

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

COIMBATORE – 641 029

PG AND RESEARCH DEPARTMENT OF BOTANY



Report On

**BOTANICAL FIELD TRIP AT COONOOR
FOREST RANGE ON 20.02.2024**

Submitted by

II B.Sc., BOTANY

Submitted to

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

**Re-accredited by NAAC with A⁺ Grade - 4th cycle,
College of Excellence - UGC
COIMBATORE – 641 029, Tamil Nadu, INDIA**

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Executive Summary

Botanical Excursions are arranged to give exposure to students and also it gives valued practical experience to both the students' and educator. Field education is equally important as classroom teaching. It adds vigour in learning processes and relieves monotones of indoor education. Field trips link the class room experience with the outside world. An one day botanical field trip has been organised by PG and Research Department of Botany on 20.02.2024 at Coonoor forest range exclusively to explore plant species diversity. This particular trip visioned at improving students' knowledge about the plant diversity in Coonoor forest region. During this field trip, the students encountered several wonderful spectacles like the magnificent natural scenery of the region. The field trip owed its success to the faculties of the department of Botany particularly Dr. H. Abdul Kaffoor, Dr. P. Revathi, Dr. R. Rekka and Mr. R. Mohanasundaram Lab Assistant who accompanied and engaged the students in sample observation and collection throughout the trip. A majority of the sample collection concerned were varied groups of plant species such as Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms which were practically examined observed from Coonoor forest range. A brief detail of this is discussed in this report.

INTRODUCTION

Field study is an essential part in Botany, the natural environment ie., the surrounding where we interact with plants in their natural habitat is one of the most interesting factor that is needed to be studied by the students of Life Sciences. Studying plants in their natural habitat enhances our knowledge that is meant for class room discussions and laboratory experiments.

An apprehensive knowledge is always required for the students to start a particular study of a particular site in their natural environment. So, class room study and field study are complementary to each other and we cannot ignore any one of the component. Hence keeping these two things in view, this botanical field trip was organised by the Department of Botany, Kongunadu Arts and Science College (Autonomous), Coimbatore as per the syllabus.

Aim and objectives of the Botanical Field trip:

- To observe and collect the plant species from study site
- To study the natural habitats and characteristic features of the plants found in the area
- To observe different types of vegetation and adaptive morphological features of the plant species
- To collect information about economically important plant species
- The collected plants may be kept and used for reference studies.

Site Description

Coonoor is a taluk and a municipality in the Nilgiris district in the state of Tamil Nadu. It is known for its production of Nilgiri tea. Coonoor is located at an altitude of 1,850 m above sea level, ideal base for a number of trekking expeditions. It features a sub-tropical highland climate due to its high altitude. Coonoor is the second largest hill station in the Nilgiri hills after Ooty.

FIELD OBSERVATION:

One day botanical field trip has been organised by the PG and Research Department of botany on 20.02.2024 to Coonoor forest range. Two buses were arranged for the trip and with a total number of 32 students with 3 teaching and 1 non-teaching staff members. The students carried with them polythene bags, papers, small bottles, forceps, scissors, etc. for carrying specimens. Journey was started at 6:45 AM. Breakfast was served in the bus. They reached Coonoor at 9:45 AM and then went on a visit to forest area. There they examined forest biodiversity.

The prime aim for the one day botanical field trip was to observe plants in their natural habitats, different types of vegetation and adaptive morphological features of plant species and to collect information about economically importance plant species. The students collected and examined the different species of Lichens, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms they are also observed plant species with special reference to their habitat, morphology, economic use, etc. Which were well explained by the staff members, The staff members also shared their previous work experience during the field trip and the important plants were photographed in the field were annexed. Based on the trip students could be able to identify the plants and their families.





Foliose lichen



Fruticose lichens



Lichens exploited on large scale for orange and yellow dyestuffs.



Adiantum hispidulum



Adiantum raddianum



Drynaria quercifolia



Begonia species



Breynia retusa



Leucas Species



Orthosiphon species



Oxalis species



Peperomia tetraphylla



In addition, they have also visited Dolphin Nose view point maintained by Sembakarai – Eco Development Committee and view a wonderful natural beauty of the Kotagiri streams.



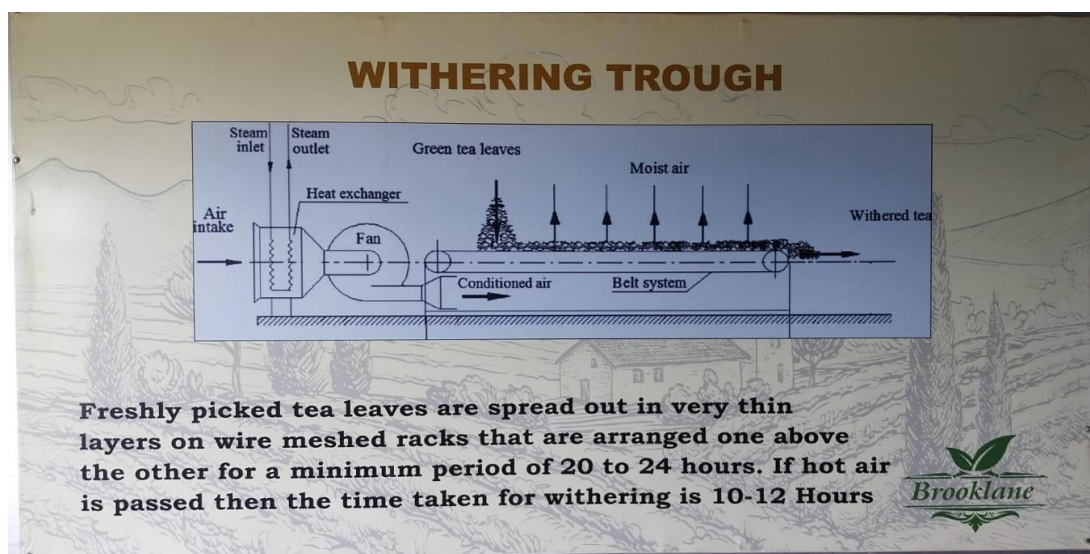
**Dolphin Nose view point maintained by Sembakarai –
Eco Development Committee**

Then the students also visited Balaji Oil distillery, Coonoor and were able to know about the methods of oil extraction process explained by Mr. Raja, where they learned about different oil types and instruments used for oil extraction, raw material requirements (fresh and dried leaves, branch tips, water and packing containers) and Manufacturing process (steam distillation method).



Oil extraction process

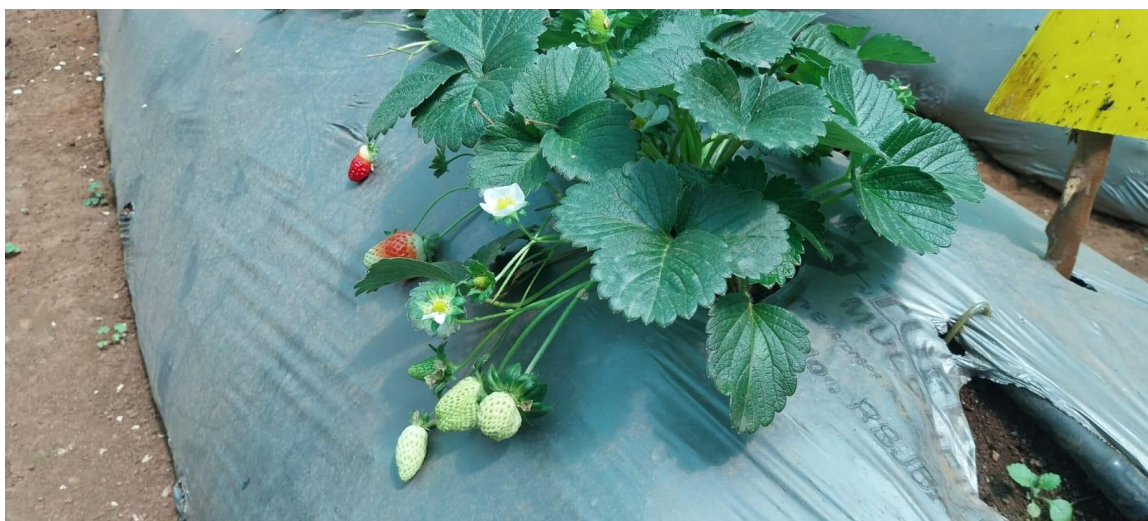
Then they visited Brooklan Tea Factory, where this factory has a legacy of producing teas for more than 90 years. The students had great opportunity to see, how tea leaves are manufactured and transformed into the main ingredient of our cup of tea. Here Mrs. Priya Prakash gave an elaborative deliberations on the methods of Tea powder processing such as, Withering trough, Rolling, cut tear curl, Continuous Fermenting Machine and also she explained about the History of tea in Nilgiris.





