

## **Botany Research Centre**

The Department of Botany at St. Mary's College (Autonomous), Thoothukudi has been recognized as a Research Department since 2000 under the affiliation of Manonmaniam Sundaranar University. The primary objective is to foster high-quality research and training at the forefront of Biological Sciences. While the department focuses on Plant Biology, its infrastructure supports research across various related fields, including Applied Chemistry, Biochemistry, Statistics, Marine Biology and Animal Science. Research areas within the department span both classical disciplines and emerging fields such as Molecular Biology, Bioinformatics and Nanotechnology.

To facilitate advanced research, the department is equipped with state-of-the-art laboratories and sophisticated instruments, including PCR, FTIR, Gel Documentation Systems, AAS, UV-visible spectrophotometers, Analytical Centrifuges, Seed Germinator, Flame Photometer, a System-attached Trinocular Imaging Microscope, Rotary Vacuum Evaporator, Deep Freezers PAGE Apparatus, and Western Blotting Apparatus. The department also houses dedicated facilities such as a Plant Tissue Culture Laboratory, a Bioinformatics Laboratory, and a Herbal Unit.

The department is supported by a team of highly qualified faculty members with doctoral degrees, who collaborate with researchers to address scientific inquiries and contribute innovative solutions. This strong research culture has led to significant contributions to the institution's overall research profile. The department has produced 17 Ph.D. graduates and completed two UGC-sponsored Major Research Projects, three Minor Projects, and several student research projects funded by TNSCST.

Access to online resources through the N-List, along with equipment funded by the DST-FIST and DBT Star College schemes, further enhances the department's ability to tackle scientific challenges at both national and international levels.

The department also plays an active role in organizing seminars, conferences, and exhibitions, providing scholars with opportunities to develop critical thinking, analytical skills, and engage with the latest advancements in the field.

**The Research Centre has the following provisions:**

- Laboratories equipped with advanced instruments.
- Wi-Fi-enabled Bioinformatics lab featuring a sufficient number of computers.
- Library with an extensive collection of books, journals, and e-books available for reference.
- Department and laboratories equipped with Wi-Fi connectivity.

**The Research Centre aims to:**

- To investigate new ideas and drive innovation in the field of biology.
- To solve the problems of scientific queries

**Faculty Approved as Research Guides and Specialization**

S.No.	Name	Department	Guideship Reference Number	Specialization
1.	Dr. ArockiaJenecius Alphonse. A	Botany	MSU/RES/INT/GUIDES HIP/R5/2017	Physiology and Biochemistry
2.	Dr. Beulah Jerlin. S	Botany	MSU/RES/INT/GUIDES HIP/R5/2017	Ecological Studies (Field and Lab)
3.	Dr. Flora. G	Botany	MSU/RES/INT/GUIDES HIP/R5/2017	Bio nanotechnology and Bioremediation
4.	Dr. Mary Santhi. R	Botany	MSU/RES/Ph.D GUIDESHIP/R2/2023	Algology, Microbiology

### Faculty Approved as Research Guides & Scholars

Name of the Guide & Guideship No.	No. of Scholars (On going)	No. of Scholars (Awarded)
Dr. Dulcy	-	2
Dr. Uthayakumari Kalavathy MSU/RES/INT/GUIDESHIP/R5/2010	-	7
Dr. Maria Victorial Rani. S MSU/Res/Recg/Sup/Nov.98	-	6
Dr. Glory. M MSU/RES/INT/GUIDESHIP/R5/2012	-	2
Dr. Sr. Arockia Jenecius Alphonse. AMSU/RES/INT/GUIDESHIP/R5/2017	3	-
Dr. Flora. G MSU/RES/INT/GUIDESHIP/R5/2017	3	-
Dr. Beulah Jerlin. S MSU/RES/INT/GUIDESHIP/R5/2017	4	1 (Submitted)
Dr. Mary Santhi. R MSU/RES/Ph.D GUIDESHIP/R2/2023	-	-

