

DESTRUCTION OF AFLATOXIN ON CONTAMINATED PEANUT BY ROASTING

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Abstract

Aflatoxin secondary metabolites of the fungi *Aspergillus flavus*, *Aspergillus parasiticus* and *Aspergillus nomius* is a potent source of health hazards to human and animals. These can cause the most severe harm to humans and animals due to their high toxicity and wide occurrence, also presenting carcinogenic, mutagenic and teratogenic properties. Aflatoxin B₁ is the most toxic. The toxic action verified in animals is called hepatocellular carcinoma (RCC), which is considered as liver failure with destruction of the parenchymal cells and proliferation of the biliary canals. In humans, the toxic action is chronic and has been correlated with the incidence of liver cancer in sites with high aflatoxin contamination (Oliveira, Germano, 1997).

A great deal of effort has been made to completely eliminate the toxin or reduce its content in foods. Although prevention is the most effective intervention, heat has been used to inactivate Aflatoxin in contaminated foodstuff. Peanuts are very sensitive to Aflatoxin contamination. In this study we tested the effect of roasting on reduction of Aflatoxin content in peanuts, tested in a laboratory setting with aiming to suggest an optimal condition for the roasting. Although all treatment protocols showed some degree of Aflatoxin degradation (ranging from 17% to 63%), roasting spiked samples at 120° C for 120 min and 150° C for 30-120 min caused substantial reduction of Aflatoxin in samples. Treatment of naturally contaminated whole peanut kernels at 150°C for 30 min significantly reduced level of Aflatoxin contamination in samples. Degradation of Aflatoxin was both time and temperature dependent. Roasting at 150° C and 120 min condition degraded more than 95% of AFB₁ in peanuts. However, the resulted product was not edible. Aflatoxin in form of naturally occurrence were more resistant to degradation with heat.