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Effect of processing on physio-chemical properties and yield of gari from dried chips

Kehinde A. Taiwo
Obafemi Awolowo University, Nigeria

Abstract

Fresh cassava tubers of the bitter variety (*Manihot esculenta* Crantz.) were processed into dried chips (sun and oven drying at 50 and 70ºC). The proximate composition, physic-chemical properties, cyanide content and water absorption capacity of the chips were determined. The chips were milled and soaked in four day old liquor (4DOL) for 3 or 4 days, and pressed for 3 or 2 days, respectively. The pressed mash was sieved, fried, cooled and packaged. The pH and titratable acidity (TTA) of the soaking medium was determined at 24 h interval during soaking of chips. Gari samples from dried chips and gari from fresh tubers (control sample) were analyzed for yield.

The results showed that moisture content (10.24) of chips dried at 70ºC was significantly ($p<0.05$) lower than that of sun dried and 50ºC oven dried chips. The ash (1.53-2.06%), protein (1.30-2.56%), crude fat (1.34-1.47%), crude fibre (2.58-2.72%) and carbohydrate (79.21-82.08%) contents were not significantly ($p<0.05$) different among the samples. The cyanide content of the chips ranged between 58.26-69.83 mg/100 g, sun dried chips had the least cyanide content. Water absorption capacity (28.21-98.81%) of chips increased with time with chips dried at 50ºC having the highest value after 6 h of soaking. The pH (4.65-3.90) of the fermenting medium (4DOL) decreased while the TTA (0.09-0.68) increased during fermentation. The yields of gari increased with soaking time and the values (71-78%) obtained were comparable to those in literature.

Keywords: Dried cassava chips, Gari, Water absorbtion capacity, Fermentation, Physic-chemical Properties, Proximate composition

Biography

Kehinde A. Taiwo holds a B.Sc. Degree in Food Science and Technology (FST) and M.Sc. and Ph.D. degrees from the Department of Agricultural Engineering both from Obafemi Awolowo University (OAU) Ile-Ife, Nigeria. She is the Head of Department of FST. Her research interests are in the areas of post harvest processing of agricultural materials, gender studies involving issues on technology adoption and management by female food processors at the rural level, and Science and Technology Policy Management issues. She has over 60 research publications in international journals of repute and is a Fellow of the Nigerian Society of Engineers.

kehindetaiwo3@yahoo.com