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Development of a Microbial consortium for the production of fermented cocopeat.

The potential of coir pith, a lignocellulosic by-product of the coir industry, as a horticultural medium and soil conditioner is well known. Its high tannin content, however, has serious drawbacks because it prevents plant growth and seed germination. Biological degradation is a promising substitute for conventional tannin removal techniques, which are frequently expensive and unsustainable. The goal of this study is to create and assess a microbial consortium of fungi that break down tannins in order to efficiently bioconvert coir pith. In order to increase degradation efficiency through synergistic interactions, the study aims to isolate and characterize effective fungal strains with tanninolytic activity. Monitoring of the tannin and phenolic content as well as related biochemical parameters like protein, starch, and lignocellulosic fractions will be part of the experimental analyses, in order to comprehend the changes in metabolism that take place during treatment. It is anticipated that this work will develop a sustainable microbial strategy for lowering tannins in coir pith, increasing its value as a substrate that is both environmentally safe and agriculturally viable. The results will advance the use of microbial consortia in bioremediation and support environmentally friendly waste management techniques in the coir sector.

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