

PROCEEDINGS OF THE 35th COTTON SCIENTISTS' MEET HELD ON 12.05.2017

Crop Scientists' Meet 2017 on Cotton was held on 12.05.2017 at TNAU, Coimbatore under the chairmanship of Dr. K. Ramasamy, Vice-Chancellor. On 11.05.2017 by 9.30 AM, pre-review of the University Research Projects (URP) combining all the disciplines in cotton was taken up by Dr. M. Maheswaran, Director of Research at Centre for Plant Breeding and Genetics. The review was assisted by Dr. R. Ravi, Director, TRRI, Dr. B.J. Pandian, Director, WTC, Special Officers Dr. P. Selvaraju (Seeds) and Dr. D. Jawahar (NRM). The list of participants for the scientists' meet on cotton is appended.

The pre-review meeting began with an introduction by Dr. M. Maheswaran, Director of Research who narrated the experiences and the expectations of the University. Followed by that, individual project review was taken up. Considering the time and to avoid duplications, Dr. M. Kumar, Professor and Head, Department of Cotton was informed to make a presentation on the action taken on the recommendations made during the last meet, progress made under various themes and the action plan formulated for 2017-18 and accordingly the presentation was made. In his presentation, he highlighted the scenario of cotton in World, India and Tamil Nadu, action taken on the remarks made during the last year highlighting the stake holder's meet concluded, promotion of TCH 1819 compact culture for HDPS, works undertaken to promote superior medium staple cotton, introgression of genes from wild species and breeding works undertaken in diploid cotton improvement. Suggestions were made by the Director of Research and accordingly, modified presentation was made by him on 12.5.2017 before the Vice-Chancellor.

Similarly, Dr. N. Meyyazhagan, Professor and Head, CRS, Veppanthattai made a presentation on the progress of research made in the crop management discipline. Dr. K. Senguttuvan, Assistant Professor (Ag. Ento.) and Dr. P. Latha, Assistant Professor (Pl. Path.) made the presentations on the progress made under Agrl. Entomology and Plant Pathology respectively. All of them were suitably advised by the Director of Research to modify the presentations highlighting the themes and the actions taken accordingly.

On 12.5.2017, Dr. N. Sakthivel, Associate Professor (Agron.), Dr. K. Senguttuvan, Assistant Professor (Ento.) and Dr. R. Vimala, Professor (Pl. Path.) made the presentations.

Observations made by the Vice-Chancellor during the presentations were

1. Research towards increasing cotton lint yield *per se* and as suggested by Dr. V. Santhanam, concentration should be given to breed varieties with more Ginning outturn (All cotton scientists)
2. Assessing the area suitability for cultivating the diploid and tetraploid species in Tamil Nadu (CARDS)
3. Targeted approach by involving private seed sector for on sharing basis for producing quality seeds (All cotton scientists)

4. Interacting with SITRA officials for understanding the need and demand of cotton (Department of Cotton)
5. Breeding programme for evolving cotton genotypes for 120 counts and advancing the selection process if cultures are found fitting (Department of Cotton)
6. Utilizing wild species by grafting (Department of Cotton)
7. Using newer varieties / advanced stage entries like CO 14 /TCH 1819 in FLDs /TSP (All cotton scientists)
8. Tissue culture works with the transformation friendly cotton varieties Coker 310 and 312 using the native Bt gene Cry2AX1 to be undertaken by Dr. V. Thiruvengadam, Assistant Professor under the guidance of Dr. P. Amala Balu, Professor (PBG) using the facilities available in CPBG and CPMB (Dr. V. Thiruvengadam, Assistant Professor, PGR)

Proceedings of the 35th Cotton Scientists' Meet are presented in the following order.

- 1) Staff Pattern
- 2) Remarks on the individual University Research Projects
- 3) Decisions made on entries for Variety Release/ART/MLT evaluation from breeders and OFTs from Crop Management and Crop Protection Scientists
- 4) Action Plan: 2017-2019

1. Staff Pattern

Station	Designation	Discipline				Total
		PBG	AGR	ENT	PAT	
Coimbatore	Professor	2+1 (AICRP)	-	-	-	7
	Assc. Professor	-	1 (AICRP)	-	-	(3 + 4)
	Asst. Professor	1	-	1 (AICRP)	1 (AICRP)	
Srivilliputhur	Professor	1	-	-	1 (PCC)	6
	Asst. Professor	2 (AICRP)	1 (AICRP)	1 (AICRP)	-	(2 + 4)
Veppanthattai	Professor	1	1	-	-	3
	Asst. Professor	1	-	-	-	
Kovilpatti	Asst. Professor	1	-	-	-	1
Total		10	3	2	2	17

Among the 17 scientists, 9 are in Non-Plan Main and 8 are under ICAR AICRP; Under 9 Non Plan Main scientists, 3 are Professor and Heads and one is in PCC ; For Jute and Mesta, one Assistant Professor each under PBG and Agronomy are working in the AICRP on Jute and Mesta at Aduthurai.

2. Remarks on the ongoing University Research Projects

Plant Breeding and Genetics

S. No.	Project Number	Remarks
1.	CPBG/CBE/PBG/COT/2012/004 Dr. N. Premalatha Development of compact cotton (<i>G.hirsutum</i> L.) genotypes for high density planting system	Strengthened breeding programme be undertaken with evaluated parents targeting the trait. The contributory traits for developing a compact genotype be listed and the variability for such traits available in the germplasm be surveyed. Project period be extended for one more year coinciding with the completion of TNCCM project.
2.	CPBG/CBE/PBG/COT/2014/005 Dr.M. Kumar Breeding for high yielding long and extra long staple <i>G.hirsutum</i> and <i>G.barbadense</i> cotton varieties suitable for high speed spinning.	The project period is over and the completion report be submitted. A new project on evolving genotypes with higher ginning outturn with good fibre qualities be proposed. Concentrated research is to be undertaken in the evaluation of colored cotton genotypes, Bt advanced generation population evaluation and on the generation of CMS and restorer lines and their management.
3.	CPBG/CBE/PBG/COT/2016/001 Dr. N. Premalatha Maintenance and evaluation of germplasm stocks of <i>G.barbadense</i> and <i>G.hirsutum</i>	Along with the scoring data of the plant protection scientists, the data should be documented and made available to the Department of PGR. Remaining germplasm be characterized and documented.
4.	CPBG/ CBE/ PBG/ COT/ 2016/002 Dr. L. Mahalingam Development of high yielding jassid resistant cotton varieties by introgression of genes from wild species	Leaf hopper tolerance in the parents and hybrids be assessed. Among the four sets of crosses initiated, crosses being taken up with diploid species have been treated with colchicine for doubling. Necessity to involve KC 3, K 11 be justified as they have leaf hopper resistance. Qualities to be infused using wild parents be documented. As suggested, cuttings of cernuum and wild species and grafting using wild species as root stock be tried.

