Theme: Microbial safety for food packaging

**The Effect of Packaging Material at Different Temperature and Water Activity (Aw) for *Aspergillus flavus* on Aflatoxin B1 Production in Peanuts**

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**Introduction:**

Aflatoxin (AFs) are a group of metabolites mainly produced by toxigenic strains of Aspergillus flavus. It is regarded as the most carcinogenic toxins originated from fungi, with Aflatoxin B1 being the most potent aflatoxin to humans.

**Objectives:**

The aim of this study was to investigate the effect of different industrial grade packaging materials (polyethylene, polypropylene, and polyethylene laminated aluminum), temperature (25 °C and 30 °C), and water activity (0.74 Aw and 0.85 Aw) on Aflatoxin production in peanuts.

**Methods:**

Samples were separated into three different packaging material, inoculated and stored for one month under various temperature and pre-determined water activity, Aw. The samples were extracted and clean up via an immunoaffinity column and analyzed for AFs using a HPLC- fluorescence detector.

**Results and discussion:**

Study showed that for Aspergillus flavus, the lowest concentration of aflatoxin B1 was obtained when peanuts samples were stored in polyethylene laminated aluminum packaging, at 0.74 Aw and the temperature of 25 °C.

**Significance:**

Thus, storing peanuts in polyethylene laminated aluminum at dry place and around room temperature of 25-30 °C is an adequate and inexpensive method in ensuring reduction for aflatoxins in the peanuts.