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Paper Title **Ingredient Optimisation for the Production of Gluten-Free Bread from Pregelatinised Cassava Starch and Sorghum or Millet Flours**

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ABSTRACT

Bread consumption is rapidly increasing in sub-Saharan Africa because the product is inexpensive, convenient to handle, use and store and a compact source of energy in a ready-to-eat form. However the climate of the region is not conducive for production of hard wheat – the main raw material for bread production. The increasing demand for bread can therefore only be met by importing wheat, which drains the countries' foreign exchange reserves and hampers development of foods from indigenous crops. Reduction of wheat demand can begin by upgrading the processing of indigenous crops and establishing their consumption as gluten-free bread.

This aim of this study was to improve the quality of gluten-free bread made from pregelatinised cassava starch and sorghum or millet flours. Dehulling the grains prior to milling improved loaf volume and texture. Response surface methodology was used to determine the optimum amount of sugar (6%), yeast (1%) and shortening (2%) required to produce bread with acceptable specific volume (1.7-1.8 cm³/g) and crumb softness. Bread texture improved significantly (i.e. increased softness) when shortening rather than oil was used. Sensory studies revealed that the breads had desirable chocolate brown colours and sandy mouthfeel, probably due to the large particle size of the cereal flours (1000 µm). Standard wheat bread improver did not improve the quality of gluten-free bread suggesting the need to develop alternative improvers for these breads. Studies on further improvement of the quality of these breads, utilizing malted or fermented sorghum or finger millet flours, are in progress.