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Evaluation of Digestibility and Nutritive Potentials of *Citrus sinensis* and *Musa paradisiaca* biologically treated with Three White Rot Fungi

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ABSTRACT
Objective To investigate the digestibility and nutritive quality of sweet orange and ripe plantain peels treated with the spawns of *Lentinus squarrosulus, Pleurotus pulmonarius* and *Pleurotus ostreatus* (HK35) incubated for 0, 30 and 60 days.
*Methodology and Result*s: 25g of each milled substrates were weighed into thoroughly washed jam bottles and 70ml-distilled water was added. The bottle was immediately covered with aluminium foil, fresh weights of the bottles determined and the bottles were sterilized in the autoclave at 121^{o}C for 15 min. The substrate bottles were left to cool and each was inoculated with 5g of pure mushroom spawn at the centre and incubated at 28±2^{0}C for 30 and 60 days incubation periods while the control (0 days) was left un-inoculated. The samples were prepared in triplicates. The dry matter, lignin, cellulose, hemicellulose, pH, digestibility and organic matter content were determined using standard techniques. The lowest lignin level of 54.86% was observed in peels treated with *P. ostreatus* after 30 days incubation period while 19.20% and 8.60% were the lowest cellulose and hemicelluloses levels recorded for peels treated with *L. squarrosulus* after 60days and 30 days respectively. The pH level increased as the incubation period increased with the highest increment of 6.82 recorded for plantain peels treated *P.pulmonarius* and the lowest organic matter content of 8.79% observed in plantain peels treated with *L. squarrosulus*. The dry matter content increased as the incubation period increased. The greatest digestibility (26.50%) was observed in plantain peels treated with *L.squarrosulus*.
Conclusion and Applications of Results: The ability of the fungi to improve these components of the peels varied among the species as increased digestibility, reduced lignin and pH contents were recorded. Hence, making these wastes better sources of feed for ruminants' production.
Keywords: Biological treatment, *Pleurotus ostreatus, P. pulmonarius, Lentinus squarrosulus*, Plantain peels, Orange peels.