Methods of Tea powder processing

Then they visited Coonoor strawberry farm and learned about cultivation practices, hydroponics system of strawberry farming and marketing of strawberry fruits and products which were explained by Mr. Saravanan





Cultivation practices, hydroponics system of strawberry farming and marketing of strawberry fruits

After lunch they went to visit Sim's park. Sim's Park is the major attraction in Coonoor, Situated at an elevation of 5,800 - 5,900 feet. It was founded in 1874 by Mr. J.D. Sims and Major Murray as an amusement park. It covers an area of 12 acres of undulating land, the park spread across a ravine and has been developed into a botanical garden partly in a Japanese style. Divided into eight major sections, the park boasts a large variety of trees and plants including over 1,000 species of huge tree ferns, giant rhododendrons from the Himalayas, Australia, Africa, China, Europe, Brazil etc; and also with more than 399 varieties of roses. The park also contains rare species of trees not found in Ooty as it is protected by the Doddabetta ranges from the onslaught of the monsoons.



In Sim's Park, we could able to identify and documente various plant species such as *Agathis robusta*, *Araucaria excels*, *Camellia japonica*, *Crytomeria japonica*, *Magnolia grandifolia*, *Podocarpus elongates*, *Ternstroemia japonica*, etc., (Table 1) and also documented the biodiversity of the various ecosystems in the field of Coonoor forest range. We all enjoyed the entire one day field trip by visiting the entire natural habitat in the Coonoor hill forest ecosystem of Nilgiris district, Tamil Nadu. There we collected few plant specimens at the foot hills. Finally, We returned back to our final destination point, Kongunadu Arts and Science College (Autonomous) by 6.30 pm.

Table 1: List of Plant species recorded at Sim's Park, Coonoor on 20.02.2024

S. No	Botanical Name	Family
1.	Aesculus assamica Griff.	Sapindaceae
2.	Agapanthus africanus (L.) Hoffmanns.	Amaryllidaceae
3.	Agathis robusta (C.Moore ex F.Muell.) F.M.Bailey.	Araucariaceae
4.	Angophore subvelutina F.Muell.	Myrtaceae
5.	Araucaria bidwillii, Hook.	Araucariaceae
6.	Araucaria excelsa (Salisb.) Franco.	Araucariaceae
7.	Bucklandia populnea (R.Br. ex Griff.) R.W.Br.	Hamamelidaceae
8.	Camellia japonica L.	Theaceae
9.	Corymbia ficifolia (F.Muell.) K.D.Hill & L.A.S.Johnson	Myrtaceae
10.	Cryptomeria japonica (L.f.) D.Don	Cupressaceae
11.	Dombaya wallichii (Lindl.) Benth. ex Baill.	Malvaceae
12.	Elaeocarpus ganitrus <u>Blume</u> .	Elacocarpaceae
13.	Erythrina variegata L.	Fabaceae
14.	Eucalyptus punctata DC.	Myrtaceae
15.	Eucalyptus robusta Sm.	Myrtaceae
16.	Eucalyptus tereficornis Sm.	Myrtaceae
17.	Grevilea hilliana F.Muell.	Proteaceae
18.	Jacaranda mimosifolia D.Don	Bignoniaceae
19.	Juniperus virginiana L.	Cupressaceae
20.	Lagerstroemia indica L.	Lythraceae
21.	Macadamia integrifolia Maiden & Betcher	Protaceae
22.	Macadamia ternifolia F.Muell.	Proteaceae
23.	Magnolia grandiflora L.	Magnoliaceae
24.	Melaleuca leucadendra L.	Myrtaceae
25.	Melaleuca viminalis (Sol. ex Gaertn.) Byrnes.	Myrtaceae
26.	Photinia lindleyana Lindl	Rosaceae
27.	Pinus palustris Mill.	Pinaceae
28.	Podocarpus elongates Aiton L'Herit. ex Pers.	Podocarpaceae
29.	Spathodea campanulata P.Beauv.	Bignoniaceae

30.	<i>Streculia diversifolia</i> L.	Malvaceae
31.	<i>Ternstroemia japonica</i> Mutis ex L.f.	Pentaphylaceae
32.	<i>Yucca gigantea</i> Lem.	Asparagaceae



**Oldest tree of Sim's Park, Coonoor -
Eucalyptus Species (1869)**



***Agapanthus africanus*
(L.) Hoffmanns.**



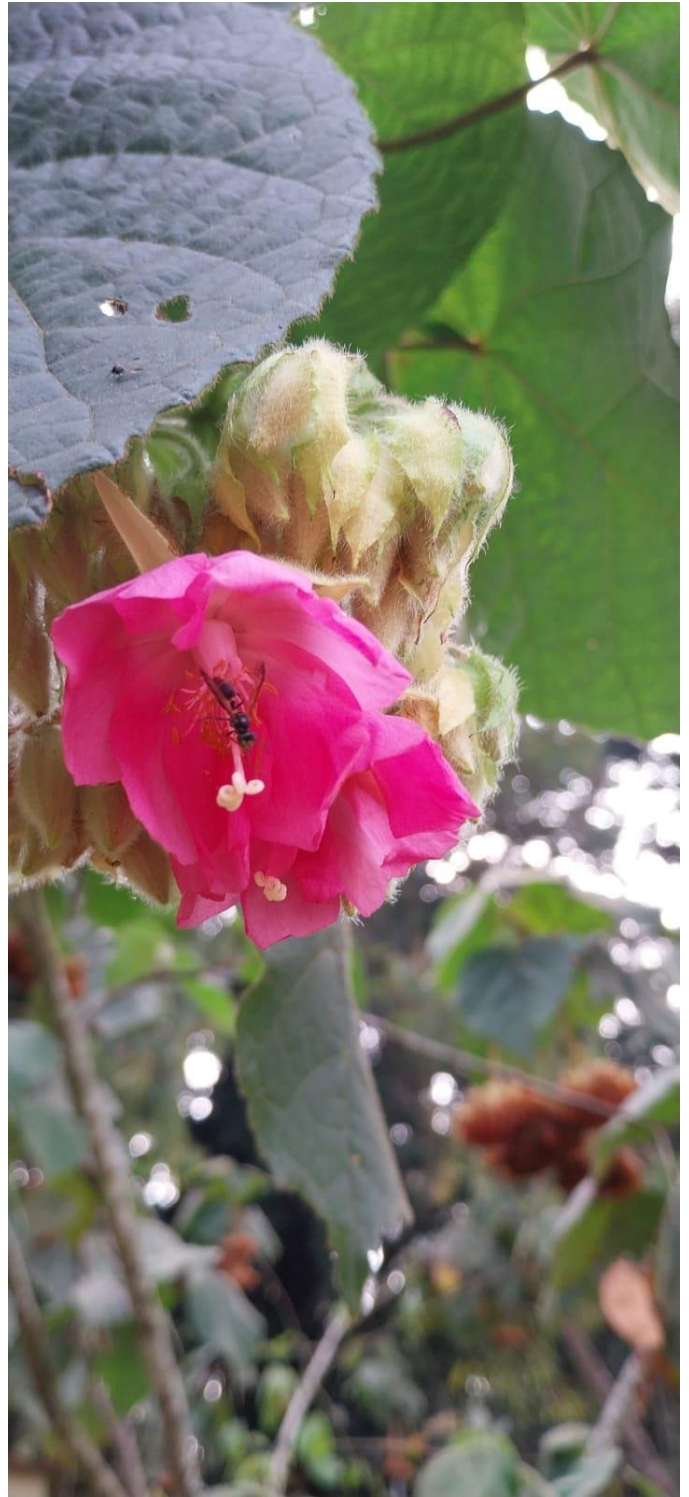
***Araucaria excelsa* (Salisb.) Franco.**



***Podocarpus elongates* Aiton
L'Herit. ex Pers.**



Camellia japonica L.



Dombaya wallichii (Lindl.) Benth. ex
Baill.