5.	<p>CPBG/ CBE/ PBG/ COT/ 2016/003 Dr. L. Mahalingam</p> <p>Maintenance and production of nucleus and breeder seeds of cotton varieties of Department of Cotton, Coimbatore</p>	<p>Quality of seeds should be ensured. Seed production can be concentrated in the newly released varieties. As suggested, seeds of newer varieties / advanced cultures be given under FLD / TSP for their popularization.</p>
6.	<p>CPBG/SVP/PBG/COT/2016/001 Dr. K. Thiyagu</p> <p>Evolution of short duration and high yielding cotton (<i>Gossypium hirsutum</i> L.) genotypes suitable for rice fallow and rainfed conditions of southern districts of Tamil Nadu</p>	<p>Advanced stage entries available at Department of Cotton under compact cotton development project be test verified for its suitability under rice fallow situation. Parents for the new crosses be assessed for its compactness and genetics of compactness be investigated.</p>
7.	<p>CPBG/SVP/PBG/COT/2016/002 Dr.M.Gnanasekaran</p> <p>Evolving high yielding medium staple upland cotton varieties (<i>Gossypium hirsutum</i> L.) resistant to jassids for summer irrigated tracts of Tamil Nadu</p>	<p>Materials found better under this project as well under the introgression project being run at Coimbatore be cross evaluated for verifying its worthiness against leaf hoppers. Leaf hopper resistant materials identified at both the locations be pushed into MLT.</p>
8.	<p>CPBG/SVP/PBG/COT/2015/004 Dr. K. Thiyagu</p> <p>Maintenance of mass pedigree lines and production of nucleus and breeder seeds of SVPR 2, SVPR 3 and SVPR 4 cotton varieties</p>	<p>Quality of seeds should be ensured. Seed production can be concentrated in the newly released varieties. As suggested, seeds of newer varieties / advanced cultures be given under FLD / TSP for their popularization.</p>
9.	<p>CPBG/VPT/PBG/COT/2015/001 Dr. K.Bharathi Kumar</p> <p>Evolution of compact, drought tolerant and long staple cotton genotypes (<i>G.hirsutum</i>) suitable for winter rainfed tracts of north western zone of Tamil Nadu</p>	<p>Project work be undertaken in coordination with the works undertaken at Coimbatore and Srivilliputhur on similar line. Better performing compact genotypes identified at Coimbatore and Srivilliputhur along with the segregating materials be evaluated for its suitability under winter rainfed situation at Veppanthattai.</p>
10.	<p>CPBG/VPT/PBG/COT/2016/002 Dr. S. Sivakumar</p> <p>Development of high yielding long staple cotton varieties and hybrids for winter rainfed in Tamil Nadu</p>	<p>Zero monopodial lines be followed for their yield, suitability for rainfed cultivation and fibre quality. Excessive handling of segregating generations be avoided and the crosses be initiated with specific purpose after assessing the traits</p>

		of parents.
11.	<p>CPBG/KPT/PBG/COT/2015/006 Dr. S. Hari Ramakrishnan Evolving medium staple <i>G.hirsutum</i> cotton cultivar with resistance to leaf hopper (Jassids).</p>	The works to be undertaken in this project be in line with the similar works undertaken at Coimbatore and Srivilliputhur with the ultimate aim of breeding a genotype with leaf hopper tolerance and yield. Upon completion of the project, the materials can be handed over to CRS, SVPR and Kovilpatti centre concentrate only on diploid cotton.
12.	<p>CPBG/KPT/PBG/COT/2015/007 Dr. S. Hari Ramakrishnan Evolution of high yielding <i>G.arboreum</i> cotton varieties suitable for rainfed condition in southern districts of Tamil Nadu</p>	Kovilpatti is the only centre concentrating on diploid cotton genotypes. The deposition of diploid germplasm materials be completed in a month's time. Resistant / tolerant segregating materials for stem weevil, if identified be spared to Coimbatore and Srivilliputhur centres for evaluation. Concentration should be much on developing cotton genotypes suitable for surgical purposes with more mic. and absorption capacity.
13.	<p>TNCCM/CPBG/CBE/COT/2015/R002 (Centres: Srivilluputhur, Coimbatore, Kovilpatti and Veppanthattai) Development of compact genotypes in cotton (<i>G. hirsutum</i>) suitable for high density planting system and mechanized harvest</p>	Objectives to be executed in accordance with the projects being run at Coimbatore (2012/004), Srivilliputhur (2016/001) and Veppanthattai (2015/001). Large scale demonstrations with proven genotypes be taken up. All the committed objectives are to be completed before March 2018. Involving agronomist, entomologist and pathologist, FLDs / field days can be conducted at identified locations in rice fallow area.

