STABILITY OF IRON-FORTIFIED GARI DURING STORAGE IN DIFFERENT PACKAGING MATERIALS

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ABSTRACT

Gari – a West African staple food, was fortified with 25, 35 and 45 mg/kg iron sulfate, iron fumarate and sodium iron ethylenediaminetetraacetic acid (NaFeEDTA), respectively. The fortified gari samples were packed in high-density zip-lock polyethylene bags and plastic jars and stored at ambient temperatures (30 ± 2C). Changes in moisture, iron, pH and peak viscosity of the fortified gari were monitored under storage for 5 months. Samples were analyzed monthly during storage using standard analytical procedures. High-density zip-lock polyethylene bags showed better protective barrier than plastic jar. Moisture content and peak viscosity decreased as storage time increased while pH increased. The iron in gari stored inside high-density zip-lock polyethylene bag was less susceptible to oxidation, hence, low losses in iron after 5 months of storage. NaFeEDTA-fortified gari packed inside high-density zip-lock polyethylene bags was the most stable during storage compared with iron sulfate and iron fumarate.