IMPACT: International Journal of Research in Engineering & Technology
ISSN(P): 2347-4599; ISSN(E): 2321-8843
Vol. 6, Issue 10, Oct 2018, 1-10
© Impact Journals

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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Received: 04 Jun 2018 **Accepted:** 10 Oct 2018 **Published:** 26 Oct 2018

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 physico-chemical and pasting properties. The following are the ranges of the various physico-chemical 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 physico-chemical 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*