

DEPARTMENT OF MICROBIOLOGY
SEVADAL MAHILA MAHAVIDYALAYA, NAGPUR
EDUCATIONAL TOUR REPORT

CLASS: B. Sc. –III



ACADEMIC SESSION: 2016-2017

Educational Tour at ICAR - Central Citrus Research Institute, Nagpur & CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur

Name of the Dept.: Microbiology
Class: B. Sc. - III
Date of the Tour: 5th October 2016
Teachers: Dr. P. R. Bhandari (HOD, Microbiology)
Mrs. S. R. Nimbarte
Dr. Mrs. K. V. Dubey

An educational tour to ICAR - Central Citrus Research Institute, Nagpur and CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur for B. Sc. –III Microbiology students was organized on 5th October 2016. In total -- students accompanied the teachers for the tour. Luxury bus was arranged for the proper and safe mode of transport of the students. All the students reported sharp at 8:00 am in the premises of the college and we began at 8:45 am for the first research institution that was Central Citrus Research Institute, (CCRI) Nagpur.

We reached to CCRI, at 9. 30, which comes under the Indian Council of Agricultural Research. At CCRI Senior Scientist Dr. C. N. Rao welcomed us. Then we proceeded to Conference room where Dr. C. N. Rao gave the introduction of CCRI. The Central Citrus Research organization is Stationed at Nagpur under Indian Institute of Horticulture Research, Bangalore and India ranks 6th in the production of orange (*Citrus reticulata*). This crop is grown on 8.23 lakhs ha area with 86.67 tons annual production in India which comprises of Mandarins, oranges, limes and lemons. The CCRI is engaged in developing improved technologies and disseminates them to growers in all parts of the country. CCRI is spread over 100 ha are having 50 ha already under plantation with various well laid out experiments.

The Centre has specialized and fully equipped laboratories and has excellent library facility. First we visited Tissue culture lab where Dr. N. N. Vijayakumari was the lab in-charge. In this lab disease free planting materials were produced by using shoot tip grafting. The survival chances of this crop are in the range of 50-60 %. This shoot tip method of grafting is used worldwide for nearly 350 species of citrus.

Next we visited plant pathology lab where senior scientist Dr. A. K. Das was the in-charge of the lab. In this lab, Dr. A. K. Das gave the information about the various diseases such as citrus greening and Gummosis disease of citrus crop and to treat such diseases of citrus. The citrus greening is caused by *Candidatus liberibacter* commonly known as greening bacteria. It is a parasitic bacteris and its effects the citrus crop and results into greening of citrus fruits. This can be detected by polymerase chain reaction (PCR). Gummosis disease is caused by *Phytophthora* a

fungal pathogen and it is controlled by *Tricoderma* a fungi present in soil. After visiting these different laboratories we departed from CCRI and reached CICR-NEERI, Nagpur.



Students and Teachers at CCRI, Nagpur



Scientist explaining to the students about the Maintenance of green house of Mandarin plants

The **CSIR-National Environmental Engineering Research Institute** (CSIR-NEERI) is a research institute created and funded by Government of India. It was established in Nagpur in 1958 with focus on water supply, sewage disposal, and communicable diseases and to some extent on industrial pollution and occupational diseases found common in post-independent India.

At CSIR-NEERI, we were received by Dr.Kumbhare, Chief Scientist & Public Relation Officer who guided us during the visit.

Firstly, students were welcomed in the Auditorium of the research centre where a film on NEERI - for sustainable development was shown to students. All the students then visited the Proteomics and Metagenomics laboratory, where they learned about various tests performed to isolate and identify various soil pollutants and metagenomic studies. The students then visited Environmental Toxicology Department & Laboratory, where they learned how the analysis of toxic compounds prevailing in various environmental samples is carried out and also about the process of reclamation and bioremediation.

Then the students visited Virology Department, where they learnt about the work being done at NEERI, Nagpur on Ganga Action plan, and also regarding their work on how bacteriophage are important in cleaning up water bodies and also other research works.

Students then visited Harit Sangrahalaya of NEERI where they could visualize various projects models of work done by NEERI scientists.



Students and Teachers at NEERI, Nagpur



Students at Harit Sangrahalaya, NEERI

The educational tour was a successful as student learned new avenues in the field of microbiology that are useful in various fields of science and technology. Motto of the students to study the use of Microbiology in various fields was also achieved. We all returned to the college by 6.00 pm.