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## Sensory evaluation during in-process optimization of Itugha production

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Fermenting *Irvingia gabonensis* seeds into Itugha considered more nutritious than the raw material from which it is produced is a traditional technology. Itugha's quality is usually measured by taste, aroma and flavor. This study aims at using sensory evaluation for product quality assessment during optimization of microbial fermentation process in the standardization design of the process flow chart that would ease production, process validation and reproducibility. The in-process monitoring was carried out under controlled environment by measuring pH, conditioned temperatures, percentage titratable acid and organic acids throughout the production process. Results indicate that early stage fermentation is caused by *Bacillus* spp., pH 6-7, 30°C and at 1.8% acidity of extract; the intermediary stage microbes, *Micrococcus* spp. and *Streptococcus*, pH 5.6, 35-38°C and 4.4% acidity of extract. Late stage, principally under *Candida tropicalis* DMB 321, pH 4.5-5.1, 70°C and 5.4% acidity of extract, citric acid 2.4% DM, glycolic acid 1.22% DM and oxalic acid 2.98% were quantified. For the Sensory analysis, 9-point Hedonic Scale was used. Overall acceptability for Like Extremely, 7.5; Like very much, 8.8; Like moderately, 9.00. Ranking was 72. Population t-test analysis-value was 21.18 and F-value 12.25. Progress of flavor development showed no flavour in the early stage, alcoholic aroma by the 3rd day (intermediate stage) and stringent spicy aroma by 6th day which became prominent after application of heat (final stage). Optimization gave the desired sensory attributes that impacted on product quality and the technique employed in system evaluation for in-process optimization, open-ended method.

### Biography

Onot Obono Ekpe had worked with the State Ministry of Agriculture Directing strategic policy on Food and Nutrition Security. She holds a PhD in Nutrition and Food Science and has been working as Lecturer at Biochemistry Department of University of Calabar.

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