

MICROBIAL EVALUATION OF MAIZE FLOUR SOLD IN MINNA TOWNSHIP

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ABSTRACT

The studies was conducted to evaluate the microbial quality of maize flour sold in Minna. A total of four samples of maize flour from four markets in Minna such as Chanchaga, Bosso, Dutsen kura gwari and Kure market was analyzed to determine the bacteria count, fungi count, bacteria and fungi identification to the species level. The total fungal count ranged from 1.0×10^4 to 2.48×10^6 CFU/g. While the total bacteria count ranged from 7.0×10^4 to 2.4×10^5 CFU/g. The isolated bacteria were: *Staphylococcus aureus*, *Escherichia coli*, *Bacillus subtilis*, *Psuedomonas aeruginosa*, *Staphylococcus aureus* and *Klebsiella sp* while the isolated fungi were: *Saccharomyces cerevisiea*, *Aspergillus niger*, *Fusarium sp*, *Saccharomyces cerevisea*, *Penicillum sp*, *Candida maltosa* and *Kluyveromyces marxianus*. *Bacillus subtilis* and *Staphylococcus aureus*, *Aspergillus niger*, *Penicillum sp* and *Saccharomyces cerevisea* had the highest occurrence for both bacteria and fungi respectively. The results show that the rate of bacteria and fungi contamination of the maize flour is far above the safe level that ranged from 1.8×10^3 to 2.3×10^4 which is the acceptable or safe level and this is potentially hazardous to human health. This contamination could be due to the unhygienic method of processing the flour as a result of the direct contact with both the maize grain and flour, gross contamination of the product during processing, unhygienic method of production, lack of portal water for washing the maize, unhygienic production environment, exposure to open air, contamination during post-harvest and storage of the maize. Therefore, severe regulatory actions on the microbiological quality control of maize flour, use of portal water for washing maize before milling into flour together with the training of production process and sales personnel on food contamination and spoilage is necessary for the better management of public health condition.

Keywords: Maize flour, Bacteria count, Fungi count and Microbial quality