TITLE: MUSHROOM PRODUCTION OF *Pleurotus pulmonarius* USING COFFEE GROUNDS AND DIFFERENT SUPPLEMENTARY SUBSTRATES

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ABSTRACT:

The use of alternative substrates such as coffee grounds has been studied for the cultivation of mushrooms produced by fungi species such as *Pleurotus pulmonarius*. The objective of this work was to evaluate the production of *Pleurotus pulmonarius* mushrooms using coffee grounds supplemented with different substrates. An experiment was carried out in a completely randomized design consisting of 6 treatments, which consisted of the following substrates: 1) only coffee grounds; 2) only brewers' spent grain originated from homemade craft brewing; 3) commercial organic compost for seedlings; 4) coffee grounds + brewers' spent grain (1:1); 5) coffee grounds + organic compost (1:1); 6) brewers' spent grain + organic compost (1:1). The experiment was carried out in triplicate. The experimental plots consisted of polypropylene bags containing 2L of the autoclaved substrate for 1 hour. The inoculation of the fungus on the substrate was made from mycelium growing in autoclaved parboiled rice. The bags remained at a temperature of 28°C until all the substrate was taken up by the mycelium. Then, X-cuts were made on one of bag sides. The bags were then kept at a temperature of 21°C until maximum growth of the mushrooms, which were harvested, oven dried at 60°C and then weighed. The dry mass values were submitted to analysis of variance (ANOVA) and their means were compared using the Tukey test at 5% probability. The substrates that presented growth in the whole bag and mushroom production were: only coffee grounds; coffee grounds + brewers' spent grain; coffee grounds + organic compost. However, the weight of the dry matter of the mushrooms produced in the substrate "coffee grounds + brewers' spent grain" (13.42±2.32g) was significantly higher ($p \leq 0.05$) than the weights of the mushrooms produced in the substrates "only coffee grounds" (5.7±0.92g) and "coffee grounds + organic compost" (2.0±1.6 g).

Keywords: *Pleurotus pulmonarius*, mushrooms, substrates, coffee grounds

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