

TP 1 : Study of Algae

I. Objectives of the TP

By the end of this practical session, students will be able to:

1. Identify different types of algae (green, brown, red) with the naked eye and under a microscope.
2. Observe the cellular structure of algae.
3. Understand the ecological importance of algae in the environment.
4. Apply techniques for preparing and observing algae under a microscope.

II. Materials

- Microscope slides and cover slips
- Optical microscope
- Tweezers and pipettes
- Scissors and spatulas
- Distilled water
- Methylene blue drops (stain)
- Algae samples:
 - **Green algae:** *Cladophora*, *Spirogyra*
 - **Brown algae:** *Fucus*, *Laminaria*
 - **Red algae:** *Polysiphonia*

III. Method / Procedure

1. **Observation with the naked eye:**
 - Examine the overall shape of the algae.
 - Identify characteristic colors: green, brown, red.
 - Note visible structures such as filaments, fronds, or thalli.
2. **Slide preparation:**
 - Cut a small fragment of the algae with scissors.
 - Place the fragment on a slide.
 - Add a drop of distilled water.
 - Add a drop of methylene blue to better visualize the nucleus (if necessary).
 - Cover with a cover slip.

3. Microscope observation:

- Start with the low-power objective (10x), then gradually increase (40x, 100x if possible).
- Observe the cells, nucleus, chloroplasts, and filaments.
- Draw an annotated diagram of the observed algae.

4. Analysis and discussion:

- Compare the different algae observed.
- Identify the differences between green, brown, and red algae.
- Discuss the ecological role of algae (oxygen production, food source, bioindicators, sediment formation, etc.).

IV. Exercises / Questions

1. Classify the observed algae according to their color and type of thallus.
2. Identify the cellular structures visible in the different algae.
3. Explain the role of algae in the aquatic ecosystem.
4. Draw and label a green algae cell and a brown algae cell.

