

Hands on Training
Department of Environmental Science
St. Edmund's College

Program: Tolerance Index (TI) by germination and seedling growth test (Under STAR College Scheme)

Date: 31.08.2022

Time: 2pm

Venue: Department of Environmental Science Laboratory

Teacher: Ms. Larihun Jeengaph

No. of students: 14

Method: Germination growth test

The Department of Environmental Science under the DBT Star College Scheme conducted practical Tolerance Index (TI) by germination and seedling growth test for the B.Sc. (H) 3rd semester students.

Students were explained and demonstrated how seed germination aptitude and seedling growth is affected by heavy metals, and how metals induced oxidative stress reduces growth and yield attributes in plants. Students were able to create metallic stress of $3\text{CdSO}_4 \cdot 8\text{H}_2\text{O}$ or $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ or $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ on seeds. The heavy metal toxicity tolerance index was observed on the germination of seeds and radicle growth. Demonstration was also made clearly for students on how to avoid contamination of seeds and how to handle metal solution carefully.

Outcome of the Programme

- Hand-on practice on Tolerance Index (TI) by germination and seedling growth test were provided
- Students were able to observe and compare the germination in control condition and in metallic stress.
- The results and observations were discussed based on the environmental significance of Tolerance Index (TI) by germination and seedling growth test.