

Screening Various Peanut (*Arachis hypogaea* L.) Genotypes for Aflatoxin Contamination using *in vitro* Seed Colonization of *Aspergillus flavus*

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Aflatoxin is a fungal mycotoxin produced by certain *Aspergillus* species. Contamination of this toxin from aflatoxigenic isolates of the fungi negatively impact global health, food production, and economy. Peanut (*Arachis hypogaea* L.) is a primary host for aflatoxigenic strains of the fungi and aflatoxin contributes to some of the largest economic losses in the peanut industry. Genotypic differences in peanut can cause varying levels of contamination. This study examines the differences in aflatoxin production between several different peanut genotypes to examine variation in contamination levels. Several varieties and genotypes from experimental populations were inoculated *in vitro* with a transgenic isolate of *A. flavus*, AF70-GFP, and screened for aflatoxin contamination.

Lines from a recombinant inbred line population developed from crosses of an aflatoxin resistant genotype, ICG 1471, and aflatoxin susceptible cultivar, Florida-07, were included in this study to validate resistance and susceptibility in respective lines from a previous study. Black-skinned peanut genotypes were also included in this study based on previous evidence which suggested some toxicity resistance. Several other genotypes with proposed resistance were also screened. Certain genotypes in this study have been utilized in crosses to develop populations for additional aflatoxin research. In addition, a few lines in this study are being utilized for genetic analysis of the aflatoxin resistance trait with the goal of identifying genetic regions which contribute to resistance.