**Ph.D. awarded under the guidance of research supervisors**

S. No.	Name of the Research Scholar	Reg. No.	Date of commencement	Title of the thesis	Ph.D. Awarded / Pursuing	Year of Award
<b>Guide: Dr. Dulcy</b>						
1.	Ms. Saroja		12.04.2004			09.05.2011
2.	Ms. Mathuram		29.04.2004			2015
<b>Guide: Dr. Uthayakumari Kalavathy</b>						
3.	Ms. Shunmuga Priya. K	2431	21.08.2006	Phytochemical profile and pharmacological evaluation of <i>Rauwolfia densiflora</i> (Wall) Benth. Ex. Hk.f. (Apocynaceae) and <i>Stephania wightii</i> (Arn.) Dunn. (Menispermaceae)	Awarded	03.08.2015
4.	Ms. Bharathy. V	7859	13.06.2011	Bio-efficacy of some <i>Jatropha</i> species of Tamil Nadu	Awarded	28.02.2014
5.	Ms. Maria Sumathi. B	7856	13.06.2011	Biosystematic studies on <i>Jatropha</i> species, Tamil Nadu	Awarded	26.06.2014
6.	Ms. Shunmuga Sundari. M	7857	13.06.2011	Micropropagation and restoration of some threatened ferns from Southern Western Ghats of India	Awarded	25.04.2014
7.	Ms. Sheela. D	7858	13.06.2011	Bioprospection of coastal vegetation of Thoothukudi District, Tamil Nadu	Awarded	29.01.2016
8.	Ms. Shanmuga Jothi. S	-	28.06.2012	Pharmacognostical phytochemical and pharmacological profile of two subspecies <i>Senna italica</i> Mill (Cesalpiniaceae)	Awarded	07.10.2016
9.	Ms. Santhanamar. N	9635	07.08.2012	Nutritional and Bioactive Potential	Awarded	17.12.2018

				of a Coastal Sedge <i>Cyperusbulbosus</i> Vahl.		
<b>Guide: S. Maria Victorial Rani</b>						
10.	Ms. Glory. M		06.09.2001		Awarded	18.09.2008
11.	Ms. Flora. G	3214	12.11.2008	Utilization of seaweeds to Protect Crop Plants from Phytopathogens	Awarded	26.04.2013
12.	Ms. Dayana Lobo. F	5340	30.07.2010	A Study on the Nutritive Value and Antimicrobial Potential of Seaweed	Awarded	09.01.2015
13.	Ms. Usha. R	5325	17.08.2010	Utilization of Seaweeds for Developing Phytoremediation Strategies to Reclaim Heavy Metal Contaminated Soil and to Enhance Biomass Productivity	Awarded	13.02.2015
14.	Ms. Vennila				Awarded	
15.	Ms. Kumareswari. J	10091	28.02.2013	Utilization of Seaweeds to Enhance Growth, Biomass Productivity, Nutritional and Antioxidant Parameters in Selected Plant Species	Awarded	29.05.2017
<b>Guide: Dr. Glory. M</b>						
16.	Ms. Jacintha Tamil Malar. A	9577	05.07.2012	Pharmacognosy, phytochemical profile and pharmacological studies on selected species of <i>capparis</i> (Cappariaceae)	Awarded	06.04.2018
17.	Ms. Hermalin. P	11768	17.04.2014	Biogeochemistry of Mangrove Ecosystem of Thoothukudi, Tamil Nadu.	Awarded	04.03.2019

**Ph.D. pursuingscholars under the guidance of research supervisors**

<b>S. No.</b>	<b>Name of the Scholar</b>	<b>Date of Commencement</b>	<b>Title</b>	<b>Name of the Supervisor</b>
1.	Ms. Pauline Jenifer. S  (Reg. No. 18222212142008)	05.07.2018	Weed as a drug for urelithic problems	Dr. Beulah Jerlin. S
2.	Ms. M. Shantha (Reg. No. 19222212272018)	30.08.2019	Phytochemical and molecular characterization of a few salt tolerance plants from the coastal area of Thoothukudi	Dr. ArockiaJenecius Alphonse. A
3.	Ms. Rathinam. J (Reg. No. 21112212262009)	07.10.2021	Bioactive potential of selected medicinal plants used against skin diseases	Dr. Flora. G
4.	Ms. Mary Stephy. G (Reg. No. 21112212262010)	13.10.2021	Identification of the ecological micro and nano plastics degrading microbes and its principle to grow transgenic algae for bioremediation	Dr. Flora. G
5.	Ms. Selvaanathi. A (Reg. No. 21212212262009)	01.02.2022	Agricultural waste a substrate source for mushroom cultivation and fermented liquid fertilizer	Dr. Beulah Jerlin. S
6.	Ms. Vimala. C (Reg. No. 21212212262008)	01.02.2022	Phytoextraction potential of mangrove and mangrove associates in Thoothukudi District in Tamilnadu	Dr. Beulah Jerlin. S
7.	Ms. Monisha. J.N (Reg. No. 21212212262007)	02.02.2022	Marine macroalgae an alternative raw material for biofuel production	Dr. ArockiaJenecius Alphonse. A