***Agapanthus africanus* (L.)
Hoffmanns.**



***Magnolia grandiflora* L.**

CONCLUSION:

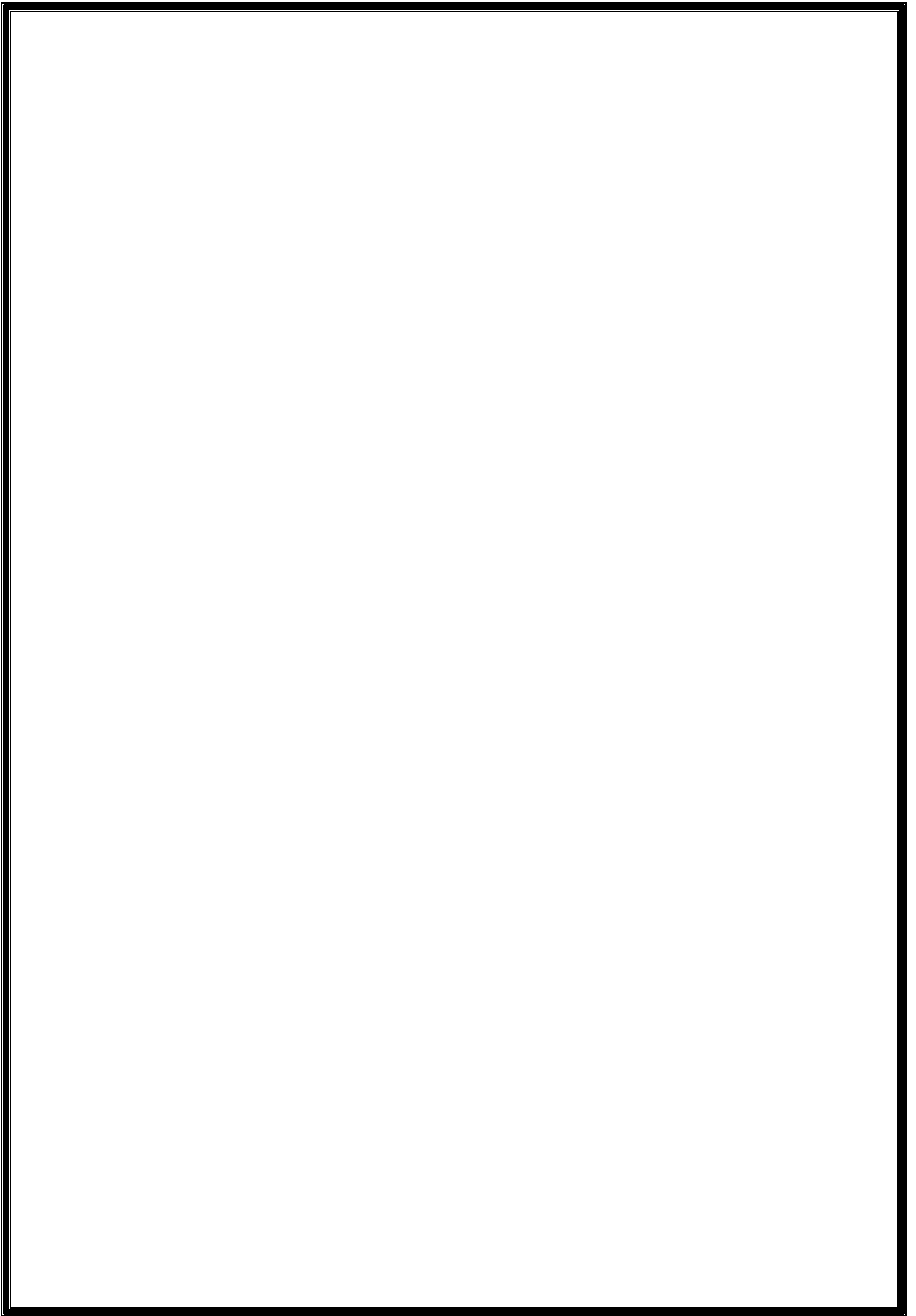
Our botanical field trip was very interesting, students interacted in a very well disciplined manner, cooperated well with teachers and overall the trip was exciting. We realised that viewing the flora and fauna in its natural habitat made us vivid enhancing the class room learning and laboratory experiments Last but not least we would like to mention the quotation “Practical without theory is Blind and theory without practical is sterile” So, theory and practical must go hand in hand all the time.

Outcomes of the Botanical Field Trip:

1. The students learnt about biodiversity in plants
2. Students learnt natural habitats and characters of the plants found in the area
3. They collected plant specimen for practical examination
4. They learned about the different methods of oil types and instruments used for oil extraction
5. Students know about the methods of tea processing
6. Students were able to know about the cultivation practices, hydroponics system of strawberry farming

Acknowledgement

We express our gratitude to Joint Director of Collegiate Education, Coimbatore for accepting and granting permission to take up this trip. We are grateful to our Secretary and Director, Dr. C. A. Vasuki Madam for her encouragement and support during each and every effort for the trip. We are very much thankful to Dr. M. Lekshmanaswamy sir, Principal for his constant encouragement and motivation. At last we are thankful to Dr. K. Thenmozhi, Assistant Professor and Head to arrange this botanical field visit and faculty members Dr. H. Abdul Kaffoor, Dr. P. Revathi, Dr. R. Rekka Assistant Professors of Botany and Mr. R. Mohanasundaram Lab Assistant, who have accompanied and guided us in each and every moment and made this a meaningful trip. We also extend our thanks to aided office staff members for getting permission to undergo this trip.



**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
COIMBATORE-641029**

PG AND RESEARCH DEPARTMENT OF BOTANY



**REPORT ON
EDUCATION TOUR
SUBMITTED BY
I M.Sc., BOTANY**

**SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
RE-ACCREDITED BY NAAC WITH A⁺ GRADE – 4th CYCLE,
COLLEGE OF EXCELLENCE (UGC)
COIMBATORE-641029
OCT - 2023**

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INTRODUCTION

Educational tours play an important role in educating students in a practical and interesting manner. As educational tour is a most important activity in teaching-learning process, it is connecting the classroom with the practical and live existence. On site observation, collection, understanding of habitat is of greater importance which creates curiosity in the minds of students as well as hands-on learning experience is better at memory retention.

An apprehensive knowledge of things are always required for students to start a particular study of a particular site in their natural environment. So, class room study and field study are complementary to each other and we cannot ignore any one of them. Hence keeping these two things in view, this educational field trip was organized by the Department of Botany, Kongunadu Arts and Science College (Autonomous).

AIMS AND OBJECTIVES OF THE EDUCATIONAL FIELD TRIP

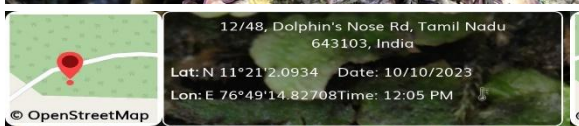
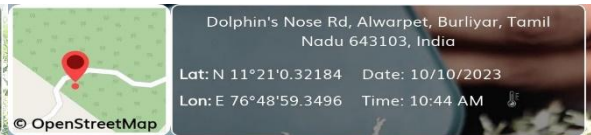
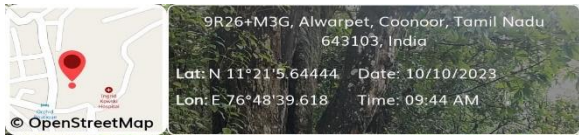
- ✓ To observe and collect the plant species from study site.
- ✓ To study the natural habitats and characters of the plants found in the area.
- ✓ To collect some plant species for herbarium preparation.
- ✓ The collected plant may be kept and used for reference studies.

SCHEDULE OF THE EDUCATIONAL TOUR

The one day educational field trip was planned on **10th October, 2023** to visit **Coonoor, The Nilgiris** with **19 students from II M.Sc., Botany and 3 teaching staffs** members. Our prime aim of one day educational trip were to observe and collect the plant specimens.

PLANT COLLECTION

The educational tour was started at 5.45 AM from Kongunadu Arts and Science College campus by outside hired bus. Around 8.30 AM arrived to Coonoor and as per the schedule we started our plant collection on the way to Dolphin's nose road. There we observed different varieties of Pteridophytes and Bryophytes. We collected the required specimens for herbarium and practical purposes.



