

**A MODEL SYSTEM FOR RESEARCH ON
ASPERGILLUS FLAVUS INFECTION OF
UNDAMAGED COTTON BOLLS**

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Abstract

Aspergillus flavus produces the potent carcinogenic compound, aflatoxin, in cottonseed in the field. To determine conditions conducive to *Aspergillus flavus* infection of cottonseed in undamaged bolls, cotton plants were grown in 1.5 m PVC pipes and subjected to various levels of water and nutrient stress. Flowers were inoculated on the involucrel nectaries, the resulting individual bolls harvested, lint and seed weighed, and the seed assayed for *A. flavus* on agar plates. Under these greenhouse conditions, we were able to mimic field conditions closely enough to obtain *A. flavus* infection in undamaged bolls. Water stress was the most important controlled variable for *A. flavus* infection. Under high water stress conditions, yield and seed weight were significantly higher in plants and bolls with *A. flavus* infected seed.

