

PROCEEDINGS OF 53RD CROP SCIENTIST MEET (OILSEEDS) -2017

The 53rd Crop Scientists' Meet on Oilseeds was held on 3rd May, 2017 at TNAU, Coimbatore under the chairmanship of the Vice-Chancellor, TNAU, Coimbatore. The discipline wise concurrent sessions on crop improvement, management and protection was held in the concerned Directorate on 02.05.2017 the technical directors reviewed the sub-projects critically and offered their remarks.

The plenary session was held on 3rd May, 2017. The Director of Research in his inaugural address stressed the need based research and advised the scientist to focus the objective of the sub-project for a better outcome. The research highlights, achievements and action plan for the year 2017-18 in the discipline of crop improvement, crop management and crop protection was presented by the respective Directors of CPBG, SCMS and CPPS respectively. The Revered Vice-Chancellor, in his remarks offered the following suggestions.

General recommendations:

1. Monitoring team may be constituted by involving all the breeders to inspect the MLT trials raised in the research station (Action: Vridhachalam, Coimbatore, Bhavanisagar and Tindivanam).
2. Drought tolerant foliar disease resistant Virginia Bunch varieties are to be popularized among drought prone districts of Tamil Nadu. (Action: Vridhachalam, Tindivanam and Coimbatore).
3. There should not be any TFL seed production on any crop varieties. Certified seed alone should be produced and distributed (Action: SS&T, Coimbatore).
4. Early maturing Spanish Bunch variety with similar features of TMV 7 need to be developed for rainfed situation (<90 days) may be evolved (Action: Vridhachalam, Coimbatore and Tindivanam).
5. Ideal plant type in groundnut may be fixed with early and synchronous maturity instead of arresting late formed flowers through spraying may be evolved in groundnut (Action: Vridhachalam, Coimbatore and Tindivanam).
6. Early maturing shy branching sesame variety need to be developed to enhance the productivity per unit area. (Action: Vridhachalam, Coimbatore and Tindivanam).
7. Long duration/ Perennial castor variety need to be developed for border, bund and intercropping in turmeric. (Action: Yethapur).
8. Sunflower hybrids with high oil content and oleic content need to be evolved for commercial exploitation. (Action: Coimbatore).

At the end, the Director of Research, TNAU, Coimbatore proposed a vote of thanks.

The detailed proceedings of the 53rd meet are presented in the following order

CROP IMPROVEMENT

- A. List of projects reviewed
- B. Remarks of the Director of Research for the University sub-projects
- C. Identification of varieties for release and provisional selection of entries for MLT / ART / OFT
- D. District-wise allocation of trial for conducting ART 2016-17
- E. Seed requirement for conducting different trials

F. Action Plan for 2016-2019.

A. LIST OF PROJECTS REVIEWED

Abstract

Crops and centres	University Sub-Projects	AICRP Projects	Externally funded projects	Bio-Tech	Total
Groundnut	10	3	2	1	16
Sesame	6	1	1	-	8
Sunflower	2	1	1	-	4
Castor	2	1	-	-	3
Total	20	6	4	-	31

Crop-wise and Station-wise list of sub-projects

Centres	University sub-projects	AICRP projects	Externally funded projects	Biotech	Total
Groundnut					
Vridhachalam	3	1	1	-	5
Tindivanam	3	1	-	-	4
Aliyarnagar	-	-	-	-	-
Coimbatore	1	-	1	1	3
Bhavanisagar	1	-	-	-	1
Vaigaidam	1	-	-	-	1
Pattukottai	1	-	-	-	1
Total	10	2	2	-	15
Sesame					
Vridhachalam	1	1	1	-	3
Coimbatore	1	-	-	-	1
Tindivanam	3	-	-	-	3
Madurai	1	-	-	-	1
Total	6	1	1	-	8
Sunflower					
Coimbatore	2	1	1	-	4
Total	2	1	1	-	4
Castor					
Yethapur	2	1	-	-	3
Total	2	1	-	-	3
Grand Total	20	5	4	1	30

B. REMARKS OF THE DIRECTOR OF RESEARCH FOR THE UNIVERSITY SUB-PROJECTS

Sl.No.	Project Number and Title	Remarks
	University sub-projects	
1	CPBG/VRI/PBG/GNT/2015/005: Collection, conservation and evaluation of genetic resources of groundnut (<i>Arachis hypogaea</i> L.). Dr. A. Mothilal, Professor (PBG) (December 2015 to November 2020)	Data base on elite germplasm sources for pests and disease resistance, oil content, shelling per cent, bold kernals and extra earliness may be developed. The project may be continued
2	CPBG/VRI/PBG/GNT/2016/001: Nucleus / Breeder seed production of high yielding groundnut varieties released from Regional Research Station, Vridhachalam. Dr. A. Mothilal, Professor (PBG) (August 2016 to July 2021)	To be continued.
3	CPBG/VRI/PBG/GNT/2012/003: Breeding of improved Spanish Bunch / Virginia Bunch cultivar with inbuilt resistance / tolerance to foliar fungal disease and drought. Dr. R.Ushakumari, Professor (PBG) (January 2012 to December 2016)	Earliness and compact plant type with medium pods with high shelling per cent may be the selection criteria. Completion report may submitted and a new project with similar objective may be proposed.
4	CPBG/TMV/PBG/GNT/BSP/2013/001: Production and supply of nucleus and breeder seeds of groundnut. Dr. M. Vaithiyalingan, Assist. Prof. (PBG) (June 2013 to May 2018)	To be continued.
5	CPBG/TMV/PBG/GNT/2013/002: Evolution of bunch groundnut varieties tolerant to early stage drought situations. Dr. M. Vaithiyalingan, Assist. Prof. (PBG) (June 2013- May 2018)	The trials are to be raised under rainfed and physiological parameters related to drought may be recorded while nominating the entries for MLT.
6	CPBG/TMV/PBG/GNT/2015/003: Development of high yielding bold seeded groundnut variety suitable for confectionery purposes. Dr. P. Yogameenakshi, Assist. Prof. (PBG) (January 2015 – December 2018)	Bold seeded Virginia Bunch with good filling and high shelling may be developed and nominated for MLT
7	CPBG/CBE/PBG/GNT/2015/001: Development of high yielding foliar disease resistant groundnut varieties better than CO 7. Dr. PL.Viswanathan, Professor and Head (October 2015 to September 2020)	All the latest releases are more than 120 days duration. Spanish Bunch variety with early duration (100 days) and high shelling may be evolved

Sl.No.	Project Number and Title	Remarks
8	CPBG/BSR/PBG/GNT/2015/002: Evolving Spanish bunch groundnut (<i>Arachis hypogaea</i> L.) genotypes with superior yield and evaluation of pre-release cultures of oilseed crops under MLT. Dr. K.N.Ganesan, Professor (PBG) (September, 2015 to August, 2018)	To be continued.
9	CPBG/VGD/PBG/GNT/BSP/ 2013/003: Breeder seed production in groundnut varieties. Dr. M. Madhan Mohan, Assist. Prof.(PBG) (October 2013 to September 2016)	The Seed Multiplication Ratio may be enhanced by adopting good crop management techniques. Completion report may submitted and a new project with similar objective may be proposed.
10	CPBG/PKT/PBG/BGR/2016/001: Breeder Seed Production in Pulses and Groundnut. Dr. A. Bharathi, Assist. Prof.(PBG) (April 2016 to March 2021)	To be continued.
11	CPBG/VRI/PBG/SES/2016/001: Production of genetically pure nucleus and breeder seed of sesame varieties released from Vridhachalam. Dr. T.Ezhilarasi, Assist. Prof.(PBG) (June 2016 to May 2021)	To be continued.
12	CPBG/TMV/PBG/SES/2015/004: Evolution of high yielding / shy branching sesame varieties for mechanized harvesting. Dr. P. Yogameenakshi, Assist. Prof.(PBG) (June 2015 to May 2018)	Before evaluating the promising shy branching genotypes under MLT, population level may be assessed with the help of the agronomist under the scheme
13	CPBG/TMV/PBG/OIL/2013/SP001: Maintenance Breeding and Breeder Seed Production of Sesame, Castor and Pulses varieties released from TNAU. Dr. P. Yogameenakshi, Assist. Prof.(PBG) (June, 2013 – May, 2016) Project Extension Proposal has been sent	Completion report may submitted and a new project with similar objective may be proposed.
14	CPBG/TMV/PBG/SES/2014/002: Exploitation of heterosis (<i>Sesamum indicum</i> . L) in sesame for higher productivity. Dr. P. Yogameenakshi, Assist. Prof.(PBG) (October 2014 –October 2017)	To be continued.
15	CPBG/CBE/PBG/SES/2016/001: Development of ideal genotypes suitable for high density planting in sesame. Dr.R. Kalaiyarasi, Assist. Prof.(PBG) (October 2015 to September 2020)	The scientist should work in coordination with VRI and TMV sesame breeders

Sl.No.	Project Number and Title	Remarks
16	CPBG/MDU/PBG/SES/2015/001: Development of short duration high yielding white seeded sesame (<i>Sesamum indicum</i> L.) variety suitable for Southern districts of Tamil Nadu. Dr. C. Parameswari, Assist. Prof.(PBG) (October, 2015 to September, 2018)	To be continued.
17	CPBG/CBE/PBG/SNF/2015/003: Collection, Maintenance and Evaluation of Germplasm in Sunflower. Dr. R. Chandirakala, Assist. Prof.(PBG) (January 2015 to December 2017)	To be continued.
18	CPBG/CBE/PBG/SNF/2015/004: Evolution of high yielding sunflower hybrids. Dr. N. Manivannan, Professor (PBG) (June 2015 to May 2020)	To be continued.
19	CPBG/YTP/PBG/CAS/2013/001: Induced chemical mutagenesis for genetic diversification of pistillate and monoecious lines in castor. Dr.S. R.Venkatachalam, Professor (PBG) (August 2013 to July 2018)	To be continued.
20	CPBG/YTP/PBG/CAS/2015/001: Collection, Conservation, Evaluation, Characterization and Utilization of Castor Germplasm. Dr. P.Arutchenthil, Assist. Prof.(PBG) (July 2015 to June 2020)	To be continued.
21	CPMB/CBE/PBT/GNT/2015/001: Development of an efficient <i>in vitro</i> regeneration protocol <i>via</i> somatic embryogenesis in Groundnut (<i>Arachis hypogaea</i>). Dr. S. Rajesh, Asst. Professor (Biotech.) (2015 to 2018)	To be continued.
	AICRP Projects	
1a	AICRP/PBG/VRI/GNT/017: Cytogenetics of <i>Arachis</i> . Dr. A. Mothilal, Professor (PBG)	To be continued.
1b	AICRP/PBG/VRI/GNT/017: Evaluation of advanced breeding lines belonging to Spanish / Virginia bunch group through co-ordinated experiments. Dr. R. Ushakumari, Professor (PBG)	To be continued.

Sl.No.	Project Number and Title	Remarks
2	AICRP/PBG/TVM/GNT/019: AICRP – Oilseeds Groundnut ORS, Tindivanam. Dr. M. Vaithiyalingan, Assist. Prof. (PBG)	To be continued.
3	AICRP/PBG/VRI/SES/021: Evaluation and utilization of sesame varieties and hybrids from AICRP trials. Dr. T.Ezhilarasi, Assist. Prof.(PBG)	To be continued.
4	AICRP/PBG/CBE/SUN/020: AICRP on Oilseeds (Sunflower) Dr. R. Chandirakala, Assist. Prof.(PBG)	To be continued.
5	AICRP/PBG/YPR/CAS/022: All India Coordinated Research Project on castor – Breeding. Dr.S. R.Venkatachalam, Professor (PBG)	To be continued.
Externally Funded Projects		
1	ICAR-CRP/CPBG/VRI/OIL/2016/R001: Consortium Research Platform (CRP) on Agro-biodiversity. Germplasm maintenance, characterization, multiplication and conservation of germplasm in groundnut. Dr. R. Ushakumari, Professor (PBG) (April 2015 to March 2017)	To be continued.
2	ICAR-CRP/CPBG/VRI/OIL/2016/R003: ICAR-Consortia Research Project on Agro Bio-Diversity in sesame. Dr. T.Ezhilarasi, Assist. Prof.(PBG) (April 2016 to March 2017)	To be continued.
3	DBT/CPBG/CBE/OIL/2014/R003: Identification of Molecular markers linked to high oleic content and development of high oleic cms line in sunflower. Dr. R. Chandirakala, Assist. Prof.(PBG) (January 2014 to December 2017)	To be continued.
4	ICRISAT/CPBG/CBE/OIL/2016/R007: Fast tracking release of high oil and high oleic groundnut varieties and promoting their adoption by farmers for enhanced production and quality of groundnut oil – Phase II. Dr. P.L. Viswanathan, Professor and Head (April 2016 to March 2017)	To be continued.

