

Assessment of the Nutritional Quality of Lactic Acid Bacteria Fermentation of Tiger nut Milk for Yoghurt Production

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Background:

Protein deficiency and malnutrition is on the rise especially among children of weaning age. This is because protein sources from either plant or animals are usually expensive and beyond the reach of low income earners especially in the rural areas. Regular supply of food crops is also being threatened by possible crop failure, drastic climate change and lack of basic methods of extending the shelf life of perishable goods which makes them susceptible to microbial attack and lack of accessibility, availability and sustainability throughout the year round.

Objectives of the study:

This study focused on isolation and identification of strains of Lactic Acid Bacteria (LAB) from fermented cereal sorghum gruel. The technological properties of the organisms were studied and they were selected as starter culture for production of tiger nut yoghurt with a view to extending the shelf life of the highly perishable food product.

Method fermented cereal:

Strains of LAB were isolated from fermented cereal gruel *Ogi* prepared under strict hygienic conditions. They were identified using classical and molecular methods. Technological properties of the organisms which include production of exopolysaccharides, antimicrobial agents, enzymes, absence of biogenic amines were monitored using standard procedures. Yellow variety of tiger nut was obtained from Sabo market, in Ile-Ife, Nigeria. The nuts were sorted, cleaned, washed and surface sterilized before the tiger nuts were milled and sieved with 45µm mesh size to obtain the milk. The milk was pasteurized at 85°C for 15 minutes and fermented in three different batches, the first batch was fermented spontaneously, second batch with LAB isolates from *Ogi* and the third batch

and improve the availability and nutritional quality of the starter produced yoghurt that can be used as weaning food.

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Results: There were significant improvements in constituents of the tiger nut yoghurt compared with the raw samples.

Conclusion: The starter-culture mediated yoghurt can solve the problem of malnutrition and lactose intolerance in weaning infants and therefore the research advances the field of Food and Nutrition Security measurement.

Keywords: Protein deficiency; Tiger nut; Nutritional improvement; weaning food; Food Security and accessibility.