Submitted Abstract

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Abstract

Mountainous communities around Mount Cameroon and Kilum Ijim mountain found in the South and Northwest Regions respectively are diverse with mushroom species which have socio-economic functions as food and medicine and play essential roles in ecosystem functioning such as in decomposition and forming mycorrhizae association. Inhabitants of this region depend on the forest for their livelihood. However, diversity of edible and medicinal mushrooms is decreasing at an alarming rate around these communities because of threats such as habitat degradation due to landslides and volcanic eruptions, climate change, over harvesting, deforestation for farmlands by the locals and oil palm cultivation by multinational companies, settlement expansion due to urbanization and fire outbreaks. This study was carried out for 5 years to train communities comprising mostly of women and youths in mushroom cultivation to conserve mushroom biodiversity, provide sustainable livelihoods to the communities and use the spent substrates as biofertilizer in their farms. Oyster mushroom (P. ostreatus) was cultivated with different locally available waste as substrates. The growth, yield, nutritional and medicinal value of P. ostreatus was determined. 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). Biological efficiency was highest in palm cones (77.1 %), second by sawdust + corn cobs (61.1%), saw dust (53.0%) and elephant stalk (6.3%). The protein content was highest in sawdust + corn cobs (12.4 g), lipid concentration highest in sawdust only (1.51 g), total carbohydrate highest in palm cones (82.98 g), and total ash highest in sawdust only (7.32 g) per 100 g. It was also found that supplementation of sawdust + corn cobs with Rauwolfia vomitoria had the highest phytochemical components.