C. IDENTIFICATION OF VARIETIES FOR RELEASE AND PROVISIONAL SELECTION OF ENTRIES FOR MLT / ART / OFT:

GROUNDNUT

(A) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE BY THE VARIETAL IDENTIFICATION COMMITTEE (AICRP):

ICGV 07240 (Spanish Bunch)

The Spanish bunch groundnut culture ICGV 07240 was identified by the Variety Identification Committee of the AICRP during 2017. It is exclusively suitable for *rabi*/summer seasons. It is recommended to Zone IIIb which includes Tamil Nadu, Andhra Pradesh and parts of Karnataka. It recorded a mean pod yield of 2789 kg/ha which is 36.8 per cent superior to the National Check TAG 24 and 35.4 per cent and 39.5 per cent superior over the Zonal Checks R 8808 and ICGV 00350 respectively.

Parentage	:	(ICGV 92069 x ICGV 93134) SIL 4 x ICGV
Duration (in days)	:	115
Yield (kg/ha)	:	2789
Per cent increase over TAG 24 (NC)	:	36.8
Percent increase over R 8808 13 (ZC)	:	35.4
Percent increase over ICGV 00350	:	39.5
Shelling percentage (per cent)	:	65.0
Oil content (per cent)	:	50.0
100 kernel weight (g)	:	37.0

(B) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE (STATE):

ICGV 07222 (Spanish Bunch)

The Spanish bunch culture ICGV 07222 has been identified and recommended for release provided the centre responsible for the culture should submit adequate number of ART results. The culture matures in 110-115 days. It recorded a mean pod yield of 1966 kg/ha which is 15.4 per cent superior over the check VRI Gn 6. The shelling outturn is 69.0 with a oil content of 50.0 per cent. It is moderately resistant to late leaf spot and rust diseases.

Parentage	:	ICGV 92069 x ICGV 93184) Sil 4 x (ICGS 44 x
Duration (in days)	:	110-115
Yield (kg/ha)	:	1966
Per cent increase over VRI Gn 6	:	15.4
Shelling percentage (per cent)	:	69.0
Oil content (per cent)	:	50.0

GROUNDNUT: TVG 0856 (Spanish Bunch)

The Spanish bunch culture TVG 0856 has been identified and recommended for release provided the centre responsible for the release should invariably submit adequate number of ART results. The culture took 100 days for maturity. It recorded a mean pod yield of 2627 kg/ha which is 12.4 per cent superior over the check VRI Gn 6. The shelling outturn is 72 per cent with a oil content of 49.0 per cent. It is moderately resistant to late leaf spot disease.

Parentage	:	VRI Gn 6 X R 2001-2
Duration (in days)	:	100 days
Yield (kg/ha)	:	2627
Per cent increase over VRI Gn 6	:	12.4
Shelling percentage (per cent)	:	72.0
Oil content (per cent)	:	49.0

(C) CULTURES IDENTIFIED FOR CONDUCTING ADAPTIVE RESEARCH TRIAL:

Habit Group: SPANISH BUNCH

Season : *Kharif* 2017

Spacing: 30 x 10 cm

Sl. No	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	% increase over CO 7	Special attributes
1	ICGV 07222 (II)	[(ICGV 92069 x ICGV 93184) SIL 4 x (ICGS 44 x ICGS 76)]	110-115	2350	35.5	Acceptable pod traits
2	BSG 0912 (II)	VRI 2 X TVG 0004	110-115	2520	22.8	Resistant to LLS and Rust
3	TVG 0856 (III)	VRI 6 x R 2001-2	103	2130	25.2	High yield

Checks : CO7 and VRI 8

Season : *Rabi*/summer 2017-18

Spacing: 30 x 10 cm

Sl. No	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	% increase over CO 7	Special attributes
1	ICGV 07222 (II)	[(ICGV 92069 x ICGV 93184) SIL 4 x (ICGS 44 x ICGS 76)]	110-115	2350	35.5	Acceptable pod traits

2	BSG 0912 (II)	VRI 2 X TVG 0004	110-115	2520	22.8	Resistant to LLS and Rust
3	TVG 0856 (III)	VRI 6 x R 2001-2	103	2130	25.2	High yield
Checks : CO7 and VRI 8						

A total of 40 OFTs may also be organized during *kharif* 2017 and *rabi/summer* 2017-18 seasons to get additional data for variety release.

(D) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Habit Group: SPANISH BUNCH

Season: *Kharif* 2017 and *Rabi/summer* 2017-18
Spacing: 30 x 10 cm

Replications : Four
Plot Size : 4.0 x 3.0 m²

Culture	Pedigree	Duration (Days)	Pod yield (Kg/ha)	Remarks	Proposed Centre
VG 13149 (I)	VG 420 X TVG 004	105-110	2665	High yield	Vridhachalam
VG 13159 (I)	VG 420 X TVG 004	105-110	3133	High yield	Vridhachalam
COG 0545 (I)	GG 2 X ICGV 00203	105-110	2456	High yield	Coimbatore
TVG 10342 (I)	TCGS 653 X ICGV 99025	105	2665	High yield	Tindivanam
VG 13153 (II)	VG 420 X TVG 0004	105-110	2220	High yield	Vridhachalam
VG 13154 (II)	VG 420 X TVG 0004	105-110	3020	High yield	Vridhachalam
VG 13127 (II)	CTMG 6 X TVG 004	105-110	2885	High yield	Vridhachalam
VG 13163 (III)	VG 420 X VRI (Gn) 6	105	2230	High yield	Vridhachalam
COG 0424 (III)	TMV 7 X ICGV 94118	110	2860	High yield	Coimbatore
Checks	CO 7 and VRI 8				

Testing centres: Vridhachalam, Tindivanam, Coimbatore, Bhavanisagar, Aliyarnagar, Chettinad (*Kharif*) and Paiyur (*Kharif*).

Observations to be recorded:

(1) Plant stand at maturity. (2) Pod yield (kg/plot) (replication-wise), (3) Kernel yield (kg/plot) (replication-wise), (4) Shelling per cent (5) Pod yield (kg/ha) and (6) Kernel yield (kg/ha).

SESAME

(A) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE BY THE VARIETAL IDENTIFICATION COMMITTEE (AICRP): -NIL-

(B) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE (STATE): -NIL-

(C) CULTURES IDENTIFIED FOR CONDUCTING ADAPTIVE RESEARCH TRIAL: -NIL-

(D) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Season: *Rabi*/summer 2017-18
Spacing: 30 X 30 cm

Replication: Four
Plot size: 4.0 X 3.0 m²

Cultures	Pedigree	Duration (Days)	Seed yield (kg/ha)	Remarks	Proposing centre
VS 13006 (I)	VRI (Sv) 2 X GT 10	85	1067	Brown	Vridhachalam
TVS 1604 (I)	TVS 0603 X ORM 7	80-85	639	White seed	Tindivanam
TVS 1606 (I)	TVS 0603 X ORM 14	82-87	561	Black seed	Tindivanam
COS 14001 (II)	<i>S. malabaricum</i> x VRI SV 1	95-100	1075	Dark brown	Coimbatore
COS 14025 (II)	<i>S. malabaricum</i> x VRI SV 2	100-105	1325	Brown	Coimbatore
TVS 1401 (II)	Mutant of TMV 5 (15 mM)	70-75	503	White	Tindivanam

Checks: TMV 7, VRI (SV) 2 and VRI 3

Testing centres: Vridhachalam, Tindivanam, Coimbatore, Srivilliputhur, Killikulam, Madurai and Kattuthottam.

Observations to be recorded:

(1) Days to 50% flowering, (2) Plant stand at maturity, (3) Seed yield (kg/plot) (replication-wise) and (5) Seed yield (kg/ha).

SUNFLOWER

(A) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE BY THE VARIETAL IDENTIFICATION COMMITTEE (AICRP): -NIL-

(B) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE (STATE): -NIL-

(C) CULTURES IDENTIFIED FOR CONDUCTING ADAPTIVE RESEARCH TRIAL:

Season : *Kharif* 2017 and *Rabi* 2017-18

Sl. No	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	% increase over CO 2	Special attributes
1	CSFH 12205 (III)	COSF 6A x IR 6	85-90	2010	17.3	High yield

Checks: Sunbred 275, Hybrid CO 2

A total of 40 OFTs may also be organized during *khariif* 2017 season to get additional data for variety release.

(D) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Season: *Khariif* 2017 and Rabi/summer 2017-18
Spacing: 60 x 30 cm

Replication: Four
Plot size: 4.0 x 3.0 m²

Cultures	Pedigree	Duration (Days)	Seed yield (kg/ha)	Remarks	Proposing centre
CSFH 15020	COSF12A X IR 6	85-90	2301	High yield	Coimbatore
CSFH 15026	COSF13A X RHA95C-1	85-90	2315	High yield	Coimbatore
CSFH 14608 (I)	COSF 7A x IR 6	85-90	1914	High yield	Coimbatore
CSFH 14638 (I)	COSF 15 A x CSFI 8002	85-90	2131	High yield	Coimbatore
Checks: Sunbred 275, Hybrid CO 2,					

Testing centres: Coimbatore, Bhavanisagar, Vridhachalam, Veppanthattai, Killikulam, Tindivanam (*rabi*) and Kovilpatti (*rabi*).

Observations to be recorded:

(1) Days to 50% flowering, (2) Plant stand at maturity, (3) Seed yield (kg/plot) (replication-wise) and (5) Seed yield (kg/ha).

CASTOR

(A) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE BY THE VARIETAL IDENTIFICATION COMMITTEE (AICRP): -NIL-

(B) CULTURES IDENTIFIED AND RECOMMENDED FOR RELEASE (STATE): -NIL-

(C) CULTURES IDENTIFIED FOR CONDUCTING ADAPTIVE RESEARCH TRIAL:

Season : *Kharif* 2017

Sl. No	Culture	Pedigree	Duration (Days)	Seed yield (kg/ha)	% increase over	Special attributes
1.	YRCS 1205 (III)	TMV 6 x Salem Local	180	1345	60.5 (CO 1)	Resistant to wilt
Checks: YRCH 1, CO 1						

A total of 40 OFTs may also be organized during *kharif* 2017 season to get additional data for variety release.

(D) CULTURES PROPOSED FOR TESTING UNDER MULTILLOCATION TRIAL:
-NIL-

Note: The cut-off date for receiving the seed at RRS, Vridhachalam is June 5th 2017.