Decisions made on entries for Variety Release/ART/MLT evaluation from breeders and OFTs from Crop Management and Crop Protection Scientists

A. CROP IMPROVEMENT

I. Culture proposed for National release for Central Zone

Culture Name : TCH 1777(*G. hirsutum*)

Centre : Department of Cotton, TNAU, Coimbatore

Parentage : (MCU12 x LRA 5166) x TCH 1569

Duration : 150 days

Yield/ quality traits	TCH 1777	Local check	Zonal check
Seed cotton yield (kg/ha)	2036.36	1693.36	1522.36
Ginning outturn (%)	34.57	34.57	35.27
Fibre length (mm) (UHML)	30.53	27.10	25.43
Fibre strength (g/tex)	24.47	25.37	23.23
Micronaire value	4.37	4.63	4.97

Increase over LC	20.09 %
Increase over ZC (CNHO 12)	33.28%

II. Culture proposed for National release for South Zone

Culture Name : TSH 04/115 (*G. hirsutum*)

Centre : Cotton Research Station, Srivilliputtur

Parentage : SVPR 2 x BJA 592

Duration : 150-155 days

Yield/ quality traits	TSH 04/115	Local check SVPR 4	Zonal check Suraj
Seed cotton yield (kg/ha)	2312	2080	2049
Ginning outturn (%)	33.4	33.7	35.9
Fibre length (mm) (UHML)	29.5	28.3	30.9
Fibre strength (g/tex)	27.3	28.7	30.8
Micronaire value	4.0	4.1	3.9

Increase over LC	11.2 %
Increase over ZC (Suraj)	12.8%

Both these cultures were accepted for release at National level during the Annual Group Meet on Cotton held at TNAU, Coimbatore during 8-10 April, 2017.

III. Cultures identified for evaluation under ART - I (compact) – 2017-18

Compact Cultures	Winter Irrigated	Summer Irrigated	Winter Rainfed	Rice fallow
1.TCH 1819 2.TCH 1822 3.TKH 1185/I/3 4. Suraj (C) 5. KC 3 (C)	Coimbatore, Theni, Salem, Dharmapuri, Erode, Villupuram, Namakkal, Tirupur and Dindigul Season: August 17- Jan 18	Theni, Salem, Tuticorin, Virudhunagar, Tirunelveli, Madurai, Dindigul, Thanjavur, Trichy and Tiruvarur Season: Feb 18 – July 18	Tuticorin, Virudhunagar, Tirunelveli, Ramanadhapuram, Madurai and Perambalur Season: Sept 17 – Feb 18	Thanjavur, Tiruvarur, Nagapattinum, Tirunelveli Season: Feb 18 – July 18
Number of ARTs	30	30	20	20
Scientist incharge	Dr.N.Premalatha	Dr.K.Thiyagu	Dr.S. Hariramakrishnan and Dr. K. Bharathi Kumar	Dr. R. Pushpa

Traits to be observed

1. Days to 50% flowering
2. Days to first bursting
3. No. of bolls/ Sq. m.
4. Seed cotton yield @ 120 days
5. Total seed cotton yield kg/ha.

ART II : *G. hirsutum* (variety) (ART 2/2017 – 18)

Culture	Summer Irrigated (10)	Winter Irrigated (10)
1.TSH 0533 2.SVPR 2 (C) 3.SVPR 4 (C) 4.Surabhi (C)	Theni, Salem, Tuticorin, Virudhunagar, Tirunelveli, Madurai, Dindigul, Thanjavur, Trichy and Tiruvarur Season: Feb 2018 – July 2018	Coimbatore, Theni, Salem, Dharmapuri, Perambalur, Erode, Villupuram, Namakkal, Tirupur and Dindigul Season: August 2018– Jan-2019
Number of ARTs	30 (Three locations/District)	30 (Three locations/District)
Scientist incharge	Dr.M.Gnanasekaran	Dr. N. Premalatha Dr.K.Thiyagu

III. Cultures identified for the evaluation under Multilocation Trial –2017-18

1. Multilocation Trial *G.hirsutum* (variety)

Design : RBD No. of replications : Three
 No. of rows : Six Spacing : 90 x 45 cm
 Seed qty : 200 g / entry/location

Culture	Locations	Season
TVH 001 (New)	Coimbatore	August – January
TSH 325 (New)	(Both winter and summer)	February-July
TSH 332 (New)	Srivilliputtur	August – January
TCH 1199 (R)	(Both winter and summer)	February-July
TCH 1828 (R)	Veppanthattai	August – January
TCH 1837 (R)	(winter)	
TSH 0324(R)	Kovilpatti	September - February
TSH 0327(R)	(winter)	
TKH 1197 III/2 (R)		
CO 14 (C)		
MCU 13 (C)		
SVPR 4 (C)		
KC 3 (C)		

2. Multilocation Trial *G.hirsutum* (compact)

Design : RBD No. of replications : Three
 No. of rows : Six Spacing : 60 x 15 cm
 Seed qty : 300 g/entry/location

Culture	Locations	Season
TSH 330 (New)	Coimbatore	August – January
TCH 1873 (R)	(Both winter and summer)	February-July
TCH 1875 (R)	Srivilliputtur	August – January
TCH 1897(R)	(Both winter and summer)	February-July
SURAJ (C)	Veppanthattai (winter)	August – January
	Kovilpatti (winter)	September - February

Features of the repeating cultures

S. No.	Culture	Yield (kg/ha)	Yield increase over check (%)	2.5% span length (mm)	Bundle strength (g/ tex)
1.	TSH 330 (N)	1865	19.5 (SVPR 4)	29.4	24.6
2.	TVH 001 (N)	2087	23.6 (KC3)	29.3	24.2
3.	TSH 325 (N)	1963	25.7 (SVPR 4)	27.6	18.9
4.	TSH 332 (N)	1806	15.7 (SVPR 4)	27.5	23.3
5.	TCH 1873 (R)	2031	9.0	27.6	20.4
6.	TCH 1875 (R)	2041	9.6	27.9	20.3
7.	TCH 1897 (R)	2027	8.8	27.0	20.2
8.	TCH 1199 (R)	1533	17.5 (Suraj)	27.3	20.1
9.	TCH 1828 (R)	1781	6.2 (Suraj)	32.9	24.5
10.	TCH 1837(R)	1835	9.5 (Suraj)	33.1	24.0
11.	TSH 0324 (R)	1938	29.7 (SVPR 4)	28.3	22.3
12.	TSH 0327 (R)	2063	28.9 (SVPR 4)	28.5	22.0
13.	TKH 1197 III/2 (R)	1925	26.4 (SVPR 2)	29.7	22.7

Traits to be observed:

1. Days to 50% flowering
2. Days to first bursting
3. No. of bolls/ Sq. m.
4. Seed cotton yield @ 130 days
5. Total seed cotton yield kg/ ha.

