SUPERIORITY OF GERMINATED OVER RAW SAMPLE IN PROXIMATE COMPOSITION AND OVER BOTH RAW AND FERMENTED IN MINERALS OF *ZEA MAYS* L. DK 818

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ABSTRACT

This research report dealt with proximate and mineral analyses of raw (B11), germinated (B22) and fermented (B33) maize grains from the same source. Values of dry matter, organic matter and carbohydrate were high at (g/100g): 94.2-95.3, 92.9-94.6 and 74.4-75.8 respectively. Crude protein had these values (g/100g): B11 (10.9) < B22 (13.0) < B33 (13.2). Crude fat was moderate at 5.05-5.59 g/100g. On concentration levels, the following were observed in the proximate composition: B22 > B11; B22 ≡ B33; B11 > B33. The energy from Z. mays was majorly from the carbohydrate (kcal/100g): B11 (303, 77.3%); B22 (297, 74.4%) and B33 (302, 75.5%). These minerals were generally high in the samples (mg/100g): K (550-661), Mg (220-235), P (369-401) whereas values were low for Fe, Cu, Co, Mn, Zn, Se and < 0.001 in Pb. The mineral density per sample ran thus (mg/100g): B11 (1227)< B22 (1403) > B33 (1313). On the whole, B22 > B33 >B11 as follows: B22> B11, 12/12 = 100%; B22>B33, 10/12 = 83.3%; B33 > B11, 8/12 = 66.7%. In the mineral ratios determined, only Zn/Cu values of 7.80-10.7 were close to reference balance ideal of 8.00. All the calculated mineral safety index (MSI) were lower than the standard Table values. At both proximate and mineral levels, the pairs: B11/B22, B11/B33 and B22/B33 were significantly different at r=0.01. All the index of forecasting efficiency (IFE) were high making it possible for one of the pairs to carry out the other pair metabolic functions and vice versa.