Proceedings of 54th Crop Scientists' Meet on Oilseeds -2018

The 54th Crop Scientists' Meet on Oilseeds was held on 6th and 7th June, 2018 at TNAU, Coimbatore. The discipline wise concurrent sessions on crop improvement, management and protection was held in the concerned Directorates on 06.06.2018. The technical directors reviewed the sub-projects critically and offered their remarks.

The second day session was held on 7th June, 2018 under the chairmanship of the Vice-chancellor, TNAU, Coimbatore. The Director of Research welcomed the gathering and in his inaugural address, expressed his deep concern about the declining trend of groundnut area and production in spite of high productivity in the state. He suggested the importance of developing location specific variety, technology for the improvement of oilseeds production in Tamil Nadu. He also expressed the marketing difficulties faced by the farmers to dispose their produce. He opined that good quality seeds should be made available to the farmers in right season. He also exuded optimism that in view of establishment of proposed oilseeds seed hub in TNAU by GoI, the farmers' demand for quality seeds of high yielding varieties will be met with.

The action taken on the recommendations of the previous crop scientists meet were presented by the scientists from the Lead centre - RRS, Vridhachalam. The research highlights, achievements and action plan for the year 2018-19in the discipline of crop improvement, crop management and crop protection were presented by the respective Directors of CPBG, DCM and CPPS. The Vice-Chancellor, in his remarks emphasised the importance of semi-spreading / spreading groundnut varieties for the rainfed tracts of Tamil Nadu. He quoted the example of Junagadh Agricultural University, Junagadh and advised the scientists to breed more semi-spreading varieties instead of bunch varieties. He further informed the house about the preference of TMV 10 groundnut among the farmers of Ariyalur and Perambalur districts. The need for the replacement of old varieties like TMV 2 and TMV 7 was also discussed. He suggested evolving monopodial branching in sesame amenable for mechanised harvesting. The Director of Research, TNAU, Coimbatore proposed vote of thanks.

The detailed proceedings of the 54rdmeet are presented in the following order

CROP IMPROVEMENT

A. List of projects reviewed
B. Remarks of the Director, CPBG 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 2018-19
E. Seed requirement for conducting different trials
F. Action Plan for 2018-2019.

A. LIST OF PROJECTS REVIEWED

Abstract

Crops and centres	University Sub-Projects	AICRP Projects	Externally funded projects	Total	Scientists
Groundnut	11	2	1	14	6
Sesame	4	1	0	5	2
Sunflower	3	1	2	6	3
Castor	2	1	0	3	2
Total	20	5	3	28	13

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

Centres	University sub-projects	AICRP projects	Externally funded projects	Total
GROUNDNUT				
Vridhachalam	3	1	-	4
Tindivanam	3	1	-	4
Aliyarnagar	-	-	-	-
Coimbatore	1	-	1	2
Bhavanisagar	2	-	-	2
Vaigaidam	-	-	-	0
Pattukottai	1	-	-	1
Kudumianmalai	1	-		1
Total	**11**	**2**	**1**	**14**
SESAME				
Vridhachalam	1	1	0	2
Coimbatore	0	-	-	0
Tindivanam	1	-	-	1
Madurai	1	-	-	1
Bhavanisagar	1	-	-	1
Total	**4**	**1**	**0**	**5**
SUNFLOWER				
Coimbatore	2	1	2	5
Killikulam	1	-	-	1
Total	**3**	**1**	**2**	**6**
CASTOR				
Yethapur	2	1	-	3
Total	**2**	**1**	**-**	**3**
Grand Total	**20**	**5**	**3**	**28**

B. REMARKS OF THE DIRECTOR,CPBG FOR THE UNIVERSITY SUB-PROJECTS

Sl.No.	Project Number and Title	Remarks
	University sub-projects:	
	GROUNDNUT	
1	CPBG/VRI/PBG/GNT/2015/005: Collection, conservation and evaluation of genetic resources of groundnut (*Arachis hypogaea* L.). Dr. A. Mothilal, Prof.(PBG) & Head, RRS, Vridhachalam. (December 2015 to November 2020)	Importance may be given for earliness, biotic and abiotic stresses. Entries may be strictly screened under sick plot conditions. Proportion of genetic stock developed using wild species may be included. Novelty of genotypes to be explored. The trait for arresting late formed flowers to be explored.
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, Prof.(PBG) & Head, RRS, Vridhachalam. (August 2016 to July 2021)	Efforts may be taken to achieve the target for indented varieties of groundnut.
3	CPBG/VRI/PBG/GNT/2012/003: Breeding of improved Spanish Bunch / Virginia Bunch cultivars with inbuilt resistance / tolerance to foliar fungal diseases and drought. Dr. A. Mothilal, Prof.(PBG) & Head, Vridhachalam. (January 2012 to December 2016)	Completion report may submitted and a new project with similar objective may be proposed. Spanish bunch varieties with earliness maturing in less than 100 days and medium sized kernel with good filling and thin shell should be prime objective in the proposed new project.
4	CPBG/TMV/PBG/GNT/BSP/2013/001: Production and supply of nucleus and breeder seeds of groundnut. Dr. M. Vaithiyalingan, Asst. Prof. (PBG), ORS, TVM (June 2013 to May 2018)	The project may be closed and Completion report to be submitted. New URP may be proposed
5	CPBG/TMV/PBG/GNT/2013/002: Evolution of bunch groundnut varieties tolerant to early stage drought situations. Dr. M. Vaithiyalingan, Asst. Prof. (PBG), ORS, TVM (June 2013- May 2018)	Early maturing Spanish bunch with medium kernel, good filling and with a capacity to withstand drought spell during early growth phase should be considered during selection. Completion report may submitted and a new project with similar objectives may be proposed.

Sl.No.	Project Number and Title	Remarks
6	CPBG/TMV/PBG/GNT/2015/003: Development of high yielding bold seeded groundnut variety suitable for confectionery purposes. Dr. M. Vaithiyalingan, Asst. Prof. (PBG), ORS, TVM (January 2015 – December 2018)	Parents involved in the crosses may be screened for confectionary traits especially low oil, high protein content, high mean HKW (>80g), high sucrose and palatability before attempting crosses.
7	CPBG/CBE/PBG/GNT/2015/001: Development of high yielding foliar disease resistant groundnut varieties better than CO 7. Dr. PL.Viswanathan, Prof.& Head, Oilseeds, Coimbatore. (October 2015 to September 2020)	Progenies with a maturity of <100 days alone should be advanced for further evaluation.
8	CPBG/KDM/PBG/GNT/2017/001: Breeder seed production in groundnut and pulses Dr. P. Shanthi, Asst. Prof. (PBG) November 2017 to September 2020.	The target may be achieved without any shortfall.
9	CPBG/BSR/PBG/GNT/2015/002: Evolving Spanish bunch groundnut (*Arachis hypogaea* L.) genotypes with superior yield and evaluation of pre-release cultures of oilseed crops under MLT. Dr. B. MeenaKumari, Asst. Prof.(PBG) (September, 2015 to August, 2018)	Completion report may be submitted and the materials generated may be carried forwarded to a new project to be proposed.
10	CPBG/BSR/PBG/GNT/2017/001: Breeder seed production in ruling varieties of groundnut in Tamil Nadu. Dr. B. MeenaKumari, Asst. Prof.(PBG) (June, 2017 to May, 2020)	The target may be achieved without any shortfall.
11	CPBG/PKT/PBG/BGR/2016/001: Breeder Seed Production in Pulses and Groundnut. Dr. A. Bharathi, Asst. Prof.(PBG), ARS, PKT (April 2016 to March 2021)	The target may be achieved without any shortfall.
	SESAME	
12	CPBG/VRI/PBG/SES/2016/001: Production of genetically pure nucleus and breeder seed of sesame varieties released from Vridhachalam. Dr. T.Ezhilarasi, Asst. Prof.(PBG), ARS, VRI (June 2016 to May 2021)	The target may be achieved without any shortfall.
13	CPBG/TMV/PBG/OIL/2013/SP001: Maintenance breeding and breeder Seed production of sesame, castor and pulses varieties released from TNAU. Dr. M. Vaithiyalingan, Asst. Prof. (PBG), ORS, TVM- (June, 2016 – May, 2019)	The project may be continued

Sl.No.	Project Number and Title	Remarks
14	CPBG/MDU/PBG/SES/2015/001: Development of short duration high yielding white seeded sesame (*Sesamum indicum* L.) variety suitable for southern districts of Tamil Nadu. Dr. C. Parameswari, Asst. Prof.(PBG), AC&RI, MDU (October, 2015 to September, 2018)	Artificial screening for diseases may be done for MLT cultures with the Pathologist. Completion report may be submitted and a new project may be proposed with similar objectives.
15	CPBG/BSR/PBG/SES/2017/001: Development of white seeded sesame genotypes suitable for western zone of Tamil Nadu. Dr. B. MeenaKumari, Asst. Prof.(PBG), ARS, BSR (June, 2017 to May, 2020)	Profuse branching with high capsule number and resistance to root rot are the traits to be considered for the variety development. The project may be continued.
	SUNFLOWER	
16	CPBG/CBE/PBG/SNF/2015/003: Collection, maintenance and evaluation of germplasm in sunflower. Dr. R. Chandirakala, Asst. Prof.(PBG) (January 2015 to December 2017	Characterization need to be completed for remaining germplasm entries. Novel traits are to be identified and recorded.
17	CPBG/CBE/PBG/SNF/2015/004: Evolution of high yielding sunflower hybrids. Dr. S. Manonmani, Prof. (PBG), Oilseeds,Cbe. (June 2015 to May 2020)	The inbreds with all desirable characters *viz*., earliness, high oil content and high seed volume weight should be involved in synthesising new hybrids. May be continued.
18	CPBG/KKM/PBG/SFL/2014/001: Genetic enhancement of sunflower (*Helianthus annuus* L.) for *Alternaria* leaf spot resistance. Dr. Ashish K. Binodh, Asst. Prof.(PBG), AC&RI,KKM (December 2014 to November 2017)	New high yielding hybrids suited for southern Tamil nadu for *rabi* season need to be given priority in the project. Completion report may be submitted and a new project may be proposed.
	CASTOR	
19	CPBG/YTP/PBG/CAS/2013/001: Induced chemical mutagenesis for genetic diversification of pistillate and monoecious lines in castor. Dr.S.R.Venkatachalam, Prof.(PBG) & Head, TCRS, YTP (August 2013 to July 2018)	Mutation breeding will be more rewarding in oilseeds particularly in castor. Novel traits may be attempted with due priority for more pistillate lines. Completion report may be submitted and a new project may be proposed.

