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CULTIVATION OF *PLEUROTUS* MUSHROOMS ON BRAZILIAN COFFEE HUSK AND EFFECTS OF CAFFEINE AND TANNIC ACID

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ABSTRACT

The possibility of using the total coffee residue (husks) obtained from the Brazilian coffee industry as substrate for cultivation of *Pleurotus* mushroom and degradation of caffeine and phenolic compounds present in this residue were studied. Eight strains of *P. ostreatus* and two strains of *P. sajor-caju* were tested on a medium prepared from aqueous extract of coffee husk and agar. Based on the best mycelial growth and biomass production in plate, the strain *P. ostreatus* LPB 09 was selected for further studies. The first fructification occurred 20 days after inoculation, and the biological efficiency reached about 96% after 60 days. It was found that fruiting bodies accumulated 0.157-mg/g caffeine on a dry weight basis. After cultivation, the content of caffeine and phenolic compounds in the husk was reduced at 60.6% and 79.1%, respectively. The results indicated the feasibility of using coffee husk without any pre-treatment for the cultivation of *Pleurotus*. We propose that after cultivation, the residue might be useful for feeding of ruminant as several toxic compounds decreased, while the protein concentration increased (9.62%).

Key words: Cultivation, coffee residue, *Pleurotus*, caffeine, phenolic compounds, detoxification.