prakash, Assoc. Professor (Entomology) (Groundnut) **TCRS, YTP** Dr. S. Jaya Prabhavathi, Assoc. Professor (Entomology) (Castor) **TNAU, CBE** Dr. E. Sumathi, Professor (Entomology) (Sunflower to be carried out with Pl. Pathologist working in Oilseeds)	❖ Screening of cultures in pipeline at research stations. ❖ Biochemical and molecular mechanisms of resistance Physical: Trichome length & density, leaf size & thickness, leaf colour ❖ Biochemical: phenols, protein, tannin, carbohydrate and reducing sugars ❖ Confirmation of resistance in most promising entries/identified for release through artificial screening	**2024-2026:** • Identifying resistant sources for major insect pest of Oilseeds **2026-2027:** • Documenting mechanism of resistance in resistant donars

Action Plan 4. Screening of germplasm and elite lines for resistance to major diseases in Oilseed crops

Theme leader	**Dr. V. Ravichandran (Plant Pathology), RRS, Vriddhachalam**		
Activity	**Name of the Scientist(s) and Centre(s)**	**Observations to be made**	**Deliverables**
Identification of resistant sources for Diseases	**Groundnut** Dr. B. Meena, CRS, Aliyarnagar Dr. V. Ravichandran, RRS, Vridhachalam **Sesame** Dr. M. Paramasivan, RRS, Vriddhachalam **Castor** Dr. A. Sangeetha, TCRS, Yethapur **Sunflower** Dr. S. Harish, Dept. of Oilseeds, TNAU, Cbe	❖ Screening of cultures in pipeline at research stations. ❖ Confirmation of resistance in most promising entries/identified for release through artificial screening	**2024-2025** Screening of elite and pre-release cultures under artificial / epiphytic condition for resistant to major disease **2024-2025** Confirmation of resistance under artificial condition.

Theme 3: Endophyte/Microbiome based pest management

Action Plan 5. Exploration of the gut endosymbionts of Sesame specialist shoot and capsule borer – *Antigastra catalaunalis* (New)

Theme leader	**Dr. P. Indiragandhi (Entomology), RRS, Vriddhachalam**		
Activity	**Name of the Scientist(s) and Centre(s)**	**Observations to be made**	**Deliverables**
Isolation and characterization of gut bacterial phylotypes in sesame shoot webber and capsule borer – *Antigastra catalaunalis*	**Sesame** Dr. P. Indiragandhi, Associate Professor (Entomology), RRS, Vriddhachalam Dr. R. Anandham, Associate Professor (Microbiology), TNAU, Coimbatore Dr. G. Gayathry, Asst Professor (Microbiology), KVK, Vriddhachalam	❖ Bacterial phylotypes present in the shoot and capsule borer ❖ Functional significance of gut bacteria to the host insect fitness	**2024-2025** Isolation and characterization of gut microbes through molecular and biochemical approaches **2025-2026** Identification of metabolites for targeting insect pest in sesame. **2026-2027** Testing the bio-efficacy under field condition and development of formulation. **2027-2028** MLT for testing the formulation efficacy and technology development.

Action Plan:6 Exploration of endophytes for late leaf spot and rust diseases in groundnut (cont.)

Theme leader	**Dr. V. Ravichandran, Associate Professor (Pl Pathology), RRS, Vridhachalam**		
Activity	**Name of the Scientist(s) and Centre(s)-Proposed**	**Proposed Activities for 2024-2025**	**Deliverables**
Isolation and morpho-molecular characterization of bacterial / fungal endophytes from groundnut	Dr. V. Ravichandran - RRS, Vridhachalam Dr. B. Meena - CRS, Aliyarnagar Dr. S. Harish - TNAU, Coimbatore	• Isolation and identification of bacterial and fungal endophytes from resistant groundnut germplasms • Molecular characterization through 16sRNA (Coimbatore centre) • Efficacy study under *in vitro*, pot culture and field conditions	**2024-2025** Testing the efficacy of the isolated endophytes against foliar diseases under pot/field condition. **2025-2026** Formulation and field application studies of the effective strains. **2026-2027** Large scale demonstration and OFTs for Technology release.

