Master thesis project:

Use of food industry side streams for mycoprotein production

A collaborative project between the Division of Industrial Biotechnology and Mycorena AB

Duration: 6-12 months
Start: As soon as possible

Introduction

Mycorena produces protein from edible filamentous fungi as a novel food component. The fungi are grown primarily on food industry side streams and are cultivated in submerged fermentation in bioreactors. Fungal biomass has a high protein content and is rich in dietary fiber. The composition of the side stream will influence the growth and the composition of the fungus. During growth, the fungus removes and assimilates nutrients from the side stream, which lowers the organic load and reduces the need for further waste water treatment. In this collaboration between the Division of Industrial Biotechnology (Department of Biology and Biological Engineering) and Mycorena, the use and composition of different side will be evaluated.

Purpose and goal of the project

The goal is to analyse different side streams in terms of composition and suitability for fungal cultivation. Fermentation in shake flasks and bioreactors will be done to determine how well the fungus grows on the different substrates. During and after the fermentation, the substrate will be analysed for the presence of fibers, carbohydrates and protein to determine how quickly and complete the fungus can take up nutrients from the side stream, and how clean the side stream is after processing by the fungus. In addition, components like ethanol, acids and glycerol will be analysed and the fermentation conditions optimised to minimise the presence of these compounds. Conclusions will be drawn about which industry side streams is most suitable for fungal cultivation.

What you will learn/gain experience in:

Fungal fermentation, microbiology techniques, HPLC, analytical assays. You have a chance to work both in an academic lab, as well as a company environment, and your research will directly be used in Mycorena's future operations.

Contacts:
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