3. Multilocation Trial *G.barbadense* (variety)

Design : RBD
 No. of rows : Four
 Seed qty : 100 g/entry/location

No. of replications : Seven
 Spacing : 90 x 45 cm

	Culture	Locations	Season
1.	TCB 37	Coimbatore	August 17– January 18
2.	TCB 26	Srivilliputtur	August 17 – January 18
3.	Suvin	Veppanthattai	August 17 – January 18

Features of the proposed cultures

S. No.	Culture	Yield (kg/ha)	Yield increase over check (%)	GOT (%)	2.5% span length (mm)	Bundle strength (g/ tex)
1	TCB 37	650	35.4	32.0	34.5	25.9
2	TCB 26	720	50.0	31.9	35.2	24.7
3	Suvin	480		30.8	34.7	24.6

Important Dates in conduction of MLT & ART

Date of receiving the seed material of the proposed entries at Coimbatore	15.06.2017
Date of dispatching the coded entries for ART/ MLT as per season's requirement	30.06.2017
Date of receiving sowing report at CBE season wise	
Winter irrigated	15.09.2017
Summer irrigated	15.02.2018
Winter rainfed	15.10.2017
Rice fallow	15.02.2018
Visit of MLT/ monitoring teams	
Coimbatore	Nov. 2017 & May 2018
Srivilliputhur	Nov. 2017 & May 2018
Veppanthattai	Dec. 2017
Kovilpatti	Dec. 2017
Visiting of ART monitoring team season wise	
Winter irrigated	November 2017
Summer irrigated	April 2018
Winter rainfed	December 2017
Rice fallow	April 2018
Date for receiving the trials results at CBE for compilation season wise	
Winter irrigated	31.03.2018
Summer irrigated	31.07.2018
Winter rainfed	15.04.2018
Rice fallow	31.05.2018

Monitoring team to visit MLT

Name of the scientist	Station to be visited
Dr. M. Gunasekaran Dr. S. Sivakumar	Coimbatore
Dr. P. Amala Balu Dr. N. Premalatha	Veppanthattai
Dr. M. Kumar Dr. K. Bharathi kumar	Srivilliputtur
Dr. L. Mahalingam Dr. M. Gnanasekaran	Kovilpatti

CROP IMPROVEMENT

Action plan for 2017-2019 on the identified themes

Theme No. 1		Characterization of genotypes			
Theme Leader		Dr. L. Mahalingam, Professor (PBG)			
Projects		1. CPBG/ CBE/ PBG/ COT/ 2016/002 2. CPBG/CBE/PBG/COT/2016/001 3. CPBG/ CBE/ PBG/ COT/ 2016/003			
S.No	Activity	Name of the scientist and centre	Year 2017-18	Year 2018-19	Deliverables/ expected out come
			Winter 2017	Winter 2018	
1.	Pre breeding materials development and utilization of wild relatives for exploiting HPR	Dr. L. Mahalingam, Prof. (PBG) (Man hours: Dr. L.M – 15 /week; Dr. K. S – 6 / week; Dr. P.L – 6 / week)	Raising of F ₁ / F ₂ population and selection of desirable segregants. Evaluation of amphiploids. Quality studies and pest and diseases screening of entries to be done by Dr. K. Senguttuvan and Dr. P. Latha	Forwarding of F ₂ - F ₃ generation based on yield, fibre properties and pest and disease resistance. Utilizing the segregating materials obtained from amphiploids for evaluation/ crossing.	<ul style="list-style-type: none"> ➤ Utilizing wild species for infusing pest and disease resistance ➤ Genotypes with good fibre quality and tolerance/ resistance to pest and diseases
2	Evaluation, characterization and documentation of cotton germplasm	Dr. N.Premalatha, AP (PBG) (Man hours: Dr. N. P – 10 / week)	Evaluation of another set of 400 germplasm of <i>G. hirsutum</i> with 10 checks for characterization, documentation and for preparing a database in collaboration of PGR	Evaluation of another 200 germplasm of <i>G. hirsutum</i> and 160 germplasm of <i>G. barbadense</i> with 10 checks for characterization, documentation and for preparing a database in collaboration of PGR	<ul style="list-style-type: none"> ➤ Preparation of a document on 1000 <i>G. hirsutum</i> and 160 <i>G. barbadense</i> germplasm ➤ Making the key traits of available germplasm on line ➤ Raising crossing blocks with selected parents for needed trait's improvement

Theme No. 2	Developing long and extra long staple cotton varieties				
Theme Leader	Dr. M. Kumar, Professor and Head (PBG), Dept. of Cotton, TNAU, Coimbatore				
Projects	1. CPBG/CBE/PBG/COT/2014/005 2. CPBG/VPT/PBG/COT/2016/002				
S.No	Activity	Name of the scientist and centre	Year 2017-18	Year 2018-19	Deliverables/ expected outcome
			Winter 2017	Winter 2018	
1	Evaluation of segregating materials	Dr. M. Kumar, Professor (PBG) (Man hours: Dr. M. K – 10 / week)	➤ Evaluation of segregating materials (F ₂ s) and selection of superior segregants for extra long fibre length and fibre strength.	➤ Evaluation of segregating materials (F ₃ s) and selection of superior segregants (F ₃ s) for extra long fibre length and fibre strength.	Comparative evaluation of <i>G. hirsutum</i> x <i>G. barbadense</i> and <i>G. hirsutum</i> x <i>G. hirsutum</i> progenies for fibre quality parameters.
		Dr. S. Sivakumar, Professor (PBG) (Man hours: Dr. S.S – 10 /week)	➤ Forwardal of identified recombinants. ➤ Observations on zero monopodia types	➤ Quality evaluation and forwardal recombinants.	Identifying superior recombinants.
2.	Identification of promising cultures and yield evaluation at station trials	Dr. M. Kumar, Professor (PBG) Dr. S. Sivakumar, Professor (PBG) (Man hours: Dr. M. K – 10 / week; Dr. S. S – 5 / week)	➤ Study of different yield trials (PVT and AVT) ➤ Yield estimation of pipe line cultures in summer and winter	➤ Seed production of promising cultures identified in AVT ➤ Yield estimation of pipe line cultures in summer and winter	Identifying promising recombinants.