Action Plan 7. Evaluation of endophytes/rhizobacteria for the management of soil borne diseases of Oilseeds

Theme Leaders	**Dr. M. Paramasivan, Assoc. Prof. (Pl. Pathology), RRS, Vridhachalam**		
Activity	**Name of the Scientist(s) and Centre (s)**	**Observations to be recorded**	**Deliverables/expected outcome**
Isolation and morpho-molecular characterization of bacterial endophytes/rhizobacteria for the management of soil borne diseases of Oilseeds	**Sesame** Dr. M. Paramasivan, RRS, Vridhachalam **Groundnut** Dr. V. Ravichandran - RRS, Vridhachalam Dr. B. Meena - CRS, Aliyarnagar **Sunflower** Dr. S. Harish - TNAU, Cbe **Castor** Dr. A. Sangeetha, TCRS, Yethapur	• Isolation and identification of bacterial endophytes/rhizobacteria from oilseeds crops • Molecular characterization through 16sRNA (Coimbatore centre) • Efficacy study under *in vitro*, pot culture and field conditions	**2024-2025** Isolation and in-vitro testing of efficient endophytes/rhizobacteria against soil borne diseases. Identification of potential strain through molecular and biochemical approaches **2025-2026** Testing the efficacy of the isolated endophytes/rhizobacteria under pot/field condition. **2026-2027** Large scale demonstration and OFTs for Technology release.

Theme: 4 Chemical/IPDM Management

Action Plan 8. Management of shoot and capsule borer – *Antigastra catalaunalis* in sesame (New)

Theme leader	**Dr. P. Indiragandhi (Entomology), RRS, Vriddhachalam**		
Activity	**Name of the Scientist (s) and Centre(s)**	**Observations to be made**	**Deliverables**
Management of sesame shoot webber and capsule borer – *Antigastra catalaunalis* T1 - Novaluran 10 EC @ 100 g a.i/h T2- Methoxyfenozide 24 SC @ 240 g a.i/ha T3 - Chlorfluazuron 5.4 EC @ 100 g a.i/ha T4 - Chlorantraniliprole 18.5 SC @ 100 g a.i/ha T5 - Spinosad 45SC @ 33.75 g a.i/h T6 - Emamectin Benzoate 5 SG @ 11 g a.i/ha T7 - Control Two spraying one on 30 DAS and 2nd spray on 45 DAS. Replication: 3; Design: RBD; Season: *Kharif* 2024 and *Rabi*/summer 2024-2025 Variety: Locally popular variety	**RRS, Vriddhachalam** Dr. P. Indiragandhi, Assoc. Prof. (Ento.) **AC&RI, Vazhavachanur** Dr. T. Nalini, Asst. Prof. (Ento.) **ADAC&RI, Trichy** Dr. P. Yasodha, Assoc. Prof. (Ento.) **KVK, Sirugamani** Dr. R. Sheeba Jasmine, Assistant Professor (Entomology) **M.S.S.AC&RI, Eachangkottai** Dr. V.G. Mathirajan, Prof. (Ento.) **AC&RI, Madurai** Dr. B. Usharani, Assoc. Prof. (Ento.)	Pest population, Damage (%), Natural Enemies population, Pollinators population, Yield and BCR	**2024-2025** Effective insecticide will be screened for Shoot borer management in sesame. **2025-2026** Testing the efficacy of the chemical through OFTs **2026-2027** Validating the efficacy of the chemical under farmers fields for technology development.

Action Plan 9. Management of sucking pests in castor (New)

Theme Leader:	**Dr. S. Jaya Prabhavathi, TCRS, Yethapur**		
	Name of the Scientist and Centre	**Observations to be recorded**	**Deliverables**
Sucking pest management in castor Treatment Details: T1-Flonicamid 50 WG @ 0.2 g/l T2- Thiamethoxam 30 FS @ 0.5g/l T3-Cyantraniliprole 10.26 OD @ 1 ml/l T4- Thiacloprid 21.70 SC @ 1 ml/l T5- Dimethoate 30 EC @ 2 ml/l T6- Untreated check **Design**: RBD; Rainfed: 4.5 x 6 m (5 rows) Irrigated: 6.0 x 9 m (5rows) **Spacing:** 90x90 cm **Plot size**: 4.5mx 6.0m **Season**: *Rabi* 2024-25 Cultivar: YRCH-1 Treatments may be given 2-3 times	**Dr. S. Jaya Prabhavathi**, Associate Professor (Entomology.), TCRS, Yethapur	• Population of whitefly, leafhopper and thrips (on leaf and spike) • Yield (kg/ha) • CB ratio	**2024-2025** Screening of effective treatment for sucking pest **2025-2026** Validation of efficacy of the treatment through OFTs **2026-2027** Large scale demonstration for technology release.

