

Lab Notebook

19th January 2016 - Day #2

Project : Observation of chloroplast movements according to different intensity of light.

To deal with our project, we brought *Egeria densa* - aquatic plants. They produce photosynthesis with their chloroplasts. We would like to understand better the relationship with the intensity of light and the movement of chloroplasts inside of the cell.

SCHAMA CHLORO

Manipulations:

- **With leafs :**



We brought two bouquets - each bouquet contains four stems, about 15 centimeters height.

We put these bouquets in a box of water, to provide them enough light and water to let them grow.

To observe chloroplasts inside of leaves, we use a scalpel to scratch them and try to have just one layer of cells. The idea is to have the more precise image of chloroplasts, so not be bother by others cells below (multiple layers of cells).

This operation is not that easy, the leafs are very dense and difficult to separate.

After having obtained a single layer of cells, we are putting the leaf on a slide, a drop of water and a cover slide.

Egeria densa stem

https://commons.wikimedia.org/wiki/File:Egeria_densa_iceland.JPG

SCHEMA MANIP SCALP

Pre-tests :

We would like to test different conditions of conversation of leafs (dark, blue light and white light) and after observed them on the microscope, to see the different positions of chloroplasts.

We prepared three slides, with three scratched leaflets of each. We put each slide on a petri dish empty.

We conserved one petri dish on a box in a closet with only a white light (Arduino LED), another in a closet with only blue light (Arduino LED), and the last one packed on aluminium, to have complete dark around the slide.

SCHEMA SLIDES/BOX

- **With macroscope**

We learn how to use the microscope ZeissAxioPlan2-Imaging. It allows us to observe chloroplasts with fluorescence filter, and observe their movement.

To our first utilisation of it, we use the slide of leaves which come from the petri dish which has been conserved with a white LED.

The microscope has three objectives x10, x25 and x63. We learn how to make observations with a simple filter, with fluorescence. Also, with color combined option, we can this kind of image, which could help us to better observe chloroplast movements.

