

Eco Friendly Teaching Aids to Show Parts of a Plant

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Abstract: Being a Biologist and a Science Educator, studying the leaves of plants is a part of my day to day routine. Having known the fact that photosynthesis takes place in the leaves of the plants, still the leaves are plucked carelessly. Also the flowers which are responsible for pollination and seed formation are tugged off for teaching and study purpose. I have always come up with the teaching aids that add up to the benefits of the Environment. Why not have the teaching aids that are ecofriendly? So, I created some teaching aids that are not only durable but are also creative. Such teaching aids will definitely grab attention of the students. I prepared the slides of different types of leaves to show Venation patterns. These patterns can be easily observed under a dissecting microscope. Similarly, the floral whorls also can be mounted on a slide and preserve for years. These aids need to be precisely prepared in a scientific manner.

Keywords: Eco friendly, teaching aids, venation slides, venation patterns.

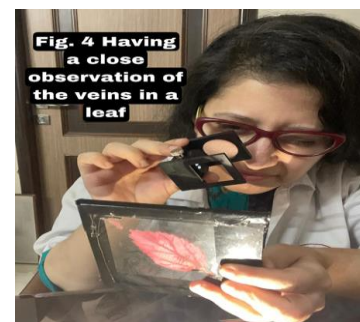
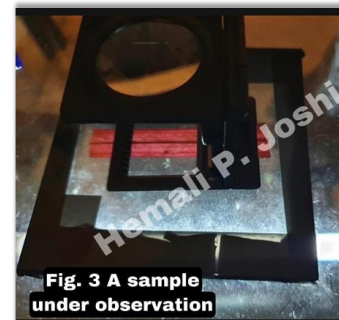
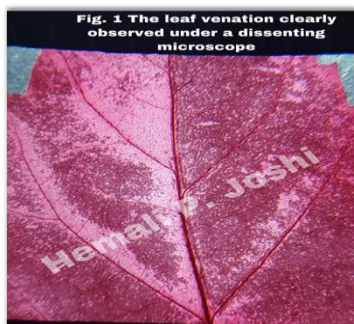
1. Introduction

Need for an environment friendly materials for teaching has become mandatory with the growing awareness on the preservation of the ecosystem. In Chemistry, the macro apparatuses have now converted into micro ones. It's called as micro Chemistry. Even in Biology, the dissection of the animals like rat, frog, etc. have been prohibited in India. But when are we going to think about plants? This article will highlight the same.

2. Hypothesis

The parts of a plant mounted in a slide may be an effective and durable Teaching tool.

1) Photographs



3. Methodology

1) For the leaves of a plant

- Select 3 to 4 leaves that are not degenerated, i.e., the leaves that have chlorophyll pigment (the fresh ones).
- Boil them in water for 15 – 20 minutes.
- And then transfer them into a beaker containing 50% Alcohol. This is for removal of the green chlorophyll pigment from the cells. The cell wall ruptures and

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releases the pigment (the process is as per the Botanical Journal by V. M. Kumar).

- The leaves are then placed into a petri plate containing 40% Saffranine stain for staining the veins of the leaves. The staining process might take a few minutes.
- After this, the samples are taken for mounting.

2) *For the floral whorls*

- If the flower is of a bigger size then individual whorl can be mounted separately or the entire flower can be mounted.
- The whorls (except Corolla) or the entire flower must be boiled in water for 5 minutes.
- There's no need to stain.

3) *For mounting the parts on a slide*

- For this purpose, glass slides must be chosen.
- Size of the slide must be according to the size of the leaf or a flower or a whorl.
- Place the Sample on a slide and cover it with 80% Glycerine.
- Place another slide of the same size on it and seal it with an adhesive tape such that there is no scope for air to pass through it.

4. Benefits

- I have been using these slides since 4 years and still they are just the same as they were prepared on day 1. It shows its durability.
- It grabs the student's attention for learning something new.
- It makes the concept more simple to understand. For example, the venation patterns in Dicotyledons and Monocotyledons become much visible.
- It helps in avoiding the destruction of parts of the plants.

5. Benefits

This paper presented an overview of Eco friendly teaching aids to show parts of a plant.

References

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