Action Plan 10. Management of *Botrytis* grey mold in castor (New)

Theme Leader:	**Dr. A. Sangeetha, Prof. (Pl. Path.), TCRS, Yethapur**		
	Name of the Scientist and Centre	**Observations to be recorded**	**Deliverables**
T1- Seed treatment with *Bacillus subtilis* (Bbv57) @ 10g/kg and foliar spray with propiconazole 25 EC @ 1ml/l T_2 - Seed treatment with *Bacillus subtilis* (Bbv57) @ 10g/kg and foliar spray with azoxystrobin 23 SC @ 1ml/l T_2 - Seed treatment with *Bacillus subtilis* (Bbv57) @ 10g/kg and foliar spray with carbendazim 50 WP @1gl/l T4- Seed treatment with *Bacillus subtilis* (Bbv57) @ 10g/kg and foliar spray of *B. subtilis* @ 2 g/l T_5-Seed treatment with *Bacillus subtilis* (Bbv57) @10 g/kg; foliar spray of tebuconazole 50% + trifloxystrobin 25 WG 1 g/l T_6-Untreated control Two sprayings, first spray at the initial incidence of disease and second spray at 15 days after first spray	Dr. A. Sangeetha, Assistant Prof. (Pl. Path.), TCRS, Yethapur	• Percent Disease index • Capsule borer infestation • Yield (kg/ha) • CB ratio	**2024-2025** Effective treatment for grey mold identified. **2025-2026** Effective treatment will be proposed for On Farm Testing. **2026-2027** Validation of the treatment under field condition for adoption.

C. RESEARCH PROJECTS AND REMARKS
List of URP/AICRP/EFP

Discipline	URP	AICRP	Total
Agricultural Entomology	2	3	5
Plant Pathology	6	5	11

UNIVERSITY RESEARCH PROJECTS

1. AGRICULTURAL ENTOMOLOGY

S. No.	Project No. and Title	Remarks
1.	**CPPS/VRI/AEN/OILSEEDS/2023/277.** Seasonal incidence of major defoliator insect pests, their damage and yield loss in Groundnut (*Arachis hypogaea* L.) (December 2023-February 2026) Dr. B. Geetha, Professor (Entomology), RRS, Vriddhachalam	The project may be continued
2.	**CPPS/VRI/AEN/OILSEEDS/2023/274.** Development of IPM module for managing sucking insect pests in sesame. (August 2023 - May 2026) Dr. P. Indiragandhi, Associate Professor (Entomology), RRS, Vriddhachalam	The project may be continued

2. PLANT PATHOLOGY

S. No.	Project No. and Title	Remarks
1.	**CPPS/VRI/OIL/2023/001** Development of management strategies for foliar disease in groundnut (Dec. 2022 to Nov. 2024) Dr. V. Ravichandran, Associate Professor (Plant Pathology), RRS, Vriddhachalam	The project may be continued and submit the completion report along with publication in time.
2.	**CPPS/CBE/PATH/OIL/2023/002** Exploring seed microbiome for the management of seed/collar rot disease in groundnut (January 2023 to December 2025) Dr. T. Anand, Associate Professor (Plant Pathology)	The project may be continued
3.	**CPPS/ ALR/ PAT/ OILSEEDS/ 2023/278** *Bacillus amyloliquefaciens* mediated disease suppression against foliar diseases of groundnut (November 2023 to October 2026) Dr. B. Meena, Prof. (Plant Pathology), CRS, Aliyarnagar	The project may be continued

