Master thesis possibility

Enhance the sensitivity of Chytrid infection detection in large scale algae cultures

Background

The microalgae *Hematococcus pluvialis* is a natural producer of Astaxanthin, a carotenoid with superior antioxidant capabilities. Astaxanthin is widely used in the neutraceutical and medicine industries and AstaReal AB was the first company in the world to commercially produce natural astaxanthin from *Hematococcus pluvialis.* However, the microalgae cultures are sometimes contaminated by a chytrid, leading to costly waste of large volumes of the cultures.

This thesis work will be a collaboration between the company AstaReal AB and academia, and the project aims to improve the sensitivity of the current detection method to allow earlier detection of Chytrid infections in the microalgae cultures. Your role will be to conduct fine tuning of the current PCR method, compare conventional PCR detection with real-time PCR detection and optimize detection by gel-electrophoresis. The work will be conducted at the department of Ecology and Genetics (IEG) at EBC with supervisors from the department and AstaReal AB.

What you will learn:

- Molecular techniques such as fungal DNA extraction, PCR optimization
- Development of qPCR method from probe design to standardization
- Data analysis and report writing within scientific and industrial context

More information For enquiries and more information regarding the project email Frida Dalin Frida.dalin@astareal.se or Anna Székely anna.szekely@ebc.uu.se