D. ADAPTIVE RESEARCH TRIAL 2017-18

DISTRIBUTION OF TRIALS (OILSEEDS)

Trial Number	Groundnut 1/2017-18	Groundnut 2/2017-18	Sunflower 1/2017-18	Sunflower 2/2017-18	Castor 1/2017-18
Season	<i>Khariif</i> (June-July)	<i>Rabi/Summer</i> (Dec.-Jan.)	<i>Khariif</i> (June- July)	<i>Rabi</i> (Dec.-Jan.)	<i>Khariif</i> (June-July)
Cultures	TVG 0856, ICGV 07222, BSG 0912	TVG 0856, ICGV 07222, BSG 0912	CSFH 12205	CSFH 12205	YRCS 1205
Checks	VRI 8 CO 7	VRI 8 CO 7	Sunbred 275 Hybrid CO 2	Sunbred 275 Hybrid CO 2	YRCH 1 DCH 519
Thiruvallur	2	2	5	5	-
Kancheepuram	2	2	5	5	-
Villupuram	2	2	5	5	-
Vellore	2	2	5	5	-
Thiruvannamalai	2	2	5	5	-
Cuddalore	2	2	5	5	-
Dharmapuri	-	-	5	5	10
Krishnagiri	-	-	5	5	-
Salem	2	2	5	5	10
Namakkal	2	2	5	5	10
Erode	2	2	5	5	-
Coimbatore	2	2	5	5	-
Tiruppur	-	-	5	5	-
Thiruchirappalli	2	2	5	5	-
Perambalur	2	2	5	5	-
Ariyalur	-	-	5	5	-
Karur	2	2	5	5	-
Pudukkottai	2	2	5	5	-
Tanjore	2	2	5	5	-
Madurai	2	2	5	5	-
Theni	2	2	5	5	-
Virudhunagar	2	2	5	5	-
Tuticorin	-	-	5	5	-
Dindigul	-	-	5	5	-
Ramanathapuram	-	-	5	5	-
Sivagangai	2	2	-	-	-
Thirunelveli	2	2	5	5	-
KVK, Sandiyur	2	2	-	-	10
KVK, Vridhachalam	2	2	-	-	-
KVK, Tinidvanam	2	2	-	-	-
KVK, Erode	2	2	-	-	5
KVK, Pauparapatti	2	2	-	-	5
KVK, Perambalur	2	2	5	5	5
KVK, Vamban	2	2	-	-	-
KVK, Karur	2	2	5	5	-
KVK, Sirugamani	-	-	5	5	-
KVK, Needamangalam	-	-	-	-	-
Total	56	56	145	145	55

E. SEED REQUIREMENT FOR CONDUCTING ART/MLT 2016-17

Sl.No	Name of the Entry / Check	Quantity of seed required (kg)		Centre responsible for supply
		<i>Kharif</i>	<i>Rabi/ summer</i>	
	GROUNDNUT			
1	ICGV 07222	140	140	Coimbatore
2	BSG 912	140	140	Bhavanisagar
3	TVG 0856	140	140	Tindivanam
4	CO 7	152	140	Coimbatore
5	VRI 8	152	140	Vridhachalam
6	VG 13153	12		Vridhachalam
7	VG 13154	12	-	Vridhachalam
8	VG 13127	12	-	Vridhachalam
9	VG 13163	12	-	Vridhachalam
10	VG 13149	12	-	Vridhachalam
11	VG 13159	12	-	Vridhachalam
12	COG 0545	12	-	Vridhachalam
13	COG 0424	12	-	Vridhachalam
14	TVG 10342	12	-	Vridhachalam
15	BSG 0912	12	-	Bhavanisagar
16	TVG 0924	12	-	Tindivanam
17	COG 0424	12	-	Coimbatore
	SESAME			
1	VS 13006	1.0		Vridhachalam
2	TVS 1604	1.0		Tindivanam
3	TVS 1606	1.0	-	Tindivanam
4	COS 14001	1.0	-	Coimbatore
5	COS 14025	1.0	-	Coimbatore
6	TVS 1401	1.0	-	Tindivanam
7	TMV 7	1.0	-	Tindivanam
8	VRI SV 2	1.0	-	Vridhachalam
9	SVPR1	1.0	-	Srivilliputhur
			-	
	SUNFLOWER			
1	CSFH 15020	20.0	20.0	Coimbatore
2	CSFH 15026	20.0	20.0	Coimbatore
3	SUNBRED 275	20.0	20.0	Coimbatore
4	HYBRID CO2	20.0	20.0	Coimbatore
5	CSFH 14608	20.0	20.0	Coimbatore
6	CSFH 14638	20.0	20.0	Coimbatore
	CASTOR			
1	YRCH 1205	8.0	8.0	Yethapur
2	YRCH 1	8.0	5.5	Yethapur
3	CO 1	8.0	8.0	Yethapur

F. Action plan for 2017-2018 on the identified themes

Theme No 1	Characterization and documentation of germplasm in Oilseed crops					
SubTheme 1	Screening of groundnut accessions available in the station gene bank to identify genotypes resistant to biotic and abiotic stresses					
SubTheme 1 Leader	Dr. A. Mothilal, Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evaluation and characterization of 792 accessions of germplasm for 16 quantitative and 14 qualitative traits	Vridhachalam: Dr. A. Mothilal, Professor (PBG)	Evaluated and characterised 234 accessions for nine quantitative characters	Evaluation and Characterization will be done for 283 genotypes	Evaluation and Characterization will be done for 283 genotypes	Identification of promising donors for various traits
2	Artificial screening for LLS & Rust	Vridhachalam: Professor (Plant Pathology)	19 genotypes resistant to rust and three genotypes resistant to LLS identified	250 genotypes will be screened	250 genotypes will be screened	Promising resistant donors for LLS and Rust
3	Artificial screening for <i>Spodoptera</i>	Vridhachalam: Dr. P. Indhira Gandhi, Assistant Professor (Ento.)	A sum total of 54 moderately resistant donors identified	100 genotypes will be screened	100 genotypes will be screened	Promising resistant donors for <i>Spodoptera</i> will be identified
4	Artificial screening for Leafminer	Vridhachalam: Dr. P. Indhira Gandhi, Assistant Professor (Ento.)	A sum total of 50 moderately resistant donors identified	100 genotypes will be screened	100 genotypes will be screened	Promising resistant donors for leafminer will be identified
5	Screening for drought tolerance	Vridhachalam: Dr. S. Vincent, Professor (Crop Physiology)	158 drought tolerant donors identified	Drought tolerant traits will be studied (RWC, SLW, Root traits, DST)	Drought tolerant traits will be studied (RWC, SLW, Root traits, DST)	Promising tolerant donors for drought
6	Screening for drought / High temperature tolerance	Vridhachalam: Dr. S. Vincent, Professor (Crop Physiology)	Tolerant donors will be identified	Tolerant donors will be identified	Tolerant donors will be identified	Promising donors for high temperature tolerance

SubTheme 2	Screening of sesame genotypes for resistant to biotic and abiotic stresses					
SubTheme 2 Leader	Dr. T. Ezhilarasi, Assistant Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evaluation and characterization of 150 Numbers of germplasm for 18 qualitative and 12 quantitative characters.	Vridhachalam: Dr. T. Ezhilarasi, Assistant Professor (PBG) Pudukotta (Kudumianmalai) : Dr. R.Kalaiyarasi, Assistant Professor (PBG)	Totally 160 germplasm has been characterised	Characterization of 415 germplasm	Characterization of 415 germplasm	Promising lines for different quantitative traits
2	Artificial screening for shoot webber	Vridhachalam: Dr. R. Sheeba Jasmine Assistant Professor (Ento.)	Twenty five genotypes evaluated under artificial condition and four genotypes were found to be resistant to shoot webber and capsule borer.	One hundred genotypes will be screened for resistance to shoot webber and capsule borer.	One hundred genotypes will be screened for resistance to shoot webber and capsule borer. .	Making core collection for Shoot webber tolerance
3	Artificial screening for root rot	Vridhachalam: Dr. B. Meena Associate Professor (Patho.)	Out of 200 germplasm screened, 17 resistant and 12 moderately resistant donors identified	Screening of 100 germplasm	Screening of 100 germplasm	Promising resistant donors
4	Screening for phyllody resistance under natural condition.	Vridhachalam: : Dr. B. Meena Associate Professor (Patho.)	Identification of Resistant donor	Identification of Resistant donor	Identification of Resistant donor	Making core collection for Phyllody tolerance

SubTheme 3	Screening of sunflower genotypes for resistant to biotic and abiotic stresses					
SubTheme 3 Leader	Dr. R.Chandirakala , Assistant Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evaluation and characterization of 840 accessions of sunflower for 8 seed morphological traits	Coimbatore: Dr. R.Chandirakala, Assistant Professor (PBG)	Evaluated and characterized 344 germplasm	Characterization of 248 germplasm	Characterization of 248 germplasm	Promising lines for different traits

SubTheme 4	Screening of castor genotypes for resistant to biotic and abiotic stresses					
SubTheme 4 Leader	Dr. P. Arutchenthil , Assistant Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evaluation and characterization 242 accessions of castor germplasm	Yethapur: Dr. P. Arutchenthil, Assistant Professor (PBG)	Evaluated and characterised 70 accessions for yield and other quantitative component characters	Evaluation and Chacterization will be done for 80 genotypes	Evaluation and Chacterization will be done for 90 genotypes	Identification of promising donors for various traits
2	Screening of genotypes for resistance to wilt and Botrytis	Yethapur: Dr.M. Deivamani, Assistant Professor (PP) Tindivanam: Dr. Sangeetha Panicker Professor (PP)	Evaluated 70 accessions for wilt in wilt sick plot and identified wilt resistant accessions	80 genotypes will be screened for wilt	90 genotypes will be screened for wilt	Promising resistant donors for wilt
3	Screening of genotypes for resistance to capsule borer	Yethapur: Dr.B.Geetha, Assistant Professor (Ento.)	54 Moderately Resistant donors identified	80 genotypes will be screened for capsule borer	90 genotypes will be screened for capsule borer	Promising resistant donors for capsule borer

Theme 2		Genetic improvement of groundnut				
Sub-theme 1		Pre-breeding to develop genetic stocks using wild relatives for biotic stresses				
Sub-theme 1 Leader		Dr. A. Mothilal, Professor (PBG)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Introgression of genes for resistant to foliar diseases (LLS and Rust) from wild diploid species into susceptible cultivar.	Vridhachalam: Dr. A. Mothilal, Professor (PBG)	Triploids identified	Crosses will be made with diploid and Autotetraploids, Evaluation of F ₁	Evaluation of segregating generations	Promising donors will be identified

Sub-theme 2		Development of high yielding <i>Spanish</i> and <i>Virginia</i> bunch varieties with high oil content and tolerance to drought and foliar diseases				
Sub-theme 2 Leader		Dr. R. Ushakumari Professor (PBG)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Hybridization of divergent parents involving high yield and agronomic superiority with resistant donars	Vridhachalam: Dr. R. Ushakumari Professor (PBG) Coimbatore: Dr. PL. Viswanathan Professor and Head (Oilseeds) Bhavanisagar: Dr. B. Meenakumari Asst. Professor (PBG) Tindivanam: Dr. M. Vaithiyalingam Assistant Professor (PBG) Chettinad: Dr. R. Sasikala Assistant Professor (PBG) Vrinjipuram: Dr. A. Gopikrishnan Assistant Professor (PBG)	Altogether 41 crosses were made , F ₁ s were evaluated	Study of segregating materials	Study of segregating materials	Promising cultures will be identified

Sub theme 3		Genetic improvement of groundnut for confectionery purpose				
SubTheme 3 Leader		Dr.P.Yogameenakshi, Assistant Professor (PBG)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evolution of large seeded Spanish bunch / Virginia bunch groundnut varieties suitable for confectionary purpose	Tindivanam: Dr.P.Yogameenakshi, Assistant Professor (PBG) Vridhachalam: Dr. R. Ushakumari Professor (PBG) Coimbatore: Dr. PL. Viswanathan Professor and Head (Oilseeds)	A sum total 16 crosses were made , F ₁ s evaluated	Study of segregating materials	Study of segregating materials	Promising large seeded types will be identified