4.	**CPPS/VNR/ PAT/Oilseeds/ 2023 / 235**. Harnessing the bio-inoculant potential of native bacterial endophytes of Groundnut (*Arachis hypogea*) and developing the bio-formulation against root rot (*Macrophomina phaseolina*) and stem rot (*Sclerotium rolfsii*) diseases. (December 2022 to November 2025) Dr. P. Mareeswari, Prof. (Plant Pathology), AC&RI, Madurai	The project may be continued.
5.	**CPPS/VRI/OIL/2023/001** Evaluation of bio-control, chemical and organic amendments against sesame root rot caused by *Macrophomina phaseolina* (Tassi) Goid (November 2022 to October 2024) Dr. M. Paramasivan, Assoc. Professor (Plant Path), RRS, Vridhachalam	The project may be continued and submit the completion report along with publication in time.
6.	**CPPS/KUM/PAT/2021/001.** Seaweeds and bio-agents as integrated biocide treatments for controlling Root rot, *Alternaria* leaf spot and powdery mildew in sesame. (June 2020 - June 2024) Dr. P. Mahalakshmi, Assistant Professor (Plant Pathology), TNAU, Coimbatore	The project may be closed and report may be submitted immediately along with publication.

V. REMARKS

a. General remarks

- Yield gap analysis in groundnut may be carried out (**Action**: DCARDS & DCM)
- End to end mechanization package for major oilseed crops may be developed (Action: Dean, AEC&RI, Cbe/Kumulur & DCM).
- Research on value addition in edible oils may be intensified (**Action**: Dean, CSC&RI, Mdu).
- Seed production of quality seeds and supply may be ensured (**Action**: Director, Seed Centre).
- All the scientists may be encouraged to submit research proposals involving various disciplines for externally funding. (**Action**: All Scientists)
- All scientists may be encouraged to publish research articles in peer-reviewed journals with NAAS ratings more than 7.0 (**Action**: All Scientists)

b. Crop Improvement

- Research on development of salinity tolerant sesamum varieties may be strengthened (**Action**: DCPBG & DCPMB&B).
- Biotechnological approaches in oilseed crops may be intensified (**Action**: DCPMB&B & DCPBG)
- Research on seaweed for seed treatment in oilseed crops may be initiated (**Action**: Director, Seed Centre)
- Research on development of multi-seeded pods in groundnut may be taken up (**Action**: DCPBG & DCM)
- Efforts may be taken to erect permanent birds-proof shelters for effective seed production in oilseeds/millets (**Action**: DCPBG).
- Research on development of Herbicide tolerant sesamum varieties may be intensified (**Action**: DCPMB&B & DCPBG)

c. Crop Management

- Efforts may be taken to popularize Sesamum harvester through KVKs (**Action**: DCM & DEE).
- Standardization of water-soluble fertilizer requirement for oilseed crops (**Action**: DNRM & DCM).
- Good Agricultural Practices for minimizing pesticide residues in oilseed crops may be developed (**Action**: DCM & DNRM).
- Technologies for management of drought in oilseed crops may be developed (**Action**: DCM & DNRM).
- Research on Potash Releasing Bacteria for increasing oil content in groundnut may be intensified (**Action**: DCM & DNRM).

d. Plant Protection

- Efforts may be taken to control leaf miner in groundnut (**Action**: DCPPS)
- All the scientists are instructed to monitor the insect pests and diseases of oilseeds in their districts regularly. If any outbreak of existing pests, disease and nematodes or occurrence of new insect pests, diseases and nematodes of Oilseeds is noticed report to the Director (CPPS) immediately.