TEA FACTORY

After the plant collection, we visited the **BROOKLANE TEA FACTORY** where we experienced a great time. Here we came to know how the tea leaves are processed and exported to several places based on their grade. All these information were clearly explained by the workers. We also had a chance to taste the different varieties of tea prepared in the factory. They also had their own products like tea powder varieties, cosmetics, chocolates etc.,



STRAWBERRY FARM

Next we visited the near by **STRAWBERRY FARM** where they cultivated the strawberries in two different methods like Hydroponic and Soil. These are maintained and cultivated under green house. They also have their own manufacturing unit and several products are prepared for commercial purposes.



SIMS PARK

At the end of the day we had a visit to **SIMS PARK** where we could able to identify and document various species of gymnosperms and also documented the biodiversity of the various ecosystems in the park. There were also many ornamental plants like orchids are grown beautifully in the park under a glass house.



TREE WEALTH OF SIM'S PARK											
S.NO	YEAR OF PLANTING	BOTANICAL NAME	COMMON NAME	FAMILY	NATIVE	S.NO	YEAR OF PLANTING	BOTANICAL NAME	COMMON NAME	FAMILY	NATIVE
1	1917	<i>Agathis robusta</i>	Queens Land Kauri Pine	Aracariaceae	Queens Land	21	1886	<i>Eucalyptus deanei</i>	Mountain Blue Gum	Myrtaceae	Australia
2	1900	<i>Alnus nepalensis</i>	Alder Tree	Betulaceae	Nepal	22	1890	<i>Eucalyptus parvata</i>	Grey Gum	Myrtaceae	Australia
3	1890	<i>Angophora subvelutina</i>	Broad-Leaved Apple	Myrtaceae	Australia	23	1926	<i>Feijoa obovata</i>	Pineapple Guava	Myrtaceae	Brazil
4	1885	<i>Araucaria bidwillii</i>	Monkey Puzzle Tree	Aracariaceae	Australia	24	1919	<i>Ilex wightiana</i>	Velod	Aquifoliaceae	India
5	1919	<i>Araucaria cookii</i>	Captain Cook's Pine	Aracariaceae	Norfolk Island	25	1926	<i>Jacaranda mimosifolia</i>	Blue Jacaranda	Bignoniaceae	South America
6	1907	<i>Araucaria excelsa</i>	Norfolk Island Pine	Aracariaceae	Norfolk Island	26	1926	<i>Juniperus virginiana</i>	Eastern Red Cedar	Cupressaceae	North America
7	1927	<i>Acer oblongum</i>	Himalayan Maple	Sapindaceae	Asia	27	1905	<i>Camellia japonica</i>	Japanese Camellia	Theaceae	Asia / Japan
8	1929	<i>Betula alnoides</i>	Himalayan Birch	Betulaceae	Himalayas	28	1935	<i>Leptospermum polygalifolium</i>	Tanoreu(Jellybush)	Myrtaceae	Australia
9	1910	<i>Biota orientalis</i>	Chinese Thuja	Cupressaceae	Asia	29	-	<i>Macadamia integrifolia</i>	Macadamia Nut	Proteaceae	Australia
10	1940	<i>Castanospermum australe</i>	Australian Chestnut	Fabaceae	Australia	30	1934	<i>Magnolia nitagrica</i>	Nigiri Champu	Magnoliaceae	India
11	1890	<i>Cedrela toona</i>	Indian Mahogany	Meliaceae	Australia	31	1925	<i>Magnolia grandiflora</i>	Bolt Bay	Magnoliaceae	North America
12	1906	<i>Chameroops fortunei</i>	Windmill Palm	Arecaceae	China / Japan	32	1919	<i>Melaleuca leucadendra</i>	Weeping Paperbark	Myrtaceae	Asia / Australia
13	1890	<i>Cinnamomum camphora</i>	Camphor Tree	Lauraceae	China / Japan	33	1895	<i>Vaccinium leschenaultii</i>	Indian Cranberry	Ericaceae	India
14	1948	<i>Corymbia citriodora</i> (syn: <i>eucalyptus citriodora</i>)	Lemon Scented Gum	Myrtaceae	Australia	34	1910	<i>Phoenix canariensis</i>	Canarian Date Palm	Arecaceae	Canary Island
15	1912	<i>Cryptomeria japonica</i>	Sekkan-Sugi Tree	Cupressaceae	Japan	35	1919	<i>Pinus canariensis</i>	Canary Pine	Pinaceae	Canary Island
16	1890	<i>Arbutus unedo</i>	Strawberry Tree	Ericaceae	Europe	36	1940	<i>Prunus cerasoides</i>	Wild Himalayan Cherry	Rosaceae	South East Asia
17	1942	<i>Corymbia ficifolia</i> (syn: <i>eucalyptus ficifolia</i>)	Red Flowering Gum	Myrtaceae	Australia	37	1890	<i>Quercus sessiflora</i>	Sessile Oak	Fabaceae	Europe
18	1913	<i>Diospyros virginiana</i>	Common Persimmon	Ebenaceae	Asia	38	1913	<i>Rhododendron arboreum</i>	Tree Rhododendron	Ericaceae	India
19	1913	<i>Exochlandia populnea</i>	Pipli Tree	Hamamelidaceae	Himalayas	39	1900	<i>Syncarpia laurifolia</i>	Turpentine Tree	Myrtaceae	Australia
20	1905	<i>Elaeocarpus ganitrus</i>	Rudraksha	Elaeocarpaceae	India / Nepal	40	1900	<i>Salix babylonica</i>	Weeping Willow	Salicaceae	China

CONCLUSION

The trip overall was a great trip that gave us good knowledge about different vegetation types. We also learnt about how invasive species take over the landscape and endanger native and endemic plants. The day was well spent botanically and taught us the importance of nature and that we must conserve it to live a good life on planet.

SUMMARY OF THE TRIP

The well planned botanical tour was filled with full of knowledge provoking for the students studying the plants. The research, preservation and propagation, impact of human influence on environment has also been well-communicated for the young botanists. The lower life forms such as bryophytes, pteridophytes has been exposed on the site. On the whole, this educational trip definitely provides the great insight in the plant research, propagation, breeding, biodiversity, preservation of specimens, impact of environment at anthropogenic activities and life forms at different climatic zones. The learning through site will give greater impact than the classroom learning is substantiated.

Report on
AWARENESS LECTURE IN CONNECTION WITH INTERNATIONAL
DAY FOR MANGROVE ECOSYSTEM 2023

at
INSTITUTE OF FOREST GENETICS AND TREE BREEDING,
COIMBATORE

on
26 JULY 2023

Submitted by
II M.Sc. Botany
2022-24 Batch

PG AND RESEARCH DEPARTMENT OF BOTANY



July 2023

Introduction

On 26th July 2023, seventeen members of II M.Sc., Botany students, nine Ph.D., scholars along with Dr. K. Karthika and Dr. R. Thirugnanasampandan visited the Institute of Forest Genetics and Tree Breeding (FGTB), Coimbatore. We arrived there at 10.00 am followed by attending the awareness lecture in connection with international day for mangrove ecosystem 2023. Subsequently visited the Institute Labs, Herbarium, Vegetative Propagation Unit and the Gass forest museum.

Objective

The objective of the visit was to attend a seminar session about the conservation of mangrove forests and get to know more about IFGTB.

Observation

First, we attended the session on conservation of mangrove forests. Dr. K. Kunhikannan, Director, IFGTB, spoke about Mangrove conservation and also released a poster on it. After refreshments, Dr. S. Vigneswaran, Senior Programme Officer, ENVIS, IFGTB delivered a lecture on the environment and environment conservation. We visited the Tissue Culture Lab and learn about different species of teak that are grown in the lab, followed by Phytochemistry Lab where high-tech instruments like GC-MS and Rotary Evaporator were explained by technicians and also showcased the different plant-based products like insect repellent, jam, soap etc. and also visited the herbarium. After lunch, we visited the vegetative propagation field and learned about clone preparation. We observed the process of emasculation. Finally, we visited the Gass forest museum. The museum had many preserved specimens, bones and skulls of various animals, birds, etc. and foetus of many animals and also observed different sections like entomology, mycology and ethnology. The core of the museum is stuffed animals and reptiles that look very much alive. Apart from this, one can see the stuffed animals like peacock, leopard, brahmini kite and the museum contains the largest seed of coconut which is about 2.060 kg weight.