Theme 3		Genetic improvement of sesame				
Sub-theme1		Pre-breeding to develop genetic stocks using wild relatives for biotic stresses				
Sub-theme1		Dr.R.Kalaiyarasi, Assistant Professor (PBG)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Evolution of high yielding lines using wild ancestors for biotic stress tolerance	Pudukotta (Kudumianmalai) : Dr. R.Kalaiyarasi, Assistant Professor (PBG) Vridhachalam: Dr. T. Ezhilarasi Assistant Professor (PBG)	Crosses were effected between CO1 and four wild species viz., <i>S. ratiatum</i> , <i>S. malabaricum</i> , <i>S. alatum</i> , <i>S. yanamalaiensis</i> .	Crosses well be effected using VRI 1 and VRI 2 <i>with S. malabaricum</i> . Raising F ₁	Raising segregating population	Identification of male sterile lines

Sub-theme2		Genetic improvement of sesame for enhanced yield and oil content with tolerance to drought and root rot diseases				
Sub-theme2		Dr. T. Ezhilarasi, Assistant Professor (PBG)				
1	Evolution of high yielding varieties	Vridhachalam: Dr. T. Ezhilarasi Assistant Professor (PBG) Pudukotta (Kudumianmalai) : Dr. R.Kalaiyarasi, Assistant Professor (PBG) Tindivanam: : Dr.P.Yogameenakshi, Assistant Professor (PBG) Madurai: Dr. C. Parameshwari Assistant Professor (PBG)	Total of 80 crosses were made in Vridhachalam, Tindivanam, Coimbatore & Madurai & Evaluation of F ₁	Raising F ₂ & Raising F ₃	Raising F ₄ Selection of high yielding families.	Identification of high yielding genotypes
2.	Screening for drought tolerance	Vridhachalami: Dr. S. Vincent, Professor (Crop Physiology)	Screened five hundred germplasm based on drought susceptibilty index and five accessions were identified as drought tolerant	Screening for drought tolerance	Screening for drought tolerance	Identification of promising lines

Sub-theme3	Evolution of high yielding, shy branching and synchronous maturing sesame varieties for mechanized harvesting					
Sub-theme3	Dr.P.Yogameenakshi, Assistant Professor (PBG)					
1	Evolution of high yielding shy branching varieties	Tindivanam: Dr.P.Yogameenakshi, Assistant Professor (PBG) Vridhachalam: Dr. T. Ezhilarasi Assistant Professor (PBG) Pudukotta (Kudumianmalai) : Dr. R.Kalaiyarasi, Assistant Professor (PBG) Madurai: Dr. C. Parameshwari Assistant Professor (PBG)	Ten crosses were made in Vridhachalam, and F ₁ s evaluated	Raising F ₂ & Raising F ₃	Raising F ₄ Selection of high yielding families.	Identification of high yielding genotypes

Theme 4	Genetic improvement of sunflower					
Sub-theme1	Development of superior hybrids in sunflower with high oil yield, high oleic acid content and tolerance to biotic stresses					
Sub-theme1	Dr. S.Manonmani, Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Development of superior hybrids	Coimbatore Dr. S.Manonmani, Professor (PBG) Dr. R. Chandirakala, AP (PBG) Killikulam Dr. Ashish K. Binoth, AP (PBG)	250 hybrids were developed and five promising hybrids were identified in Coimbatore. Ten crosses were made in Killikulam.	Identification of superior hybrids	Identification of superior hybrids	Promising hybrids with high yield and tolerance to biotic stresses
2	Screening of inbreds against powdery mildew and <i>Alternaria</i> disease	Coimbatore: Dr. L. Rajendran (Patho). Dr. S.Manonmani, Professor (PBG) Dr. R. Chandirakala, AP (PBG) Killikulam Dr. Ashish K. Binoth, AP (PBG)	3 resistant, 50 moderately resistant source for powdery mildew and 3 moderately resistant donors for <i>Alternaria</i> leaf spot identified.	Identification of Resistant donor	Identification of Resistant donor	Promising resistant donars

Theme 5	Genetic improvement of castor					
Sub-theme1	Development of superior hybrids in castor with resistance to biotic stresses (wilt, <i>Botrytis</i> and capsule borer)					
Sub-theme1	Dr.S.R. Venkatachalam, Professor (PBG)					
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Synthesizing new crosses for generation of superior hybrids.	Yethapur: Dr.S.R. Venkatachalam, Professor (PBG) Dr. P. Arutchenthil, Assistant Professor (PBG)	1.Total of 73 new castor hybrids have been synthesized for evaluation in Kharif, 2017 2. Total of 119 new castor hybrids have been evaluated in 6 sets under RBD replicated twice. Among 119 new hybrids, 10 promising entries are identified for further evaluation	1.Evaluation of newly synthesized 73 castor hybrids & identification of promising entries 2.Generation of new hybrids for further evaluation	1.Generation of new hybrids for further evaluation. 2.Evaluation of promising hybrids in advanced trials	Identification of superior hybrids
2	Evaluation of superior hybrids for yield and reaction to pest and diseases in Station trials.	Dr.S.R.Venkatachalam, Professor (PB&G) Dr.P.Arutchenthil AP (PBG) Dr. M. Deivamani AP (Patho) Dr. M. Senthil Kumar AP (Ento.) TCRS, Yethapur	Total of 10 wilt resistant pistillate lines and 5 wilt resistant monoecious lines identified	Evaluation of 10 promising hybrids identified during 16-17 for wilt and botrytis	Identification of Resistant donor	Promising resistant donors
3.	Screening of genotypes for resistance to capsule borer	Yethapur:Dr. M. Senthilkumar, Assistant Professor (Ento.)	Due to absence of conducive weather there is no capsule borer incidence during 2016-17	Evaluation of 10 promising hybrids identified during 16-17 for capsule borer	Identification of Resistant donor	Promising resistant donors

Theme 6		Development of drought tolerant groundnut genotypes through <i>in vitro</i> mutagenesis				
Sub-theme1		Drs. S. Rajesh, Professor (Biotech.)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Standardization of somatic embryogenesis mediated regeneration	Coimbatore: Dr. M. Raveendran Professor Dr. A. Senthil Assistant Professor (Phy.) Dr. R. Renuka Assistant Professor (Biotech.)	Work on standardization of tissue culture protocol has been initiated. Callus induction using leaf explants has been optimized. Cell suspension cultures have been established and are in embryo maturation stage. Generation of tissue culture plants Screening of tissue culture plants	Standardization of tissue culture techniques	Standardization of tissue culture techniques	Tissue culture technique for somatic embryogenesis
2	Developing cell lines through <i>in vitro</i> techniques	Coimbatore: Dr. M. Raveendran Professor Dr. A. Senthil , Assistant Professor (Phy.) Dr. R. Renuka, Assistant Professor (Biotech.)		Generation of tissue culture plants	Generation of tissue culture plants	Evolving cell lines through <i>in vitro</i> technique
3	<i>In vitro</i> mutagenesis and screening for drought tolerance	Coimbatore: Dr. M. Raveendran Professor Dr. A. Senthil , Assistant Professor (Phy.) Dr. R. Renuka, Assistant Professor (Biotech.)		Screening of tissue culture plants	Screening of tissue culture plants	Mutants with drought tolerance.

Theme 7		Whole genome sequencing and allele mining in sesame				
Sub-theme1		Dr. M. Raveendran Professor, (Biotech.)				
S.No	Activity	Name of the scientist and centre	2016-17	2017-18	2018-19	Deliverables / expected outcome
1	Whole genome sequencing of sesame using NGS	Coimbatore: Dr. S. Rajesh, Assistant Professor (Biotech) Dr. Jeyakanthan, Assistant Professor (Biotech)	Efforts have been taken to sequence genome of native / TNAU varieties of sesamum.	Genome sequencing	Genome sequencing	Complete sequencing of sesame
2	Elucidating molecular mechanisms underlying i) High poly unsaturated fatty acids ii) Phyllody resistance and iii) Drought tolerance	Coimbatore: Dr. S. Rajesh, Assistant Professor (Biotech) Dr. Jeyakanthan, Assistant Professor (Biotech)		Identification of molecular mechanism	Identification of molecular mechanism	Identification of molecular mechanism

CROP MANAGEMENT

The 53rd Crop Scientists Meet on Oilseeds -2017 was held on 2nd and 3rd May 2017 at TNAU, Coimbatore. The programme was chaired by the Vice-Chancellor and Co-chaired by the Director of Research. Action taken on the recommendations of 52nd CSM on Oilseeds - 2016 and Action Plan for 2017-18 was presented by the Director (Crop Management), Special Officer (NRM) and Special Officer (Seeds), TNAU, Coimbatore.

RESEARCH HIGHLIGHTS – 2017

STATUS OF ONGOING RESEARCH PROJECTS

Crop wise

Projects	Groundnut	Sesame	Sunflower	Castor	Total
URP	13	5	5	6	29
AICRP	16	5	6	6	33
External funded	2	-	-	-	2
PG Research	2	-	1	1	4
Total	31*	10	11*	12*	64*

**Total excluding PG Research*

Discipline wise

Projects	Groundnut	Sesame	Sunflower	Castor	Total
Agronomy	16	7	10	12	45
Soil Science & Agrl. Chemistry	6	-	1	-	7
Agrl. Microbiology	3	1	-	-	4
Crop Physiology	2	1	-	-	3
Seed Science & Technology	4	1	-	-	5
Total	31	10	11	12	64

A. Technology for adoption

Studies on tank mix application of early post emergence herbicides for efficient weed control in groundnut

Pre emergence application of Pendimethalin 1.0 kg /ha + tank mix of Imazethapyr 37.5 g /ha + Quizalofop ethyl 25 g /ha at 20 DAS is recommended for efficient weed control and for getting higher yield (1950 kg/ha) and net return Rs. 53,632/ ha.

B. Technologies for information

1. Soil Test Crop Response correlation studies through IPNS for rainfed groundnut

The results of the test verification trials confirmed the validity of the fertilizer prescription equations for rainfed groundnut on Somayanur series (red calcareous soil). The highest yield, response ratio and BCR were recorded in STCR-IPNS-12 q/ ha. Therefore, Soil Test Crop Response based fertiliser prescriptions under Integrated Plant Nutrition System (STCR-IPNS for 12 q/ ha) can be recommended for achieving higher yield, response ratio and BCR in rainfed groundnut.

2. Permanent Manurial Experiment on groundnut in red sandy loam soil (*Typic Haplustalf*) of Sivaganga under rainfed situation

- The combined application of organic and inorganic nutrient sources and organic alone reduced the bulk density from 1.41 to 1.36, respectively and increased the pore space of 3.4 and 3.5 per cent over control
- Application of integrated nutrient sources and organic alone built up the soil carbon 1.0 and 0.9 g/ kg, respectively over the control.
- Integrated application of organic and inorganic nutrient sources enhanced the groundnut yield to a tune of 88 %, 33% and 5% over the control, inorganic and organic plot, respectively. Besides, INM practices enhanced the soil chemical, physical and biological parameters and nutrient uptake over the other treatments.
- Benefit cost analysis also favoured INM and organic practice is superior as it gave maximum return of Rs.1.9 for every rupee invested against control (Rs.1.1).

3. Developing nutrient management practices for groundnut – blackgram cropping system

- Application of 125 % RDF to groundnut has recorded higher pod yield (2742 kg/ha), net income (Rs.1,37,088/ha) and B:C ratio (2.47). The treatment imposed to blackgram *i.e* application of 100 % RDF to blackgram produced higher groundnut pod yield (2530 kg/ha).
- Application of 75 % RDF to blackgram has recorded a maximum blackgram grain yield of 885 kg/ha, net income (Rs.31,673/ha) and B:C ratio(2.21).

4. Effect of different amendments on sodic soils management in groundnut – pulses cropping system

Application of gypsum with sulphur oxidizing bacteria has recorded significantly higher pod yield (1314 kg/ha) followed by elemental sulphur with sulphur oxidizing bacteria treatment (1131 kg/ha) compared to green manure treatment (916 kg/ha).

5. Habitat adopted phyllosphere Methylo trophs as a plant probiotics for improving plant health and kernel quality in groundnut (*Arachis hypogaea* L.)

