

The Reduction of Lignin Content by Fermentation of Cocoa Pod Husk (*Theobroma cocoa*) using Different Microbes

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ABSTRACT

The study was aimed to determine the increase of nutrient content and the decrease of lignin content in the cocoa pod husk (CPH) when fermented with various microbes. The research was performed by formulating four treatments, i.e., T0 = CPH without microbial addition; T1 = CPH fermentation with *Aspergillus niger*; T2 = CPH fermentation with *Phanerochaete chrysosporium* and T3 = CPH fermentation with *Tricoderma Viridae*. Three replicates were applied for each treatment. The mixtures were put into containers aerobically for 7 days. The variables observed were DM, CP, CF, CFt, ash and lignin contents. This study was arranged in a completely randomized design with a unidirectional pattern analysis of variance (oneway ANOVA). Significant variables went through Duncan's Multiple Range Test (DMRT). The results showed that the best reduction of lignin content was found in T2 or the fermentation with *Phanerochaete chrysosporium*, i.e., $5.43 \pm 0.20\%$. It could be concluded that the addition of fungus *Phanerochaete chrysosporium* in fermentation of CPH decreased the lignin content of CPH.

Key Words : Lignin, Fermentation, Cocoa pod husk, Microbial
