



Conference Paper

Growth,yield and nutritional quality of two oyster mushrooms(Pleurotus pulmonarius and P.ostreatus)on different subStrates supplemented with wheat bran

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Abstract

Owing to their nutritional and health benefits, the cultivation of *Pleurotus* species continues to receive global attention. This study aims at determining the growth, yield and nutritional quality of *Pleurotus pulmonarius* and *Pleurotus ostreatus*. In this study, 10g of *P. pulmonarius* and *P. ostreatus* each were cultivated on 400g of sugarcane bagasse and cotton waste individually. Each substrate was supplemented with wheat bran separately at varying compositions (0%, 5%, 10%, 15% and 20% w/w) in triplicates and incubated at $28 \pm 20^\circ\text{C}$ for 35 days. The experiment was arranged in Complete Randomized Design. Data were subjected to analysis of variance (ANOVA) while the means were separated with Duncan Multiple Range Test at $P \leq 0.05$. After the incubation period, the growth and yield of mushroom were assessed. *P. ostreatus* cultivated on sugarcane bagasse with 15% wheat bran additives had the highest stipe length, stipe width and pileus width ranging from 3.93-4.07cm, 3.23-4.77 and 5.03-6.43 respectively at flush 2 and 3 respectively. Also, *P. pulmonarius* had best the stipe width (5.17cm) performance on cotton waste with 10% wheat bran at flush 2 while *P.ostreatus* had the highest stipe length of 4.17cm on cotton waste with 10% wheat bran at flush 3. The total biological efficiency of

P. ostreatus was highest at 15% wheat bran grown on sugar bagasse with 13.59g and 3.40% respectively. On sugarcane bagasse, *P. pulmonarius* cultivated on 10% wheat bran had the highest dry weight with 0.87g, 0.80g and 3.67g respectively for flush 1 and 3 while *P. pulmonarius* cultivated on cotton waste with 10% wheat bran had the highest dry matter (3.85g) but greatly rich in potassium (1.32-6.82%). The protein contents range from 26.60-30.46%. The highest carbohydrate was recorded in *P. pulmonarius* with 10% additive in sugarcane bagasse while *P. ostreatus* grown in 10% cotton waste recorded the highest carbohydrate content. *P. pulmonarius* cultivated on sugarcane bagasse with wheat bran additives, irrespective of their percentage concentration, had better mushroom quality/size, yields, biological efficiency, mineral composition and proximate composition than *P. ostreatus*. This study will guide the mushroom farmers in the selection of mushroom species, substrates and additives for healthy and vigorous mushrooms. Key words: *Pleurotus ostreatus*, *P. pulmonarius*, cotton wastes, sugarcane bagasse, proximate composition.

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