- Groundnut leaves were found to harbour pigmented and non-pigmented methylo trophic bacteria.
- Molecular characterization of isolated 80 methylo trophic bacteria revealed that those bacteria were belong to 30 different methylo trophic species.
- Isolated methylo trophic bacteria have the potential to fix atmospheric nitrogen, oxidize sulfur, solubilize minerals, and produce IAA and siderophore.
- Methylo trophic isolates showed to enhance early growth of groundnut plants.

6. Studies on the nutrient dissolution potential and yield enhancement of *Paenibacillus mucilaginosus* (KRB-9) in groundnut.

- KRB-9 applied plants had prior flowering, pegging and pod formation.
- Increased biometrics and yield attributes were noted in KRB-9 and other bioinoculant applied plots.
- 27-30 per cent yield increase was noted in bio inoculants applied plots.
- *Rhizobium*, PSB and KRB-9 was compatible and synergistic
- Survival of KRB-9 was found up to harvest stage.

7. Permanent Manurial Experiment of Coimbatore under irrigated tropical agro ecosystem

- Continuous application of 100% NPK along with FYM @ 12.5 t/ ha increased the seed yield of sunflower to the tune of 30.8% over 100% NPK.
- Continuous application of single nutrient alone (N or P or K) drastically reduced the yield compared to combined application (NP, PK, NK and NPK).
- Continuous addition of N alone reduced the soil productivity. The available nitrogen and potassium status were found to be higher under INM practice. Whereas the available

phosphorus content was higher with the application of poultry manure on nitrogen equivalent basis.

- Continuous adoption of INM practice increased the organic carbon content from 0.32 % (1974-79) to 0.66 % (2016) followed by STCR-IPNS treatment (0.65 %).
- Regarding micronutrient status, the soil was deficient in Zn and Fe and sufficient in Cu and Mn.
- Regarding nutrient balance, balanced NPK fertilization and INM practice showed positive balance in available NPK while continuous skipping of fertilizer depleted nutrients from soil.

8. Optimizing plant density for promising castor hybrid DCH 519

Under rainfed alfisol, adaptation of closer spacing of 120 x 120cm had recorded significantly higher seed yield of 1436 kg/ ha with realizing higher gross return (Rs.51696), net return (Rs.29596) and BCR of 2.33.

C. On Farm trials proposed for 2017-18

1. Arresting late formed flowers to improve seed yield in groundnut (var. TMV 13)

Treatments

T₁ – Control (without any spray)

T₂ - Mepiquat chloride @ 125 ppm on 60 DAS

T₃- NAA @ 300 ppm on 60 DAS

T₄- NAA @ 200 ppm on 60 DAS

Coordinating Centre:

TNAU, Coimbatore

Dr. K. Nelson Navamaniraj, Asst. Prof (SST), DSST, TNAU, CBE

Dr. P. Jeyakumar, Prof. & Head, Dept. of Crop Physiology, TNAU, CBE

Dr. S. Marimuthu, Asst. Prof (Agron), Dept. of Nano Science & Technology, TNAU, CBE

Centres:

ORS, Tindivanam

Dr. V. Vijayageetha, Assistant Professor (SST), ORS, Tindivanam

Dr. C. Harisudan, Assistant Professor (Agron.), ORS, Tindivanam

Tmt. R. Anitha, Assistant Professor (CRP), SRS, Cuddalore

TCRS, Yethapur

Dr. R. Vijayan, Assistant Professor (SST), KVK, Sandhiyur

Dr. S. Manickam, Professor and Head, TCRS, Yethapur

Dr. M. K. Kalarani, Professor (CRP), TCRS, Yethapur

RRS, Vridhachalam

Dr. K. Natarajan, Assistant Professor (SST), KVK, Vridhachalam

Dr. S. Vincent, Professor (CRP), RRS, Vridhachalam

Dr. V. Karunakaran, Assistant Professor (Agron.), RRS, Vridhachalam

2. Destruction of capitulum core to improve seed filling and yield in sunflower

Treatments

T₁ – Control

T₂- Capitulum core destruction (1.5 cm) (Five days after flower initiation)

Variety: TNAU Sunflower hybrid

Coordinating Centre:

TNAU, Coimbatore

Dr. K. Nelson Navamaniraj, Assistant Professor (SST), DSST, TNAU, CBE

Dr. T. Selvakumar, Assistant Professor (Agron.), Dept. of Agronomy, TNAU, CBE

Centres:

ORS, Tindivanam

Dr. V. Vijayageetha, Assistant Professor (SST), ORS, Tindivanam

Dr. C. Harisudan, Assistant Professor (Agron.), ORS, Tindivanam

ARS, Vaigaidam

Dr. D.Thiruchendura Selvi, Assistant Professor (SST), ARS, Vaigaidam

Dr. R. Jayasrinivas, Assistant Professor (Agron.), ARS, Vaigaidam

RRS, Vridhachalam

Dr. K. Natarajan, Assistant Professor (SST), KVK, Vridhachalam

Dr. S. Vincent, Professor (CRP), RRS, Vridhachalam

Dr. V. Karunakaran, Assistant Professor (Agron.), RRS, Vridhachalam

3. Enhancing the castor productivity through selective mechanization

Treatments

T₁ - Selective mechanization

(Sowing with tractor drawn seed drill, intercultivation with power weeder, need based plant protection with boom sprayer, harvesting by secateurs and thrashing & shelling by castor thresher)

T₂ – Farmer's practices

(Sowing by manual dibbling, hand weeding and spraying with knapsack sprayer, harvesting with sickle and manual threshing and shelling)

Coordinating Centre:

TCRS, Yethapur

Dr. P. Kathirvelan, Asst. Prof. (Agron.), TCRS, Yethapur

Centres:

KVK, Sandhiyur

Dr. M. Vijayakumar, Asst. Prof. (Agronomy) KVK, Sandhiyur

DARS, Chettinad

Dr. P. Kannan, Asst. Prof. (SS&AC), DARS, Chettinad

Vice - Chancellor's remarks on 53rd Crop Scientists Meet (Oilseeds)

Groundnut

- ❖ Raised bed system for groundnut may be studied (**Action: RRS, Vridhachalam**)
- ❖ Peg to pod ratio and pod filling problem studies may be conducted in groundnut (**Action: RRS, Vridhachalam**)
- ❖ Study on root nodulation may be conducted in groundnut (**Action: ORS, Tindivanam**)

Sesame

- ❖ Studies on rice – fallow sesame may be conducted (**Action: RRS, Vridhachalam**)
- ❖ Drought studies in sesame may be conducted (**Action: ORS, Tindivanam**)
- ❖ Plant population studies may be conducted for shy branching type of sesame with the help of plant breeder (**Action: RRS, Vridhachalam and ORS, Tindivanam**)
- ❖ Seed pelleting for sesame may be studied (**Action: Seed Technologist from KVK, Vridhachalam and ORS, Tindivanam**)

PROJECT WISE REMARKS

S.N.	Project No. & Title	Coordinating scientist	Duration	Remarks
Action Plan Trials				
1.	DCM/TNJ/AGR/GNT/2016/001 Oilseeds as a component crop in rice based cropping sequence in canal command area	Dr. V. Ganesaraja, Prof.(Agron)	June-2016 to May-2019	<ul style="list-style-type: none"> To be continued
2.	DCM/VRI/AGR/GNT/2016/001 Integrated best management practices for enhancing the productivity of irrigated groundnut	Dr. V. Karunakaran, Asst. Prof. (Agron.)	June-2016 to May-2019	<ul style="list-style-type: none"> To be continued Effect of mechanizing stripping operations on groundnut germination percentage may be studied. Contribution percentage by individual scientist may be reported.
3.	DCM/TVM/AGR/GNT/2016/001 Crop establishment and suitable intercrop for semi-spreading groundnut under rainfed condition	Dr.K.Sathiya, Asst. Prof. (Agron)	June-2016 to May-2019	<ul style="list-style-type: none"> To be continued Contribution percentage by individual scientist may be reported. All coordinating centres should record and report all the parameters as per the technical programme.
4.	DCM/VRI/CRP/SES/2017/001 Seed pelleting and foliar nutrition for yield maximization in sesame (Summer irrigated)	Dr. S. Vincent, Prof. (CRP)	June 2016 to May 2019	<ul style="list-style-type: none"> To be continued Plant population and seed vigour index should be calculated
5.	DCM/CBE/AGR/SNF/2016/001	Dr. T. Selvakumar,	June-2016	<ul style="list-style-type: none"> To be continued

	Altering crop geometry to suit mechanized weeding in sunflower	Asst. Prof (Agron.)	to May-2019	<ul style="list-style-type: none"> • Crop damage percentage has to be studied in weeding plot.
6.	DCM/YTP/AGR/CAS/2016/002 Introduction of castor as intercropping in samai in hilly areas	Dr. S. Manickam, Prof (Agron.)	June-2016 to May-2019	<ul style="list-style-type: none"> • To be continued • Castor crop population has to be included. Crop equivalent yield has to be given.
7.	NRM /CBE/SAC/GNT/2016/001 (346) Understanding the role of sulphur on oil and protein synthesis in groundnut	Dr. S. Meena, Prof (SS&AC),	June-2016 to May-2019	<ul style="list-style-type: none"> • To be continued
8	NRM/CBE/AGM/SES/2016/001 Enhancing the productivity and quality of sesame using microbial inoculants	Dr. R. Sridar, Prof (Agrl.Micro) Dr. S. Meena, Prof. (SS&AC) Dr. R. Brindavathy AP (AGM)	June-2016 to May-2019	<ul style="list-style-type: none"> • To be continued with the revised treatments as per the remarks given by the Vice Chancellor in the Crop Scientists Meet.
GROUNDNUT AGRONOMY				
S.N	Project No. & Title	Name of the scientist	Duration	Remarks
9.	DCM/VRI/AGR/GNT/2014/002 Developing nutrient management practices for groundnut – blackgram cropping system	Dr. C. Harisudan Asst. Prof (Agron)	July 2014 to June 2017	<ul style="list-style-type: none"> • To be closed. • Results may be given for information.

	AICRP Projects			
10.	AICRP/PBG/VRI/GNT/017 Response of summer groundnut to fertilizer doses and plant population under drip-fertigation and check basin method	Dr. V. Karunakaran, Asst. Prof (Agron)	November 2013 to May 2016	<ul style="list-style-type: none"> To be closed and completion report may be submitted
11.	AICRP/PBG/VRI/GNT/017 Standardization of periodicity of sulphur and/or zinc, iron and boron fertilization in prevalent groundnut-based cropping system	Dr. V. Karunakaran, Asst. Prof (Agron)	November 2013 to May 2016	<ul style="list-style-type: none"> To be closed and completion report may be submitted
12.	AICRP/PBG/VRI/GNT/017 Effect of mulching, hydrogel and nutrient management on productivity of summer groundnut	Dr. V. Karunakaran, Asst. Prof (Agron)	November 2013 to May 2016	<ul style="list-style-type: none"> To be closed and completion report may be submitted
13.	AICRP/PBG/VRI/GNT/017 Evaluation of DAPG-producing fluorescent pseudomonads for enhancing nutrient use efficiency, biocontrol of soil borne diseases and yield of groundnut	Dr. V. Karunakaran, Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be continued
14.	AICRP/PBG/VRI/GNT/017 Effect of paclobutrazol on growth and productivity on kharif groundnut	Dr. V. Karunakaran, Asst. Prof (Agron)	June 2015 to May 2017	<ul style="list-style-type: none"> To be continued
15.	AICRP/PBG/VRI/GNT/017 Evaluation of DAPG-producing fluorescent pseudomonads for enhancing nutrient use efficiency, biocontrol of soil borne diseases and yield of groundnut	Dr. V. Karunakaran, Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be continued
16.	AICRP/PBG/VRI/GNT/017	Dr. V. Karunakaran,	2014-17	<ul style="list-style-type: none"> To be continued

