

Nutritional Composition of Provitamin A-Biofortified Amahewu, a Maize Based Beverage with Potential to Alleviate Vitamin A Deficiency

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Abstract : Amahewu, a lactic acid fermented non-alcoholic maize based beverage is widely consumed in Southern Africa. It is traditionally made with white maize which is deficient in vitamin A. Provitamin A-biofortified maize has been developed for use as a complementary strategy to alleviate vitamin A deficiency. In this study the nutritional composition and protein digestibility of amahewu produced using provitamin A-biofortified maize was determined. Provitamin A-biofortified amahewu was processed by fermenting cooked maize porridge using malted provitamin A-biofortified maize, wheat bran and lactobacillus mixed starter culture with either malted maize or wheat bran. The total provitamin A content in amahewu products ranged from 3.3-3.8 $\mu\text{g/g}$ (DW). The % retention of total provitamin A ranged from 79 %- 90 % $\mu\text{g/g}$ (DW). The lowest % retention was observed in products fermented with the addition of starter culture. The gross energy of amahewu products were approx. 20 MJ/kg. There was a slight increase in the lysine content of amahewu after fermentation. Protein digestibility of amahewu (approx.91%) was slightly higher compared to unprocessed provitamin A maize (86%). However, a general decrease was observed in the minerals when compared to the unprocessed provitamin A maize. Amahewu processed using starter cultures has higher iron content than those processed with the addition of malt. These result suggests that provitamin A-biofortified amahewu has the potential to make a significant contribution towards alleviating Vitamin A Deficiency in rural communities who are also the most vulnerable to VAD.

Keywords : vitamin A deficiency, provitamin A maize, biofortification, fermentation

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