Sl.No.	Project Number and Title	Remarks
20	CPBG/YTP/PBG/CAS/2015/001: Collection, conservation, evaluation, characterization and utilization of castor germplasm. Dr. P.Arutchenthil, Asst. Prof.(PBG), TCRS, YTP (July 2015 to June 2020)	Local accessions may be collected to strengthen the germplasm.
	AICRP PROJECTS	
21	AICRP/PBG/VRI/GNT/017: Evaluation of advanced breeding lines belonging to Spanish / Virginia bunch group through co-ordinated experiments. Dr. A. Mothilal, Prof.(PBG) and Head, RRS, VRI	Promising lines with preferable pod characteristics can be identified and used in the crossing programme. To be continued.
22	AICRP/PBG/TVM/GNT/019: AICRP – Oilseeds Groundnut ORS, Tindivanam. Dr. M. Vaithiyalingan, Asst. Prof. (PBG) ORS, TVM	Drought resistant early maturing genotypes can be identified and utilized in breeding programme. To be continued.
23	AICRP/PBG/VRI/SES/021: Evaluation and utilization of sesame varieties and hybrids from AICRP trials. Dr. T.Ezhilarasi, Asst. Prof.(PBG), RRS,VRI	To be continued.
24	AICRP/PBG/CBE/SUN/020: AICRP on Oilseeds (Sunflower) Dr. R. Chandirakala, Asst. Prof.(PBG)	To be continued.
25	AICRP/PBG/YPR/CAS/022: All India Coordinated Research Project on castor – Breeding. Dr.S. R.Venkatachalam, Prof. (PBG) and Head, TCRS, YTP	To be continued.
	EXTERNALLY FUNDED PROJECTS	
26	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, Asst. Prof. (PBG) (01.01.2014 to 21.12.2016 extension upto 31.12.2017)	Completion report may be submitted.
27	DBT/CPBG/CBE/OIL/2017/R008: Development of high oleic hybrid through marker Assted backcross approach in sunflower (*Helianthus annuus* L.) Dr. Ameena Premnath Early Career Scientist, 07.07.2017 to 06.07.2020	May be continued.

	BIOTECHNOLOGY	
28	CPMB/CBE/PBT/GNT/2015/001: Development of an efficient *in vitro* regeneration protocol *via* somatic embryogenesis in groundnut (*Arachis hypogaea*). Dr. S. Rajesh, Asst. Professor (Biotech.) (2015 to 2018)	May be continued.

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

GROUNDNUT

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

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

BSG 0912 (Spanish Bunch) to be proposed for release as Groundnut VRI 7

The Spanish bunch culture BSG 0912 has been identified and recommended for release. The culture matures in 105-110 days. It recorded a mean pod yield of 2449 kg/ha which is 20.9 per cent, 29.1 per cent and 17.0 per cent superior over the check VRI Gn 6, CO 7 and VRI 8 respectively. The newly evolved culture registered a mean shelling outturn of 70.0 and a mean hundred kernel weight of 44 g. The oil content of the genotype is 48.5 per cent. It is moderately resistant to late leaf spot (grade 3) and rust diseases (grade 3).

Parentage	:	VRI 2 X TVG 004
Duration (in days)	:	105-110
Yield (kg/ha)	:	2449
Per cent increase over VRI Gn 6	:	20.9
Per cent increase over CO 7	:	29.1
Per cent increase over VRI 8	:	17.0
Shelling percentage (per cent)	:	70.0
Oil content (per cent)	:	48.5

(iii) CULTURES IDENTIFIED FOR CONDUCTING ADAPTIVE RESEARCH TRIAL:

Habit Group: SPANISH BUNCH

Season :*Kharif* 2018 Spacing:30 x 10 cm

Sl. No	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	% increase over VRI 8	Special attributes
1	VG 13163	VG 0420 X VRI Gn 6	100-105	2186	11.5	High yield
2	VG 13154	VG 0420 X TVG 004	100-105	2278	10.5	High yield
Checks : CO7, VRI 8 and TMV 14						

Season :*Rabi*/summer 2018-19 Spacing: 30 x 10 cm

Sl. No	Entries/ Checks	Pedigree	Duration (Days)	Pod yield (kg/ha)	% increase over VRI 8	Special attributes
1	VG 13163	VG 0420 X VRI Gn 6	100-105	2186	11.5	High yield
2	VG 13154	VG 0420 X TVG 004	100-105	2278	10.5	High yield
Checks : CO 7 , VRI 8 and TMV 14						

A total of 40 OFTs may also be organized during *kharif* 2018 and *rabi*/summer 2018-19 seasons to get additional data.

(iv) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Habit Group: SPANISH BUNCH

Season: *Kharif* 2018 and *Rabi*/summer 2018-19 Replications: Four
Spacing: 30 x 10 cm Plot Size : 4.0 x 3.0 m^2

Culture	Pedigree	Duration (Days)	Pod yield (Kg/ha)	Remarks	Proposed Centre
VG 13149 (II)	VG 420 X TVG 004	105-110	2665	High yield	Vridhachalam
VG 13159 (II)	VG 420 X TVG 004	105-110	3133	High yield	Vridhachalam
COG 0545 (II)	GG 2 X ICGV 00203	105-110	2456	High yield	Coimbatore
TVG 10342 (II)	TCGS 653 X ICGV 99025	105	2665	High yield	Tindivanam
VG 13153 (III)	VG 420 XTVG 0004	105-110	2220	High yield	Vridhachalam
VG 13154 (III)	VG 420 X TVG 0004	105-110	3020	High yield	Vridhachalam
VG 14019 (I)	CTMG 7 X CS 19-1	105-110	2036	High yield	Vridhachalam
VG 14021 (I)	CTMG 7 X CS 19-1	105-110	1965	High yield	Vridhachalam
TVG 12363 (I)	ALG 234 X AK 267	105	2620	High yield	Tindivanam
TVG 10342 (II)	TCGS 653 X ICGV 99025	105	2665	High yield	Tindivanam
COG 0537 (I)	CO 7 X ICGV 03042	105	2883	High yield	Coimbatore
Checks	CO 7, VRI 8 and TMV 14				

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

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

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

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

(iv) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

(a) MLT Sesame – Profuse branching type:

Season: *kharif* 2018 & *Rabi*/summer 2018-19 Replication: Three
Spacing: 30 cm X 30 cm Plot size: 4.0 X 3.0 m^2

Cultures	Pedigree	Duration (Days)	Seed yield (kg/ha)	Remarks	Proposing centre
VS 13006 (II)	VRI (Sv) 2 X GT 10	85	1067	Brown	Vridhachalam
TVS 1604 (II)	TVS 0603 X ORM 7	80-85	639	White seed	Tindivanam
TVS 1606 (II)	TVS 0603 X ORM 14	82-87	561	Black seed	Tindivanam
COS 14001 (III)	*S. malabaricum* x VRI SV 1	95-100	1075	Dark brown	Coimbatore
COS 14025 (III)	*S. malabaricum* x VRI SV 2	100-105	1325	Brown	Coimbatore
TVS 1401 (III)	Mutant of TMV 5 (15 mM)	70-75	503	White	Tindivanam
VS 15-007	VRI Sv 2 X OSC 366-1	90	993	Brown	Vridhachalam
VS 15-014	TMV 7 X Mutant 699	90	995	Brown	Vridhachalam
COS 14026	*S. malabaricum* X VRI Sv 1	92	1048	Brown	Coimbatore
ACMS 14-007	CO 1 X RT 3	80-85	945	White	Madurai
Checks: TMV 7 and VRI 3					

Testing centres: Vridhachalam, Tindivanam, Coimbatore, Srivilliputhur, Killikulam, Madurai, Echangottai, Bhavanisagar, Aruppukottai (*kharif* alone) and Kattuthottam.

(b) MLT sesame – Shy branching type:

Season: *Rabi*/summer 2018-19 Replication: Four
Spacing: 20 cm X 20 cm Plot size: 4.0 X 3.0 m^2

Cultures	Pedigree	Duration (Days)	Seed yield (kg/ha)	Remarks	Proposing centre
VS 12076	Cardeborega X TMV 6	90	945	White	Vridhachalam
COS 14018	Mutant of TMV 4 (500 Gy)	85	977	White	Coimbatore
Checks: TMV 7, SVPR 1 and VRI 3					

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

Observations to be recorded:

(1) Days to 50% flowering, (2) Plant stand at maturity, (3) Seed yield (kg/plot) (replication-wise) and (4) Seed yield (kg/ha).

SUNFLOWER

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

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

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

(iv) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Season: *Kharif* 2018 and *Rabi*/summer 2018-19 Replication: Four
Spacing: 60 x 30 cm Plot size:4.0 x 3.0 m^2

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	COSF 7A x IR 6	85-90	1914	High yield	Coimbatore
CSFH 14638	COSF 15 A x CSFI 8002	85-90	2131	High yield	Coimbatore
CSFH 16510	COSF 6A X CSFH 13006	85-90	2121	High yield	Coimbatore
KKSF 3	COSF 1A X KSFI 88	85-90	1833	High yield	Killikulam
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 (4) Seed yield (kg/ha).

CASTOR

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

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

CASTOR: YRCS 1205 proposed for release as Castor YTP 2

A perennial castor high yielding genotype YRCS 1205 has been evolved by crossing Salem local X TMV 6. It is a perennial type with mean seed yield of 1456 kg/ha under rainfed situations. In the mixed / intercropping situations, the entry recorded a mean seed yield of 3 kg of castor bean per plant per annum. It is profusely branching with wilt resistant. Also they possessed bold seeds with mean hundred seed weight of 45g.