	Studies on tank mix application of early post-emergence herbicides for efficient weed control in groundnut	Asst. Prof (Agron)		
17.	AICRP/PBG/VRI/GNT/017 Economizing phosphorus use in groundnut production by exploiting phosphorus build-up in soil	Dr. V. Karunakaran, Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be continued
18.	AICRP/PBG/TVM/GNT/019 Evaluation of DAPG-producing fluorescent pseudomonads for enhancing nutrient use efficiency, biocontrol of soil borne diseases and yield of groundnut	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be closed. Results may be given for information
19.	AICRP/PBG/TVM/GNT/019 Studies on tank mix application of early post-emergence herbicides for efficient weed control in groundnut	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> Project to be closed and completion report to be submitted
20.	AICRP/PBG/TVM/GNT/019 Economizing phosphorus use in groundnut production by exploiting phosphorus build-up in soil	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be continued
21	AICRP/PBG/TVM/GNT/019 Evaluation of DAPG-producing fluorescent pseudomonads for enhancing nutrient use efficiency, biocontrol of soil borne diseases and yield of groundnut	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	<ul style="list-style-type: none"> To be continued

22.	AICRP/PBG/TVM/GNT/019 Studies on tank mix application of early post-emergence herbicides for efficient weed control in groundnut	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	• To be continued
23.	AICRP/PBG/TVM/GNT/019 Economizing phosphorus use in groundnut production by exploiting phosphorus build-up in soil	Dr. K. Sathiya Asst. Prof (Agron)	2014-17	• To be continued
CROP PHYSIOLOGY				
24.	DCM/VRI/CRP/GNT/2017/001 Effect of high temperature and their management in summer groundnut genotypes (<i>Arachis hypogaea</i> L.)	Dr. S. Vincent, Prof (CRP)	Feb 2017 to June 2020	• To be continued
25.	DCM/CBE/CRP/GNT/2016/001 Physiological response and reproductive efficiency of groundnut to drought at different flowering phases	Dr. M. K. Kalarani Prof. (CRP)	March 2016 to February 2018	• Field trials to be conducted. Physiologist from Vridhachalam may be involved.
26.	DCM/CBE/CRP/GNT/2016/001 Physiological response and reproductive efficiency of groundnut to drought at different flowering phases	Dr. M. K. Kalarani Prof. (CRP)	March 2016 to February 2018	• To be continued
SOIL SCIENCE AND AGRICULTURAL CHEMISTRY				

27.	AICRP/NRM/CBE/SAC/002 Soil Test Crop Response Correlation Studies through IPNS for Rainfed groundnut	Dr. S. Maragatham, Asst. Prof.(SS&AC)	July 2014 to June 2017	<ul style="list-style-type: none"> To be closed. Results may be given for information.
28.	TRRI/TVM/SAC/10/003 Permanent Manurial Experiment (PME) on Rainfed Groundnut and Cold weather Gingelly	Dr.K.M.S.Anandan Prof.(SS&AC)	October 2010 to June 2015	<ul style="list-style-type: none"> To be closed Five years data should be pooled
29.	Effect of different amendments on sodic soils management in Groundnut – Pulses cropping system	Dr.T. Balaji, Asst. Prof(SS&AC)	October 2014 to September 2017	<ul style="list-style-type: none"> To be closed. Results may be given for information
30.	NRM/BSR/SAC/RIC/2015/001 Permanent manurial experiment on rice – groundnut cropping system in red sandy loam soil of Bhavanisagar under irrigated condition	Dr. S. Thenmozhi, Asst. Prof(SS&AC)	February 2015 to April 2020	<ul style="list-style-type: none"> Not presented
31.	NRM/CTN/SAC/GNT/2014/015 Permanent Manurial Experiment on groundnut in red sandy loam soil (Typic Haplustalf) of Sivaganga under rainfed situation	Dr. P. Kannan, Asst. Prof(SS&AC)	April 2014 to March 2019	<ul style="list-style-type: none"> To be closed. Results may be given for information
AGRICULTURAL MICROBIOLOGY				
32.	DST/NRM/MDU/AGM/2016/R004	Dr.R.Krishnamoorthy National Post-	May 2016-	<ul style="list-style-type: none"> To be closed. Results may be given for information

	Habitat adopted phyllosphere Methyloprophs as a plant probiotics for improving plant health and kernel quality in groundnut (<i>Arachis hypogaea</i> L.)	Doctoral Fellow, Dr. R. Anandham, Asst.Prof(Agril-Micr)	March 2018	
33.	NRM-MDU-AGM-GNT-2014/ 001 Impact of VAM and Phosphobacteria on yield of oilseed crops Groundnut and Gingelly	Dr. N. Ramalingam, Prof.(Agril. Micr)	April 2014- May 2017	<ul style="list-style-type: none"> • Initiated, to be continued
34.	DCM/TMV/AGM/2014/002 Studies on the nutrient dissolution potential and yield enhancement of <i>Paenibacillus mucilaginosus</i> (KRB-9) in groundnut.	Dr. R. Brindavathy, Asst.Prof(Agril-Micr)	July 2014- August 2016	<ul style="list-style-type: none"> • To be closed. • Three years data may be consolidated and given for information. N content value to be checked.
SEED SCIENCE AND TECHNOLOGY				
35.	PPV/SC/CBE/SST/2013/Roo1 Impleme ntation of PVP Legislation through DUS testing under ICAR and SAU systems	Nodal Officer: Dr. R. Umarani Prof &Head (DSST)	November 2003 to till date	<ul style="list-style-type: none"> • To be continued
36.	SEED/CBE/SST/GNT/2016/001 Study on seed priming treatments for improving seed vigour and yield in groundnut	Dr. V. Manonmani Prof. (SST)	June 2016 to May 2019	<ul style="list-style-type: none"> • Initiated, to be continued
37.	SEED /CBE / SST / GNT / 2016 / 001	Dr. K. Malarkodi,	March 2016	<ul style="list-style-type: none"> • Initiated, to be continued

	Assessment of seed dormancy and germination characteristics in groundnut	Asst. Prof.(SST)	to February 2018	
38.	SEED/TMV/SST/2015/001 Standardization of seed storage techniques in Groundnut and Sesame	Dr. V. Vijaya Geetha, Asst. Prof.(SST)	Oct 2015 – Sep 2017	<ul style="list-style-type: none"> To be continued
39.	Students Research Work-(M.Sc/Ph.D) Studies on flowering pattern in groundnut in relation to seed filling and groundnut seed multiplication rate .	N. Vinothini, Dr. R. Vijayan Asst. Prof (SST)	-	<ul style="list-style-type: none"> OFT may be conducted NAA 200 ppm prevents late flowering. To be discussed with physiologist.
SESAME AGRONOMY				
40.	DCM/VRI/AGR/SES/2014/001 Organic production of confectionary sesame.	Dr. C. Harisudan Asst. Prof (Agron)	July 2014 to June 2017	<ul style="list-style-type: none"> To be continued. Quality parameters may be tested
41.	AICRP/PBG/VRI/SES/021 Integrated Crop Management for Yield Maximization in Sesame	Dr. C. Harisudan Asst. Prof (Agron)	July 2015 to June 2018	<ul style="list-style-type: none"> To be continued
42.	AICRP/PBG/VRI/SES/021 Optimization of nutrient requirement for AVT genotypes	Dr. C. Harisudan Asst. Prof (Agron)	June 2016 to May2019	<ul style="list-style-type: none"> To be continued
43.	AICRP/PBG/VRI/SES/021 Influence of terminal nipping and growth regulator on yield maximization of	Dr. C. Harisudan Asst. Prof (Agron)	June 2016 to May2019	<ul style="list-style-type: none"> To be continued

	sesame			
44.	AICRP/PBG/VRI/SES/021 Studies on ferti-fortification on growth & yield of sesame	Dr. C. Harisudan Asst. Prof (Agron)	June 2016 to May2019	• To be continued
45.	AICRP/PBG/VRI/SES/021 Studies on productivity of sesame intercropping system	Dr. C. Harisudan Asst. Prof (Agron)	June 2016 to May2019	• To be continued
SOIL SCIENCE AND AGRICULTURAL CHEMISTRY				
46.	NRM/CBE/SAC/2013/004 Permanent Manurial Experiment of Coimbatore Under irrigated Tropical Agro Ecosystem	Dr. M. Malarkodi Asst. Prof (SS & AC)	November 2013 to October 2018	• To be closed • Results may be given for information.
SUNFLOWER AGRONOMY				
47.	AICRP /PBG /CBE / SUN / 020 Assessment of agronomic requirement for AHT II entries	Dr. T. Selvakumar Asst. Prof (Agron)	2016 -2017	• To be continued
48.	AICRP /PBG /CBE / SUN / 020 Efficacy of hydrophilic polymer on sunflower production	Dr. T. Selvakumar Asst. Prof (Agron)	2016 -2017	• To be continued
49.	AICRP /PBG /CBE / SUN / 020 Response of sunflower to varying	Dr. T. Selvakumar	2016 -2018	• To be continued

	planting geometry and fertilizer levels under different land configurations under rainfed conditions	Asst. Prof (Agron)		
50.	AICRP /PBG /CBE / SUN / 020 Increasing cropping intensity and profitability with sunflower as component crop in the emerging / new cropping system	Dr. T. Selvakumar Asst. Prof (Agron)	2016 -2018	<ul style="list-style-type: none"> To be continued
51.	AICRP /PBG /CBE / SUN / 020 Integrated weed management in sunflower under modified spacing	Dr. T. Selvakumar Asst. Prof (Agron)	2016 -2017	<ul style="list-style-type: none"> To be continued
52.	DCM/ARS/KPT/AGR/SNF/2015/001 Agronomic strategies to enhance radiation use efficiency in sunflower hybrid under dry land.	Dr. B. Arthirani Asst. Prof(Agrl.Met)	October 2015 – June 2018	<ul style="list-style-type: none"> To be continued
53.	DCM/ARS/KPT/AGR/SNF/2015/002 Bio amelioration for stress management and yield maximization in sunflower hybrid under dry land farming.	Dr. M. Joseph, Asst. Prof (Agron)	October 2015 – June 2018	<ul style="list-style-type: none"> To be continued
54.	Student research work (M.Sc/Ph.D) Development of crop management techniques to improve seed set and seed productivity in sunflower (<i>Helianthus annus</i> L.)	K. Vijayalakshmi Dr. K. Nelson Navamaniraj, Asst. Prof(SST)	-	<ul style="list-style-type: none"> To be closed. Results may be given for information Injury index may be studied and Cost benefit ratio may be calculated

CASTOR AGRONOMY				
55.	DCM/YTP/AGR/CAS/2016/003 Optimizing plant spacing and nutrients (NPK) requirements for pre-release hybrid YRCH 1116 under rainfed and irrigated conditions	Dr. S. Manickam, Prof (Agron) & Head	April, 2016 to Dec, 2018	<ul style="list-style-type: none"> To be continued.
56.	DCM/YTP/AGR/CAS/2015/02 Integrated weed management for castor under irrigated condition	Dr. D. Raja Prof. (Agron)	October 2015 to September 2017	<ul style="list-style-type: none"> To be continued.
57.	DCM/YTP/AGR/CAS/2015/01 Effect of spacing, nipping primary shoot and pruning on growth and yield of perennial castor variety TCRS 1205 under irrigated condition	Dr. D. Raja Prof. (Agron)	July 2015 to April 2017	<ul style="list-style-type: none"> To be closed. Results may be given for information
58.	DCM/YTP/AGR/CAS/2015/003 Optimizing plant density for promising castor hybrid DCH 519	Dr. P. Kathirvelan Asst. Prof (Agron)	Dec.2015- Dec.2018	<ul style="list-style-type: none"> To be closed. Results may be given for information
59.	AICRP/PBG/YTR/CAS/022 Evaluating the performance of Castor in rice fallow/after rice cultivation.	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	<ul style="list-style-type: none"> To be continued
60.	AICRP/PBG/YTR/CAS/022 Enhancing the castor productivity through	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	<ul style="list-style-type: none"> To be closed. Results may be given for information

	selective mechanization.			
61.	AICRP/PBG/YTR/CAS/022 Comparative efficacy of PSB and biophos on the performance of castor`	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	• To be continued
62.	AICRP/PBG/YTR/CAS/022 IIFSR-IIOR Collaborative Trial: Performance of castor as component crop in farming systems of Tamil Nadu.	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	• To be continued
63.	AICRP/PBG/YTR/CAS/022 Effect of Hydrogel on soil moisture and productivity of rainfed castor.	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	• To be continued
64.	AICRP/PBG/YTR/CAS/022 Agronomic requirements of castor hybrids in AHT-II	Dr. P. Kathirvelan Asst. Prof (Agron)	June 2016 to July 2017	• To be continued

CROP PROTECTION

Group of 19 scientists (8 Entomologists, 9 Pathologists and 1 Nematologist and 1 biotechnologist) met under the chairmanship of the Director (CPPS)i/cand discussed the issues related to Crop Protection in Oilseeds on 2nd May, 2017. The major thrust areas in oilseed crops were identified after thorough discussion.

