Abstract title: [The effects of substrate on the growth, yield, nutritional and phytochemical components of *Pleurotus ostreatus* supplemented with medicinal plants]

ABSTRACT

Edible mushrooms are mostly used as a supplement in foods and medicine. That is why this research was conducted with the aim to investigate the effect of substrates on the growth, yield, nutritional and medicinal value of *Pleurotus ostreatus* when supplemented with 4 different medicinal plants. A Completely Randomized Block Design was laid out with 4 treatments replicated 5 times. 4 treatments were used represented as T1 (sawdust), T2 (sawdust + corncobs), T3 (palm cones) and T4 (elephant stalks). Medicinal plants used include; *Croton macrastarchus*, *Harungana madagascariensis*, *Tithonia diversifolia* and *Rauwolfia vomitoria.* A laboratory work was carried out to determine the nutritional content based on the different treatments. Bioactive component analysis was equally carried out to determine the effect of the 4 different medicinal plants on the medicinal value of *P. ostreatus*. It was found that the growth and yield of *P. ostreatus* depends widely on the type of substrate used. Sawdust+ corn cobs indicated the highest effect on growth as it had the highest mean height (19.5 ± 3.3 cm), diameter (29.0 ± 4.3 cm) and mean weight of individual fruiting bodies (175.8 ± 84.3 cm). The protein content and crude fibre was highest in sawdust + corn cobs (12.4 g and 19.78 g per 100 g respectively). It was also found that supplementation of sawdust + corn cobs with *Rauwolfia vomitoria* had the highest bioactive components. Therefore, if *P. ostreatus* is cultivated using the above supplement, this mushroom can become a health supplement in foods.

Keywords: [Medicinal properties, Mushroom cultivation, Nutritional content, *Pleurotus ostreatus*, Substrate]