ABSTRACT

Quality of Porridge from Sub-Saharan Africa Evaluated Using Instrumental Techniques and Descriptive Sensory Lexicon. Part 2: Thin Porridge

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Thin porridge is a popular nourishment drink for adults and complementary food for children in sub-Saharan Africa. It is made from straight (unblended) or composite flours of maize, sorghum, finger millet and cassava in neutral or chemically-acidified media, or after spontaneous fermentation of the flours. The objective of this study was to determine the impact of type of composite flour and pH on the sensory quality of thin porridges. Instrumental methods and modified quantitative descriptive analysis were used to identify the main sensory attributes of thin porridges made from different composite flours in neutral or acidic media or after spontaneous fermentation. The results of the study indicated that irrespective of the pH, cereal-based composite flours had higher onset pasting temperatures; and lower peak, breakdown, final and setback viscosities than cassava-cereal flours. Thin porridges formulated from cereal-based composite flours tended to have lower firmness, consistencies, cohesiveness and indices of viscosity than those made from cassava-cereal flours. The colour of thin porridges depends on the botanical origin of the composite flours, their ratios and whether the pH was adjusted using citric acid or by spontaneous fermentation. Principal component analysis identified three major principal components (PCs) that accounted for 83.7% of the total variance in the sensory attribute data. The principal component scores indicated that the location of the thin porridges on each of the three scales corresponded with cassava aroma (PC1), finger millet/maize aroma (PC2), and colour and fermented aroma (PC3). This study has shown that thin porridges with different sensory profiles can be produced in sub-Saharan Africa for different population groups.

Key words: Colour, texture, thin porridge, quantitative descriptive analysis.