VI. LIST OF PARTICIPANTS

S. No.	Name	Designation and Department
1.	Dr. R. Ravikesavan	Director, CPBG, TNAU, Coimbatore
2.	Dr. N. Senthil	Director, CPMB&B, TNAU, Coimbatore
3.	Dr. M.K. Kalarani	Director, CM, TNAU, Coimbatore
4.	Dr. M. Shanthi	Director, CPPS, TNAU, Coimbatore
5.	Dr. R. Umarani	Director, Seed Centre, TNAU, Coimbatore
6.	Dr. P. Balasubramaniam	Director, NRM, TNAU, Coimbatore
7.	Dr. K. Subrahmaniyan	Director, TRRI, Aduthurai
8.	Dr. E. Somasundaram	Director, ABD, TNAU, Coimbatore
9.	Dr. A. Raviraj	Dean (Agrl. Engg.), AEC&RI, Coimbatore
10.	Dr. U. Sivakumar	Prof. and Head, Agrl. Microbiology, Coimbatore
11.	Dr. R. Baskaran	Prof. and Head, RRS, Vriddhachalam
12.	Dr. N.K. Sathyamoorthy	Prof. and Head, ACRC, TNAU, Coimbatore
13.	Dr. S. Srinivasan	Prof. and Head, CRP, VOC AC&RI, Killikulam
14.	Dr. M. Murugan	Prof. and Head, (Ento.), TNAU, Coimbatore
15.	Dr. N. Sakthivel	Prof. and Head, ARS, Bhavanisagar
16.	Dr. K. Angappan	Prof. and Head, (Pl. Path.), TNAU, Coimbatore
17.	Dr. R. Krishnan	Prof. and Head, NOFRC, TNAU, Coimbatore
18.	Dr. E. Kokiladevi	Prof. and Head, DPB, CPMB&B, Coimbatore
19.	Dr. D. Selvi	Prof. and Head, SS&AC, TNAU, Coimbatore
20.	Dr. P. Parasuraman	Prof. and Head, Agronomy, TNAU, Coimbatore
21.	Dr. V. Manonmani	Prof. and Head, SST, TNAU, Coimbatore
22.	Dr. K.G. Sabarinathan	Assoc. Professor & Head, (Micro.), AC&RI, Madurai
23.	Dr. N. Manivannan	Professor (PBG), TNAU, Coimbatore
24.	Dr. S. Thiruvudainambi	Professor (Pl. Path.), TCRS, Yethapur
25.	Dr. M. Chandrasekaran	Professor (Entomology), AC&RI, Kudimiyanmalai
26.	Dr. P. Arutchenthil	Professor (PBG), TCRS, Yethapur
27.	Dr. R. Thangapandian	Professor (PBG), CRS, Srivilliputhur
28.	Dr. K. Raja	Professor (SST), Seed Centre, TNAU, Coimbatore
29.	Dr. R. Sivakumar	Professor (CRP), TNAU, Coimbatore
30.	Dr. V. Ravichandran	Professor (CRP), TNAU, Coimbatore
31.	Dr. M. Sundar	Professor (Ag. Micro.), SS&AC, ADAC&RI, Trichy
32.	Dr. P. Masilamani	Professor (SST), SRS, Sirugamani
33.	Dr. E. Sumathi	Professor (Ento.), TNAU, Coimbatore
34.	Dr. M.R. Backiyavathy	Professor (SS&AC), TNAU, Coimbatore

