



Guru Nanak College (Autonomous)

(Affiliated to University of Madras & Re-Accredited At "A" Grade by NAAC)
No. 161, Guru Nanak Salai, Velachery, Chennai – 600042, Tamil Nadu
Website: www.gurunanakcollege.edu.in

1.3.4 Percentage of Students undertaking Field Projects / Internships / Student Projects

Supporting Documents

Sample Photographs of Field Projects / Field Visit

|| 2020-21 ||

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CERTIFIED DOCUMENTS	
METRIC NO. : <u>1.3.4</u>	
PAGE NO. <u>01</u> TO <u>10</u>	
 PRINCIPAL	

To

20.03.2021

Dr. J. Jayanthi,
Associate Professor & Head,
Department of Advanced Zoology and Biotechnology,
Guru Nanak College,
Velachery, Chennai – 42.

Dear Madam,

Sub: Acceptance for a field trip to Clean Green Biosystems – Reg.

This is with reference to your letter dated 19.03.2021, We express our interest to permit your M.Sc Zoology students (45) for a field trip to observe Herbal, Nutraceutical, Phytochemical extraction system, Botanical Drug Development, Fruits and Vegetables Processing & Organic Agricultural input formulation system of our Industry on 23.03.2021.

With Regards,



(Dr. S. PREM MATHI MARAN)

Registered Office:

No. 2872, Sun Shelters, Susheela Nagar 1st Street,
Kovilambakkam, Chennai 600 117.
Mob: +91 80561 26827

Corporate Office:

Plot No.9, 1st Cross Street, SIDCO Industrial Estate,
Thirumudivakkam, Chennai 600 044.
Ph: +91 44 6462 7337

To

20.03.2021

Dr. J. Jayanthi,
Associate Professor & Head,
Department of Advanced Zoology and Biotechnology,
Guru Nanak College,
Velachery, Chennai – 42.

Dear Madam,

Sub: Acceptance for a field trip to Clean Green Biosystems – Reg.

This is with reference to your letter dated 19.03.2021, We express our interest to permit your B.Sc., Advanced Zoology and Biotechnology students (38) for a field trip to observe Herbal, Nutraceutical, Phytochemical extraction system, Botanical Drug Development, Fruits and Vegetables Processing & Organic Agricultural input formulation system of our Industry on 24.03.2021.

With Regards,



(Dr. S. PREM MATHI MARAN)

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No. 2872, Sun Shelters, Susheela Nagar 1st Street,
Kovilambakkam, Chennai 600 117.
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A ONE DAY FIELD VISIT

“CLEAN GREEN BIOSYSTEMS”

Thirumudivakkam

Date: 24.03.2021.

Objective of the Field Trip

A visit was made to Clean Green Biosystems on 24th March 2021 along with the III B.Sc. Advanced Zoology and Biotechnology Students

- Knowledge sharing and for catalyzing joint initiatives to launch development programmes for the benefit of Students.
- Cater to the needs of educational, Training and consultancy programs in the area of ‘Herbal, Nutraceutical / Phytochemical Extraction System/ Phytopharmaceuticals and Botanical Drug Development, Fruits and Vegetables Processing & Organic Agricultural Input Formulation System’.

Beneficiaries of the Visit: Totally 33 students and 2 faculty members were benefitted by this field trip.

Description:

The company is into the process engineering of phyto pharmaceutical industry and doing research and development in phyto pharmaceutical.

Dr. S. Prem Mathi Maran, Founder, Director and CEO, explained about the drug discovery and drug delivery systems based on botanicals. It supplies plant and machineries on turnkey basis to their clients to produce phytopharma drugs also supplies downstream processing equipments to their customers. It has a well-established pilot plants which does production of specialty ingredients to their customers. It also included a patented Hydro dynamic system, filtration systems, solid liquid extraction system, liquid liquid extraction system, forced circulation evaporation system, molecular distillation system, vacuum tray drier and utilities (thermic fluid system and chilling units). The laboratory has all the photochemical extraction equipments, microbiological equipments and spectroscopy.

A detailed explanation of the process of producing phytopharma drugs were done by the team Clean Green Biosystems

Feedback Report

- Commendable response received from the students regarding the field visit ,
- 78.8 % students stated that the visit was useful, informative and gained practical knowledge with innovative ideas.







A ONE DAY FIELD VISIT
“CLEAN GREEN BIOSYSTEMS”
Plot No.9, 1st Cross Street, SIDCO Industrial Estate,
Thirumudivakkam, Chennai – 600 044
on 23.03.2021

Objective of the Field Trip:

This field trip was initiated to create awareness about the phytochemical properties and bioactive compounds of several herbals to the student's community. In the M.Sc., Zoology curriculum, first year students have to do their summer internship. Hence, this field visit to Clean Green Biosystems on 23.03.2021 was arranged.

Beneficiaries of the Visit: Totally 45 students and 3 faculty members were benefitted by this field trip.

Explanation about the Work and Working of Clean Green Biosystems:

Dr. S. Prem Mathi Maran, Founder, Director and CEO, has explained about the machinery and instrumentations of their pharmaceutical industry. Further he added about the herbal/phytochemical extraction is the process of removing various group of phytochemicals from different herbs. The extraction method shall be of two types such as Solid-Liquid Extraction (SLE) and Liquid-Liquid Extraction (LLE). In SLE, the phytochemicals are removed from the leaf, stem, bark, seed, root and from the entire plant. In LLE, the bioactive principles are isolated/separated from phytoemulsions, oils or herbal extracts from SLE.

Another technician Mr. Kumaran explained about the Vegetable Extraction (Hydrodynamic System). It is a machine used to extract nano emulsion by cell breaking method. The machine is patented by them. It can take upto 25Kg tomatoes and 30 liters of water which is broken using the heat produced by rotor stator and 2 motors that has 3000 rpm speed, which brings out the computer providing the nano emulsion, the temperature from the rotor could be between 80°C - 90°C. It is further processed in filter process. This process supports the extraction of minor and major clinically significant compounds from agriculture materials or wastes from fruits and vegetables processing plants; a few are carotenoids from vegetables, luteins from green vegetables, lycopene from tomato, catechins from green tea, flavonoids from citrus and fruits processing wastes like apple skin, grape skin and mango peel etc.





