

Studies on the fermentation of plantain wine.

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Abstract:

Studies were conducted on the natural fermentation of plantain in the making of "Agadagidi". Two processing methods were examined for biochemical and microbiological changes during the five-day period of fermentation, namely (i) addition of water to sliced plantains and (ii) addition of water and "Kaun" (trona) to sliced plantains. In both cases, the biochemical analysis showed that pH and reducing sugar decreased during the fermentation period while acidities (titratable, volatile, fixed), total nitrogen, and ethanol content increased. Ethanol content of the beverage was low (0.75% - 0.90%) while titratable acidity was high (1.261 - 1.486% expressed as lactic acid). Paper chromatography showed lactic acid as the major organic acid produced.

Microbiological analysis showed that mixed cultures of both yeasts and bacteria were involved in the fermentation. Bacteria isolated were of the genera Pediococcus, Leuconostoc, Staphylococcus and Micrococcus. Yeasts isolated were mainly wild yeasts of the genera Candida, Kloeckera, Hansenula and Brettanomyces.

Sensory evaluation of the two beverages showed that there was no significant difference in flavour out in colour. The colour of the beverage produced with Kaun was preferred. A technique for processing of the plantain must prior to fermentation was developed and a pure culture fermentation of this processed plantain must was conducted with three yeasts isolated from traditional fermenting plantain, and a commercial wine yeast. Acceptable wines with higher alcohol content than the traditional beverage were produced.

Keywords: Fermentation/ plant/ plantain/ biochemical ananlysis/ acidity/ paper chromatography/ titration/ alcohol/ wine/ yeast / beverage

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