Parentage	:	Salem local X TMV 6
Duration (in days)	:	Perennial
Yield (kg/ha)	:	1456
Per cent increase over CO 1	:	32.0
Special features	:	Wilt resistant

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

(iv) CULTURES PROPOSED FOR TESTING UNDER MULTILOCATION TRIAL:

Cultures	Pedigree	Duration (Days)	Seed yield (kg/ha)	Remarks	Proposing centre
YRCH 16007	DPC 21 X SKI 215	180	2047	Wilt resistant	Yethapur
Checks: YRCH 1, YRCH 2					

D. ADAPTIVE RESEARCH TRIAL 2018-19

DISTRIBUTION OF TRIALS (OILSEEDS)

District's JDA/ KVK	Trial Number	Groundnut1/2018-19	Groundnut2/2018-19
	Season	*Kharif*(June-July)	*Rabi*/Summer(Dec.-Jan.)
	Cultures	VG 13163, VG 13154	VG 13163, VG 13154
	Checks	VRI 8, CO 7	VRI 8, CO 7
Thiruvallur		2	2
Kancheepuram		2	2
Villupuram		2	2
Vellore		2	2
Thiruvannamalai		2	2
Cuddalore		2	2
Dharmapuri		-	-
Krishnagiri		-	-
Salem		2	2
Namakkal		2	2
Erode		2	2
Coimbatore		2	2
Tiruppur		-	-
Thiruchirappalli		2	2
Perambalur		2	2
Ariyalur		-	-
Karur		2	2
Pudukkottai		2	2
Tanjore		2	2
Madurai		2	2
Theni		2	2
Virudhunagar		2	2
Tuticorin		-	-
Dindigul		-	-
Ramanathapuram		-	-
Sivagangai		2	2
Thirunelveli		2	2
KVK, Sandiyur		2	2
KVK, Vridhachalam		2	2
KVK, Tinidvanam		2	2
KVK, Erode		2	2
KVK, Paparapatti		2	2
KVK, Perambalur		2	2
KVK, Vamban		2	2
KVK, Karur		2	2
KVK, Sirugamani		-	-
KVK, Needamangalam		-	-
Total		56	56

Note: The cut-off date for receiving the seed at RRS, Vridhachalam is June15th 2018.

E. SEED REQUIREMENT FOR CONDUCTING ART/MLT 2018-19

Sl.No	Name of the Entry / Check	Quantity of seed required (kg)		Centre responsible for supply
		Kharif	*Rabi*/ summer	
	GROUNDNUT			
1	VG 13163	152	152	Vridhachalam
2	VG 13154	152	152	Vridhachalam
3	CO 7	152	152	Coimbatore
4	VRI 8	152	152	Vridhachalam
5	VG 13153	12		Vridhachalam
6	VG 13149	12		Vridhachalam
7	VG 13159	12	-	Vridhachalam
8	COG 0545	12	-	Coimbatore
9	TVG 10342	12	-	Tindivanam
10	VG 14019	12	-	Vridhachalam
11	VG 14021	12	-	Vridhachalam
12	TVG 12363	12	-	Tindivanam
13	TVG 10342	12	-	Tindivanam
14	COG 0537	12	-	Coimbatore
15	TMV 14	12		Tindivanam
	SESAME			
1	VS 13006	1.0	1.0	Vridhachalam
2	TVS 1604	1.0	1.0	Tindivanam
3	TVS 1606	1.0	1.0	Tindivanam
4	COS 14001	1.0	1.0	Coimbatore
5	COS 14025	1.0	1.0	Coimbatore
6	TVS 1401	1.0	1.0	Tindivanam
7	VS 15-007	1.0	1.0	Vridhachalam
8	VS 15-014	1.0	1.0	Vridhachalam
9	COS 14026	1.0	1.0	Coimbatore
10	ACMS 14-007	1.0	1.0	Madurai
11	VS 12-076	-	1.0	Vridhachalam
12	COS 14018	-	1.0	Coimbatore
13	TMV 7	1.0	1.0	Tindivanam
14	VRI 3	1.0	1.0	Vridhachalam
15	SVPR 1	1.0	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
7	CSFH 16510	20.0	20.0	Coimbatore
8	KKSF 3	20.0	20.0	Killikulam
	CASTOR			
1	YRCH 16007	5.0		Yethapur
2	YRCH 1	5.0		Yethapur
3	YRCH 2	5.0		Yethapur

F. Action plan for 2018-2019 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) and Head					
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) and Head	Evaluated and characterised 234 accessions for nine quantitative characters	Evaluation and Chacracterization has been done for 283 genotypes	Evaluation and Chacracterization will be done for 283 genotypes	Identification of promising donors for various traits
2	Artificial screening for LLS & Rust	Vridhachalam: Dr. G. Senthilraja Asstant Professor (Plant Pathology)	19 genotypes resistant to rust and three genotypes resistant to LLS identified	Five genotypes were found to be resistant for LLS and rust	Artificial screening of identified genotypes for foliar diseases.	Promising resistant donors for LLS and Rust
3	Artificial screening for *Spodoptera*	Vridhachalam: Dr. P. Indhira Gandhi, Asstant Professor (Ento.)	A sum total of 54 moderately resistant donors identified	50 genotypes were found to be resistant	Artificial screening of identified genotypes for *Spodoptera*.	Promising resistant donors for *Spodoptera* will be identified
4	Artificial screening for Leafminer	Vridhachalam: Dr. P. Indhira Gandhi, Asstant Professor (Ento.)	A sum total of 50 moderately resistant donors identified	75 genotypes were found to be resistant	Artificial screening of identified genotypes for *Leafminer*	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	Eight genotypes were found to be tolerant.	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	Seven genotypes were found to be tolerant.	Drought tolerant traits will be studied (RWC, SLW, Root traits, DST)	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, Asst.Professor (PBG) , RRS, VRI					
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, Asst. Prof. (PBG) Kudumianmalai: Dr.R.Kalaiyarasi, Asst. Prof. (PBG)	Totally 160 germplasm has been characterised	Characterization has been completed for 300 germplasm	Characterization will be done of 150 germplasm	Promising lines for different quantitative traits
2	Artificial screening for shoot webber	Vridhachalam: Dr. R. Sheeba Jasmine Asst. Prof. (Ento.)	Twenty five genotypes evaluated under artificial condition and four genotypes were found to be resistant to shoot webber and capsule borer.	Four genotypes were found to be resistant in vegetative, flowering and capsule formation stages.	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 Assoc. Prof. (Patho.)	Out of 200 germpalsm screened, 17 resistant and 12 moderately resistant donors identified	None of the entries were found to be resistant to root rot. The incidence ranged from 24.2% to 34.6%	Screening of 100germplasm	Promising resistant donors for root rot will be identified.
4	Screening for phyllody resistance under natural condition.	Vridhachalam: : Dr. B. Meena Assoc. Prof. (Path.)	Identification of Resistant donor	The phyllody incidence ranged from 12.8% (OMT 4) to 22.4% (ES 20).	Screening of 100germplasm	Making core collection for Phyllody tolerance.

SubTheme 3	Screening of sunflower genotypes for resistant to biotic and abiotic stresses					
SubTheme 3 Leader	Dr. R.Sasikala, Asst. Prof. (PBG), Dept. of Oilseeds, Cbe.					
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.Sasikala, Asst. Prof. (PBG)	Evaluated and characterized 344 germpalsm	Completed characterization for all the DUS characters	-	Promising lines for different traits

SubTheme 4	Screening of castor genotypes for resistant to biotic and abiotic stresses					
SubTheme 4 Leader	Dr. P. Arutchenthil , Asst. Prof. (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, Asst. Prof. (PBG)	Evaluated and characterized 70 accessions for yield and other quantitative component characters	Highest single plant seed yield observed in four genotypes.	Evaluation and Characterization 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, Asst. Prof. (PP) Tindivanam: Dr. Sangeetha Panicker Professor (Pl.Path.)	Evaluated 70 accessions for wilt in wilt sick plot and identified wilt resistant accessions	Five genotypes were found to be resistant	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, Asst. Prof. (Ento.)	54 Moderately Resistant donors identified	Four genotypes were found to be resistant	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, Prof. (PBG) and Head, RRS, VRI					
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 species into susceptible cultivar.	Vridhachalam: Dr. A. Mothilal, Prof. (PBG) and Head, RRS, VRI	Triploids / Tetraploids identified	18 crosses and 9 backcrosses were made and the F1's were evaluated	Evaluation of segregating generations	Promising donors will be identified

Sub-theme 2	Development of high yielding *Spanish* and *Virginia* bunch varieties with high oil content and tolerance to drought and foliar diseases					
Sub-theme 2 Leader	Dr. A.Mothilal, Prof.and Head, RRS, VRI					
1	Hybridization of divergent parents involving high yield and agronomic superiority with resistant donars	Vridhachalam: Dr. A. Mothilal Prof. (PBG) and Head, RRS, VRI Coimbatore: Dr. PL. Viswanathan Prof. and Head (Oilseeds), CBE Bhavanisagar: Dr. B. Meenakumari Asst. Prof. (PBG), ARS, BSR Tindivanam: Dr. M. Vaithiyalingam Asst. Prof. (PBG), ORS, TVM Chettinad: Dr. R. Chandirakala Asst. Prof. (PBG), DARS, CTN	Altogether 41 crosses were made , F_1s were evaluated	Studied segregating populations and single plants were selected	Study of segregating materials	Promising cultures will be identified

Sub theme 3	Genetic improvement of groundnut for confectionery purpose					
SubTheme 3 Leader	Dr. M. Vaihtiyalingan, Asst. Prof. (PBG), ORS, TVM					
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.M. Vaithiyalingan, Asst. Prof. (PBG), ORS, TVM Vridhachalam: Dr. A. Mothilal Prof. (PBG) & Head, RRS, VRI Coimbatore: Dr. PL. Viswanathan Prof.& Head (Oilseeds), CBE	A sum total 16 crosses were made , F_1s evaluated	Studied segregating populations and single plants were selected	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.S.Manonmani, Prof. (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	Coimbatore: Dr.S.Manonmani, Professor (PBG), Oilseeds, CBE Vridhachalam: Dr. T. Ezhilarasi Asst. Prof. (PBG), ARS, VRI	Crosses were effected between CO1 and four wild species viz., *S.ratiatum, S.malabaricum, S.alatum, S.yanamalaiensis*.	Crosses were made and the F1's were studied.	Raising segregating population	Identification of pre-breeding lines for biotic stresses.

