

## **Evaluation of Selected F6 Peanut Progenies of BC3-derived Introgression Lines and Spanish Parents for Resistance to *Aspergillus flavus* Infection**

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Aflatoxin contamination of peanut can have serious economic and health impacts on humans and livestock. Efforts are being made to identify new sources of resistance to *Aspergillus flavus* infection. Wild species have been reported to have resistance or near immunity to *A. flavus* infection. This study seeks to identify *A. flavus* resistant genotypes from a population derived from a cross between BC3F6 interspecific introgression lines and Spanish peanut genotypes with susceptibility to *A. flavus* contamination. The interspecific introgression lines (BC3F6) originated from a cross between Florunner and TxAG-6 [*A. batizocoi* x (*A. cardenasii* x *A. diogenii*)]<sup>4x</sup>.

Thirty-three (33) BC3×Spanish breeding lines selected based on resistance to leafspot disease, two *A. flavus* susceptible checks namely, Manipinta and Chinese and a resistant check, ICGV-03401 were used in this study. Ten healthy seeds with intact seed coat of each genotype were inoculated with an aqueous conidial suspension of an aflatoxigenic strain of *A. flavus* in vitro per replicate. Data were recorded on incidence and severity of *A. flavus* infection every two days. Results revealed significant ( $p < 0.001$ ) differences for both incidence and severity of *A. flavus* infection. Susceptible check cultivars Chinese and Manipinta had >70% infected seeds, and the resistant check ICGV-03401 had 38%. Genotypes, L096, L015A, L027B, L020, L030 and ICGV 03401 were found to be resistant to *A. flavus* infection and colonisation with less than 50% infection. Among these, L096, L015A and L027B had fewer than 35% infected seeds and out-performed the resistant check. The presence of resistant genotypes in this population signifies the existence of individuals within the BC3F6 population that may have equal or stronger levels of resistance than the Spanish parents used in developing the population under the study.