8.	Ms. EruthayaAbisha. C (Reg. No. 23112212262009)	08.05.2023	Proximate composition and pharmacognostical evaluation of the unique potential of medicinal halophytes pearl fishery coast Thoothukudi, Tamil Nadu	Dr. Beulah Jerlin. S
9.	Ms. Shyni. J (Reg. No. 23122212262011)	09.06.2023	Biofuel potentials of microalgae strains isolated from Muthupet mangroves, India	Dr. Flora. G
10.	Ms. Vellammal. S (Reg. No. 241122123008)	07.05.2024	Sustainable effluent management: utilizing microalgae from salt pans in Thoothukudi	Dr. ArockiaJenecius Alphonse. A
11.	Ms. Shivananthini. B (Reg. No. 21211282262009)	24.01.2022	Exploring the Biochemical Characterization and Biological Evaluation of the Selected Seaweeds	Dr. Beulah Jerlin. S

### Genbank Submissions

#### Dr. Sr. ArockiaJenecius Alphonse. A

Submitted LOCUS MG183687 1109 bp DNA linear BCT 17-OCT-2017. *Acinetobacterbaumannii*AJAUBOT 16S rRNA gene, partial sequence NCBI/GenBank, USA / Nucleotide sequence

Submitted LOCUS MG183688 1246 bp DNA linear BCT-17-OCT -2017. *Pseudomonas aeruginosa* strain AJAUBGT 16S rRNA gene, partial sequenceNCBI/GenBank, USA / Nucleotide sequence

#### Dr. Beulah Jerlin. S

Submitted GenBank flat file: LOCUS MG271850 560 bp DNA linear PLN 13-NOV 2017 DEFINITION *Aspergillusniger* internal transcribed spacer 1, partial sequence; 5.8S ribosomal RNA gene and internal transcribed spacer 2, complete sequence; and large subunit ribosomal RNA gene, partial sequence.ACCESION MG271850 Centre for Biotech Inf NCBI/GenBank, USA

Submitted GenBank flat file: LOCUSMG271851 1263bp DNA linear BCT 13-NOV-2017DEFINITION*Pseudomonas aeruginosa* strain K1 16S ribosomal RNA

gene, partial sequence.ACCESSION MG271851 Centre for Biotech Inf  
NCBI/GenBank, USA

Submitted GenBank flat file: LOCUS MG271852 1240bp DNA linear BCT  
13-NOV-2017 DEFINITION *Pseudomonas aeruginosa* strain K2 16S ribosomal  
RNA gene, partial sequence.ACCESSION MG271852 Centre for Biotech Inf  
NCBI/GenBank, USA

Submitted GenBank flat file:LOCUS MG271853 1240 bp DNA linear BCT 13-  
NOV-2017 DEFINITION *Pseudomonas aeruginosa* strain K3 16S ribosomal RNA  
gene, partial sequence.ACCESSION MG271853 Centre for Biotech Inf  
NCBI/GenBank, USA

**Dr. G. Flora**

Submitted *Staphylococcus arlettae* Strain GFB 16S ribosomal RNA gene, partial  
sequence Natl Centre for Biotech Inf NCBI/GenBank, USA / Nucleotide sequence  
SUB2904350 seq1 MF574272

Submitted *Aspergillus* 16S ribosomal RNA gene, partial sequence Natl Centre for  
Biotech Inf NCBI/GenBank, USA / Nucleotide  
sequenceSUB3118601seq1MG132203

Submitted *Aspergillus*16S ribosomal RNA gene, partial sequence Natl Centre for  
Biotech Inf NCBI/GenBank, USA / Nucleotide sequence SUB3118605 seq1  
MG132202