

GARRI - researchcub.info **ABSTRACT**

Samples of white and yellow garri were collected at a week interval. From umunya in oyi local government Area, Anambra state. The purchased garri with initial moisture of 9.3% for white garri and 8.65 yellow garri. The samples of white and yellow garri was aseptically weighted (2kg) into polythene bags, plastic bucket and sack bag. The packs were labeled and kept at ambient temperature of (30.0±2c) for 14 day. The change in the sample moisture content, change in PH biochemist

The result revealed that the averaged moisture content of yellow garri package in the yellow garri packaged in polythene bag (9.3%) and sack bag (8.2%) and also the white garri package in plastic bucket has lower moisture content (8.6%) polythene the moisture content and mould content were observed to increase with the period of storage. While the nutritional content and PH were reduced. Changes in the various sensory quality attributes such as colour, aroma texture and mouldiness at the end of the storage four fungi species (*Aspergillus Niger*, *Aspergillus flavus*, *Aspergillus fumigatus* and the *Rhizopus stolonifer*) were isolated during the storage period in all the packaging materials the total viable fungal count was in the order sack bags > polythene bags > plastic buckets. On the whole aim tight plastic buckets were observed and recommendation to be the best packing material for garri for a long period of time in this study

CHAPTER ONE

1.0 INTRODUCTION

Garri: (yellow or white) a roasted granular hygroscopic starchy food product, produced from cassava (*Manihot esculenta* Crantz) is the most popular from in which cassava is consumed in the West Africa sub region. It is consumed by several million of people regardless of ethnicity and socio economic class, making it the commonest meal amongst the rich and poor. Garri available in the market can be consumed directly without further processing in the dry form with peanut, coconut, smoked fish soaked in water (some times with milk and beverage) or processed minimally using boiled water to form stiff paste popularly called "eba" and eaten with various types of African soups.

Cassava for garri production is harvested manually in the farm with the aid of a cutlass, hoe and flat iron sheet (digger) which occasionally inflicts various degrees of injuries on the root tubers. After harvesting, the root tubers are halved to the market where they are heaped in 20s, 40s, 50s or for sales under humid and warm topical conditions. These practices predispose the root tubers to contamination and infestation by various groups of microorganisms (especially moulds) mites and insects which potentiate biodegradation.

Following processing, garri is spread on the bare floor or on a mat to allow cooling before final sieving and packaging for marketing in the open market; garri is displayed in open basins, bowls, bags and mats. These practices potentiate contamination by various groups of microorganism and may predispose public health hazard. Various groups of moulds have reports to be associated with garri during storage and distribution. Moulds if present can grow and affect the nutritional and sensory properties of garri and species of oxygenic may produce mycotoxins Aflatoxin B₁, B₂, G₁, G₂ are the they are produced by ubiquitous fungal genera and neurological association of these toxins reinforce the need for continuous and regular search for their presence in foods

Numerous processing methods have been devised including gaited roots, fermenting peeled followed by roasting to reduce the toxicity and at the same time convert the highly perishable fresh root of cassava into stable products. Garri is processed by fermenting peel and grated roots followed by dewatering sieving and frying. Frying the garri at high temperature which would have killed all micro-organisms but after preparation however other fungal spoilage. Garri is the most popular for in when of cyanogens (a colourless, poisonous, flammable, water-soluble gas (N₂ having an almondine) odour used chiefly in organic synthesis)

In the cassava variety used for processing garri in Nigeria. When not properly processed make the products unsafe for consumption the processing of cassava into garri is one of the

major cottage industries in umunya.

Garri, which is the by-product of cassava is rich in carbohydrate, mainly starch and is a major source of energy. With the exception of sugar cane garri is the highest source of carbohydrate.

The approximate and physical properties of garri is a function of the cassava variety, age of cassava time, of harvesting, processing methods, packaging method, storage condition and duration of storage (Oduro et al, 2000, Chuzel and Zakhua 1991).

Adejumo and Rayi (2010) carried out an appraisal of garri packaging method in Ogbomosho, Nigeria. The objectives of the work were to appraise the various packaging material used for garri and to suggest, safe, and affordable packaging material for garri packaging. This is with a view of reducing losses during storage and for proper planning of marketing strategies in terms of appropriated product packaging the result should that the packaging material used for garri packaging. The result showed that the packaging material used for garri packaging are all improvised material not specifically made for garri packaging. The loss of garri during storage was assessed on the type of storage material used. Storage condition, storage duration and the were based on change in colour, odour and taste which was a result of poor keeping quality due to the moisture uptake during merchandising. The effect of moisture content and storage conditions on the storability of garri was investigated by Amadi and Adebola (2008) yellow & white garri sample were obtained and storage under the same conditions using polythene bags, sack bags and plastic buckets

1.2 OBJECTIVE OF STUDY

The main aim of the study

1. the main objective of this research is to determine the
2. optimum packaging and storage properties for packaged
3. garri
4. to determine the moisture content and PH of the garri using different packaging method

1.3 JUSTIFICATION FOR THE STORAGE WHY IS THE STUDY NECESSARY. WHY DO THE STUDY HOPE ACTIVE

After this research, the best packing material will be noted so as to avoid or retard the actions of micro-organisms in the packaging of garri

DETERMINATION OF OPTIMUM PACKAGING AND STORAGE PROPERTIES OF PACKAGED GARRI

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