

## **OYSTER MUSHROOM PRODUCTION USING AGRO-BASED INDUSTRY'S BY-PRODUCTS**

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### **Abstract**

Mushroom is a nutrition rich food source and is also called as “poor man’s meat”. The demand for mushroom around the globe and Sri Lanka has increased greatly. Success of commercial mushroom production is depended on continuous and abundant supply of low-cost substrate. This study was aimed to identify the best Agro-based Industry’s By-products as substitute to produce oyster mushroom (*Pleurotus ostreatus*) ecofriendly. Four substrates such as paddy straw, wood saw dust, paddy husk and banana leaves were mixed with extracts of coffee (*Coffea Arabica*) powder, tea (*Camelia sinensis*) dust and Mahua (*Madhuca longifolia*) oil cake. This experimental setup was inoculated with 18days old mother spawns and arranged in complete randomized design with three replications. The data of mushroom mycelial run, pinhead formation and yield were measured on daily basis from the seven days of post inoculation. Collected data were subjected to ANOVA using SAS 9.1 statistical package. Significant among the treatments were analyzed through DMRT mean separation at P value of 0.05. This study has proved that substrates have significant effect on growth, reproduction and yield of mushroom. Spawn run was consistent and significant among the treatments when mix tea (20 days) and coffee (21 days), respectively, at P <0.05. Treatment wise coffee treated spawn bags took average of 32.5 days whereas in tea treated substrates it was more than 36 days to form pin head. In all substrates, Mahua treated trials showed poor spawn run, longer days of pin head formation and lower yield. Paddy Straw + Coffee treatment produced significantly highest yield of 200.67g comparing to other all treatments. It is 14.58% increment in yield compared to non-treated substrates. When saw dust used as substrate, addition of tea showed significantly higher yield of 185.00g than coffee (145.00g). This study concluded that the coffee and tea extract have potential to increase the yield when incorporated with paddy straw and sawdust, respectively. After harvesting of mushroom, mushroom industry wastes can be directly used as organic fertilizer for crop production.

Keywords: Coffee, Eco friend, Paddy straw, Plant extract, *Pleurotus ostreatus*, Substrate

