EXPERIMENTAL DETERMINATION OF THERMAL PROPERITIES OF

**COLOCASIA ESCULENTA** (COCO-YAM) CULTIVAR

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ABSTRACT

The effect of moisture on the thermal properties of *Colocasia esculenta* (*Coco yam*) identified by National Root Crop Research Institute, (NRCRI) as cocoyam cultivar, NCE 003 was studied. The proximate composition of the raw cocoyam sample obtained (using standard methods) revealed the sample as containing 44.00% moisture, 9.61% crude protein, 4.50% ash, 2.00% crude fibre, 3.39% fat and 36.50% carbohydrate. Predictive equations were used to determine some thermal properties which include the specific heat capacity, thermal conductivity and thermal diffusivity. Its specific heat capacity ranged from 2.774 – 2.895 KJ/kg°C within the temperature range of 25-125°C and 2.774 - 1.354 KJ/kg°C within a moisture content range of 44-10%. The thermal conductivity was between 0.433-0.496 W/m°C within the same temperature range and 0.433-0.304 W/m°C within a moisture content range of 44-10%. Thermal diffusivity ranged between 0.111-0.065m²/s over the same temperature range and 0.111-0.063m²/s over a moisture content range of 44-10%. 