

ALFA-GUARD CLEARED FOR AFLATOXIN SUPPRESSION IN IN-SHELL PEANUTS

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Aflatoxins are carcinogenic metabolic byproducts produced by most strains of the widely distributed soil fungi *Aspergillus parasiticus* and *A. flavus*. While the pre- and post harvest invasion of in-shell peanuts by these fungi is common, sustained soil temperatures in excess of 95F along with extended periods of moisture stress are required for the production and accumulation of aflatoxins in peanut. Colonization of peanut seed by aflatoxigenic fungi is greatly enhanced by lesser cornstalk borer feeding injury on the pods. Other soil insects that damage peanut pods may also increase the risk of invasion by these very common fungi.

Aflatoxin contamination has taken a heavy toll on Alabama's peanut crop. As expected, the highest level of aflatoxin contamination has been seen in Alabama's dryland peanut crop during the drought years of 1980, 1993, and 2000. When rainfall totals, particularly in July and August are near to above the historical average and temperatures are near normal, the level of aflatoxin contamination and subsequent numbers of Seg III peanut loads are very low. Typically, irrigated peanuts are at little risk from aflatoxin contamination.

The best measure for preventing aflatoxin contamination in farm stock peanuts is an irrigation system and/or plenty of summer rainfall. Unfortunately, most Alabama peanut land is not irrigated and farmers have no control over summer rainfall patterns. As a result, a real threat of significant aflatoxin contamination of farm stock peanuts exists whenever a severe summer drought occurs.

Previously, strains of *A. flavus* that do not produce aflatoxins have been isolated and later formulated in a biological control product called Afla-Guard. When applied to the soil during pod set, this fungus colonizes or grows through the soil in the area where the pods mature and forms a 'barrier' or 'shield' around the pods that blocks out the toxin producing strains of *Aspergillus parasiticus* and *A. flavus*.

According to the label, the application rate for Afla-Guard is 20 pounds per acre of the granular formulation. For best results, Afla-Guard should be applied over the row about

60 days after planting just before the canopy laps the row middle. Some moisture probably will be needed to trigger growth of the fungus from the carrier into the soil.

While Alfa-Guard has received a full federal label for alfatoxin suppression on peanut, relatively little information is available concerning product effectiveness. Earlier studies at the National Peanut Research Laboratory at Dawson, GA showed a nearly 90% reduction in aflatoxin levels in peanuts in small plot trials. Sizable reductions in average alfatoxin contamination were also seen in on-farm field trials in Georgia in 2004. No research with this product has been conducted in Alabama.

The best fit for Afla-Guard is the dryland fields of peanut in the Wiregrass Region of Alabama. This is an area with a history of the destructive summer droughts and lesser cornstalk borer infestations that contribute to aflatoxin contamination in farm stock peanuts. As long as adequate water resources are on hand, irrigated peanuts in the Wiregrass will not greatly benefit from the use of Afla-Guard. Peanuts grown in other areas of the state, particularly those grown north of Escambia County that are also at-risk of a significant summer drought may also benefit from treatment with this product.

Information regarding the cost of Afla-Guard is not available at this time.