

## Unconventional production of maize in “OGI” using yeast as starter culture

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*Saccharomyces cerevisiae* was cultured from palm wine, baker's yeast and traditionally prepared Ogi (the most popular acceptable food of choice for the sick, beverage and weaning food in West Africa) and subsequently inoculated into re-constituted fine maize flour earlier tempered with 5% water concentration. This was thereafter fine milled, sieved, and 200 g each of it were re-constituted with 400 ml of distilled water. Finally, prior to inoculation, the Ogi slurries were placed in a pasteurizer at 50°C for thirty minutes for mild heat treatment. Each of *Saccharomyces* cultured from palm wine, baker's yeast, and traditionally prepared Ogi were subjected to three different levels of temperature condition; ambient (30°C), elevated (47°C), and refrigerated (9°C) for 48 hrs fermentation, making nine samples in all.

After 48 hrs fermentation, each of the Ogi sample came out with a distinct flavor originated from the source the *Saccharomyces* was cultured from; palm wine Ogi with palm wine flavor, baker's yeast Ogi with puff puff – beadlike flavor, and traditionally prepared Ogi with a stronger appealing Ogi flavor. Nevertheless, two of the palm wine samples had an offensive alcoholic odor. This however aided the twenty men panelist in identifying the conventionally prepared Ogi when asked to identify the conventional one which served as control amidst ten different samples presented to them with the nine experimental Ogi among. Also the bakes yeast samples had gas pores which suggest carbon (iv) oxide (CO<sub>2</sub>).

However, though not intentionally inoculated and in spite of mild heat treatment to check microbial invasion, lactic acid bacteria the main micro organisms in Ogi production was discovered after 48 hrs of fermentation which was absent at zero hour to uphold its relevance in Ogi processing. In addition, the pH which was determined at zero hour of fermentation and subsequently every twenty four hour of the forty eight hours fermentation was discovered to be gradually decreasing in all samples more than the conventionally prepared Ogi except the refrigerated samples that rather tends towards basicity between 5.06 and 5.74. While elevated processing temperature was observed to aid fat synthesis in Ogi, refrigerated temperature checkmated excessive microbial growth, eliminated coli form, and hence safest means amidst the three temperature medium used for processing. Nevertheless, the microbial load of the conventionally prepared Ogi at ambient temperature which served as Ogi control was far more than any of the experimental Ogi. In addition all the experimental Ogi had a superior nutritional status when compared with Ogi control, though baker's yeast sample had the best nutritional status. The main quality product of Ogi (flavor) is however enhanced in addition to nutrition. When the acceptability test of the experimental Ogi was conducted using 20 panelists and nine points hedonic scale, baker's yeast Ogi at the three processing temperatures and the traditionally prepared Ogi at elevated temperatures were the most preferred. However, considering the proximate composition, pH, microbial load, and intending consumers' acceptability, baker's yeast Ogi at refrigerated temperature was discovered to be the best Ogi, with traditionally prepared yeast Ogi and the other baker's yeast samples following.

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