EVALUATION OF MICROBIAL PROLIFERATION IN TRADITIONAL 'MAGEU' BEVERAGE PRODUCED IN LIMPOPO (SOUTH AFRICA)

H. Silungwe, T. Mudau and E.T. Gwata

University of Venda, School of Agriculture, P. Bag X5050, Thohoyandou 0950, South Africa.

'Mageu' is a non-alcoholic beverage prepared traditionally from porridge. Partly because of its popularity in both rural and urban areas, 'mageu' is now also produced commercially in many countries in Southern Africa. This study was designed to assess microbial proliferation in traditionally prepared 'mageu' (TPM) brewed by small-scale producers in Limpopo. Five samples of TPM were purchased from randomly selected street vendors in Limpopo. Two additional samples of the commercially prepared 'mageu' (CPM) were purchased from a retail outlet for inclusion in the study. All the samples were subjected to total plate count in order to detect the proliferation of commonly occurring micro-organisms namely Salmonella, Escherichia coli and Bacillus cereus. The pH and titratable acidity were also determined. The plate counts for the TPM ranged from $6.35 \times 10^2$ to $6.85 \times 10^2$ CFU mL$^{-1}$. In contrast, the mean proliferation of the micro-organisms in the CPM was $0.3 \times 10^2$ x CFU mL$^{-1}$. The TPM was more acidic (pH=3.5) than the CPM (pH=4.6). Similarly, the titratable acidity ranged between 0.4 - 0.5% for the CPM and 0.3 - 0.8% for the TPM. It was recommended that traditional preparation of 'mageu' could utilize a commercial starter and a simplified HACCP procedure in order to minimize the microbial proliferation.

Key words: beverage, microorganisms; plate count; proliferation.