

The Chair of Fungal Biotechnology is offering, to start as soon as possible, a topic for a

Master's thesis

Implementation of filamentous fungi in a biogas production process

As part of the project **LCR-PILZE** funded by BMLEH (FNR), we are investigating the potential of filamentous fungi for biogas production in a pilot plant to improve methane yield. The main hypothesis to be tested is that aerobic brown- and white-rot fungi are capable of effectively breaking down the lignocellulose-rich agricultural fermentation residues, which could not be fully degraded by the microbiome resident in biogas production processes. This opens a new avenue for the valorization of such residues for further improvement of methane yield in additional rounds of fermentation.

THESIS OBJECTIVES

The goal of this thesis is to investigate the growth of brown- and white-rot fungi on fermentation residues and to select the best-performing strain for application in a biogas production process at laboratory and pilot plant scale.

TASKS

- Growth assessment of brown- and white-rot fungi on fermentation residue
- Analytics of lignocellulose degradation efficiency
- Test of a brown- or white-rot fungus in a laboratory scale biogas production experiment
- Implementation of a brown- or white-rot fungus in a biogas production pilot plant

REQUIREMENTS

- Enrolled Master's student (m/f/d) in **Biology, Molecular Biotechnology, Bioprocess Engineering** or a related field
- Strong theoretical background in **microbiology**
- Experience with **microbiological laboratory methods**
- Interest in sustainable (biogas) production processes

WHAT WE OFFER

- Opportunity to contribute to an interdisciplinary and sustainable research project
- Cooperation with academic and industrial project partners
- Flexible working conditions (mainly on-site lab work, remote work partially possible)

Interested?

Send an e-mail including a letter of motivation and short CV (incl. relevant expertise/internships etc.) to:

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