3.	Screening of advanced culture for pest and diseases	Dr.K.Senguttuvan Asst. Prof. (Ento) Dr.P. Latha, Asst. Professor (Patho) (Man hours: Dr. K.S – 6 /week; Dr. P.L – 6 / week)	Artificial screening of advanced elite cultures for pest & diseases	Artificial screening of advanced elite cultures for pest & diseases	Artificial screening of advanced elite cultures for pest & diseases
4.	Advancement of promising entries to MLT/AICCIP	Dr. M. Kumar, Professor (PBG) Dr. S. Sivakumar, Professor (PBG) (Man hours: Dr. M. K – 5 / week; Dr. S. S – 5/ week)	MLT-Winter irrigated at CBE and SVPR MLT-Winter rainfed at VPT and KPT	MLT-Winter irrigated at CBE and SVPR MLT-Winter rainfed at VPT and KPT	Best types will be identified after assessing its performance at various locations.
5.	Conducting OFT/FLD	Dr. N. Sakthivel, Assoc. Professor Dr. M. Kumar, Professor (PBG) (Man hours: Dr. M.K – 1 /week; Dr. N. S – 10 / week)	Promoting CO 14, TCH 1819 and other identified cultures in advanced stage of testing through FLDs	Promoting CO 14, TCH 1819 and other identified cultures in advanced stage of testing through FLDs	Popularization of CO 14 and compact genotype. Understanding the requirements of farmers

Theme No. 3	Development of high yielding medium staple cotton varieties (<i>G.hirsutum</i> L.) resistant to leaf hopper						
Theme Leader	Dr.M.Gnanasekaran, Assistant Professor (PBG) , Cotton Research Station, Srivilliputtur						
Projects	1. CPBG/SVP/PBG/COT/2016/002 2. CPBG/SVP/PBG/COT/2015/004						
S. No	Activity	Name of the scientist and centre	Year 2017-18		Year 2018-19		Deliverables/ expected out come
			Summer 2017	Winter 2017	Summer 2018	Winter 2018	
1	Synthesizing new crosses and evaluation of segregating materials	Dr.M.Gnanasekaran, Asst. Prof. (PBG) (Man hours: 5 /week)	Studying segregating materials (F ₂ S, F ₃ S, F ₄ S, F ₅ S) and Evaluation of F ₁ S	Effecting crossing among the high yielding and leaf hopper resistant donors	Study of segregating materials (F ₂ S, F ₃ S, F ₄ S, F ₅ S)	Forwardal of progenies	Newer crosses synthesized for getting desirable recombinants.
2.	Identification of promising cultures and yield evaluation at station trials	Dr.M.Gnanasekaran, Asst. Prof. (PBG) (Man hours: 5 /week)	Studying the performance of identified cultures in different yield trials (RRYT, PVT, and AVT)	Seed production of promising cultures identified in AVT. Artificial screening of advanced cultures against jassids	Studying different yield trials (RRYT, PVT, and AVT)	Seed production of promising cultures identified in AVT Artificial screening of advanced cultures against jassids	Identifying desirable entries with yield and leaf hopper tolerance.

3.	Screening of advanced culture for pest and diseases	Dr.K.Sasikumar, Asst. Prof. (Ento) (5 man hours / week) Dr.R.Vimala, Professor (Patho) (5 man hours / week)	-	Artificial screening of advanced elite cultures for pest & diseases	-	Artificial screening of advanced elite cultures for pest & diseases	Confirming the tolerance / resistance of better performing entires.
4.	Advancement of promising entries to MLT/AICCIP	SVPR: Dr.M.Gnanasekaran, Asst. Prof. (PBG) (5 man hours / week) CBE: Dr. N. Premalatha, Asst. Prof. (PBG) (8 man hours / week) VPT: Dr.K.Bharathikumar, Asst. Prof. (PBG) (8 man hours / week) KPT: Dr.S.Hariramakrishnan, Asst. Prof. (PBG) (5 man hours / week)	MLT-Summer irrigated at CBE and SVPR	MLT-Winter irrigated at CBE and SVPR MLT-Winter rainfed at VPT and KPT	MLT-Summer irrigated at CBE and SVPR	MLT-Winter irrigated at CBE and SVPR MLT-Winter rainfed at VPT and KPT	Identifying promising genotypes.
5.	Conducting ART and Submission of release proposal	SVPR: Dr. M.Gnanasekaran, Asst. Prof. (PBG) (5 man hours / week)	Evaluation of TSH 04/115	Evaluation of TSH 04/115	Evaluation of TSH 0533 through ART	Evaluation of TSH 0533 through ART	Release of promising genotypes at National and State level.

Theme No. 4	Development of compact and short duration cotton genotypes (<i>G. hirsutum</i>) suitable for HDPS and rice fallow				
Theme Leader	M. Gunasekaran, Professor and Head, CRS, Srivilliputtur				
Projects	1. CPBG/CBE/PBG/COT/2012/004 2. CPBG/SVP/PBG/COT/2016/001 3. CPBG/VPT/PBG/COT/2015/001 4. TNCCM/CPBG/CBE/COT/ 2015/R002				
S. No.	Name of the Activity	Name of the scientist and centre	Year 2017-18	Year 2018-19	Deliverables
1	Evaluation of advanced breeding lines to identify stable genotypes under rainfed and irrigated conditions	CBE: Dr. N. Premalatha, Asst. Prof. (PBG) (5 man hours / week) SVPR: Dr. M. Gunasekaran, P&H (10 man hours / week) Dr. K. Thiyagu, AP (PBG) (5 man hours / week) VPT: Dr. K. Bharathikumar, AP(PBG) (8 man hours / week) KPT: Dr. S. Hari Ramakrishnan, Asst. Prof. (PBG) (8 man hours / week)	Evaluation and short listing of genotypes for MLT/ ART	Evaluation of promising genotypes in ART/ submission of release proposal	Submission of varietal identification proposal for the elite culture