Poster Release



Explaining about Teak Tissue Culture



Explaining about Rotary Evaporator



Herbarium



Vegetatively Propagated Nursery Visit

**The Chemical Composition, Antimicrobial, and Antioxidant
Properties of Essential Oil from the Leaves of
Coleus amboinicus Lour.**

Dissertation submitted to Kongunadu Arts and Science College affiliated to
Bharathiar University, Coimbatore in partial fulfillment of the requirements
for the award of the degree of

MASTER OF SCIENCE IN BOTANY

Submitted by

Ms. ANUSHA, S. (222BO001)

Under the guidance of

Dr. K. SOWNDHARARAJAN

Assistant Professor of Botany



**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

College of Excellence (UGC)

*Re-accredited by NAAC with 'A**' Grade (4th Cycle)*

29th Rank among Colleges in NIRF 2023

COIMBATORE – 641 029, TAMIL NADU

APRIL 2024

**ANALYSIS OF CHEMICAL COMPOSITION AND EVALUATION OF
ANTIOXIDANT ACTIVITY OF INFLORESCENCE ESSENTIAL OIL
OF *Hyptis suaveolens* (L.) Poit**

**DISSERTATION
SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY
IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN BOTANY**

**Submitted by
VRINDA KRISHNA K
(Reg.No.222BO002)**

**Under the Guidance of
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Assistant Professor of Botany**



**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
College of Excellence (UGC)
Re-accredited by the NAAC with 'A+' Grade (4th cycle)
29th Rank Among College in NIRF 2023
COIMBATORE – 641 209
APRIL-2024**

A SURVEY ON ORNAMENTAL PLANTS IN THADAGAM HILLS OF COIMBATORE DISTRICT, TAMIL NADU

Dissertation submitted to Kongunadu Arts and Science College
affiliated to Bharathiar University, Coimbatore
in partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE IN BOTANY

Submitted by

Ms. AMEENA, M. (222BO003)

II M.Sc. Botany

Under the guidance of

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

Re-accredited by NAAC with 'A+' Grade (4th Cycle)

COLLEGE OF EXCELLENCE (UGC)

29th Rank among Colleges in NIRF - 2023

COIMBATORE – 641 029, TAMIL NADU

APRIL 2024

**STUDY ON SEED GERMINATION AND PLANT GROWTH RATE
OF COMMON BEANS (*PHASEOLUS VULGARIS* L.) IN
DIFFERENT SOIL SAMPLES**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY, IN PARTIAL FULFILMENT
FOR THE AWARD OF THE DEGREE OF
MASTER OF SCIENCE IN BOTANY**

**Submitted by
ABRAR MUHAMMED A
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**Under the Guidance of
DR. H. ABDUL KAFFOOR, M.Sc., M.Phil., Ph.D.
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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
RE-ACCREDITED BY NAAC WITH "A+" GRADE (4th CYCLE)
COLLEGE OF EXCELLENCE (UGC)
29TH RANK AMONG COLLEGE IN NIRF 2023
COIMBATORE- 641 029**

APRIL 2024

EVALUATION OF PHYTOCHEMICAL CONSTITUENTS AND ANTIOXIDANT PROPERTY OF *Drynaria quercifolia* (L.)j. Sm.

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

**In partial fulfilment for the award of
MASTER OF SCIENCE IN BOTANY**

**SUBMITTED BY
SUNMATHY.M
(REG.NO:222BO005)**

**Under the guidance of
Dr. M.PARVEEN
ASSISTANT PROFESSOR
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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

**(Affiliated to Bharathiar University)
(Re-accredited by NAAC with 'A+' Grade (4th cycle)
29th Rank Among Colleges in NIRF 2023
College of Excellence (UGC)
Coimbatore-641029, Tamil Nadu, INDIA**

APRIL 2024

**EVALUATION OF PHYTOCHEMICAL CONSTITUENTS AND
ANTIOXIDANT PROPERTY OF *IMPATIENS MINOR* (DC.) BENNET**

Dissertation submitted to

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

AFFILIATED TO BHARATHIAR UNIVERSITY, IN PARTIAL FULFILMENT

FOR THE AWARD OF THE DEGREE

MASTER OF SCIENCE IN BOTANY

SUBMITTED BY

LAVALIKA.J (REG.NO:222BO006)

Under the guidance of

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Coimbatore- 641029



PG AND RESEARCH DEPARTMENT OF BOTANY

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

(Affiliated to Bharathiar university)

(Re-accredited by NAAC with 'A+' Grade 3.64 CGPA (4th cycle)

College of excellence-UGC

Coimbatore-641029,Tamil nadu, INDIA

APRIL 2024

**PHYTOCHEMICAL SCREENING AND LC-MS/MS ANALYSIS OF
ELAEOCARPUS SERRATUS L. IN KOTAGIRI, THE NILGIRIS
DISTRICT, TAMILNADU**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

**IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE
MASTER OF SCIENCE IN BOTANY**

**SUBMITTED BY
Ms. B. SWETHA (Reg. No. 222BO007)**

**UNDER THE GUIDANCE OF
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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

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College of Excellence – UGC

29th Rank among Colleges in NIRF - 2023

Coimbatore-641 029, Tamil Nadu, INDIA

APRIL, 2024

**EXTRACTION, ISOLATION AND IDENTIFICATION OF
PHENOLS, FLAVONOIDS AND SAPONINS FROM
HOLARRHENA PUBESCENS WALL. EX. G.DON. AND THEIR
POTENTIAL ANTIOXIDANT ACTIVITY**

**DISSERTATION SUBMITTED TO KONGUNADU ARTS AND SCIENCE
COLLEGE (AUTONOMOUS)**

*Affiliated to Bharathiar University in Partial Fulfillment of the
Requirement for the award of the Degree of*

MASTER OF SCIENCE IN BOTANY

Submitted by

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PG AND RESEARCH DEPARTMENT OF BOTANY

**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

RE-ACCREDITED BY NAAC WITH 'A + 'GRADE (4th CYCLE)

COLLEGE OF EXCELLENCE (UGC),

29th Rank among Colleges in NIRF 2023

COIMBATORE-641029, TAMIL NADU

APRIL - 2024

PHYTOCHEMICAL ANALYSIS OF *RHODOMYRTUS TOMENTOSA*
(Alton) Hassk.,

DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE
MASTER OF SCIENCE IN BOTANY

SUBMITTED BY
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PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

(Institution Affiliated to Bharathiar University)
Re-accredited by NAAC with 'A+' Grade (4th Cycle)
College of Excellence – UGC
29th Rank among Colleges in NIRF - 2023
Coimbatore-641 029, Tamil Nadu, INDIA

APRIL, 2024

**INVESTIGATION ON PHYTOCHEMISTRY AND ANTIBACTERIAL
ACTIVITY IN THE LEAF EXTRACT OF *ANNONA SQUAMOSA* L.**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY,
IN PARTIAL FULFILMENT FOR
THE AWARD OF THE DEGREE OF
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RE-ACCREDITED BY NAAC WITH "A+" GRADE (4th CYCLE)
COLLEGE OF EXCELLENCE (UGC)
COIMBATORE- 641 029**

APRIL 2024

**SURVEY OF PTERIDOPHYTES FROM COONOR,
WESTERN GHATS, TAMIL NADU**

DISSERTATION
SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY
IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF
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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

College of Excellence (UGC)

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29th Rank Among College in NIRF 2023

COIMBATORE-641209

APRIL, 2024

**EXPLORATION OF PHYTOCONSTITUENTS AND *IN VITRO*
ANTIOXIDANT CAPACITY OF *OXALIS LATIFOLIA* KUNTIL.**

Dissertation submitted to

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

In partial fulfillment for the award of

MASTER OF SCIENCE IN BOTANY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

(Affiliated to Bharathiar University)

(Re-accredited by NAAC with 'A' Grade (4th Cycle))

29th Rank among colleges in NIRF 2023

College of Excellence (UGC)

Coimbatore-641 029, Tamil Nadu, India

March-2024

**PHYTOCHEMICAL AND ANTIOXIDANT ANALYSIS ON THE
RHIZOME OF RAUWOLFIA SERPENTINA (L.) BENTH. ex
KURZ.**

DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS),
AFFILIATED TO BHARATHIAR UNIVERSITY IN PARTIAL FULFILLMENT
FOR THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF
MASTER OF SCIENCE IN BOTANY