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, Asst. Prof. (PBG), RRS, VRI					
1	Evolution of high yielding varieties	Coimbatore: Dr.S.Manonmani, Prof. (PBG), Oilseeds, CBE Vridhachalam: Dr. T. Ezhilarasi Asst. Prof. (PBG), RRS, VRI Kudumianmalai: Dr.R.Kalaiyarasi, Assoc. Prof. (PBG), AC&RI, KDM Madurai: Dr. C. Parameshwari Asst. Prof. (PBG), AC&RI, MDU	Total of 80 crosses were made in Vridhachalam, Tindivanam, Coimbatore & Madurai & Evaluation of F_1	The segregating populations were studied and single plants were selected	Raising F_4 Selection of high yielding families.	Identification of high yielding genotypes
2.	Screening for drought tolerance	Vridhachalam: Dr. S. Vincent, Prof.(CRP)	Screened five hundred germplasm based on drought susceptibilty index and five accessions were identified as drought tolerant	Ten cultures were identified as drought tolerant genotypes	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.S.Manonmani, Prof. (PBG), Oilseeds, CBE					
1	Evolution of high yielding shy branching varieties	Vridhachalam: Dr. T. Ezhilarasi Asst. Prof. (PBG), RRS, VRI Kudumianmalai: Dr.R.Kalaiyarasi, Assoc. Prof. (PBG), AC&RI, KDM Madurai: Dr. C. Parameshwari Asst. Prof. (PBG), AC&RI, MDU	Ten crosses were made in Vridhachalam, and F_1 s evaluated	The segregating populations were studied and single plants were selected	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, Prof. (PBG), Oilseeds, CBE					
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, Prof.(PBG), Oilseeds, CBE Dr. R. Sasikala, AP (PBG), Oilseeds, CBE Killikulam Dr. Ashish K. Binoth, AP (PBG), AC&RI,KKM	250 hybrids were developed and five promising hybrids were identified in Coimbatore. Ten crosses were made in Killikulam.	Superior hybrids identified.	Identification of superior hybrids	Promising hybrids with high yield and tolerance to biotic stresses
2	Screening of inbreds against powdery mildew and *Alternaria*disease	Coimbatore: Dr. L. Rajendran (Path.). Dr. S.Manonmani, Prof. (PBG), Oilseeds,CBE Dr. R. Sasikala, AP (PBG), Oilseeds, CBE Killikulam Dr. Ashish K. Binoth, AP (PBG), AC&RI, KKM	3 resistant, 50 moderately resistant source for powdery mildew and 3 moderately resistant donors for *Alternaria* leaf spot identified.	Identified two maintainer and two restorer lines as resistant	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, *Botrytis* and capsule borer)					
Sub-theme1	Dr.S.R. Venkatachalam, Prof. (PBG) & Head, TCRS, YTP					
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, Prof. (PBG) & Head, YTP Dr. P. Arutchenthil, Asst. Prof. (PBG), TCRS, YTP	1.Total of 73 new castor hybrids were 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 were are identified for further evaluation	Seven new high yielding hybrids identified.	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, Prof. (PBG) & Head, TCRS, YTP Dr.P.Arutchenthil AP (PBG), TCRS, YTP Dr. M. Deivamani AP (Patho), TCRS, YTP Dr. M. Senthil Kumar AP (Ento.), TCRS, YTP	Total of 10 wilt resistant pistillate lines and 5 wilt resistant monoecious lines identified	Six resistant genotypes identified	Identification of Resistant donor	Promising resistant donors
3.	Screening of genotypes for resistance to capsule borer	Yethapur:Dr. M. Senthilkumar, Asst. Prof.(Ento.), TCRS, YTP	Due to absence of conducive weather there is no capsule borer incidence during 2016-17	Four capsule borer resistant lines identified	Identification of Resistant donor	Promising resistant donors

Theme 6	**Development of drought tolerant groundnut genotypes through *in vitro* mutagenesis**					
Sub-theme1	Dr. S. Rajesh, Prof. (PBT), CPMB, CBE					
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. S. Rajesh, Prof. (PBT), CPMB, CBE Dr. A. Senthil Asst. Prof. (CRP.)	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	Efforts were made to optimize protocol for callus induction, and established suspension cultures for somatic embryogenesis in two elite varieties of groundnut CO (Gn) 7 and TMV (Gn) 13. Induction of embryogenesis was confirmed through histological studies. In vitro mutagenesis experiments have been initiated. *In vitro* regeneration from epicotyl explants of TMV (Gn) 13 was carried out	Standardization of tissue culture techniques	Tissue culture technique for somatic embryogenesis
2	Developing cell lines through *in vitro* techniques	Coimbatore: Dr. M. Raveendran Professor Dr. A. Senthil Asst. Prof. (CRP.)			Generation of tissue culture plants	Evolving cell lines through in vitro technique
3	*In vitro* mutagenesis and screening for drought tolerance	Coimbatore: Dr. S. Rajesh, Prof. (PBT), CPMB, CBE Dr. A. Senthil , Asstant Professor (Phy.)			Screening of tissue culture plants	Mutants with drought tolerance.

Theme 7	Whole genome sequencing and allele mining in sesame					
Sub-theme1	Dr. M. Raveendran Prof. (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, Prof. (PBT), CPMB, CBE Dr. Jeyakanthan, Asst. Prof. (Bif)	Efforts have been taken to sequence genome of native / TNAU varieties of sesamum.	Activities have been initiated in collaboration with Dept. of Oilseeds, CPBG (Dr.Manonmani, Professor (PB&G)) Genotyping is in progress using 40 genome wide SSR markers AM Panel will be assembled using phenotyping and genotyping data for further characterization.	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, Prof. (PBT), CPMB, CBE Dr. Jeyakanthan, Asst. Prof. (Bif)			Identification of molecular mechanism	Identification of molecular mechanism

Work load of oilseeds scientist (Crop Improvement) 2018-19

S. No.	Scientists	% of time
1.	**Dr. A. Mothilal**	
	URP -2	20
	AICRP	40
	Teaching	10
	Administration, Organising MLT/ART/OFT; MLT monitoring; Crop scientist meet; Seed Hub	30
3.	**Dr. PL. Viswanathan**	
	URP -1	20
	AICRP	0
	Teaching	20
	Administration, Seed production and despatch, Monitoring MLT Trials and demonstrations, Farmers training activities.	60
5.	**Dr.R. Sasikala**	
	URP – 1	20
	AICRP	40
	Teaching	20
	Maintenance breeding, Organising MLT / ART / OFT / FLD, VCS in charge.	20
7.	**Dr. S. R.Venkatachalam**	
	URP – 1	20
	AICRP	40
	Administration, Guiding 1 Ph.D and 1 M.Sc student, , Castor Seed production	40

S.No.	Scientists	% of time
2.	**Dr. T. Ezhilarasi**	
	URP - 2	30
	AICRP	50
	Teaching	0
	Sesame MLT, ART; other crops MLT, Crop Scientist Meet Report Compilation.	20
4.	**Dr. S. Manonmani**	
	URP -1	20
	AICRP	0
	Teaching	20
	Organising MLT/ART/OFT/FLD, Maintenance breeding, NCC Officer (Girls), MAS Lab Maintenance	60
6.	**Dr. M. Vaithiyalingan**	
	URP – 3	50
	AICRP	40
	Teaching	0
	MLT- Groundnut (Spanish bunch and Virginia bunch), Black gram and green gram, Sesame, Sunflower, cumbu, Castor. Incharge for exhibition arrangement, SOSF, Musaravakkam breeder seed production incharge, MLT monitoring, BSP monitoring, BLTF (Koliyanur block)	10
8.	**Dr. P.Arutchenthil**	
	URP - 1	20
	AICRP	40
	Castor Seed production, Scientist Incharge for MLT Pulses, Millets and Forage crops, VCS Castor, Revolving Fund Castor incharge, Vehicle in-charge.	40

S. No.	Scientists	% of time
9.	**Dr. C. Parameshwari**	
	URP -1	20
	AICRP	0
	Teaching	40
	Handling UG courses 3, PG courses 2, Ph.D course 1; Guiding one PG student; Incharge of Tissue culture lab; MLT- sesame and maize.	40
11.	**Dr. B. Meenakumari**	
	URP -3	60
	AICRP	0
	Teaching	10
	MLT- groundnut, sunflower and minor millets, breeder seed production, block level scientist incharge of Chennimalai Block, varietal cafeteria, extension related activities.	30

S.No.	Scientists	% of time
10.	**Dr. Ashish K . Binoth**	
	URP - 1	20
	AICRP	0
	Teaching	60
	Sunflower breeding, MLT,	20

CROP MANAGEMENT

STATUS OF ONGOING RESEARCH PROJECTS

CROP WISE

S.No	Projects	Groundnut	Sesame	Sunflower	Castor	Total
1.	University Research Subprojects	14	5	3	5	27
2.	AICRP	12	6	4	6	28
3.	External funded	1				1
	Total	27	11	7	11	56
4.	Students Research (M.Sc/Ph.D)*	3	4	1	-	8

**Total excluding PG Research*

DISCIPLINE WISE

S.No	Projects	Groundnut	Sesame	Sunflower	Castor	Total
1.	Agronomy	16	8	6	11	41
2.	Agricultural Meteorology	-	-	1	-	1
3.	Soil Science & Agrl. Chemistry	4	-	-	-	4
4.	Agrl. Microbiology	2	2	-	-	4
5.	Crop Physiology	2	1	-	-	3
6.	Seed Science & Technology	3	-	-	-	3
	Total	**27**	**11**	**7**	**11**	**56**

A. Technology for adoption

1. Arresting late formed flowers to improve seed yield in groundnut

Foliar application of NAA@ 200 ppm at 60 days after sowing arrested late formed flowers and recorded higher number of matured pods (21.6) and pod yield (2655 kg/ha) with 19 percent yield increase in TMVGn 13.

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

Core destruction of capitulum (1.5 cm) at five days after flower initiation recorded higher capitulum diameter (15.9 cm) and higher yield (1781 kg/ha), the yield increase being 13.5 per cent over control.

3. Enhancing the castor productivity through selective mechanization

Selective mechanization in castor *viz*., sowing with tractor drawn seed drill, inter cultivation with power weeder, need based plant protection with boom sprayer, harvesting by secateurs and threshing and shelling by castor thresher recorded higher net return of Rs.39,636/ha and B:C ratio of 2.94.

4. Integrated best management practices for enhancing the productivity of irrigated groundnut (Adoption - demonstration through KVK, Vridhachalam and KVK, Tindivanam)

The integrated best management practices in groundnut recorded higher pod yield (2523 kg/ha) with net return (Rs.70533/-) and B:C ratio (2.27) compared to farmers practice.

