SINGLE - LAYER DRYING CHARACTERISTICS OF TIGERNUTS
(cyperus esculentus l.)

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ABSTRACT
The continuous search for lesser known and underutilized crops, many of which are potentially valuable as human and animal foods has been intensified to maintain a balance between population growth and agricultural productivity, particularly in the developing countries. Tigernut (Cyperus esculentus) is an underutilized crop which produces tubers that are somewhat spherical. Tigernut produces high quality oil about 25.5% of its content and protein about 8% of the nut. The nuts are valued for their nutritional starch content, dietary fibre and carbohydrate. The nut is also very rich in mineral content (Calcium, Potassium, Magnesium, Zinc and traces of Copper). Its tubers are also said to be aphrodisiac, carminative, diuretic, emmanogogue, stimulant and tonic. Tigernut has also been reported to be used in the treatment of flatulence, indigestion, diarrhoea, dysentery and excessive thirst. In addition, tigernut has been demonstrated to contain higher essential amino acids than those proposed in the protein standard for satisfying adult needs. Based on the above discoveries on the qualities of tiger nut, Single layer drying characteristics of the nuts were studied and reported on two drying conditions (40°C; 38%RH and 50°C; 8% RH). Drying of the nuts was observed to lie within the falling rate zone. Drying was faster at 50°C than at 40°C due to elevated sensible heat in the drying air. Page's equation adequately describes the drying behavior of tiger nuts from an initial moisture content of 45% (wb). Under the two drying air conditions, the K and N constants in the equation varied, hence K and N values are functions of drying conditions.