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COLLEGE OF EXCELLENCE (UGC)

COIMBATORE- 641029,

TAMILNADU, INDIA

APRIL-2024

A Study on the Antimicrobial and Antioxidant Activities of Certain Aromatic Compounds

Dissertation submitted to Kongunadu Arts and Science College affiliated to
Bharathiar University, Coimbatore in partial fulfillment of the requirements
for the award of the degree of

MASTER OF SCIENCE IN BOTANY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
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College of Excellence (UGC)

Re-accredited by NAAC with 'A' Grade (4th Cycle)*

29th Rank among Colleges in NIRF 2023

COIMBATORE – 641 029, TAMIL NADU

APRIL 2024

**PHYTOCHEMICAL AND ANTIOXIDANT EVALUATION OF
HERBAL GEL PREPARED FROM FRUIT EXTRACT OF FICUS
AURICULATA LOUR. (MORACEAE)**

**DISSERTATION SUBMITTED TO KONGUNADU ARTS AND SCIENCE
COLLEGE (AUTONOMOUS)**

*Affiliated to Bharathiar University in Partial Fulfillment of the
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MASTER OF SCIENCE IN BOTANY

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**KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

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COLLEGE OF EXCELLENCE (UGC),
29th Rank among Colleges in NIRF 2023
COIMBATORE-641029, TAMIL NADU**

APRIL - 2024

**PHYTOCHEMICAL EVALUATION AND ANTIOXIDANT ANALYSIS
OF *IMPATIENS MINOR* (DC.) BENNET**

Dissertation submitted to

**KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY, IN PARTIAL FULFILMENT
FOR THE AWARD OF THE DEGREE
MASTER OF SCIENCE IN BOTANY**

SUBMITTED BY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

(Affiliated to Bharathiar university)

(Re-accredited by NAAC with 'A+' Grade 3.64 CGPA (4th cycle))

College of excellence-UGC

Coimbatore-641029,Tamil nadu, INDIA

APRIL 2024

**ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED BY
THE KURUMBA TRIBES IN MUKKUR, THE NILGIRIS, THE
WESTERN GHATS OF TAMIL NADU**

Dissertation submitted to
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY, IN PARTIAL FULFILMENT
FOR THE AWARD OF THE DEGREE
MASTER OF SCIENCE IN BOTANY

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PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

(Affiliated to Bharathiar university)

(Re-accredited by NAAC with 'A+' Grade 3.64 CGPA (4th cycle)

29th Rank Among Colleges in NIRF-2023

College of excellence-UGC

Coimbatore-641029,Tamil Nadu, INDIA

APRIL 2024

A STUDY ON THE DIVERSITY OF WEEDS IN THADAGAM HILLS OF COIMBATORE DISTRICT, TAMIL NADU

Dissertation submitted to Kongunadu Arts and Science College
affiliated to Bharathiar University, Coimbatore
in partial fulfillment of the requirements for the award of the degree of

MASTER OF SCIENCE IN BOTANY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
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COLLEGE OF EXCELLENCE (UGC)

29th Rank among Colleges in NIRF - 2023

COIMBATORE – 641 029, TAMIL NADU

APRIL 2024

**SURVEY AND DOCUMENTATION OF VARIOUS
MUSHROOM CULTIVATION UNITS IN COIMBATORE
DISTRICT AND STUDY ON MUSHROOM CULTIVATION
PROCESS OF
OYSTER MUSHROOM (*Pleurotus osteratus*)**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
DEPARTMENT OF BOTANY
BACHELOR OF SCIENCE IN BOTANY**

**SUBMITTED BY
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Batch: 2023 - 2024

**UNDER THE SUPERVISION OF
DR. M. PARVEEN M.SC., M.PHIL., PH.D.
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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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29th Rank Among Colleges in NIRF 2023

College of Excellence (UGC)

**GN MILLS POST, COIMBATORE-641029,
TAMILNADU, INDIA**

April – 2024

**SURVEY AND DOCUMENTATION OF INVASIVE ALIEN SPECIES IN
ANUVAVI HILLS, COIMBATORE DISTRICT, TAMIL NADU, INDIA.**

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY,
IN PARTIAL FULFILMENT FOR
THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN BOTANY**

**Submitted by
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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
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COLLEGE OF EXCELLENCE (UGC)
COIMBATORE- 641 029**

APRIL 2024

**SURVEY OF PTERIDOPHYTES FROM GUNDRI HILLS,
EASTERN GHATS, TAMIL NADU**

**DISSERTATION
SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY
IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREE OF
BACHELOR OF SCIENCE IN BOTANY**

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
College of Excellence (UGC)**

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29th Rank Among College in NIRF 2023

COIMBATORE-641209

APRIL-2024

FLORA OF CLIMBING PLANTS IN WEST COIMBATORE

DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY, IN PARTIAL FULFILMENT FOR

THE AWARD OF THE DEGREE OF
BACHELORS OF SCIENCE IN BOTANY

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UG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
RE-ACCREDITED BY NAAC WITH "A+" GRADE (4th CYCLE)
COLLEGE OF EXCELLENCE (UGC)
COIMBATORE- 641 029

MARCH 2024

**PRODUCTION AND STORAGE OF ARTIFICIAL SEEDS USING
IMMATURE SEEDS OF *Achyranthes aspera* Linn.**

**DISSERTATION SUBMITTED TO KONGUNADU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)**

**AFFILIATED TO BHARATHIAR UNIVERSITY IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE AWARD OF THE DEGREE OF**

BACHELOR OF SCIENCE IN BOTANY

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Assistant Professor



KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

Re-accredited by NAAC with "A+" Grade (4th Cycle)

29th Rank Among Colleges in NIRF 2023

College of Excellence (UGC)

**GN MILLS POST, COIMBATORE-641029,
TAMILNADU, INDIA**

April – 2024

**ETHNOBOTANICAL EXPLORATION OF MEDICINAL PLANT SPECIES
USED IN *IRULAR* TRIBAL MEDICINAL SYSTEM FOR THE TREATMENT
OF GYNECOLOGICAL DISORDERS**

Dissertation submitted to

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

In partial fulfillment for the award of

BACHELOR OF SCIENCE IN BOTANY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

(Affiliated to Bharathiar University)

(Re-accredited by NAAC with 'A+' Grade (4th Cycle))

29th Rank among colleges in NIRF 2023

College of Excellence (UGC)

Coimbatore-641 029, Tamil Nadu, India

March-2024

**DIGITIZATION OF VASCULAR PLANT HERBARIUM COLLECTIONS
AT KONGUNADU ARTS AND SCIENCE COLLEGE (KASC),
COIMBATORE, TAMIL NADU**

Dissertation submitted to Kongunadu Arts and Science College
affiliated to Bharathiar University, Coimbatore
in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF SCIENCE IN BOTANY

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**Mr. M. SAAHIL (211BO007)
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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)
Re-accredited by NAAC with 'A+' Grade (4th Cycle)
College of Excellence (UGC)
29th Rank among Colleges in NIRF - 2023
COIMBATORE – 641 029, TAMIL NADU**

APRIL 2024

**The Chemical Composition and Biological Properties of
Essential Oil of *Cymbopogon flexuosus*
(Nees ex Steud.) W. Watson**

Dissertation submitted to Kongunadu Arts and Science College affiliated to
Bharathiar University, Coimbatore in partial fulfillment of the requirements
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BACHELOR OF SCIENCE IN BOTANY

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**PG AND RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

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29th Rank among Colleges in NIRF 2023

COIMBATORE – 641 029, TAMIL NADU

APRIL 2024

ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS IN GUDALUR TALUK, THE NILGIRIS

DISSERTATION

SUBMITTED TO KONGUNADU ARTS AND SCIENCE COLLEGE
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BACHELOR OF SCIENCE IN BOTANY

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PG AND RESEARCH DEPARTMENT OF BOTANY

KONGUNADU ARTS AND SCIENCE COLLEGE

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Re-accredited by NAAC with A+ Grade (4th cycle)

29th Rank among Colleges in NIRF 2023

COLLEGE OF EXCELLENCE (UGC)

COIMBATORE - 641029.

