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Effect of fermentation on aflatoxin content of ogi produced from mouldy maize *(Zea mays)* and storage stability of its flour

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Mycotoxins are naturally occurring toxins produced by fungi. They are toxic and among the most carcinogenic substances known, they have severely impacted food safety and quality in various countries in Africa. In this research, effect of fermentation on aflatoxin content of ogi produced from mouldy maize and storage stability of its flour were investigated. Mouldy and none mouldy maize grains were steeped and subjected to proximate, microbial and aflatoxin content analysis at 0hr, 24hr, 48hr and 72hr fermentation periods. Ogi was produced using the traditional method and dried to produce ogi flour. The ogi flours were packed in glass bottles and kept under ambient, refrigerating and freezing temperatures to assess the storage stability of the flours through a period of 4 weeks. There was decrease in the protein, crude fiber, ash and carbohydrate contents during the steeping periods. Fat content increased marginally (4.32%-4.36%) for steeped none mouldy maize compared to that of mouldy maize (3.94%-4.01%), though not statistically significant. Microbial analysis indicated a reduction in yeast/mould counts ranging from 7.0-0.50 cfu/gx104 in none mouldy maize and 11.45-2.45 cfu/gx104 for mouldy maize at 72hr. Higher amounts of lactic acid bacteria counts were observed at 48hr fermentation period for both samples. During fermentation, aflatoxin contents in the mouldy grains dropped from initial concentration of 58.00µg/kg in the raw maize sample to 3.13 µg/kg on the 72hr steeping period, which is still within the maximum acceptable limit of 10.0 µg/kg. Aflatoxin content increased slightly after the ogi was dried and continued as storage progressed. This study has shown that natural fermentation of maize grains for ogi production can substantially reduce the amount of aflatoxins contaminating the raw material.

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