B. Technologies for information

1. **Oilseeds as a component crop in rice based cropping sequence in canal command area (upland)**
    - Rice – groundnut cropping sequence recorded higher RGEY (Rice Grain Equivalent Yield) and net returns in canal command area
2. **Crop establishment and suitable intercrop for semi-spreading groundnut under rainfed condition**
    - Adoption of compartmental bunding recorded higher groundnut pod yield, which was observed from ORS, Tindivanam, DARS, Chettinad and RRS, Paiyur.
    - Adoption of seed drill sowing under raised bed recorded higher values at TCRS, Yethapur.
    - Groundnut intercropped with blackgram recorded the higher groundnut and blackgram yield from the ORS, Tindivanam and RRS, Paiyur centres.

- Groundnut intercropped with cowpea recorded the higher yield and benefit cost ratio at DARS, Chettinad
- Groundnut intercropped with castor recorded higher yield at TCRS, Yethapur

3. Introduction of castor as intercropping in Samai in hilly areas

Intercropping of samai + castor (10:1) along with 50 % organic and 50 % inorganic nutrients recorded higher samai equivalent yield (SEY) of 1077 kg/ha under rainfed condition giving a higher net return of Rs. 45983/ha and B:C ratio of 2.80.

4. Enhancing the productivity and quality of sesame using microbial inoculants

- Seed treatment of sesame with *Azotobacter* + SOB (Sulphur Oxidizing Bacteria) @ 600 g/ha each and soil application of SOB @ 2 kg/ha on 45 DAS + 75% N recorded higher number capsules/plant (126.5/plant), seed yield (711.5 kg/ha)

5. Response of groundnut to various amendments in iron rich surface crusting soil under different land configurations

- Raised bed in combination with soil amendment Bio-char @ 5.0 t/ha + FYM @ 12.5 t/ha is found to be suitable amendment in reducing the soil surface crust and to obtain more yield and economics in groundnut in iron rich surface crust soil.

6. Optimizing plant spacing and nutrients (NPK) requirements of newly released hybrid castor YRCH 2 under rainfed and irrigated conditions

Irrigated

- Higher seed yield of 2260 kg/ha in castor (YRCH 2) was registered under the treatment comprising of 150% RDF (135:65:65 kg NPK/ha) + 180 cm x 150 cm plant spacing with returns of Rs.68560/ha and B:C ratio of 3.84 in irrigated situation.

Rainfed

- Higher castor seed yield (2020 kg/ha) was recorded under application of 125% RDF (75:35:35 kg NPK/ha) +180 cm x 150 cm plant spacing (2020 kg/ha) with B:C ratio of 3.47 in rainfed situation.

7. Permanent manurial experiment on groundnut in red sandy loam soil (Typic Haplustalf) of Sivaganga under rainfed situation

- Combined application of organic and inorganic nutrient sources reduced the bulk density from 1.41 to 1.36 g/cc and increased the pore space 3.7 and 4.9 per cent over control.

- Application of integrated nutrient sources and organic alone enhanced the soil carbon to 1.3 and 1.1 g/kg respectively over the control.
- Application of integrated nutrient sources and organic alone increase the soil moisture content to 3.1 and 3.5 per cent respectively at 15 cm soil depth over the control.
- Integrated application of organic and inorganic nutrient sources enhanced the groundnut yield to a tune of 86, 29 and 13 per cent over the control, inorganic and organic plot respectively.

8. Standardization of seed drying methods to improve the storability of groundnut

- The seeds of groundnut dried under shade registered highest vigour and viability up to 8 months of storage in cloth bags under ambient condition.

9. Study on seed priming treatments for improving seed vigour and yield in groundnut

- Groundnut seeds primed with $CaCl_2$ @ 0.5 % with a seed to solution ratio of 1:1 and soaking duration of 8 hours improved 10% seed germination in medium vigour lots.

10. Assessment of seed dormancy and germination characteristics in groundnut

- Groundnut varieties *viz*., VRI 7, CO 6 and CO 7 recorded initial seed dormancy over a period of 15 to 20 days
- Groundnut seeds stored under cold storage condition (10^0 C, 40% RH) maintained seed germination above Indian Minimum Seed Certification Standards of 70% upto 12 months of storage

11. Physiological response and reproductive efficiency of groundnut to drought at different flowering phases

- The Pre-flowering drought (PFD) imposed in ground nut bunch variety CO 7 resulted in higher kernel yield by registering an increase of 17.3 per cent.
- In spreading variety CO 6, the stress imposed during pre-flowering, flowering, and post flowering phases were found to decrease the yield considerably up to 63 per cent.

C. On Farm trials proposed for 2018-19

1. Seed pelleting and foliar nutrition for yield maximization in sesame (summer irrigated)

Treatments

T_1 - Non pelleted seed

T_2 - Seed pelleting + 1% combined nutrient spray at 30 & 45 DAS
(Seed pelleting - neem leaf powder @ 760 g + 120 g *Azotobacter + 120 g* phosphobacteria for 1 kg of seed using rice gruel as adhesive)

Coordinating Centre:

RRS, Vridhachalam

Dr.S.Vincent, Professor (CRP)
Dr.C.Harisudan, Asst. Prof. (Agron.)
Dr.K.Natarajan, Asst. Prof. (SST), KVK

Centres:

ORS, Tindivanam

Dr.V.Vijayageetha, Asst. Prof.(SST)
Dr.K.Sathya, Asst.Prof.(Agron.)

ARS, Bhavanisagar

Dr.N.Satheeshkumar, Asst. Prof.(Agronomy)
Dr.R.Vigneshwari, Asst.Prof.(SST)

2. Altering crop geometry to suit mechanized weeding in sunflower

Treatments

T_1 - Pendimethalin + Hand weeding at 30 DAS with spacing of 60 x 30 cm
T_2 - Pendimethalin + Power weeding at 30 DAS with spacing of 75 x 25 cm

Coordinating Centre:

Dept. of Agronomy, TNAU, Coimbatore

Dr.T.Selvakumar, Asst.Prof.(Agron.)

Centres

ARS, Bhavanisagar

Dr.N.Satheeshkumar, Asst. Prof. (Agron.)

KVK, Sirugamani

Dr.R.Nageswari, Asst.Prof.(Agron.)

3. Understanding the role of sulphur on oil and protein synthesis in groundnut

Treatments

T_1 - NPK based on STCR-IPNS
T_2 - NPK based on STCR-IPNS + 60 kg S/ha

Coordinating Centre:

Dept. SS&AC, Coimbatore

Dr. A. Renuka Devi, Asst. Prof. (SS &AC)

Centres:

Dept. SS&AC, Coimbatore

Dr. A. Renuka Devi, Asst. Prof. (SS &AC)

TCRS, Yethapur

Dr. S. Suganya, Asst.Prof. (SS &AC)

AC&RI, Vazhavachanur

Dr. V Arun Kumar, Prof.(SS &AC)

4. Effect of spacing, nipping primary shoot and pruning on growth and yield of perennial castor TCRS 1205 under irrigated condition

Treatments

T_1 - Nipping primary shoot at 10^{th} node

T_2 - Without nipping

Coordinating Centre:

TCRS, Yethapur

Dr.K.Raja, Professor (Agronomy)

Centres :

RRS, Vridhachalam

Dr.C.Harisudan, Asst. Prof.(Agronomy)

General remarks in Crop Scientists Management

Crop intensification in borewell areas may be studied **(Action : WTC, Coimbatore)**

1. Root ecology study may be conducted for oilseed crops **(Action : Dept. of Crop Physiology, TNAU, Coimbatore)**
2. Soil profile and suitable crops **(Action : Dept. of SS &AC, TNAU, Coimbatore)**
3. Transplanting studies in tap rooted oilseed crops may be studied
   Groundnut & Sesame **(Action : RRS, Vridhachalam)**
   Castor **(Action : TCRS, Yethapur)**
   Sunflower **(Action : Dept. of Oilseeds, TNAU, Coimbatore)**
4. Effect of black, brown and white seeded sesame cake on milk yield of milch animal may be studied.
   (Action : Department of Veterinary and Animal Sciences, TNAU, Coimbatore)
5. Quenching effect of cruciferous on residual elemental sulphur applied in groundnut may be studied **(Action : Dept. of SS &AC, TNAU, Coimbatore)**
6. Castor may be tested at Vedharanyam **(Action : TCRS, Yethapur)**
7. Physiological parameters for screening of oilseeds crops for abiotic stress tolerance to be identified and communicated to all research stations (**Action : Dept. of Crop Physiology, TNAU, Coimbatore)**

CROP MANAGEMENT
PROJECT WISE REMARKS

S. No	Title of project	Name of the scientist	Duration	Remarks
1.	DCM/TNJ/AGR/GNT/2016/001 Oilseeds as a component crop in rice based cropping sequence in canal command area	Dr. M.Babu, Prof.(SS&AC) SWMRI, Thanjavur	June-2016 to May- 2019	**Remarks** • Introduction of oilseed in rice cropping system • Improving WUE • Project to be continued **Deliverables** • Effective utilization of water and improving WUE • Breaking mono -cropping of rice • Increasing farm profitability and self-sustenance.
2.	DCM/VRI/AGR/GNT/2016/001 Integrated best management practices for enhancing the productivity of irrigated groundnut	Dr. V. Karunakaran, Asst. Prof. (Agron.), RRS, Vridhachalam	June-2016 to May- 2019	**Remarks** • Pooled data may be reported • Upscaling of the technology through large scale demonstration through KVK • Project to be closed and the completion report to be submitted.
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), ORS, Tindivanam	June-2016 to May- 2019	**Remarks** • Concluding results of the centres may be given • Studies on soil moisture and microbial load may be conducted. • Project to be continued **Deliverables** • Suitable crop establishment method and intercropping system for rainfed ecosystem will be developed.