APRIL - 2024

DOCUMENTATION OF SCLEREIDS PATTERN AND DISTRIBUTION IN SOME ANGIOSPERMIC PLANTS

Dissertation submitted to Kongunadu Arts and Science College affiliated to Bharathiar University,
Coimbatore in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF SCIENCE IN BOTANY

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KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

**Re-accredited by NAAC with "A" Grade in 4th Cycle College of
Excellence (UGC)**

**GN MILLS POST, COIMBATORE-641029, TAMIL NADU,
INDIA**

APRIL -2024

**PAPAYA LEAF EXTRACT AS FOLIAR SUPPLEMENTARY
TO IMPROVE ROOT BIOMASS AND QUALITY OF
INDIAN RADISH (RAPHANUS SATIVUS L.) - A WASTE TO
MANURE APPROACH**

**DISSERTATION SUBMITTED TO KONGUNADU ARTS AND SCIENCE
COLLEGE (AUTONOMOUS)**

*Affiliated to Bharathiar University in Partial Fulfillment of the
Requirement for the award of the Degree of*

BACHELOR OF SCIENCE IN BOTANY

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PG AND RESEARCH DEPARTMENT OF BOTANY

**KONGUNADU ARTS AND SCIENCE COLLEGE
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**RE-ACCREDITED BY NAAC WITH 'A' + 'GRADE (4th CYCLE)
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COIMBATORE-641029, TAMIL NADU**

APRIL, 2024

SURVEY AND DOCUMENTATION OF MEDICINAL PLANTS

**DISSERTATION SUBMITTED TO
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

In Partial Fulfillment for the Award of

BACHELOR OF SCIENCE IN BOTANY

**SUBMITTED BY
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KARTHICK. Y (211BO016)**

**UNDER THE GUIDANCE OF
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**PG RESEARCH DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**

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Re-accredited by NAAC with A+ Grade (4th Cycle)

College of Excellence (UGC)

29th Rank among College in NIRF - 2013

Coimbatore - 641 029, Tamil Nadu, INDIA

APRIL, 2024



GREENLEAF TESTING LAB

CERTIFICATE

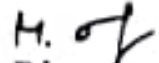
This is to certify that S. SANJAY.....(20280020R).....from...DEPARTMENT.....OF...BOTANY.....
KANNAMADU.....ARTS.....AND.....SCIENCE.....COLLEGE.....(ANONAMPUR)..... participated in the Internship /
Training Programme of ..ADVANCED.....INSTRUMENTATION.....TECHNIQUES.....IN.....FOOD.....
.....ANALYSIS.....

Organized by Greenleaf Testing Laboratory during ...26.05.2023.....to15.06.2023.....
at Coimbatore.

Greenleaf Testing Laboratory

Site No 8A, Elango Nagar West Street - I,
Shoba Nagar, Avarampalayam,
Coimbatore - 641 006 Tamil Nadu.
Cell : +91 94867 28436, 81484 42926
Email : greenleaftestinglab@gmail.com
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Director



CERTIFICATE

This is to certify that M JAMUNA (21180004) from DEPARTMENT OF BOTANY
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS) participated in the Internship /
Training Programme of ADVANCED INSTRUMENTATION TECHNIQUES IN FOOD
ANALYSIS

Organized by Greenleaf Testing Laboratory during 26. 05. 2023 to 15. 06. 2023
at Coimbatore

Greenleaf Testing Laboratory

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M. S.
Director



GREENLEAF TESTING LAB

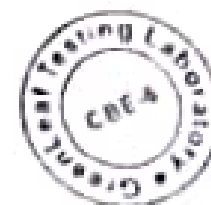
CERTIFICATE

This is to certify that S. VIVILJA BLESSY (211B0003).....from DEPARTMENT OF BOTANY.....
KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS) participated in the Internship /
Training Programme of ADVANCED INSTRUMENTATION TECHNIQUES IN FOOD
ANALYSIS.....

Organized by Greenleaf Testing Laboratory during 26.05.2023.....to 15.06.2023.....
at Coimbatore.

Greenleaf Testing Laboratory

Site No BA Elango Nagar West Street 1
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Coimbatore - 641 006 Tamil Nadu
Call : +91 94857 28436 & 94874 1216
Email : greenleaftestinglab@gmail.com
Website : www.greenleaf.in



M. S.
Director



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This is to certify that *S. SHANTHUGAM*....(21180004).....from...DEPARTMENT.....OF...BOTANY...
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This is to certify that M. MOHAMMAD JAVED (21180005) from DEPARTMENT OF BOTANY,
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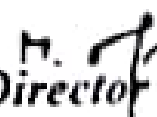
This is to certify that S. LOGANAYAKI.....(211B0006).....from.....DEPARTMENT.....OF.....BOTANY.....
.....KONGUNADU.....ARTS.....AND.....SCIENCE.....COLLEGE.....(AUTONOMOUS)participated in the Internship /
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This is to certify that M. SAHIL (211B0007) from DEPARTMENT OF BOTANY
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This is to certify that S. DEVI (21180008) from DEPARTMENT OF BOTANY,
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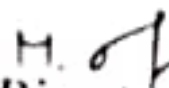
This is to certify that A. PARVATHI (211B0009) from DEPARTMENT OF BOTANY,
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This is to certify that *R. SUNANTHINI* (2180010) from *DEPARTMENT OF BOTANY*
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This is to certify that S.J. SUDESHNA (21180012) from DEPARTMENT OF BOTANY
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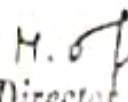
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This is to certify that MUHAMMAD...ANAS... (21180013) from DEPARTMENT.....OF.....BOTANY.....
..KONGUNADU....ARTS.....AND.....SCIENCE...COLLEGE... (AUTONOMOUS) participated in the Internship /
Training Programme of ADVANCED.....INSTRUMENTATION.....TECHNIQUES.....IN.....FOOD.....
..ANALYSIS:.....

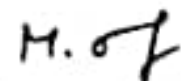
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This is to certify that M. BHUNANESHWARI (21B0014) from DEPARTMENT OF BOTANY
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Website : www.greenleaflab.in



M. J.
Director

ARK



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This is to certify that Y. KARJICK (21180026).....from DEPARTMENT OF BOTANY.....
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Training Programme of ADVANCED INSTRUMENTATION TECHNIQUES IN FOOD.....
ANALYSTS.....

Organized by Greenleaf Testing Laboratory during 26.05.2023.....to 15.06.2023.....

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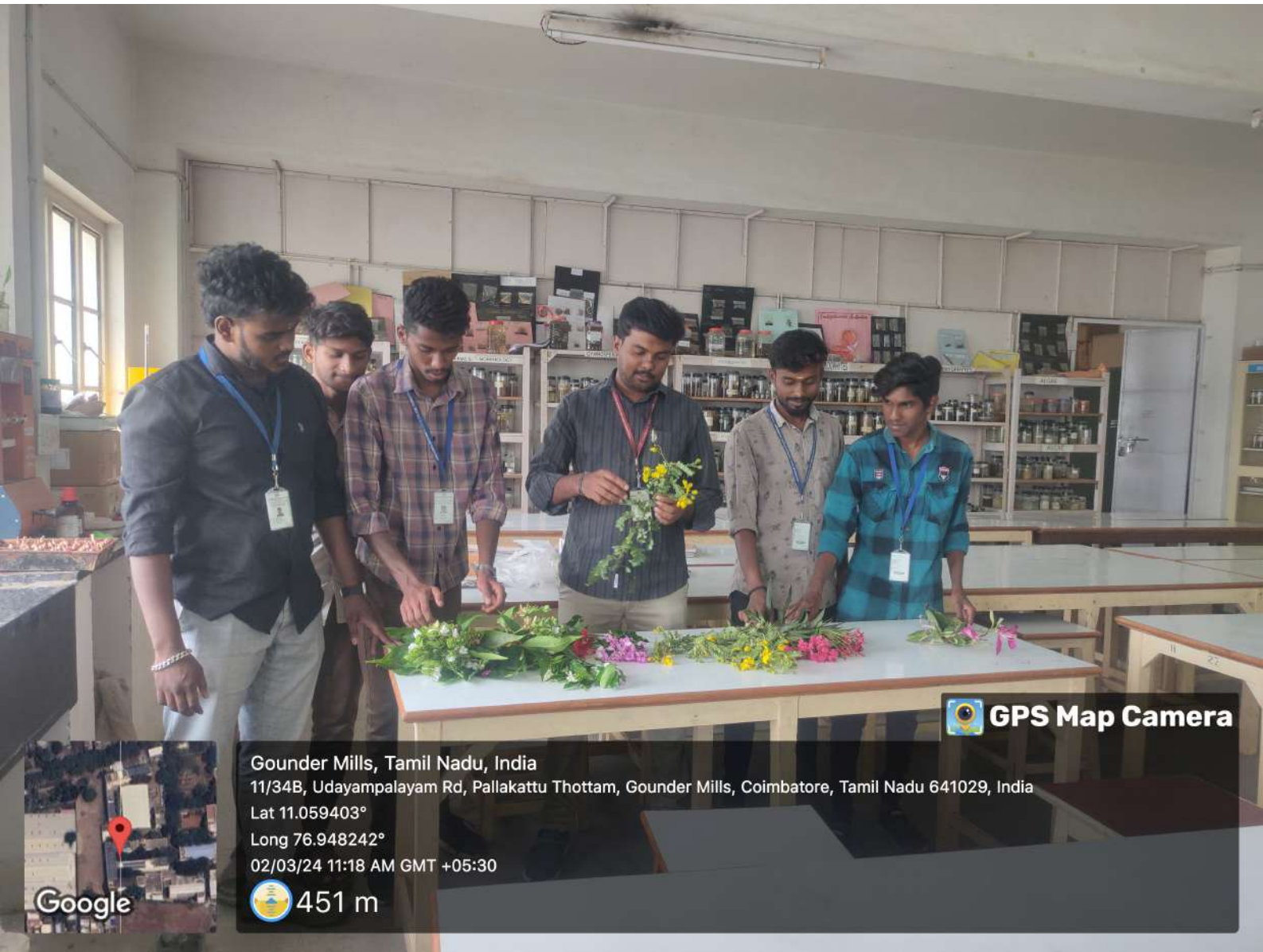
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M. J.
Director





