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Molecular characterization of most cultivated Pleurotus species in sub-western region Nigeria and the development of cost effective cultivation protocol on Palm oil waste

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Abstract:
Major problems associated with the study of mushrooms in Nigeria are inaccuracy in identification, low bio-efficiency of commonly used substrate and difficulty in composting of substrates. The current study attempts the identification and characterization of Pleurotus species commonly cultivated in Western region of Nigeria, and evaluates the effectiveness of agricultural wastes in mushrooms cultivation. Morphological and molecular characterizations were carried out. Different substrates combinations at ratio 1:1 were used. Molecular characterization revealed that the Pleurotus species grown in most farms and research institutes in South-western Nigeria are predominantly P. pulminarius, P. ostreatus, P. sajor-caju, and P. abalone. Palm bunch +Rice bran (8.24±0.16) ramified almost twice faster than sawdust alone (4.98±0.31) or any of the other substrates containing it. Fermented bunch (7.36±0.19), the only substrate not sterilized also ramified faster than sawdust alone. All the other substrates compounded with palm bunch and shaft ramified faster than sawdust as lone substrate. In terms of yield, Palm bunch +Rice bran gave the highest (1774.75 g), followed by shaft + rice bran (1483.70 g), while the least value of 326. 94 g was obtained from sawdust. The highest value of biological efficient (BE) (100.57 g) and productivity (PT) (17.46 g) were obtained from shaft + Wheat bran and Palm bunch +Rice bran respectively, while sawdust gave lowest values of 13.08% and 3.23% for BE and PT respectively. Results obtained have shown that bunch and shaft supplemented with wheat and rice bran gave better yields and can be recommended for commercial mushrooms cultivation.

Biography:
Adebayo, Elijah Adegoke has completed his PhD at the age of 38 years from Ladoke Akintola University of Technology, Nigeria and postdoctoral studies from Colegio dePosgraduados, Biotechnology of Edible, Functional and Medicinal Mushroom, Puebla, Mexico. He is the Associate Professor in Department of Pure and Applied Biology, LAUTECH, Ogbomoso. He has published more than 40 papers in reputed journals and has been serving as an editorial board member of repute.

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