Assessment of various lignocellulosic residues for mycelium cultivation

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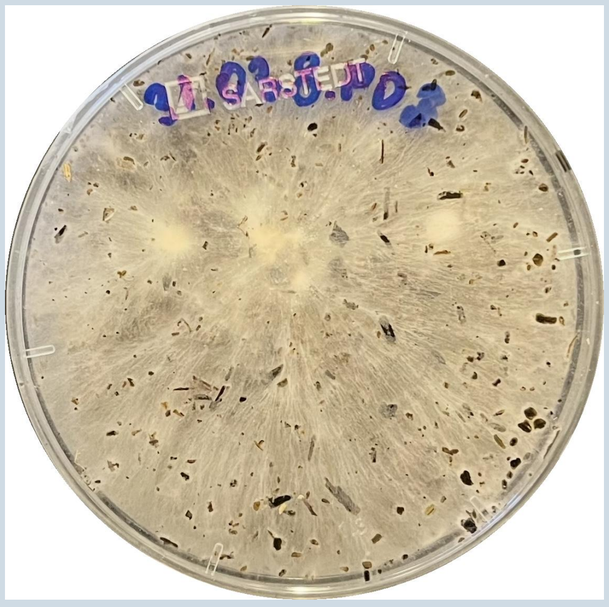
The best results were achieved with goldenrod, sunflower husks, and brewer's spent grain

Goldenrod



Sunflower husks

Brewer's spent grain

Brewer's spent grain after image analysis

Introduction

The mycelium technologies are becoming increasingly attractive because these materials exhibit good technical properties, cost-effectiveness, and low environmental impact.

Lignocellulosic substrates, particularly agricultural and industrial residues, serve as suitable growth media for mycelium.

Research has studied many different types of mushrooms, with the most popular being Pleurotus ostreatus, Ganoderma lucidum, and Trametes versicolor.

This study aimed to **identify mushroom species that have not yet been studied in relation to mycelium technologies** but have the potential to be used, and to test their suitability on various lignocellulosic substrates.

Laboratory work

In laboratory experiments, **24 substrates** and four mushroom species were studied:

- two common species (**Pleurotus ostreatus** and **Trametes versicolor**)
- two previously unstudied species (**Phanerochaete sordida** and **Phlebia radiata**).

The results were analyzed using image analysis to determine the area and density of the mycelium, and C/N analysis was performed for the substrates.

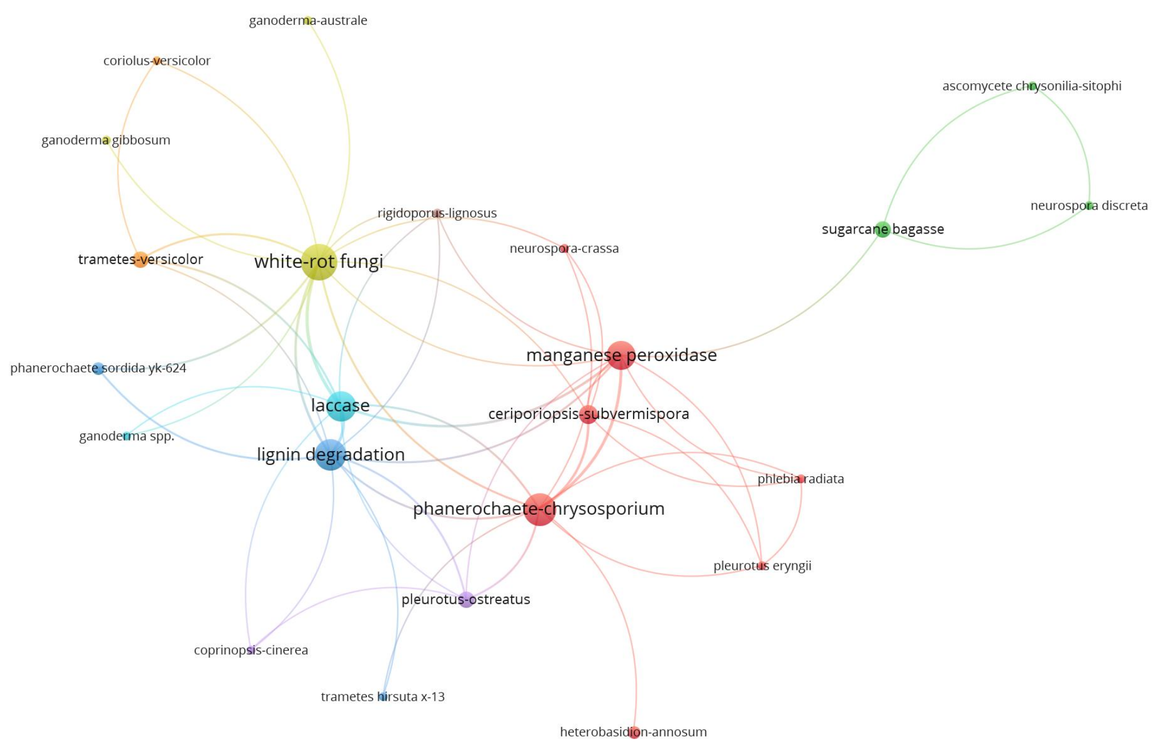
Literature review

The study consisted of two parts: **literature review** and **laboratory work.**

First, a literature review was conducted to select lignocellulosic substrates and mushroom species.

Previously unstudied fungi species were selected in four steps:

Bibliometric analysis → **Screening based on published research on mycelium technologies** → **Evaluation of fungi's properties**



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