List of Projects in Crop Protection

Crop	Agricultural Entomology	Plant Pathology	Total
University sub projects			
Groundnut	2	4	6
Sesame	1	1	2
Castor	1	-	1
AICRP projects			
Groundnut	1	1	2
Sesame	1	1	2
Castor	1	1	2
Sunflower	-	1	1
Externally funded projects			
Groundnut	1	1	2
Total	8	10	18

List of plant protection scientists attended the 53rd CSM (oilseeds)

SN	Scientist name and Designation	Centre
Agricultural Entomology		
1	Dr. K.Ramaraju, Director (CPPS)	DCPPS, TNAU,Coimbatore
2	Dr. N. Natarajan, Professor &Head (Ento)	AEN, TNAU, Coimbatore
3	Dr. G.V.Ramasubramanian, Professor (Ento)	ORS, Tindivanam
4	Dr.K. Rajamanickam, Asst Professor (Ento)	CRS, Aliyarnagar
5	Dr. P.Indiragandhi, Asst Professor (Ento)	RRS, Vridhachalam
6	Dr.S.Sheeba Jasmine, Asst Professor (Ento)	RRS, Vridhachalam
7	Dr.SheelaVenugopal, Asst Professor (Ento)	ARS, Bhavanisagar
8	Dr. M.Senthilkumar, Asst Professor (Ento)	TCRS, Yethapur
Plant Pathology		

9	Dr. K. Krishnamoorthy, Professor&Head	TNAU, Coimbatore
10	Dr.G. Karthikeyan, Professor (Plt Path)	TNAU, Coimbatore
11	Dr.SangeethaPanicker, Professor (PltPatho)	ORS, Tindivanam
12	Dr.B.Meena, Associate Prof (Plt Path)	RRS, Vridhachalam
13	Dr.S.Sundravadhana, Asst Professor (Plt Path)	CRS, Aliyarnagar
14	Dr.L.Rajendran, Asst Professor (Plt Path)	TNAU, Coimbatore
15	Dr. M.Paramasivam, Asst Professor (Plt Path)	DARS, Chettinad
16	Dr.P.Deivamani, Asst Professor (Plt Path)	TCRS, Yethapur
17	Dr.R. Thilagavathy, Asst Professor (Plt Path)	TRRI, Aduthurai
Nematology		
19	Dr. N.Swarnakumari, Asst Professor (Nema)	TNAU, Coimbatore
Biotechnology		
20	Dr.E.Kokiladevei, Associate Prof (PPBG)	CPMB, TNAU, Coimbatore

- The Director of Research in his remarks insisted that the University Research Project should cover the action plan and also it should address on the farmers need.
- The Director (CPPS) requested the scientists that the survey data should be presented along with the GPS co-ordinate.
- All the promising lines/entries/cultures should be screened under artificial inoculated conditions
- Pest surveillance report may be sent separately to this Directorate before 30th of every month.
- It was decided to standardize the dosage of biocontrol agent (*Pseudomonas fluorescens* and *Trichoderma asperellum*) for different crops by different methods of application. The following scientists are identified for this work plan.

I. Groundnut - Dr. SangeethaPaniker, Professor, (Plant Pathology)
Dr. S.Sundaravadana, Assistant Professor,(Plant Pathology)
Dr. M.Paramasivan, Assistant Professor, (Plant Pathology)

II. Sunflower - Dr. L.Rajendran, Assistant Professor, (Plant Pathology)

III.Castor - Dr.P.Deivamani, Assistant Professor, (Plant Pathology)

For seed ingredient of *T.asperellum* 4g, 10g, 15g, 20g, 25g and 30g/kg of seeds and *P. fluorescens* 5g, 10g, 15g, 20g,25g and 30g/kg of seed may be tried.Similarly, for soil

application also 2.0kg, 2.5kg, 3.0kg and 3.5kg/ha may be tried as treatments along with different quantities of FYM *viz.*, 250kg, 500kg and 1000kg/ha.

- Those plant protection scientists doesn't have university research projects are requested to propose the project before July 2017
- The plant pathologists are requested to submit the cultures (bioagents and pathogens) to the Department of Plant Pathology, TNAU, Coimbatore with passport data including ITCC/MTCC numbers.

University Research Sub-Projects

SN	Project no and Title	Duration	Scientist in charge	Centre	53rd CSM (oilseeds) remarks
1	CPPS/VRI/ENT/GNT/2016/00 1. Cultural Management of pests of groundnut	June-2016 to September 2019	Dr. P. Indiragandhi Assistant Professor (AEN)	Regional Research Station, Vriddhachalam	<ul style="list-style-type: none"> ➤ Strategies may be developed to manage GBNV by organising network experiments with pathologists. ➤ The pest outbreaks with rainfall have to be compared over seasons and correlation studies have to be made. ➤ Diversity of thrips species and defoliators in <i>kharif</i> and <i>rabi</i> has to be documented/ studied in groundnut regularly. ➤ The project may be continued. ➤ Propose an externally funded project to DST.
2	CPPS/ALR/ENT/2015/001 Screening groundnut breeding materials against insect pests for exploitation of resistance	June 2015 to July 2018	Dr. K. Rajamanickam Professor (AEN)	Coconut Research Station, Aliyarnagar.	<ul style="list-style-type: none"> ➤ Artificial screening has to be done. ➤ The resistant materials have to be identified over seasons/ years.

					<ul style="list-style-type: none"> ➤ Reorient towards our own TNAU entries. Study the resistant mechanism for thrips and leaf hopper by selecting two entries through protein profiling as long term action plan. ➤ The project may be continued.
3	<p>CPPS/VRI/ENT/SES/2016/001</p> <p>Introducing ecofeast crops and enhancing soil fertility to improve plant pest natural enemy interactions in sesame</p>	2016 to 2018	<p>Dr. R. Sheeba Jasmine</p> <p>Assistant Professor (AEN)</p>	<p>Regional Research Station Vriddhachalam</p>	<ul style="list-style-type: none"> ➤ Pool the AICRIP data over the years and consolidate. ➤ The project may be continued.
4	<p>CPPS/YTP/AEN/CAS/2015/001</p> <p>Bioecology and management of castor whitefly (<i>Trialeurodes ricini</i>) and castor thrips (<i>Retithripssyriacus</i>) in Rabi castor</p>	<p>August 2015 to September 2018</p>	<p>Dr. M. Senthilkumar,</p> <p>Assistant Professor (AEN)</p>	<p>Tapioca and Castor Research Station, Yethapur.</p>	<ul style="list-style-type: none"> ➤ The economic damage by thrips on spike and leaf may be worked out and assess which one is serious. ➤ The project may be continued.

5	CPPS/TVM/PAT/GNT/2011/02 Evaluation of groundnut AVT/Zonal varieties/genotypes resistant to leaf spot and rust under natural and artificial conditions	August 2014 to July 2017	Dr.M.Rajakumar Professor (PAT)	Oilseeds Research Station, Tindivanam	➤ The project may be closed.
6	CPPS/TMV/PAT/GNT/2014/02 Identification of suitable Integrated disease management approach for the management of major diseases of groundnut.	April 2014 to March 2017	Dr. SangeethaPanicker Professor (PAT)	Oilseeds Research Station, Tindivanam	➤ The completion report may be sent for closure of the project
7	CPPS/TMV/PAT/GNT/2014/001 Identification of suitable biocontrol + organic management approach for the management of major diseases of groundnut	April 2014 to March 2017	Dr. SangeethaPanicker Professor (PAT)	Oilseeds Research Station, Tindivanam	<ul style="list-style-type: none"> ➤ The <i>Bacillus</i> culture has to be registered. ➤ The role of Potassium silicate may be determined. ➤ The Population (cfu) has to be estimated in the FYM enriched <i>Trichoderma</i>. ➤ The project may be closed after clarifying the above

					points.
8	CPPS/ALR/PAT/NEM/GNT/2017/001 Identifying the mechanism of resistance in groundnut breeding materials against rust and late leaf spot diseases.	January 2017 to December 2019	Dr.S. Sundravadhana Assistant Professor (PAT)	Coconut Research Station, Aliyarnagar	<ul style="list-style-type: none"> ➤ Include local entries in the study. ➤ Study the protein profiling and include an objective on protein profiling by sending a proposal for mid-term modification in the project. ➤ Management of <i>Aspergillus</i> using onion as crop rotation may be cross checked at different centres like Aliyarnagar, Vridhachalam and Chettinad.
9	CPPS /CBE /PAT / GNT / 2014/ 001 Development of IDM Technologies for the Management of Soil Borne Diseases of Groundnut	May 2015 - April 2017	K. EraivanArutkaniAiyathan, Professor(PAT)	Department of Plant Pathology, TNAU, Coimbatore	<ul style="list-style-type: none"> ➤ The project was not presented. ➤ The project may be closed.
10	CPPS/CTN/PAT/GNT/2016/001 Integrated diseases Management of Soil Borne Diseases of Groundnut under	April 2016- March 2019	Dr.M.Paramasivan Assistant Professor (PAT)	Dryland Agricultural Research Station, Chettinad	<ul style="list-style-type: none"> ➤ Handling only one project. ➤ Additional URP may be proposed. ➤ The standardization of

	rainfed conditions				dosage of biocontrol agents may be relooked.
Externally Funded project					
11	DST/CPPS/ADT/PAT/2016/R002: Bio-consortia of PGPRs from different growth stages of peanut (<i>Arachishypogaeae</i>) for the management of stem rot caused by <i>Sclerotiumrolfsii</i>	August, 2015 - July 2018	Dr.R.Thilagavathi Assistant Professor (Plant Pathology)	Tamil Nadu Rice Research Institute Aduthurai – 612 101	➤ The project may be continued as per the objectives of the scheme.

Action Plan 1

Monitoring the occurrence of major insect pests of groundnut, sesame and castor

Theme leader	Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS, Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/expected outcome
Monitoring of incidence of important insect pests	RRS, Vridhachalam Dr. P. Indiragandhi (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	<ul style="list-style-type: none"> ➤ Insect pest incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons. ➤ Insect pest incidence has to be correlated with the weather parameters. 	<ul style="list-style-type: none"> ➤ Insect pest incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons. ➤ Insect pest incidence has to be correlated with the weather parameters and regression analysis will be worked out 	<ul style="list-style-type: none"> ➤ Disease incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons. ➤ Diseases incidence has to be correlated with the weather parameters and revalidation will be done 	Forecasting of the time of maximum incidence levels of important insect pests of groundnut, sesame and castor.
	ORS, Tindivanam Dr.G.V.Ramasubramaniyam (Groundnut and Sesame)				
	CRS, Aliyarnagar Dr.K.Rajamanickam (Groundnut)				
	TCRS, Yethapur Dr.M.Senthilkumar, (Castor)				
Observations to be recorded	<ul style="list-style-type: none"> • Incidence of sucking pests and defoliators has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons. • Insect infestation levels have to be correlated with the weather parameters. 				

