

MINERAL COMPOSITION, BIOACCESSIBILITY AND BIOACTIVE  
CONSTITUENTS OF WHOLE WHEAT, ORANGE FLESHED SWEET POTATOES  
AND MUSHROOM (*LENTINUS SQUARROSULUS*) COOKIES

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Cookies are cereal based foods commonly consumed by the populace and particularly among the children. Cookies are ready- to-eat, convenient food snacks that has been identified as a significant vehicle for food fortification. Orange fleshed sweet potatoes (OFSP) is a sweet, yellowish colored beta carotene biofortified crop developed to combat Vitamin A deficiency globally. Mushroom (*Lentinus squarrosulus*) is widely cultivated and commercialized in Nigeria. It is accepted for its taste, nutrition and bioactive constituents. The application of OFSP which is been classified as food security crop, and mushroom in cookies production could reduce dependence on wheat, improved nutrition by addressing mineral deficiency and overall health of consumers. Whole wheat grain (W), orange fleshed sweet potato (O) and mushroom (*L. squarrosulus*) (M) flours were produced and cookies were prepared from the composite flours blends at ratio W:O:M of 60:40 (A), 60:35:5 (B), 60:30:10 (C), 60:25:15 (D) ,60:20:20 (E) and 100 % whole wheat flour (W) was the control. The bioactive (Total carotenoids, phenolics and flavonoids), minerals (potassium, sodium, phosphorus, zinc, iron, magnesium and calcium) contents and bioaccessibility were analyzed using standard methods. Cookies produced with OFSP and mushroom (*L. squarrosulus*) substitution resulted in increased in mineral contents and bioaccessibility. Macroelement potassium was the highest at 256.76 mg/100g (Sample E) while phosphorous was the most bioaccessible (87.45 %) amongst the minerals studied. Increase in total flavonoids and phenol that acts as influential antioxidants, total carotenoids which are important in alleviating Vitamin A deficiency was observed in the cookies formulated from the composite blends. The inclusion of orange fleshed sweet potato and mushroom (*L. squarrosulus*) in cookie production improved the mineral contents, bioaccessibility and bioactive constituents. This study encourage the utilization and consumption of orange fleshed and mushroom (*L. squarrosulus*) substituted cookies for improved nutrition and health.