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## The determination of aflatoxin levels of unprocessed and processed peanuts

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Aflatoxins are highly toxic fungal compounds produced by the mold *Aspergillus* which grows on a number of raw food commodities. Farmers in the U S and throughout the world face the impact of this toxin on crops such as peanuts and corn. Animals and humans may be affected by the consumption of these contaminated crops. Aflatoxins have been found to damage and affect the lungs, kidneys, brain and heart. In this study, the level of aflatoxins found in processed and unprocessed peanuts was investigated. To determine the aflatoxin levels, the Vicam Afla-V test reader was employed. This device detects the presence of aflatoxins B1, B2, G1 and G2 levels ranging from 2 ppb to 100 ppb. To analyze the samples, peanuts were blended finely and weighed to 5 grams and transferred into an extraction tube containing 25 ml of 70% methanol. The mixture was vortexed for 2 minutes and filtered. One hundred microliters (100  $\mu$ l) of the extracted sample were mixed with 100  $\mu$ l of Afla-V dilute contained in an Eppendorf tube. The samples were vortexed for 10 seconds. The sample mixture was then placed on the Alfa-V test strip for 5 minutes and inserted inside the Vicam test reader. Results indicated that although the parts per billion (ppb) levels of aflatoxin varied in the samples tested, all of the processed peanut samples tested were less than 25 ppb established by the USDA. However, two of the unprocessed samples tested, proved to be 2.052 and 3.856 times higher respectively, when compared to the established aflatoxin levels.

### Biography

James B Stukes is an Associate Professor of Biology/Biology Program Coordinator for the Department of Biological and Physical Sciences at SC State University. He has received his PhD in Microbiology from Atlanta University. He has served as the Principal Investigator for several grants, written various publications, and presented his work at numerous conferences. He was named University Teacher of the Year, Outstanding Young Man of America, served as a Member of the Governor's Mathematics and Science Advisory Board, and Who's Who Among America's Teachers. He currently serves as Co-Principal Investigator of the Evans-Allen 1890 Food Safety Research Grant funded by the USDA.

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