

## **Insoluble Polyphenols Mediate *Aspergillus Flavus* Resistance in Peanut**

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*Aspergillus flavus* invasion in peanut has been a major drawback in the peanut industry with most of the infection occurring in the post-harvest stage. At the postharvest stage, the seed coat is the only outer layer protecting the endosperm from pathogen infection. The seed coat is made up of secondary metabolite called polyphenols which are important determinants of color, taste and flavor of foods. These polyphenols can be grouped into soluble and insoluble polyphenols. We sought to identify which component of these biochemicals present in peanut seed coat plays a role in *A. flavus* resistance. Soluble polyphenol was extracted using acetone, acetic acid and water. Insoluble polyphenols were freed from the wall bound compounds using alkaline hydrolysis and HCL complementation, followed by extraction with acetone, acetic acid and water solution. The radial growth bioassay using these compounds showed that insoluble polyphenols showed a greater resistance to *A. flavus* growth as compared to soluble polyphenols. Solid phase extraction (SPE) techniques were used to fractionalize the polyphenols into phenolic acids, flavanols and anthocyanin groups. We have identified 8 phenolic acids by complimenting the SPE techniques with the HPLC.

The results observed indicates that the seed coat biochemicals contains certain biochemicals which could be used to regulate *A. flavus* contamination in peanut.