 **GPS Map Camera**

Gounder Mills, Tamil Nadu, India

11/34B, Udayampalayam Rd, Pallakattu Thottam, Gounder Mills, Coimbatore, Tamil Nadu 641029, India

Lat 11.059403°

Long 76.948242°

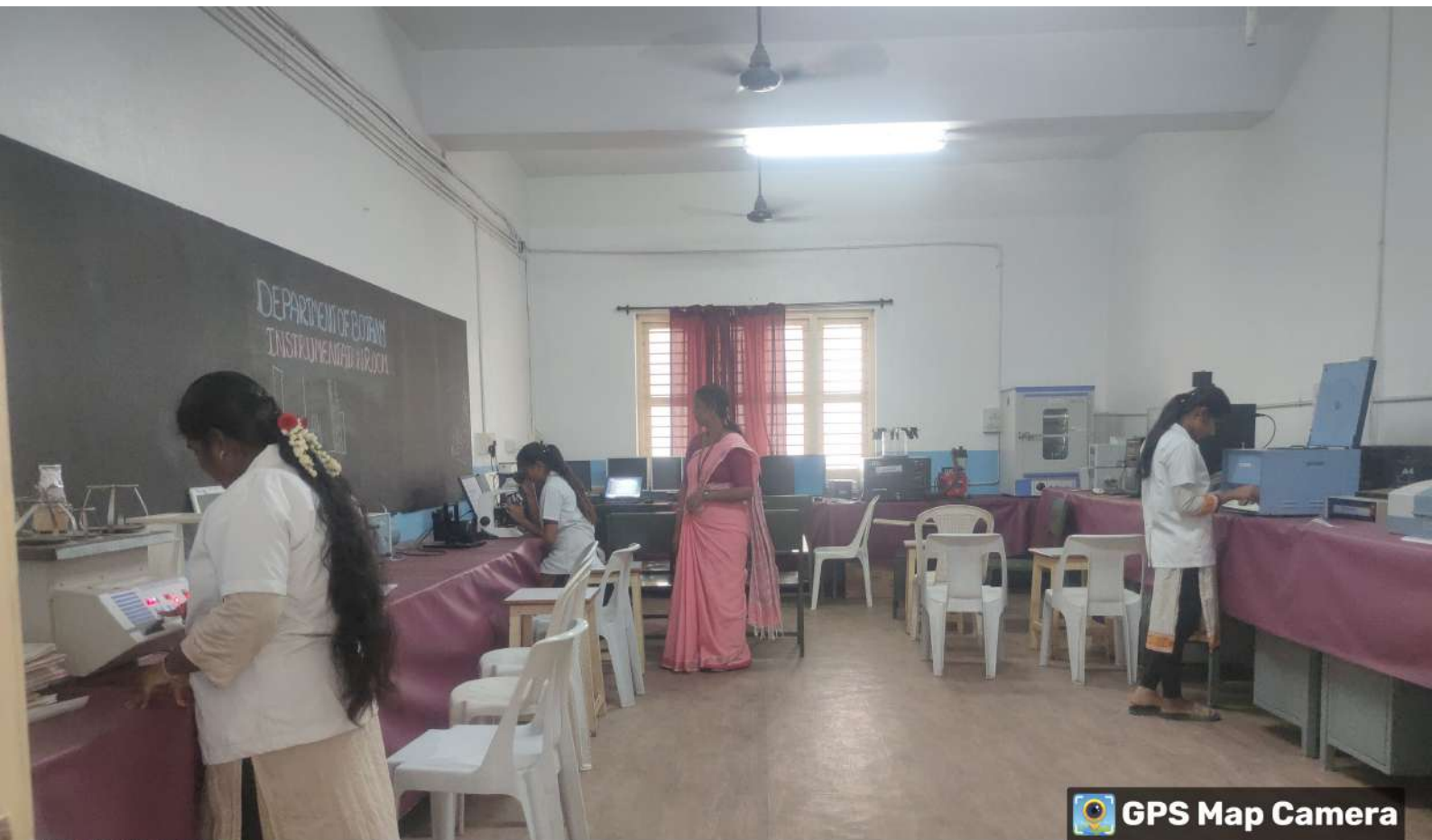
02/03/24 11:18 AM GMT +05:30



451 m



Google



 **GPS Map Camera**

Gounder Mills, Tamil Nadu, India

11/34B, Udayampalayam Rd, Pallakattu Thottam, Gounder Mills, Coimbatore, Tamil Nadu 641029, India

Lat 11.059399°

Long 76.948212°

02/03/24 11:29 AM GMT +05:30



451 m



Google



Gounder Mills, Tamil Nadu, India

11/34B, Udayampalayam Rd, Pallakattu Thottam, Gounder Mills, Coimbatore, Tamil Nadu 641029, India

Lat 11.059234°

Long 76.94814°

02/03/24 11:34 AM GMT +05:30



451 m



GPS Map Camera

Google



Coimbatore, TN, India

GN Mills, Coimbatore, 641029, TN, India

Lat 11.059249, Long 76.948032

06/20/2024 02:30 PM GMT+05:30

Note : Captured by GPS Map Camera

2.3.1- Student-centric methods such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

We, PG and Research Department of Botany, Kongunadu Arts and Science College has a main objective of man making education. For achieving such height in academic, PG and Research Department of Botany is mainly focus on student centric approach which mainly concentrate on improving standards of students in experiential learning, participative learning and problem solving areas are as follows,

Experiential learning, we offer to the students to get engaged by various laboratory experiments and project works. Because of experiential learning students get hands on experience on various practical followed by improving their problem solving capability. In addition, a student gets chance of understanding and interpreting the theory and practical. Further, trouble shooting capacity improves the student own skill and also create opportunities to show their work potential which open the avenue for collaborate with diverse work groups. Above all, experiential learning might improve self confidence and team work.

Through participative learning PG and Research Department of Botany encouraged the students to take part in group discussions, case study analysis and providing solutions for teaching and learning. Further, encourage the students to collect research articles of recent developments and discussion on merits and demerits followed by make use of available technologies for own. Making students to attend seminars, workshops and trainings and also let them to present their works in such events. Also create an opportunity for students to participate extracurricular activities like sports, drawings, debates, paintings etc. We give importance to internships, field visits and education tours which are integral part of participative learning.

PG and Research Department of Botany is giving much attention in problem solving since it is most important and essential part of teaching and learning. Problem based assignments, subject related puzzles, writing mini projects and repair minor problems in instruments are concentrated which will strengthen the student self confidence through which getting jobs and becoming entrepreneur becomes easy.