Action Plan 2

Monitoring of incidence of major diseases of groundnut, sesame, castor and sunflower

Theme leader	Dr. B. Meena, Associate Professor (Plant Pathology), RRS, Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/expected outcome
Monitoring of incidence of important diseases	Vridhachalam Dr. B. Meena (Sesame)	<p>➤ Disease incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons.</p> <p>➤ Diseases incidence has to be correlated with the weather parameters.</p>	<p>➤ Disease incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons.</p> <p>➤ Diseases incidence has to be correlated with the weather parameters and regression analysis will be worked out</p>	<p>➤ Disease incidence has to be monitored throughout the crop period in both <i>kharif</i> and <i>rabi</i> seasons.</p> <p>➤ Diseases incidence has to be correlated with the weather parameters and revalidation will be done</p>	Forecasting of the time of maximum incidence levels of important diseases of groundnut, sesame, castor and sunflower.
	Aliyar Dr. S.Sundravadana (Groundnut)				
	Tindivanam Dr. Sangeethapanicker (Groundnut)				
	Coimbatore Dr. L.Rajendran (Sunflower)				
	Yethapur Dr. M.Deivamani (Castor)				

Action Plan 3

Evaluation of ecological engineering techniques through habitat manipulation for the management of insect pests in groundnut and sesame

Theme leader	Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS,Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected out come
Management of insect pests in groundnut and sesame through habitat manipulation	RRS, Vridhachalam Dr. P. Indiragandhi, (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	Effect of organic amendments in groundnut and sesame against insect pests by increasing the abundance of natural enemies <ol style="list-style-type: none"> 1. Farm yard manure (12.5 t/ha) or vermicompost (2.5 t/ha) 2. Neem cake (250 kg/ha) 3. Poultry manure (5 t/ha) 4. <i>Phosphobacteria</i> 2kg/ha 5. <i>Rhizobium</i> 2kg/ha 6. Inorganic fertilizers @ NPK RDF 	Best ecological engineering methods identified in first and second years will be integrated with IPM module and validated.	Result of the integrated trial of best ecological engineering methods will be validated during 2018-19 and reconfirmed.	Best border crop and organic amendment combination that suppresses the insect pest population by increasing the natural enemy population will be identified.
		<ul style="list-style-type: none"> • Observations on insect pests and natural enemies • CB Ratio 			

Action Plan 4

Identification of resistant sources for major insect pests in groundnut, sesame, castor and sunflower

Theme Leader	Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS,Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/expected outcome
Field screening of TNAU entries, AICRP entries, AVT, IVT, MLT and ART entries. (2017-2019)	RRS, Vridhachalam Dr. P. Indiragandhi, (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	➤ Promising entries will be identified from entries received for <i>Kharif-16</i> by Stage II screening. Stage I screening will be done entries to be received for Rabi-Summer 2017-18	➤ The same work will be continued with the advancement of screening stages.	➤ Artificial screening will be done for most promising entries and station cultures.	Identification of promising resistant entries to major insect pests to be transferred for breeding purpose.
	ORS, Tindivanam Dr.G.V.Rama-subramaniyam (Groundnut & Sesame)				
	CRS, Aliyarnagar Dr.K.Rajamanickam (Groundnut)				
	TCRS, Yethapur Dr.M.Senthilkumar (Castor)				
Observations to be recorded	<ul style="list-style-type: none"> ➤ Incidence of sucking pests and defoliators at vegetative, flowering and maturity stages ➤ Categorizing resistance 				

Action Plan 5

Identification of resistant sources for major diseases in groundnut, sesame, castor and sunflower

Theme leader	Dr. B. Meena, Associate Professor (Plant Pathology), RRS, Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected outcome
Exploring mechanisms of resistance in the identified resistant entries against major diseases	Aliyarnagar Dr. S.Sundravadana (groundnut) CPPS/ALR/PAT/GNT/2017/001	Mechanisms of resistance in groundnut – rust, LLS and root rot Sesame- Dry root rot Castor- wilt Sunflower– Alternaria leaf spot	Study of mechanisms of resistance in resistant lines of groundnut, Sesame, castor and sunflower	Study of mechanisms of resistance in the identified groundnut, sesame, castor and sunflower resistant lines.	Mechanisms of resistance to important diseases of oilseeds (Groundnut, Sesame, Castor and Sunflower)
	Vridhachalam Dr. B. Meena (sesame)				
	Coimbatore Dr. L.Rajendran (sunflower)				
	Yethapur Dr. M.Deivamani (castor)				

Action Plan 6

Mechanisms of resistance in groundnut/sesame/castor lines for major insect pests

Theme leader	Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS,Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected out come
Exploring mechanisms of resistance in the identified resistant entries against major sucking and chewing pests	RRS, Vridhachalam* Dr. P. Indiragandhi, (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	Mechanisms of resistance in groundnut - thrips, leafhopper, GLM, <i>Spodoptera</i> ; Sesame- <i>Antigastra</i> and leafhopper; Castor-whitefly, thrips and leafhopper	Study of mechanisms of resistance in <i>S.litura</i> , GLM resistant lines of groundnut and capsule borer resistant lines of Sesame and castor.	Study of mechanisms of resistance in the identified groundnut, sesame and castor resistant lines. Artificial screening for confirmation	Mechanisms of resistance to important insect pests of oilseeds (Groundnut, Sesame and Castor).
	CRS, Aliyarnagar Dr.K.Rajamanickam (Groundnut)				
	TCRS, Yethapur* Dr.M.Senthilkumar (Castor)				

Action Plan 7

Validation of integrated management modules against major insect pests of groundnut and castor

Theme Leader	Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS, Vridhachalam			
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Deliverables/ expected out come
<p>IPM module: Groundnut Seed treatment with imidacloprid 17.8SL 2ml/kg of seed Basal application of neem cake @ 2.5 kg/ha Yellow sticky trap 25/ha <i>Chrysopa</i> 2500/ha at 20 DAS Azadirachtin 1% 2 ml/l at 30 DAS+ Cumbu as intercrop (6:1) Need based application of insecticides/fungicides</p> <p>Castor Application of Btk @ 1g/l (on notice of egg and early instar larvae of semilooper) Monitoring of <i>Spodoptera litura</i> by pheromone traps @ 4 /acre from 30 DAS Application of flubendiamide 39.35 SC @ 0.2 ml /l (for <i>Spodoptera</i> when foliar damage reaches >10%) Profenofos 50EC @ 1ml/l (for capsuleborer /</p>	<p>Vridhachalam Dr. P. Indiragandhi, (Groundnut)</p> <p>Tindivanam Dr.G.V.Rama subramaniyam (Groundnut and Sesame)</p>	<p>IPM module will be tested during <i>Kharif</i> 2017 and rabi-summer 2017-18</p>	<p>IPM module effect will be confirmed during <i>Kharif</i> 2018 and rabi-summer 2018-19</p>	<p>Economic and eco-friendly IPM module</p>
	<p>Yethapur Dr.M.Senthilkumar (Castor)</p>	<p>IPM module for castor will be tested during <i>Kharif</i> 2017 by adopting large field plot (500 m²)</p>	<p>IPM module experiment will be repeated for the second year <i>Kharif</i> 2018 with the same treatment, methods of observation/analysis to be carried out, statistical methodology to be adopted will be the same as that of 1st year</p>	<p>Economic and eco-friendly IPM module</p>

leafhopper when damage reaches 10%)	<p>Observations to be recorded</p> <ul style="list-style-type: none"> ➤ Observations have to be recorded on the incidence of insect pests in both IPM and non IPM modules. ➤ Incidence of sucking pests and defoliators has to be recorded from vegetative stage to maturity stage in the field in both IPM and non IPM modules in groundnut, Sesame and castor. ➤ C:B ratio - to be calculated for both IPM and non IPM components.
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Action Plan 8

Bio ecology and vector management of phyllody in sesame

Theme leader	Dr. R. Sheeba Jasmine, Asst. Professor (Entomology), RRS,Vridhachalam				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected out come
Bio ecology and vector management of phyllody in sesame	RRS, Vridhachalam Dr.R.Sheeba Jasmine (Sesame)	Studies on population dynamics of leaf hopper in sesame and alternate hosts	Exclusion of vectors from host plant under protected condition. To find susceptible stage of host plant	Management of vector at the susceptible stage of the host plant	Suitable management technology for sesame phyllody will be arrived by preventing the secondary spread of phytoplasma.
Observations to be recorded	<ul style="list-style-type: none"> ➤ Observations on vector population in sesame and alternate host ➤ The incidence of Phyllody and its severity in both sesame and alternate hosts 				

Action Plan 9

Establishing Rust resistant land races in groundnut to study the genetic, physical, physiological and biochemical mechanism of resistance

Theme Leader	Dr. S.Sundravadana , Asst. Professor (Plant Pathology)				
Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected outcome
Establishing the rust resistant land races to study genetic, physical, physiological and biochemical mechanism of resistance.	Aliyarnagar Dr. S.Sundravadana, Assistant Professor (Plt Pathology)	<ul style="list-style-type: none"> ➤ Field and seedling rust resistant test ➤ Studies on cytological resistance 	<ul style="list-style-type: none"> ➤ Identification of gene /protein associated with groundnut rust resistance 	<ul style="list-style-type: none"> ➤ Biochemical and molecular characterization of resistance associated proteins 	Identification of resistance sources.
Observations to be recorded	Genetic, physical, physiological and biochemical mechanism of resistance in rust resistance land races.				

Action Plan 10

Identification and management of soil borne fungal disease in castor

Activity	Name of the Scientist and Centre	Year 2017-18	Year 2018-19	Year 2019-20	Deliverables/ expected outcome
Isolation and characterization of soil borne disease – wilt Management using intercropping system, soil solarization, chemicals, biocontrol and mulching	TCRS, Yethapur Dr. M.Deivamani (2017-2020)	Study on performance of different management practices on castor wilt viz., biocontrol agents and	Confirmation of trials will be conducted during <i>Kharif</i> 2018	Best treatments will be advanced for On Farm Testing	Developing IDM module for wilt

		fungicides, intercropping system, soil solarisation and mulching during <i>kharif</i> 2017			
Observations to be recorded	<ul style="list-style-type: none"> ➤ Characterization of wilt pathogen ➤ Germination percentage, ➤ Assessment of disease incidence ➤ Assessment and evaluate Efficacy of biocontrol agents and fungicides, intercropping system, soil solarisation method and mulching ➤ Seed yield and its components ➤ Economics (Gross and net returns, cost of cultivation and BC ratio). 				

OFT proposed for Sunflower-1. Management of *Alternaria* blight through bio-agents and fungicides

Treatments

T1: Seed treatment with *Pseudomonas fluorescens* (Pf1) @10g/kg seeds followed by spray of Hexaconazole @ 0.1% at 45 days and *Pseudomonas fluorescens* (Pf1) @ 1.0% at 60 days after sowing

T2: Seed treatment with *Pseudomonas fluorescens* (Pf1) @10g/kg seeds followed by spray of propiconazole @ 0.1 % at 45 days and *Pseudomonas fluorescens* (Pf1) @ 1.0% at 60 days after sowing

T3: Two foliar spray of mancozeb at 0.2% at 45 and 60 DAS

T4: Control

Design: RBD; Replication: 5 ; Plot size: 4.0 x 3.0 m

Spacing: 60x30cm ; Cultivar: Hybrid CO 2

Observations to be recorded

1. Disease severity of *Alternaria* leaf spot
2. Yield (kg/ha) and CBR

Centres: TNAU, Coimbatore-Dr. L. Rajendran ; ARS, Bhavanisagar-Dr. Maruthasalam, AC&RI, Killikulam-Dr.R.Akila

Remarks of the Vice Chancellor

Sesame

- Raised bed should be followed for sesame sowing to avoid *Fusarium* wilt due to water stagnation
- Seed treatment by way of Steam therapy for phyllody management can be tested
- Orange , white, violet flower crops as trap crops should be raised for phyllody vector management
- Artificial screening of sesame germplasm for sesame shoot webber and capsule borer should be carried out

Castor

- Evolving *Spodoptera* resistant varieties in castor