2	Selection of genotypes and synthesizing new cross	SVPR: Dr.K. Thiyagu, Asst. Prof. (PBG) (10 man hours / week)	Synthesizing new crosses using early duration (TCH 1820, TCH 1821, TKH 1185, G Cot 20, Suraj) with high yielding (MCU 5, MCU 12, MCU 13, TCH 1716, TCH 1608, SVPR 2, SVPR 4, TSH 0250, TSH 0499) genotypes	Synthesis of new crosses among early duration (SCS 793, SCS 1001, SCS 1062, GJHV 160 and TCH 484-7) with high yielding (MCU 5, MCU 12, MCU 13, TCH 1716, TCH 1608, SVPR 2, SVPR 4, TSH 0250, TSH 0499) genotypes	Identifying superior crosses and forwardal of progenies
		CBE: Dr. P. Amala Balu, Professor (PBG) (10 man hours / week)	Evaluation of segregating materials (F ₂ s) and selection of superior segregants with 135 days	Selection in the segregating materials (F ₃ s) for superior segregants with earliness	Identifying desirable recombinants
3	Optimization of spacing and fertilizer requirement for TCH 1819 and other compact cultures under HDPS	SVPR: Dr. R. Veeraputhiran, Asst. Prof. (Agron) (10 man hours / week) CBE : Dr. N. Sakthivel, Assoc. Prof. (Agron.) (10 man hours / week) VPT : Dr. N. Meyyazhagan, Professor (AGR) (10 man hours / week)	Large scale demonstration of identified genotypes; Arriving at package of practices for TCH 1819 under HDPS	Standardizing suitable spacing, fertilizer and including it is package of practices for the advanced cultures	Standardizing agronomic package of practices
4	Developing suitable Integrated Pest and Disease Management (IPDM) module for HDPS	SVPR: Dr. K. Sasikumar, Asst. Prof. (Ento) (5 man hours / week) Dr. R. Vimala, Prof. (Patho) (5 man hours /week)	Confirmation experiment on IPDM under HDPS	Large scale demonstration of IPDM on HDPS	Arriving at suitable IPDM for HDPS

5	Management of plant geometry through growth retardants under HDPS	SVPR: Dr. R. Veeraputhiran, Asst. Prof. (Agron) (5 man hours / week) VPT : Dr. N. Meyyazhagan, Professor (AGR) (10 man hours / week)	Field experiment using growth retardant (Confirmation study)	Large scale field demonstration	Arriving at suitable dose for adoption
6	On farm research cum demonstration of HDPS in farmer's field	CBE: Dr. N. Premalatha, Asst. Prof. (PBG) SVPR: Dr. M. Gunasekaran, P&H VPT: Dr. K. Bharathikumar, Asst. Prof. (PBG), KPT: Dr. S. Hari Ramakrishnan, Asst. Prof. (PBG) (5 man hours / week for each scientist)	Large scale demonstration of TCH 1819 in the farmers' field	Large scale demonstration of TCH 1819 in the farmers' field	Creating confidence among the farmers about the culture and its cultivation.
7	Demonstration of implements and machinery for mechanized cultivation	Scientists from AMRC (to be identified by the Professor and Head; 8-10 man hours /week)	Demonstration of labour saving implements particularly for line sowing, weeding and earthing up etc	Demonstration of labour saving implements particularly for line sowing, weeding and earthing up etc	Large scale Popularisation and adoption of technology by cotton farmers particularly in rainfed situation

Theme No. 5	Development of diploid cotton (<i>G. arboreum</i>) with high yield and fibre length as well as suitable for surgical purpose				
Theme Leader	Dr.S. Hari Ramakrishnan, Assistant Professor, ARS, Kovilpatti				
Projects	CPBG/KPT/PBG/COT/2015/007				
S. No.	Name of the Activity	Name of the scientist and centre	Year 2017-18	Year 2018-19	Deliverables
1	Selection of genotypes and synthesizing of new cross and evaluation of segregating materials	KPT: Dr. S. Hari Ramakrishnan, Asst. Prof. (PBG) (15 man hours / week)	Selection of <i>G. arboreum</i> genotypes with high micronaire value and effecting crosses among the selected genotypes	Evaluation of F ₁ s and selection of superior F ₁ s towards higher micronaire value for further studies	Identifying crosses with higher mic. & boll traits.

CROP MANAGEMENT

1. Action Taken on Action Plan proposed during 34th CSM on cotton, 2016

I. No.	Project No. and Title	Scientists incharge	Duration	Remarks
Action plan project (2016-2019)				
1	DCM/ KPT/ AGR/ COT/ 2016/ 001 Effect of drought mitigation technology on growth and yield of rainfed cotton (with supplemental irrigation) (August, 2016 - July 2019)	CRS, Veppanthattai (Coordinating Centre): Dr. N. Meyyazhagan, Prof. & Head (Agron.) Dr. S. Nithila (CRP), ADAC&RI, Trichy Dr. T. Eevera, (SST), ADAC&RI, Trichy ARS, Kovilpatti Dr. M. Joseph, Asst. Prof (Agronomy) Dr. C. Rajababu (CRP), AC&RI, Killikulam Dr. B. Venu Devan, (SST), AC&RI, Killikulam	August 2016 - July 2019	<ul style="list-style-type: none"> • The project is to be continued
2	SEED / CBE/ SST/ COT/ 2016/ 001 Polymer seed coat for cotton 'TNAU FORTI Seed'	Dr. R. Umarani, Professor and Head, SST Dr. Subbalakshmi Lokanadhan, Professor (Agronomy) Dr. R.G. Anitha, Asst. Prof. (Agrl. Microbiology)	June 2016-May 2019	<ul style="list-style-type: none"> • The project is to be continued • Polymer I and II has to be changed as formulations • Yield data to be derived

