

292
735 +
206

Title: A Survey of Peanut Diseases, Nematodes and Insects and Their Relationship to Pre-harvest Aflatoxin Contamination Risk

PI's: K.L. Bowen, A. Majumdar, A. Hagan

Final Report for 2009

Summary

Objectives for 2009:

- 1) identify growers and field sites for which cultural practices (i.e., planting date, cultivar, etc) information, soil samples and yield data can be obtained;
- 2) monitor fields and record relative occurrence(s) of foliar and soil-borne diseases, including tomato spotted wilt;
- 3) determine soil characteristics and nematode densities from soil samples from each field;
- 4) determine pre-harvest insect damage and/or relative abundance of peanut pests;
- 5) obtain yield samples, as well as yield and possibly grade information from monitored fields;
- 6) assay yield samples for aflatoxin contamination;
- 7) estimate the impact of diseases and pests on aflatoxin contamination and peanut yield; and
- 8) refine and post relevant risk index maps for potential aflatoxin problems.

Results.

Twenty-six field sites were identified in throughout south Alabama, with most sites in Baldwin, Houston, and Mobile Counties. Soil samples were collected from each of these fields were sampled for determining nematode densities and soil attributes; field in southwest AL were also monitored for insect densities. Risk maps for aflatoxin contamination continued to be available on the web at <http://www.awis.com/Misc/Peanut/Peanut.htm>.

Using the Aflatoxin Risk Index for Peanuts, cumulative points for sampled fields ranged from 55 to 65, which reflects a slight risk of contamination. No aflatoxins were detected in peanuts from any of the sampled fields. No changes were made to the risk index.

Soil

292
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2009

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- 8) refine and post relevant risk index maps for potential aflatoxin problems.

Progress:

Twenty-six field sites were identified in throughout south Alabama, with most sites in Baldwin, Houston, and Mobile Counties. Soil samples were collected from each of these fields were sampled for determining nematode densities and soil attributes; field in southwest AL were also monitored for insect densities. Risk maps for aflatoxin contamination continued to be available on the web at <http://www.awis.com/Misc/Peanut/Peanut.htm>. Because of personnel health problems, fields were not closely monitored for disease intensities, and, in many cases, yield samples and grades were not collected.

At this point in time, aflatoxin assays of pod samples are not wholly complete. All other data is compiled.

The Aflatoxin Risk Index for Peanuts

For each of the following factors that can influence the occurrence of aflatoxins in peanuts, identify which option best describes the situation for an individual peanut field. An option must be selected for each risk factor. Add the index numbers associated with each choice to obtain an overall risk index value. Compare that number to the risk scale provided and identify the projected level of risk. For additional information, click colored text.

Prior to Planting		
<u>Soil</u>	Mostly Sand	10
	Mostly clay	0
Nematode assay results		
	None detected	0
	Nematicide Used	5
	5 or more Root-Knot in 100 cc soil test; 20 or more of any other species	10
<u>Planting Date</u>	May 11-31	0
	June 1 or later	5
During Pod Development - July 15 through ~ 110 days after planting		
<i>Prevailing Weather</i>		
<u>Temperature</u>	Warm; daily max. often over 94 F	20
	Moderate; daily max. rarely or never over 94 F	5
Rainfall / Irrigation		
<u>Rainfall / Irrigation</u>	Average is < ½ inch weekly	15
	Average is ≥ ½ inch weekly	5
Soil Insects		
	None detected	0
	Low populations, no insecticide	10
	High populations, insecticide appropriately applied	10
	High populations, no insecticide	20
Soil Calcium		
<u>Soil Calcium</u>	< 500 lbs/A soil test	0
	> 500 lbs/A	10
Final 3-4 Weeks preceding Harvest		
<i>Prevailing Weather</i>		
<u>Temperature</u>	Warm; daily max. often over 94 F	40
	Moderate; daily max. stays less than 94 F	5
Rainfall / Irrigation		
<u>Rainfall / Irrigation</u>	Average is < 1/3 inch weekly	20
	Average is ≥ 1/3 inch weekly	5