Effect of Groundnut Drying Methods on Drying Rate and Aflatoxin Contamination

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A major concern in groundnut production is aflatoxin contamination which negatively affects trade and wellbeing of humans. This study evaluated twelve methods for drying groundnuts used in Malawi namely, Mandela cock, stacking pole, A-Frame, windrows, rack, inverted circular pattern, drying on slab, black plastic sheet, mat, grass roof, bare ground, iron roof and their effect on drying rate and aflatoxin contamination. Moisture content, temperature and relative humidity were recorded each day during the drying period in order to estimate drying rates. After drying was completed, total aflatoxin analysis was done using ELISA method (Agraquant™).

The drying period for stripped groundnuts was shorter (10 days) than drying a whole plant (18 days). Whole groundnut plants dried using the Mandela cock and stacking pole had the lowest aflatoxin contamination of 0.68 and 1.39 ppb respectively. Stripped groundnuts dried on bare ground had relatively higher aflatoxin contamination (3.5 ppb) as compared to all the other methods.

In conclusion, stripped nuts dries faster than groundnuts dried as a whole plant. In addition Mandela cock system and staking pole has a potential for reducting aflatoxin in groundnuts.