4.	DCM/VRI/CRP/SES/2017/001 Seed pelleting and foliar nutrition for yield maximization in sesame (Summer irrigated)	Dr. S. Vincent, Prof. (CRP), RRS, Vridhachalam	June 2016 to May 2019	**Remarks** • Results given for OFT • Project to be completed
5.	DCM/CBE/AGR/SNF/2016/001 Altering crop geometry to suit mechanized weeding in sunflower	Dr. T. Selvakumar, Asst. Prof (Agron), Dept. of Oilseeds, TNAU, CBE	June-2016 to May-2019	**Remarks** • Results given for OFT • Labour requirement for different treatments may be calculated • Project completed and completion report to be submitted.
6.	DCM/YTP/AGR/CAS/2016/002 Introduction of castor as intercropping in samai in hilly areas	Dr. P. Kathirvelan, Prof. (Agron), TCRS, Yethapur	June-2016 to May- 2019	**Remarks** • Modify FYM application as per the quantification of nutrients for organic • Project to be continued **Deliverables** • Suitable castor + samai intercropping system will be developed as technology to bring additional castor area under cultivation in hilly areas
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), Dept. of SS&AC, TNAU, CBE	June-2016 to May- 2019	**Remarks** • Results given for OFT • Project completed and completion report to be submitted.
8	NRM/CBE/AGM/SES/2016/001 Enhancing the productivity and quality of sesame using microbial inoculants	Dr. R. Brindavathy, Asst. Prof. (Agrl. Micro.), ORS, Tindivanam	June-2016 to May- 2019	**Remarks** • Pooled data may be reported • Analysis of quality parameters • Project to be continued **Deliverables** • Seed treatment with Azotobacter + SOB @ 600 g/ha each and soil application of SOB @ 2 kg/ha will be developed as a technology by reducing N level to improve the yield and quality of groundnut.

UNIVERSITY RESEARCH PROJECTS

	DCM Numbered Projects			
	Groundnut			
1	DCM/KDM/AGR/GNT/2016/001 Response of various amendments in iron rich surface crusting soil under different land configuration	Dr. A. Veeramani Prof. (Agronomy) AC&RI,Kudumiyanmalai	Dec'2016-March'2018	**Remarks** • Fe content and germination percent to be included in project report • Project to be closed
2	DCM/CBE/CRP/GNT/2016/001 Physiological response and reproductive efficiency of groundnut to drought at different flowering phases	Dr. S. Srinivasan Asst. Prof. (CRP) Dept.of CRP, TNAU,CBE	March 2016 to February 2018	**Remarks** • Results given for information • Project to be closed
3	DCM/VRI/CRP/GNT/2017/001 Effect of high temperature and their management in summer groundnut genotypes (*Arachis hypogaea* L.)	Dr. S. Vincent, Prof (CRP) RRS, Vridhachalam	Feb 2017 to June 2020	**Remarks** • Project to be continued **Deliverables** • A cost effective technology to sustain the tolerance of high temperature of groundnut genotypes
	Sesame			
4	DCM/VRI/AGR/SES/2014/001 Organic production of confectionary sesame.	Dr. C. Harisudan Asst. Prof (Agron) RRS, Vridhachalam	July 2014 to June 2017	**Remarks** • Quality parameters may be studied • Extension proposal may be sent to continue the project **Deliverables** • Organic production package for confectionery sesame •
	Castor			
5	DCM/YTP/AGR/CAS/2015/02 Integrated weed management for castor under irrigated condition	Dr. D. Raja Prof. (Agron) TCRS, Yethapur	Oct 2015 to Sept 2017	**Remarks** • BC ratio, net income may be calculated • Results given for information • Project to be closed

6	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) TCRS, Yethapur	July 2015 to April 2018	**Remarks** • Results given for OFT and proposed to conduct three location at farmers field. **Deliverables** • Production technology for perennial castor cultivation under irrigated condition
7	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.P. Kathirvelan Asst. Prof (Agron) TCRS, Yethapur	July 2017 to March 2019	**Remarks** • Results may be given for information to the breeder • The project may be closed
8	DCM/YTP/AGR/CAS/2017/01 Identifying the promising castor genotypes under closer spacing for single harvesting	Dr.P. Kathirvelan Asst. Prof (Agron) Dr.S.Suganya Asst. Prof .(SS & AC) TCRS, Yethapur	July 2017-March 2019	**Remarks** • The project to be closed • Completion report to be submitted
	Sunflower			
9	DCM/ARS/KPT/AGR/SNF/2015/002 Bioamelioration for stress management and yield maximization in sunflower hybrid under dry land farming	Dr. S.Subbulakshmi, Asst. Prof (Agronomy) ARS, Kovilpatti	October' 2015 to June 2018	**Remarks** • The project to be closed • Completion report to be submitted
10	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 to June 2018	**Remarks** • Results given for information • Salient findings should be elaborate • The project to be closed • Completion report to be submitted
	NRM Numbered Projects			
	Groundnut			
11	NRM-MDU-AGM-GNT-2014-001 Impact of VAM and Phosphobacteria on yield of oilseed crops Groundnut and Gingelly	Dr. N. Ramalingam, Prof.(Agrl. Micro.), Dept. of Agrl.Micro AC&RI, MDU	April 2014-May 2017	**Remarks** • The project to be closed • Completion report to be submitted

12	DST/NRM/MDU/AGM/2016/R004 Habitat adopted phyllosphere Methylotrophs as a plant probiotics for improving plant health and kernel quality in groundnut (*Arachis hypogaea* L.)	Dr.R.Krishnamoorthy, National Post-Doctoral Fellow, Dr. R. Anandham, Asst.Prof. (Agrl. Micro.) Dept. of Agrl.Micro AC&RI, MDU	May 2016-March 2018	**Deliverables** • Hot-spots on groundnut leaves for the growth of methylotrophic bacteria will be identified. • Methylotrophs as a plant probiotics for improving plant health and kernel quality will be identified.
13	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	**Remarks** • Not presented The reason for not presenting the progress of work of the project to be submitted by the individual to the Technical Director, DNRM, TNAU, Coimbatore
14	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) DARS,Chettinad	April 2014 to March 2019	**Remarks** • May be given for information and the project may be closed
15	NRM/TVM/SAC/GNT/2015/001 Permanent Manurial Experiment (PME) on rainfed groundnut and cold weather gingelly	Dr.P.C.Prabu Asst. Prof.(SS&AC) ORS, Tindivanam	July 2015 to June 2020	**Remarks** • Pooled data may be summarized and documented • Herbicide dose and name may be given **Deliverables** • The results revealed that in both the crops, the highest grain yield was recorded in the 100 % NPK + FYM @ 12.5 t/ha with herbicide application followed by 100 % NPK + FYM @ 12.5 t/ha.

	Sesame			
16	NRM/TMV/AGM/SES/2017/001 Effect of biological source of nutrients on growth enhancement, productivity and seed quality of *Sesamum indicum* L.	Dr. R. Brindavathy, Asst.Prof. (Agrl. Micr) ORS, Tindivanam	April 2017-March 2019	**Remarks** • To be continued **Deliverables** • Bioinoculants to enhance the productivity and quality of sesame will be developed.
	Seed Numbered Projects			
	Ground nut			
17	SEED/TMV/SST/2015/001 Standardization of seed storage techniques in groundnut and sesame	Dr. V. Vijaya Geetha, Asst. Prof.(SST) ORS, Tindivanam	Oct 2015 to Sep 2018	**Remarks** • Results given for information. • Completion report to be included with quality parameters. • The project may be closed
18	SEED/CBE/SST/GNT/2016/001 Study on seed priming treatments for improving seed vigour and yield in groundnut	Dr. V. Manonmani Prof. (SST), Dept. of SS&T, TNAU, CBE	June 2016 to May 2019	**Remarks** • Quality parameters may be included • The project may be closed
19	SEED /CBE / SST / GNT / 2016 /001 Assessment of seed dormancy and germination characteristics in groundnut	Dr.K.Nelson Navamaniraj Asst. Prof.(SST) Dept. of SS&T, TNAU, CBE	March 2016 to February 2018	**Remarks** • Results given for information. • Completion report to be included with quality parameters. • The project may be closed

Work load of oilseeds scientist (Crop Management) 2018-19

Agronomy

S. No.	Scientists	% of time
1.	**Dr. V.Karunakaran**	
	URP -1	20
	AICRP	40
	Teaching	10
	Other activities (Extension/Field visit/FLDs)	30
3.	**Dr. K.Sathya**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other activities (Extension/Field visit/FLDs)	20
5.	**Dr. D. Raja**	
	URP - 2	40
	Other activities	60
7.	**Dr.P. Kathirvelan**	
	URP - 2	40
	AICRP	40
	Other activities (Extension/Field visit/FLDs)	20

S.No.	Scientists	% of time
2.	**Dr.C.Harisudan**	
	URP - 3	50
	AICRP	30
	Teaching	10
	Other activities (Extension/Field visit/FLDs)	10
4.	**Dr. T.Selvakumar**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities	20
6.	**Dr. A. Veeramani**	
	URP - 1	20
	Teaching	60
	Other activities	20
8.	**Dr. S.Subbulakshmi**	
	URP - 1	20
	AICRP	50
	Other activities (Extension/Field visit)	30

Crop Physiology

S. No.	Scientists	% of time
1.	**Dr. S.Vincent**	
	URP - 3	50
	Teaching	20
	Other activities	30

S.No.	Scientists	% of time
2.	**Dr. S. Srinivasan**	
	URP - 2	30
	Teaching	60
	Other activities	10

Soil Science and Agricultural Chemistry

S. No.	Scientists	% of time
1.	**Dr. M. Babu,**	
	URP - 1	20
	Teaching	20
	Other activities	60

S.No.	Scientists	% of time
2.	**Dr. S. Meena,**	
	URP - 1	20
	Teaching	60
	Other activities	10

S. No.	Scientists	% of time
3.	**Dr. P. Kannan,**	
	URP - 1	30
	Teaching	20
	Other activities	50

S.No.	Scientists	% of time
4.	**Dr. S. Thenmozhi,**	
	URP - 1	20
	Other activities	80

Agricultural Microbiology

S. No.	Scientists	% of time
1.	**Dr. N.Ramalingam,**	
	URP - 1	20
	Teaching	60
	Other activities	20

S.No.	Scientists	% of time
2.	**Dr. R.Brindhavathy,**	
	URP - 2	50
	Teaching	20
	Other activities	30

S. No.	Scientists	% of time
3.	**Dr. R. Anandham,**	
	URP - 1	20
	Teaching	60
	Other activities	20

Agricultural Meteorology

S. No.	Scientists	% of time
1.	**Dr. B.Arthirani,**	
	URP - 1	20
	GOI/VCS/NMH schemes	50
	Other activities	30

Environmental Science

S.No.	Scientists	% of time
1.	**Dr. P.C.Prabu,**	
	URP - 2	30
	Teaching	30
	Other activities	40

Seed Science & Technology

S. No.	Scientists	% of time
1.	**Dr. V. Manonmani,**	
	URP - 1	20
	Teaching	60
	Other activities	20

S.No.	Scientists	% of time
2.	**Dr.K.Nelson Navamaniraj,**	
	URP - 1	20
	Teaching	60
	Other activities	20

S. No.	Scientists	% of time
3.	**Dr. V. Vijayageetha,**	
	URP - 2	40
	Teaching	30
	Other activities	30

CROP PROTECTION

The following scientists attended the meeting.