University Research Projects (2016-17)				
1	DCM/SVPR/AGR/COT/2016/001 Management of plant density and architecture under high density planting system(HDPS)for mechanized cotton production	Dr.ChelviRamessh*, Assistant Professor (Agronomy), CRS, Srivilliputtur Dr. M.Gunasekaran, Prof. (PBG) & Head, CRS, Srivilliputtur	July, 2016 to June, 2018	<ul style="list-style-type: none"> The project to be continued <i>*In-lieu</i> of the transfer of the existing Scientist, alternate scientist may be identified and approval may be obtained from the Director of Research, TNAU, Coimbatore <p>1. (Action: Prof. & Head, CRS, Srivilliputhur)</p>
2	DCM/VPT/AGR/COT/2015/003 Study on intercropping in rainfed cotton	Dr. N. Meyyazhagan, CRS, Veppanthattai	August 2015 to July 2017	<ul style="list-style-type: none"> The project may be closed and completion report may be submitted. Findings may be taken as On Farm Trial at Veppanthattai and Kovilpatti
On Farm Trials (Proposed during CSM 2016)				
1	Integrated Weed Management in cotton	Dr. R. Veeraputhiran AP (Agron.), CRS, Srivilliputhur Dr. R. Jeyasrinivas AP (Agron.), ARS, Vaigaidam Dr. AnittaFanish AP (Agron.), AC & RI, Madurai	2016-17	<ul style="list-style-type: none"> OFT conducted only at CRS, Srivilliputtur during 2016-17. To be continued for one more year at CRS, Srivilliputhur, ARS, Vaigai Dam and Department of Agronomy, AC & RI, Madurai

Proposal for Action plan (Proposed during CSM, 2017)				
2	Fertilizer prescription under IPNS for cotton under drip fertigation	Dr. R. Shanthi Professor (SS&AC), TNAU, Coimbatore	2016-17	Recommended for Adoption • Fertiliser prescription under IPNS for cotton under drip fertigation may be recommended for adoption
Proposal for OFT (Proposed during CSM, 2017)				
1	Study on intercropping in rainfed cotton	Centres CRS, Veppanthattai Dr. N. Meyyazhagan, Professor and Head ARS, Kovilpatti Dr. M. Joseph, Asst. Prof (Agronomy)	2017-18	Treatment details: T1: Cotton T2: Cotton + Onion (Additive series) T3. Cotton + Amaranthus (Additive series) Observations to be recorded: a) No. of monopodial and symbodial branches b) Intercrop yield c) Yield components and yield d) Cotton Equivalent yield e) Land Equivalent Ratio (LER) f) Economics

CROP PROTECTION

The following scientists attended in the Review Meeting of Crop Scientists Meet on Cotton on 11.05.2017 and 12.05.2017

1. Dr. K. Senguttuvan, Assistant Professor (Entomology), Department of Cotton, Coimbatore.
2. Dr. M. Sassikumar, Assistant Professor (Entomology), Cotton Research Station, Srivilliputtur.
3. Dr. R. Vimala, Professor (Plant Pathology), Cotton Research Station, Srivilliputtur.
4. Dr. P. Latha, Asst. Professor (Plant Pathology), Department of Cotton, TNAU, Coimbatore.

General Recommendation:

1. Two University Research Projects (URP) and an external agency funded project (EFP) to be prepared and submitted by Dr. R. Vimala, Professor (Plant Pathology), Cotton Research Station, Srivilliputtur) and one each of URP and EFP by Dr. P. Latha, Asst. Professor (Plant Pathology), Department of Cotton, TNAU, Coimbatore on or before 30-06-2017.

ACTION PLAN (2017-2018)

- Population dynamics of cotton insect pests and diseases in irrigated and rainfed ecosystem
- Host plant resistance for sucking pests and diseases
- Development of pink bollworm management module
- Development of IDM module for the management of wilt and root rot in cotton

ACTION PLAN 2017-2018			
Theme Leader	Dr. K. Senguttuvan, Asst. Professor (Entomology), Dept. of Cotton, Coimbatore. Mr. M. Sassikumar, Asst. Professor (Entomology), CRS, Srivilliputtur. Dr. R. Vimala, Professor (Plant Pathology), CRS, Srivilliputtur. Dr. P. Latha, Asst. Professor (Plant Pathology), Department of Cotton, Coimbatore.		
Activity	2017-2018	2018-2019	Deliverables
Population dynamics of cotton insect pests and diseases in irrigated and rainfed ecosystem	<ul style="list-style-type: none"> ➤ Insect, mite and diseases incidence in cotton will be monitored throughout the crop period in both irrigated and summer cotton. ➤ Insect, mite and diseases incidence levels will be correlated with the weather parameters. ➤ Developing prediction models using the available data for pest incidence. ➤ Centre : CBE & SVPR 	<ul style="list-style-type: none"> ➤ In addition to that continuous monitoring of insect pests and diseases correlation of insect data of two years to predict pests dynamic model will be worked. ➤ Centre : CBE & SVPR 	<ul style="list-style-type: none"> ➤ Timely forecasting of the pest incidence and suitable pest management.
Host plant resistance for sucking pests and diseases	<ul style="list-style-type: none"> ➤ Screening of TNAU MLT and ART entries for sucking pests and borers, root rot and <i>Alternaria</i> leaf blight. ➤ Screening AICCIP entries including Bt hybrids / varieties ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ Identifying resistant entries; reconfirmation through advanced artificial screening. ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ Most promising resistant entries will be given to breeders for further crossing purpose.

<p>Development of pink bollworm management module</p> <ol style="list-style-type: none"> 1) Growing the crop at correct season 2) Refugia maintenance 3) Regular monitoring for insects 4) Use pheromone trap for monitoring 5) Release of <i>Trichogramma bactrae</i> 6) Need based chemical application 7) Timely harvest 8) Remove crop residues immediately after harvest 9) Crop rotation 	<ul style="list-style-type: none"> ➤ IPM module to be tested at hot spot - Anthiyur. ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ Comparing the existing IPM and improved one and doing mid correction if required. ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ Suitable pink bollworm management module development.
<p>Development of IDM module for the management of wilt and root rot in cotton</p> <p>One university research project may be formulated based on this action plan</p>	<ul style="list-style-type: none"> ➤ IDM module to be tested under field condition. ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ The effective module tested in under field condition. ➤ Centre : CBE 	<ul style="list-style-type: none"> ➤ Effective wilt and root rot management module development.

