

**Shelf-life extension of home-made *mahewu* by adding *Aloe vera* powder**

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## Abstract

The effect of adding *Aloe vera* (*Aloe barbadensis* Miller) powder (AVP) in the production of home-made *mahewu* was investigated with the intention of extending the shelf-life of the product. *Mahewu* was produced in the laboratory (sample C) and at home (sample B) using standard home-made procedure with the addition of AVP. A control *mahewu* (sample A) was produced without AVP. The extension of shelf-life was determined by following the chemical, microbiological, physical properties at  $36 \pm 5^\circ\text{C}$  for 60 days and the sensory properties of the products were also evaluated. Physicochemical analysis revealed decreases in pH ranging between 3.3 and 2.4 from day 15 to 60 days of storage in all three samples. Titratable acidity of all the samples increased significantly ( $P \leq 0.05$ ) throughout the storage period and it ranged between 0.2% and 1.8%. There was a significant difference amongst the samples during day 15 to day 60 with respect to total soluble solids (TSS). A general decrease in TSS was recorded in all three samples during day 45 and 60, while sample B had an increase in TSS in day 30 (3.2). In terms of the colour of the products, there was an increase in the  $L^*$  value for samples A (68.9) and C (69.9) in day 60 of storage, while sample B had a decrease in  $L^*$  value (67.8). Samples (B and C) had a decrease in redness during day 60 as compared to day 45 (7.1), while sample A had an increase in day 60 (7.4). In terms of the  $a^*$  values, there was no significant difference between sample B and C from day 15 to day 60 of storage while sample A was statistically significantly different from the two samples during the same storage days. In terms of the  $b^*$  values, there was no significant difference in sample B and C during day 15, while sample B was significantly different from samples A and C from day 30 until day 60 of storage at  $P < 0.05$ . There was an increase in numbers of coliform bacteria, lactic acid bacteria and yeast during the storage period of 60 days. The overall acceptability of the three samples in terms of sensory evaluation showed that there was no significant difference between two samples (B and C) with AVP ( $P < 0.05$ ), while sample A was significantly different from both samples.

Key words: Maize, *Mahewu*, *Aloe vera*, sensory properties