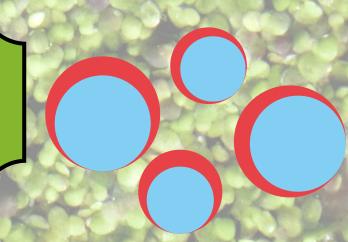


Algae prevention in duckweed production



Context

Lemna minor is seen as a high potential source of protein, but the best way of producing it is not fully determined yet. When growing Duckweed, previous teams have encountered problems with an unwanted algae developping. Our team's goal is to find a way to grow duckweed without proliferation of algae before enhancing production to a larger scale, therefore garanteeing a more reliable end product.



Hypothesis

We have selected a variety of **modalities** on which to intervene to find the best working system. Amongst them, two main ideas showed:

Introduction of a third organism

Find a predator for the algae but not for duckweed, for example a **shrimp**.

Then we thought of a species of **fish**, but we abandoned the idea as most fish feed on Duckweed given the high protein content.

To change an abiotic factor in the environment:

- Daylight exposition
- Nutrient supply
- Temperature
- Salinity
- pH
- Oxygen content
- Water source

The protocol

- Take samples of duckweed (5-10 pieces) in a separate tray, allowing algae growth. We can then use the samples to identify the algae.
- All along the process, we keep **healthy plants** to set new experiments.
- Many experiments on different criteria will be conducted at the same time to optimize the number of results and the reliability of each experiment.
- At all times, **a control tray** with no modified criteria allows us to **compare** the effectiveness of each applied variation.
- For several weeks, we report on excel the evolution of lentil weight and speed of growth, as well as the presence or not of algae.

Results and analysis

As our project barely started, we haven't collected a lot of inforations yet. In the end, we look forward to **identify the algae** and its source to prevent it from entering the growing system. Amongst the growing modalities we will experiment with, some will inlfuence the **growth** of the algae and **limit the negative effect** on production. We expect to find at least **one criteria** leading to the absence of algae, while maintaining or **enhancing the yield** of Duckweed. As we may find several possibilities, we will rely on **sample** observations to determine the most **efficient** one.