UNIVERSITY RESEARCH PROJECTS WISE REMARKS - CROP PROTECTION

Sl.No.	Project No. and Title	Project leader and location	Period	Remarks
ENTOMOLOGY - University Research Projects (URP)				
1	CPPS/CBE/ENT/COT/2015/001 Studies on thrips diversity of cotton ecosystem and it's management, Department of Cotton, Coimbatore	Dr. K. Senguttuvan Assistant Professor (Entomology), Department of Cotton, TNAU, Coimbatore	June 2015 to March 2017	The project to be closed and completion report be submitted. New URP may be proposed.
2	CPPS/KPT/AEN/COT/2013/001 Ecology and management of leafhopper <i>Amrasca biguttula biguttula</i> (Ishida) in cotton ecosystem, ARS, Kovilpatti	Dr. C. Gailce Leo Justin Professor (Agrl. Entomology), Agricultural Research Station, Kovilpatti	August, 2013 to September, 2016	To be continued by Dr. P. Ananthi and completion report to be submitted.
3	CPPS/KPT/AEN/COT/2014/002 Development of Integrated Pest Management strategies for the management of cotton stem weevil, <i>Pempherulus affinis</i> (Faust) , ARS, Kovilpatti	Dr. C. Gailce Leo Justin Professor (Agrl. Entomology), Agricultural Research Station, Kovilpatti	August, 2014 to September, 2017	

PATHOLOGY - University Research Projects				
6	CPPS/SVP/PAT/COT/2013/001 Screening of cotton accessions for resistance to major foliar and root diseases	Dr. R.Vimala, Professor (Plant Pathology), Cotton Research Station, Srivilliputtur	June 2013 to May 2016	Completion report to be submitted and data generated to be published. New URP may be proposed.
7	CPPS/ VPT/PAT/COT/2015/003 Exploitation of phylloplane and endophytic microorganism for the management of bacterial blight of cotton.	Dr.K.Kalpana, Assistant Professor, (Plant Pathology), Cotton Research Station, Veppanthattai	Aug 2015-July 2018	Kept in abeyance in view of transfer project leader

Load of each scientist (Theme wise)

Theme 1: Characterization of genotypes

Theme 2: Developing long and extra long staple cotton genotypes

Theme 3: Developing superior medium staple cotton genotypes

Theme 4: Developing genotypes with short duration and compactness for HDPS and rice fallow

Theme 5: Improvement of *G. arboreum* genotypes

Sl. No.	Name of the scientist	Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Total
(man hours / week)							
1	M. Kumar		26				26
2	N. Meyyazhagan				20		20
3	M. Gunasekaran			15	10		25
4	P. Amala balu				10		10
5	L. Mahalingam	15					15
6	S. Sivakumar		20				20
7	R. Vimala			5	5		10
8	N. Sakthivel		10		10		20
9	N. Premalatha	10		8	10		28
10	M. Gnanasekaran			20			20
11	K. Thiyagu				15		15
12	K. Bharathi Kumar			8	13		21
13	K. Hari ramakrishnan			5	13	15	33
14	R. Veeraputhiran				15		15
15	K. Senguttuvan	6	6				12
16	K. Sassikumar			5			5
17	P. Latha	6	6				12

WORK LOAD OF COTTON SCIENTISTS FOR THE YEAR 2017-18

S. No.	Scientists	% of time
1	M. Kumar	
	Univ. Sub Project-1	20
	Teaching	15
	Students guide	15
	Administration	35
	Other Activities	15
2	N. Meyyazhagan	
	Univ. Sub Project-1	20
	Administration	50
	Other Activities	30
3	M. Gunasekaran	
	Univ. Sub Project-1	20
	Ext.Funded Projects	30
	Administration	30
	Other Activities	20
4	P. Amala balu	
	Univ. Sub Project-1	20
	AICRP	40
	Teaching	20
	Students guide	15
	Other Activities	5
5	L. Mahalingam	
	Univ. Sub Project-1	20
	Univ. Sub Project-2	20
	Teaching	15
	Students guide	15
	Breeder seed	15
	Other Activities	15
6	S. Sivakumar	
	Univ. Sub Project-1	25
	AICRP	25
	Other Crop (Maize)	25
	Other Activities	25

S.No.	Scientists	% of time
9	N. Premalatha	
	Univ. Sub Project-1	20
	Univ. Sub Project-2	20
	Ext. Funded Projects	30
	Teaching	20
	Other Activities	10
10	M. Gnanasekaran	
	Univ. Sub Project-1	30
	AICRP	40
	Other Activities	30
11	K. Thiyagu	
	Univ. Sub Project-1	20
	Univ. Sub Project-2	20
	AICRP	40
	Other Activities (farm)	20
12	K. Bharathi Kumar	
	Univ. Sub Project-1	40
	AICRP	20
	Other Activities (farm)	40
13	K. Hari ramakrishnan	
	Univ. Sub Project-1	20
	Univ. Sub Project-2	20
	AICRP	20
	Teaching	20
	Other Activities	20
14	R. Veeraputhiran	
	Univ. Sub Project-1	25
	AICRP	25
	Other Activities	50
15	K. Senguttuvan	
	Univ. Sub Project-1	25
	AICRP	25
	Teaching	20
	Other Activities (farm)	30

7	R. Vimala	
	Univ. Sub Project-1	20
	PCC	50
	Other Activities	30
8	N. Sakthivel	
	Univ. Sub Project-1	20
	AICRP	40
	Teaching	20
	Other Activities (farm)	20

16	K. Sassikumar	
	Univ. Sub Project-1	25
	AICRP	25
	Other Activities	50
17	P. Latha	
	Univ. Sub Project-1	20
	AICRP	40
	Teaching	20
	Other Activities	20