

3rd International Conference on

PLANT SCIENCE

November 13-14, 2023 | Paris, France

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

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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.

Biography

Ms. Sirri Nsoh is a dynamic researcher within the Department of Plant Biotechnology at the University of Bamenda in Cameroon. Focused on advancing agricultural sustainability, Nsoh's work delves into innovative plant biotechnological solutions. Her dedication to the field is evident through active research contributions, paving the way for sustainable practices in agriculture and addressing crucial challenges in Cameroon's diverse ecosystem.

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