Agrl. Entomology

S. No.	Name of the Scientist	Mobile No.	E mail ID
1	Dr. N. Muthukrishnan	9486257548	nmuthu64@yahoo.com
2	Dr. P. Indiragandhi	9655867995	mptindira@gmail.com
3	Dr. R. Sheeba Jasmine	8122586689	shepris2000@yahoo.com
4	Dr. M. Senthilkumar	9976099191	senthilkumariari@ gmail.com

Plant Pathology

S. No.	Name of the Scientist	Mobile No.	E mail ID
1	Dr. T. Raguchander	9443080035	pathology@tnau.ac.in
2	Dr. M. Muthamilan	9003799152	srinatrakamutha@yahoo.in
3	Dr. SangeethaPanicker	9940871944	sangeetha_murali@hotmail.com
4	Dr. B. Meena	9842067785	meepath@rediffmail.com
5	Dr. S. Sundravadhana	9443972946	sundravadana@rediffmail.com
6	Dr. L. Rajendran	9786504560	rucklingraja@rediffmail.com
7	Dr. M. Paramasivan	9942407343	pathosivan_1977@rediffmail.com
8	Dr. P. Deivamani	9626674884	deivamani.m@tnau.ac.in
9	Dr. G .Senthilraja	9600485661	gsr.path@gmail.com
10	Dr. R. Thilagavathi	8870188755	rthilagaphd@gmail.com

CROP PROTECTION

List of URP/AICRP/ERP

Discipline	URP	AICRP	EFP	Total
Agricultural Entomology	4	3	-	7
Plant Pathology	6	4	1	11

A. Remarks on the ongoing University Research Projects

1. AGRICULTURAL ENTOMOLOGY

S. No.	Project No. and Title	Remarks
1.	**CPPS/ENT/GNT/2016/001** Cultural Management of insect pests in groundnut (2016-2019) **Dr. P. Indiragandhi**	Project may be continued. Already screened border crops and organic amendments may be tested once more. Treatment structure may be modified in consultation with Dr. N.Muthukrishnan, Prof.&Head (Agrl.Ent.), TNAU, Coimbatore. Pest defender ratio and B:C ratio needs to be worked out for each treatment.
2.	**CPPS /ALR/ ENT/ GNT/2015/ 001** Screening groundnut breeding materials against insect pests for exploitation of resistance. (2015-2019) **Dr. K. Rajamanickam**	Project may be continued. Mechanism of resistance should be studied for screened groundnut entries. Morphological and Biochemical analysis should be done for the screened entries.
3.	**CPPS/VRI/ENT/SES/2016/001** Introducing ecofeast crops and enhancing soil fertility to improve plant pest natural enemy interactions in sesame (2016-2019) **Dr. R. Sheeba Jasmine**	The findings of the project have not been presented with statistically analysed data. Report should be submitted with statistically analyzed data. Pests and natural enemies population in main and border crops should be recorded scientifically with the tabulated data.
4.	**CPPS/YTP/AEN/CAS/2015/001** Bioecology and management of castor whitefly (*Trialeurodes ricini*) and castor thrips (*Retithrips syriacus*) in *rabi* castor (2015-2018) **Dr. M. Senthilkumar**	Completion report is to be submitted on or before 31.09.2018. A copy of the publication (both soft and hard copy) from this URP may be sent to Director (CPPS) for documentation. New research project proposal should be submitted based on theme area.

II. PLANT PATHOLOGY

S. No.	Project No. and Title	Remarks
1	**CPPS/TMV/PAT/GNT/2017/New** Standardization of dose of *Trichoderma asperellum* and *Pseudomonas fluorescens* for groundnut by different methods of application (2017 – 2020) **Dr. Sangeetha Panicker**	The project number is to be obtained. The scientist is currently working at ARS, Bhavanisagar, hence proposal for change of project leader in the name of Dr.M.Rajakumar should be submitted before July, 15, 2018 (Action: Dr. Sangeetha Panicker, Prof.(Pathology) and Dr.M. Rajakumar, Prof. (Pathology), ORS, Tindivanam).
2	**CPPS/ALR/PAT/GNT/2017/001** Identifying the mechanism of resistance in groundnut breeding materials against rust and late leaf spot diseases (2017-2019) **Dr. S. Sundravadhana**	Ascorbic acid and riboflavin content should be studied along with all other mechanisms of resistance as discussed during the CSM. The project may be continued.
3	**CPPS/VRI/PAT/GNT/2017/001** Management of soil borne diseases of groundnut by using bioinoculants and organic amendments (2017-2020) **Dr. G. Senthilraja**	Project title and treatment structure have to be modified on consultation with Dr.T.Raguchander, Prof & Head, Dept. of Plant Pathology, TNAU. Proposal for midterm correction should be submitted on or before July, 15, 2018.
4	**CPPS/CTN/PAT/GNT/2016/001** Integrated disease management of soil borne diseases of groundnut under rainfed conditions (2016-2019) **Dr. M. Paramasivan**	Total fungal and bacterial colonies along with the cfu counting of introduced bio-inoculants at periodical intervals (30, 60 and 90 days) may be carried out using special media. The changes in the rhizobiome at infection court needs to be documented in the best treatments. Augmentation of the infection court with at least 60% of beneficial microbes is to be ensured. The project may be continued
5	**CPPS/VRI/PAT/SES/2017/001** Management of root rot (*Macrophomina phaseolina*) disease of sesame (*Sesamum indicum* L.) (2017-2019) **Dr. B. Meena**	Project may be continued. Organic amendments should be included along with bioagents in the management trial. The effect of AM fungi may also be tested. The rhizobiome changes at infection court should be documented in the best treatments. Augmentation of the infection court with at least 60% of the introduced bio-inoculants is to be ensured.

6	**CPPS/CBE/PAT/SES/2017/001** Effect of liquid formulation of *Pseudomonas fluorescens* and *Bacillus amyloliquefaciens* on the management of leaf blight and charcoal rot of sesame (*Sesamum indicum* L.) (2017-2020) **Dr. M. Muthamilan**	Project may be continued. The mechanism of action of *B. amyloliquefaciens* against both the pathogens is to be studied in detail. The population dynamics (in terms of cfu) of pathogenic organisms and the bioinoculants under evaluation may be documented at periodical intervels.

A. For Information

Buprofezin 25 SC @ 0.8ml/l reduced the whiteflies and thrips population upto 89 and 73 percent reduction over control respectively, with highest seed yield of 1430 kg/ha and favourable B:C ration of 1: 4.69.

B. For Adoption

Management of leaf spot disease in sunflower

- Seed treatment with *Pseudomonas fluorescens* (TNAU-Pf1) @ 10g/kg seeds along with foliar spray of hexaconazole / propiconazole @ 0.1% at 45 DAS and foliar spray of TNAU-Pf1 at 60 DAS was effective in managing the leaf spot disease of sunflower.

B. On Farm Testing

OFT 1: Integrated Management of insect pests in groundnut

IPM Module

- Seed treatment with imidacloprid 17.8 SL @ 2ml/kg of seed
- Basal application of neem cake @ 25 kg/ha
- Yellow sticky trap @ 25/ha
- Release of *Chrysopa* @ 2500/ha on 20 DAS
- Azadirachtin 1% @ 2ml on 30 DAS
- Cumbu as intercrop (6:1) ratio
- Need based application of insecticide

Spacing: 30x10cm; Cultivar: VRI 2; Replication: Non replicated, Area: 10 cents; Season: *Kharif* / *rabi*

Observations to be recorded

1. Population and per cent damage of sucking and chewing insect pests
2. Poulation of natural enemies
3. Yield (kg/ha) and CBR

Centres : RRS, Vriddhachalam - Dr.P.Indiragandhi, AP (Ento.); TCRS, Yethapur - Dr.M.Senthilkumar, AP (Ento.); ARS, Virinjipuram - Dr.P.Thilagam, AP (Ento.)

OFT 2: Integrated Management of insect pests in castor

- Application of Btk @ 1g/l (on notice of egg and early instar larvae of semilooper
- Monitoring of *Spodoptera litura* by pheromone traps @ 4 /acre from 30 DAS
- Application of flubendiamide 39.35 SC @ 0.2 ml /l (for *Spodoptera* when foliar damage reaches 23%)
- Profenofos 50EC @ 1ml/l (for capsule borer/leafhopper when damage reaches 10%)

Spacing: 90x19cm; Cultivar: YRCH 1; Replication: Non replicated, Area: 10 cents; Season: *Kharif*

Observations to be recorded

1. Population of defoliators per plant and per cent damage of capsule borer
2. Population of leafhopper, thrips per three leaves per plant
3. Poulation of natural enemies
4. Yield (kg/ha) and CBR

Centres : RRS, Vriddhachalam - Dr.P.Indiragandhi, AP (Ento.); TCRS, Yethapur - Dr.M.Senthilkumar, AP (Ento.); ARS, Virinjipuram - Dr.P.Thilagam, AP (Ento.)

OFT 3: Management of foliar diseases of sunflower

Treatments

T1: Seed treatment with *Trichoderma asperellum* @ 10g/kg + two foliar spray of Propiconazole @ 0.1% on 45 and 60 DAS and need based spray of thiamethoxam 25 WG @ 0.04%

T2: Seed treatment with (carbendazim @ 2g/kg + thiamethoxam 70WS @ 4 g/kg) + two foliar spray of propiconazole @ 0.1% on 45 and 60 DAS and need based spray of thiamethoxam 25 WG @ 0.04%

T3: Seed treatment with Imidacloprid 70WS 2g/kg seed + two sprays of mancozeb @1kg/ha

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, powdery mildew and necrosis
2. Yield (kg/ha) and CBR

Centres: TNAU, Coimbatore - Dr. L. Rajendran; AC&RI, Killikulam - Dr.R.Akila; RRS,Vridhachalam - Dr.G.Senthilraja

C. ACTION PLAN (2018 -2019)

Thrust Areas for Research

- ❖ Monitoring of pests and diseases
- ❖ Identification of resistant sources and study of mechanism of resistance
- ❖ Management of pests and diseases

  (Bio intensive / Use of newer molecules / IPM)

Theme Area 1

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

<table>
<tr><td>Theme leader</td><td colspan="3">Dr.P.Indiragandhi, Asst. Professor (Agrl. Entomology), RRS, Vridhachalam</td></tr>
<tr><td>Activity</td><td>Name of the Scientist</td><td>2018-19</td><td>Deliverables</td></tr>
<tr><td rowspan="4">Monitoring of incidence of important insect pests</td><td>RRS, Vridhachalam
Dr. P. Indiragandhi (Groundnut)
Dr.R.Sheeba Jasmine (Sesame)</td><td rowspan="4">Incidence of insect pests is to be monitored throughout the crop period during kharif , rabi and summer.

