

2008 Final Report *summary*

247
AL-43
572
2008

Title: Risk of Pre-harvest Aflatoxin Contamination in Peanuts

PI's: K.L. Bowen, R. Huettel, R. Getz

Objectives:

- 1) To develop web-based maps for ARI;
- 2) To share this information and access to the ARI with Regional Extension Agents and growers during county meetings.
- 3) to enlist growers to provide data and soil and peanut samples by which ARI can be tested and refined.

Risk maps for aflatoxin contamination were available on the web by 10 July at <http://www.awis.com/Misc/Peanut/Peanut.htm>. These were updated approximately every 2 weeks and based exclusively on temperature and rainfall amounts. These maps showed that a moderate risk for aflatoxin contamination of peanuts in the most northern counties of Alabama in mid-September. Twenty-seven grower fields were visited in August and again in late Sept/early Oct. Soil samples taken in August were analyzed for nematode populations as well as soil nutrients.

Aflatoxin contamination of peanuts sampled from growers' fields ranged from undetectable levels to moderate (90 ppb) levels of contamination. Risk Index point totals for the sampled fields from 40 to 90 and these values reflect moderate or lower risk of aflatoxin contamination. Chi-square analysis shows that the higher risk points are significantly related to higher aflatoxin levels.

The Aflatoxin Risk Index for peanuts is weighted heavily for hot dry weather during the final 5 weeks of the peanut growing season. Other factors that are included in this risk accumulation guide include soilborne insect and nematode densities, and soil calcium levels, and prevailing weather during pegging. Damage to pods by insects or nematodes can allow fungal entry into the pod. Pod integrity is further compromised when soil calcium is deficient.