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EFFECTS OF DRYING METHODS AND REHYDRATION WATER TEMPERATURES ON PHYSICO-CHEMICAL AND PASTING PROPERTIES OF *GARI* PRODUCED FROM DRIED CASSAVA CHIPS

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ABSTRACT

Freshly harvested cassava tubers were converted into cassava chips utilizing three different drying methods which include: sun, solar and cabinet drying. The dried cassava chips were coarse-milled and rehydrated to about 67% moisture content with water of three temperature levels (20, 30 and 40°C). The rehydrated mash was seeded with 5 % fresh cassava mash, fermented for 72 h and gari was produced. The gari produced were investigated for their physicochemical and pasting properties. The following are the ranges of the various physicochemical parameters evaluated: swelling capacity (3.56 - 4.14), water absorption capacity (493.85 - 542.15%), solubility index (3.5 to 9.4%), loose density (0.63 - 0.67 g/cm^3), bulk density (0.63 - 0.69 g/cm^3), pH (4.13 - 4.73), total titratable acidity (0.67 - 0.87 %), hydrogen cyanide content (0.023 - 0.03). The gari produced from cassava chips showed that pH and Hydrogen cyanide (HCN) content were reduced significantly ($p<0.05$) compared to the control sample. Better results were observed in some physicochemical properties such as water absorption capacity, swelling capacity, bulk density, and titratable acidity and pasting properties, particularly at lower temperature (20 °C) of rehydration water in all drying methods, used. At rehydration water temperature of 30 °C, sun and solar drying methods gave better results. Cabinet dried and rehydrated at 20°C sample has the highest peak viscosity value. Cabinet drying method and rehydration temperatures of 20 and 30°C produce the samples with the best pasting parameters.

KEYWORDS: *Pasting, Physico-Chemical, Cassava Chips, Gari*