Pest incidence is to be correlated with weather parameters.</td><td rowspan="4">Forecasting of the seasonal occurrence of major insect pests. Monitoring of invasive pests if, any.</td></tr>
<tr><td>ORS, Tindivanam
Dr.G.V.Ramasubramaniyam (Groundnut and Sesame)</td></tr>
<tr><td>CRS, Aliyarnagar
Dr.K.Rajamanickam (Groundnut)</td></tr>
<tr><td>TCRS, Yethapur
Dr.M.Senthilkumar (Castor)</td></tr>
</table>

Action Plan 2. Monitoring diseases of groundnut, sesame, sunflower and castor

Theme leader	**Dr. B. Meena, Associate Professor (Plant Pathology), RRS, Vridhachalam**		
Activity	Name of the Scientist	2018-19	Deliverables
Monitoring the incidence of major diseases	RRS, Vridhachalam Dr. G. Senthilraja (Groundnut) Dr. B. Meena (Sesame)	Incidence of diseases is to be monitored throughout the crop period during *kharif*, *rabi* and summer. Disease incidence is to be correlated with weather parameters.	Forecasting of the seasonal occurrence of major diseases. Monitoring of invasive diseases if, any.
	CRS, Aliyarnagar Dr. S.Sundravadhana (Groundnut)		
	ORS, Tindivanam Dr. M.Rajakumar (Groundnut)		
	DARS, Chettinad Dr.M.Paramasivan (Groundnut)		
	TCRS, Yethapur Dr. M.Deivamani (Castor)		
	Dept. of Oilseeds, Coimbatore Dr. L.Rajendran (Sunflower)		

Theme Area 2

Action Plan 3. Identification of resistant sources & mechanisms of resistance

Insect pests

Theme Leader	**Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS, Vridhachalam**		
Activity	Name of the Scientist	2018-19	Deliverables
Identification of resistant entries for defoliators and sucking pests	RRS, Vridhachalam Dr. P. Indiragandhi (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	Mechanism of resistance in Groundnut : VG13127, VG13153, VG13154, VG13163 Sesame : KMR 30, ES 10, KMR 27	Resistant donors will be transferred for breeding purpose.
	ORS, Tindivanam Dr.G.V.Ramasubramaniyam (Groundnut & Sesame)		

	CRS, Aliyarnagar Dr.K.Rajamanickam (Groundnut) TCRS, Yethapur Dr.M.Senthilkumar (Castor)	KMR 49 Castor : RG22, M 574 (Thrips) RG3477, RG1068 (Leafhopper) Observations Physical : Trichome length & density, leaf size & thickness, leaf color Biochemical : phenols, protein, tannin, carbohydrate and reducing sugars	

Theme Area 2:

Action Plan 4. Identification of resistant sources & mechanisms of resistance

Diseases

Theme leader	**Dr. B. Meena, Associate Professor (Plant Pathology), RRS, Vridhachalam**		
Activity	Name of the Scientist	2018-19	Deliverables
Revealing the mechanisms of resistance in the identified resistant entries	RRS, Vridhachalam Dr. G.Senthilraja (Groundnut) Dr. B.Meena (Sesame) CRS, Aliyarnagar Dr. S.Sundravadhana (Groundnut) TCRS, Yethapur Dr. M.Deivamani (Castor) Dept. of Oil seeds, Coimbatore Dr. L.Rajendran (Sunflower)	Mechanism of resistance in Groundnut : MLT1704, MLT1709, ICGV07222 Sesame : ES 6 and VS 1407 Castor : YRCH17002, YRCH17007, YRCH17021, YRCH-2 Sunflower : CSFI 13023, CSFI 13022, SFK 1606, CSFH 17427, CSFH 17261 Morphological & Biochemical parameters including Enzymes, Phenols and PRPs Confirmation of resistance in the most promising entries through artificial screening	Resistant donors will be transferred for breeding purpose.

Theme area: 3 Integrated pest management

Sub Theme:1 Bio-intensive Pest Management

Action Plan 5. Evaluation of habitat manipulation for the management of insect pests

Theme leader	**Dr. P. Indiragandhi, Asst. Professor (Entomology), RRS,Vridhachalam**		
Activity	Name of the Scientist	2018-19	Deliverables
Management of insect pests in groundnut and sesame	Vridhachalam Dr. P. Indiragandhi (Groundnut) Dr.R.Sheeba Jasmine (Sesame)	Maize as border crop recorded the lowest population of *Antigastra* and leafhopper/plant and increased coccinellids & spiders. Neemcake @ 250 kg/ha + Vermicompost @ 2.5 t/ha+ Phosphobacteria @ 2 kg/ha showed reduced levels of thrips, leafhopper, leaf miner, *S.litura* and *H.armigera.* Trial is to be repeated for confirmation during 2018.	Best practice of habitat manipulation and organic manure treatment will be integrated with IPM module.
		Observations to be recorded Pests and natural enemies population throughout cropping period	

General Remarks

- To solve the emerging crop protection problems in oil seed crops, team research is to be given priority. Inter-disciplinary research projects are encouraged (Action: All scientists).
- If work has been initiated in the theme area of research without getting URP number, immediate action may be taken up to regularise the work properly under URP. In this regard proposals may be sent for a new URP for getting project number from the Director of Research. This is very much essential to fix the workload for the individual scientist. New URP proposals should be submitted by

the concerned scientists on or before 31.09.18. All proposals should be presented before the RPAC convened by the Director (CPPS) before getting final approval.

- The dates given for sending the closure / deletion / change of project leadership should be strictly adhered.
- All scientists are requested to monitor the status of insect pests and diseases of oilseeds in their respective districts. Monthly pest and disease surveillance report should be submitted to the Director (CPPS) on or before 25th of every month without fail.
- Authentication of effective bio-control agents (Accession no. from IDA recognized Type Culture Collection Centre) should be given, when claimed for technology adoption / commercialization.
- All microbial bio-inoculants used for plant protection by the scientists should have accession no. assigned by the Professor & Head, Department of Plant Pathology, CPPS, TNAU, Coimbatore.
- Post graduate students may be involved to work on basic research of theme area, wherever possible.
- Soft and hard copies of publications made from URP should be submitted to the Director, CPPS for documentation.
- Proper design and layout of experiments should be followed for conducting field experiments. The data should be presented only with statistical analysis (Action: Dr.R.Sheeba Jasmine, AP (Entomology), RRS, Vriddhachalam)
- A new URP should be proposed before 30th July 2018 based on the identified theme area (Action: Dr.M.Deivamani, Asst Prof (Pl. Pathology); Dr.M.Senthilkumar, AP (Entomology), TCRS, Yethapur)

Work load of each scientist - Entomology (Theme wise) 2018-2019

Theme 1: Monitoring of pests and diseases

Theme 2: Identification of resistant sources and study of mechanism of resistance

Theme 3: Management of pests and diseases

(Bio intensive / Use of newer molecules / IPM)

Sl. No.	Name of the scientist	Theme 1	Theme 2	Theme 3	Total
(man hours / week)					
1.	Dr. K. Rajamanickam	5	5	-	10
2.	Dr. P. Indiragandhi	5	5	5	15
3.	Dr. R. Sheeba Jasmine	5	5	5	15
4.	Dr. M. Senthilkumar	5	5	5	15

Work load of each scientist - Plant Pathology (Theme wise) 2018-2019

Theme 1: Monitoring of pests and diseases

Theme 2: Identification of resistant sources and study of mechanism of resistance

Theme 3: Management of pests and diseases

(Bio intensive / Use of newer molecules / IPM)

Sl. No.	Name of the scientist	Theme 1	Theme 2	Theme 3	Total
(man hours / week)					
1.	Dr. M. Muthamilan	-	-	5	5
2.	Dr. M. Rajakumar	5	-	5	10
3.	Dr. B. Meena	5	5	5	15
4.	Dr. S. Sundravadhana	5	5	5	15
5.	Dr. L. Rajendran	5	5	5	15
6.	Dr. M. Paramasivan	5	-	5	10
7.	Dr. P. Deivamani	5	5	5	15
8.	Dr. G. Senthilraja	5	5	5	15

Work load of oilseeds scientist (Entomology) 2018-19

S. No.	Scientists	% of time
1.	**Dr. K. Rajamanickam**	
	URP -1	30
	Teaching	20
	Other activities	50
2.	**Dr. P. Indiragandhi**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities	20
3.	**Dr. R. Sheeba Jasmine**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities	20

S.No.	Scientists	% of time
4.	**Dr. M. Senthilkumar***	
	URP - 1	20
	AICRP	40
	Teaching	20
	Other activities	20

* The scientist will propose new university research project

Work load of oilseeds scientist (Pathology) 2018-19

S. No.	Scientists	% of time
1.	**Dr. M. Muthamilan**	
	URP - 1	20
	Teaching	25
	Students guidance	25
	Other Activities	30
2.	**Dr. M. Rajakumar**	
	URP -1	40
	Teaching	20
	Other Activities	40
3.	**Dr. B. Meena**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities/projects	20
4.	**Dr. S. Sundravadhana**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities/projects	20

S.No.	Scientists	% of time
5.	**Dr. L. Rajendran**	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities/projects	20
6.	**Dr. M. Paramasivan**	
	URP	40
	Teaching	20
	Other activities/projects	40
7.	**Dr. P. Deivamani***	
	URP -1	20
	AICRP	40
	Teaching	20
	Other Activities/projects	20
8.	**Dr. G. Senthilraja**	
	URP	20
	AICRP	40
	Teaching	20
	Other projects/activities	20

* The scientist will propose new university research project