

**THE S STRAIN OF *A. FLAVUS* MAY BE AN IMPORTANT
CAUSE OF AFLATOXIN CONTAMINATION IN SOUTH TEXAS**

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Abstract

Aflatoxins are a group of toxic, carcinogenic fungal metabolites produced by some members of *Aspergillus* section Flavi when those fungi infect crops. *Aspergillus flavus* is the primary causal agent of aflatoxin contamination of cottonseed. In the United States, aflatoxin contamination of cottonseed is most severe in Arizona and South Texas. On the basis of physiological, morphological, and genetic criteria, *A. flavus* can be divided into two strains, S and L. Isolates of the S strain produce numerous small sclerotia (< 400 μ m in diameter) and fewer conidia than L strain isolates. Strain S isolates produce on average much more aflatoxin than L strain isolates both in culture and within developing cottonseed. Strain S isolates have been associated with higher levels of aflatoxin contamination of cottonseed in Arizona. During the 1999 crop year, aflatoxin contamination of cottonseed was widespread and severe in South Texas. Samples from 30 truckloads of commercial cottonseed from 11 South Texas gins were examined for the S strain. The S strain composed from 15% to 74% of the *A. flavus* community associated with seed from the various gins. 2000 crop seed from 34 gins was examined. Strain S composed between 0% and 58% of the *A. flavus* community on seed from the 13 gins in the Lower Rio Grande Valley with an average of 12%. Seed from the 19 gins in the Coastal Bend and Upper Coast regions had S strain incidences that ranged from 7% to 80% (average 28%). The observed incidences of the S strain in the *A. flavus* communities associated with South Texas cotton crops combined with that strain's very high aflatoxin producing potential suggests that the S strain may be an important cause of aflatoxin contamination of cottonseed in South Texas.