S. No.	Name	Designation and Department
35.	Dr. S. Maragatham	Professor (SS&AC), TNAU, Coimbatore
36.	Dr. R. Brindavathy	Professor (AGM), ORS, Tindivanam
37.	Dr. P. Mareeswari	Professor (Pl. Path.), AC&RI, Madurai
38.	Dr. B. Geetha	Professor (Ento.), RRS, Vriddhachalam
39.	Dr. C. Babu	Professor (PBG), O/o. DR Office, Coimbatore
40.	Dr. N. Balakrishnan	Professor (Ento.), O/o. DR Office, Coimbatore
41.	Dr. B. Meena	Professor (Path.), CRS, Aliyarnagar
42.	Dr. K. Sathiyabama	Professor (SS&AC), TNAU, Coimbatore
43.	Dr. S. Saravanan	Assoc. Professor (PBG), RRS, Ambasamudram
44.	Dr. M. Jayaramachandran	Assoc. Professor (PBG), AC&RI, Chettinad
45.	Dr. C. Harisudan	Assoc. Professor (Agron.), RRS, Vriddhachalam
46.	Dr. V. Ravichandran	Assoc. Professor (Pl. Path.), RRS, Vriddhachalam
47.	Dr. S. Thiruvarassan	Assoc. Professor (Agron.), ORS, Tindivanam
48.	Dr. S. Harish	Assoc. Professor (Pl. Path.), TNAU, Coimbatore
49.	Dr. M. Ravi	Assoc. Professor (Ento.), KVK, Santhiyur
50.	Dr. M. Djanaguiraman	Assoc. Professor (CRP), TNAU, Coimbatore
51.	Dr. M. Santhivelu	Assoc. Professor (Agron.), Oilseeds, Coimbatore
52.	Dr. J. Rajkumar	Assoc. Professor (CRP), AC&RI, Kudimiyanmalai
53.	Dr. S. Elankavi	Assoc. Professor (Agron.), TCRS, Yethapur
54.	Dr. T. Anand	Assoc. Professor (Pl. Path.), TNAU, Coimbatore
55.	Dr. A. Mahalingam	Assoc. Professor (PBG), RRS, Vriddhachalam
56.	Dr. S.K. Natarajan	Assoc. Professor (Agron.), TCRS, Yethapur
57.	Dr. R. Vijayan	Assoc. Professor (SST), FC&RI, Mettupalayam
58.	Dr. R. Karthikeyan	Assoc. Professor (Agron.), CM, TNAU, Coimbatore
59.	Dr. P.S. Saravanan	Assoc. Professor (Ento.), KVK, Pongalur
60.	Dr. M. Gopalakrishnan	Assoc. Professor (SS&AC), TNAU, Coimbatore
61.	Dr. K. Bharathikumar	Assoc. Professor (PBG), RRS, Vriddhachalam
62.	Dr. M. Paramasivan	Assoc. Professor (Pl. Path.), RRS, Vriddhachalam
63.	Dr. M. Kannan	Assoc. Professor (Agrl. Ento.), TNAU, Coimbatore
64.	Dr. V. Vakeswaran	Assoc. Professor (SST), ARS, Bhavanisagar
65.	Dr. T. Selvakumar	Assoc. Professor & Head (Agron.), MRS, Vagarai
66.	Dr. V. Dhanushkodi	Assoc. Professor (SS&AC), KVK, Needamangalam
67.	Dr. C. Vanitha	Assoc. Professor (SST), TNAU, Coimbatore
68.	Dr. S. Rathika	Assoc. Professor (Agron.), ADAC&RI, Trichy
69.	Dr. B. Rajagopal	Assoc. Professor (Biotech.), CPMB&B, Coimbatore
70.	Dr. D. Janaki	Assoc. Professor (SS&AC), KVK, Sirugamani
71.	Dr. S. Suganya	Assoc. Professor (SS&AC), TNAU, Coimbatore
72.	Dr. B. Usha Rani	Assoc. Professor (Ento.), AC&RI, Madurai
73.	Dr. K. Manonmani	Assoc. Professor (Pl. Path.), AC&RI, Madurai
74.	Dr. R. Kancharani	Assoc. Professor (Pl. Patho.), AC&RI, Madurai
75.	Dr. C. Parameshwari	Assoc. Professor (PBG), ARS, Vaigaidam
76.	Dr. E. Jamuna	Assoc. Professor (AGM), KVK, Tindivanam
77.	Dr. P. Indiragandhi	Assoc. Professor (Ento.), RRS, Vriddhachalam
78.	Dr. K. Venkatalakshmi	Assoc. Professor (Agron.), RRS, Vriddhachalam
79.	Dr. T.K.S. Latha	Assoc. Professor (Pl. Path.), TNAU, Coimbatore

S. No.	Name	Designation and Department
80.	Dr. A. Suganthi	Assoc. Professor (Ento.), TNAU, Coimbatore
81.	Dr. A. Karthikeyan	Asst. Professor (Agron.), RRS, Vriddhachalam
82.	Dr. G. Senthilraja	Asst. Professor (Pl. Path.), TNAU, Coimbatore
83.	Dr. S. Utharasu	Asst. Professor (PBG), ARS, Bhavanisagar
84.	Dr. V. Arunkumar	Asst. Professor (SS&AC), AC&RI, Vazhavachanur
85.	Dr. M. Vijayakumar	Asst. Professor (SS&AC), AC&RI, Kudumiyanmalai
86.	Dr. A.P. Mohankumar	Asst. Professor (FM), FM&PE, AEC&RI, Coimbatore
87.	Dr. S. Manoharan	Asst. Professor (Agron.), ARS, Koilpatti
88.	Dr. G. Porkodi	Asst. Professor (SS&AC), SRS, Cuddalore
89.	Dr. G. Gayathry	Asst. Professor (AGM), KVK, Vriddhachalam
90.	Dr. R. Sasikala	Asst. Professor (PBG), Oilseeds, Coimbatore
91.	Dr. S. Suganthi	Asst. Professor (PBG), AC&RI, Vazhavachanur
92.	Dr. P. Mahalakshmi	Asst. Professor (Pl. Path.), TNAU, Coimbatore
93.	Dr. M. Umadevi	Asst. Professor (PBG), TNAU, Coimbatore
94.	Dr. A Sangeetha	Asst. Professor (Pl. Path.), ADAC&RI, Trichy

****