

Improving biomass production by investigating the role of PSBS on NPQ

Thesis about the efficiency of photosynthesis at the Laboratory of Biophysics, as part of a BSc/MSc internship in the programs of Biotechnology or Molecular Life Sciences.

PSBS is the protein responsible for the activation of Non-Photochemical Quenching (NPQ), an essential protection mechanism against excess light. However, the presence of PSBS is not always favorable and can sometimes lead to lower biomass production. Furthermore, PSBS seems to effect the stomata opening, something which inhibits CO₂ assimilation and influences biomass production. In this project you'll grow *A. thaliana* Wild Type (WT) and *npq4* (mutants completely devoid of PSBS) in fluctuating light to assess in which conditions PSBS is essential. You'll work with chlorophyll fluorescence measurements to see the effect of PSBS on the photosynthetic efficiency. You'll also perform spectral analysis under canopy conditions (natural fluctuating light) and measurements in an open field (clouds passing before the sun).



You will learn:

- How to work *A. thaliana*
- How to perform and analyse chlorophyll fluorescence measurements
- Literature research and data interpretation

BSc/MSc-thesis project:

Assessing the necessity of PSBS in higher plants



Further information:

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