Diversity of technologies and quality of Akpan, a vegetal yoghurt-like cereal product from Benin

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Objective

To highlight differences in the flow diagrams, physico-chemical and microbiological characteristics of Akpan types and to map samples Akpan in relation with the sensory attributes.

Methods

A survey was carried out in the southern region of Benin using a questionnaire administrated to producers, sellers and consumers for gathering information on raw materials and processing techniques. A total of 145 producers/sellers and 607 consumers were interviewed. In addition, twenty-four traditional samples of Akpan were collected at Cotonou and Porto-Novo markets for microbiological and chemical analysis.

Results

Diversity of processing technologies

Irrespective of the raw materials used, two processing technologies were observed based on submerged and solid state fermentation. These are Akpan from Ogi and Akpan from kneaded flour, essentially obtained through submerged and solid state fermentation respectively (Figure 1). The predominant technology remains that of Akpan from Ogi, which was used by 100% of the respondents. In this technology, Akpan is prepared from Ogi mash, a process that has been totally described previously (Madode et al., 2003).

Physico-chemical and microbiological characteristics

Akpan were collected at Cotonou and Porto-Novo markets for microbiological and chemical analysis.

Diversity of processing technologies

Four types of Akpan are marketed in Benin, with quality attributes depending on raw materials and processing techniques: (1) Akpan from maize ogi, a wet sieved fermented maize mash, is the most commonly produced; (2) Akpan from sorghum ogi, a wet sieved fermented mash similar to maize ogi; (3) Akpan obtained by kneading and fermentation of whole sorghum flour or Akpan from “mixed sorghum and maize” flours. Regarding quality attributes, Akpan should have no lumps, it should be flavoured, smooth, sweet and acid. Particularly, Akpan from sorghum is of red colour, sour taste, mushy with smooth texture whereas Akpan from exclusively maize is of white colour, slightly acid, partially/slightly cooked with aroma of fermented maize.

Conclusion

Akpan is with great economic significance and will take increasing importance in the future due to many variants encountered nowadays; then, satisfying the consumer demand of non-dairy beverages such as Akpan is a challenge to the future local food industry.