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EFFECTIVE DISEASE MANAGEMENT STRATEGIES FOR MID-SOUTH PEANUT

2005 Annual Report
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In 2005, the performance of four peanut varieties and five fungicide spray schedules were evaluated for efficacy against peanut diseases. Tests were conducted on the Macon Ridge Research Station near Winnsboro, Louisiana and in a producer field located near Bonita, Louisiana. The objectives of this project were to: 1. Document the predominant peanut diseases in the Mid-South, 2. Evaluate peanut varieties for genetic potential and resistance to peanut diseases in the Mid-South, 3. Evaluate efficacy of experimental and commercial fungicides for naturally occurring diseases, and 4. Develop disease management strategies specific to the Mid-South U.S.

Two experiments were conducted on the Macon Ridge Research Station and another experiment was conducted on Shackelford farms. In addition to these experiments, a disease survey was conducted at another location near Bonita, Louisiana.

Macon Ridge Research Station:

In one test, four peanut varieties (Georgia Green, Georgia 01R, Georgia 03L, and Tifrunner) were evaluated for vigor and genetic resistance to tomato spotted wilt virus and other naturally-occurring diseases. In another test, selected fungicide treatments were evaluated for efficacy against naturally-occurring diseases. Fungicides evaluated included: Abound 2.08SC, Echo 720F, Folicur 3.6F, Headline 2.08EC, and Moncut 50WP (Table 1). Based on weekly observations, no diseases developed in the fungicide screening tests; therefore, no data was obtained.

Small plots (four rows x 25 feet) of four peanut varieties were planted on May 6. Each plot consisted of a single variety arranged in a randomized complete block design replicated three times. To assess the vigor of each variety, inches from row closure (inches of bare ground between plants in adjacent rows) was recorded on July 21. Variety tests were not oversprayed with a fungicide to monitor for genetic resistance against pathogens. Beginning mid-season, plots were monitored weekly for the presence of diseases. On July 27, spotted wilt incidence was recorded as the number of symptomatic plants in each plot. Stem rot incidence was recorded in each plot on August 31 and expressed as the number of stem rot hits (hit = 1 foot or less of infected row).

Georgia 03L was the most vigorous variety relative to the other three; however, little difference was observed among the other varieties. Even though Georgia Green confers resistance to Tomato spotted wilt virus, a higher degree of resistance was noticed in Georgia 01R, Georgia 03L, and Tifrunner (Table 2). A similar trend was noticed with stem rot. These data provided evidence that new peanut varieties may be suitable for production in Louisiana.

Shackleford Farms

Georgia 01R, Georgia 03L, Georgia Green, and Tifrunner were planted in large blocks on Shackleford Farms to assess their resistance to naturally-occurring diseases in the field. This site was monitored periodically throughout the growing season for the presence of disease epidemics. On August 11 and 26, spotted wilt incidence was assessed as the number of symptomatic plants in each block. Stem rot incidence was recorded for each variety on October 13 and expressed as the number of stem rot hits (hit = 1 foot or less of infected row). At maturity variety strips were inverted and harvested.

Spotted wilt incidence was highest in Georgia Green and lowest in Tifrunner (Table 3). The resistance to spotted wilt in Georgia 01R and 03L was higher than resistance observed in Georgia Green. Stem rot incidence was highest in Georgia 03L and substantially lower in the other varieties. Yields were highest in Georgia 01R (4419) followed by Georgia Green (3472) and lowest in Tifrunner (2999).

Summary

These preliminary results suggest that Tifrunner, Georgia 01R and 03L may be suited for production in Louisiana; however, further evaluation is needed. Primary concerns are the low yields observed with Tifrunner and the possible stem rot susceptibility in Georgia 03L.

Table 1. Peanut variety evaluations, Northeast Research Station, Macon Ridge Branch, Winnsboro, 2005

Treatment (rate of product/A)	Application Timing¹
Nontreated	NA
Echo 720(24 fl oz/a).....	1-5
Echo 720 (1.5 pt/a)	1,2,4
About 2.08SC (18.5 fl oz/a).....	3,5
Echo 720 (24 fl oz/a).....	1
Folicur 3.6F (7.2 fl oz/a)	3-5
Echo 720 (24 fl oz/a).....	1,2,4
Moncut 50WP (1.0 lb/a).....	3,5
Headline 2.08EC (12.0 fl oz/a)	2,4
Folicur 3.6F (7.2 fl oz/a)	5

¹First application made on June 15 and subsequent applications applied on two week intervals (June 29, July 13, July 27, August 10)

Table 2. Peanut variety evaluation with no fungicide sprays, Northeast Research Station, Macon Ridge Branch, Winnsboro, 2005

Variety	In From Row Closure	July 27 TSWV Plts/50 ft	August 31 Stem Rot Hits/50 Ft
GA Green	10.0	6.3	7.5
GA 01R	8.0	2.1	3.0
GA 03L	5.7	3.0	3.3
Tifrunner	8.1	2.3	0.7
LSD (P=0.05)	2.2	2.0	3.8

Table 3. Peanut variety evaluations, Shackleford Farm, Bastrop, LA, 2005

Variety	Stem Rot Hits / 100 Row Feet	TSWV Plts/20 Ft	Yield lb/A
GA Green.....	4.8	12.0	3472
GA 01R.....	4.8	4.5	4419
GA 03L	14.0	5.5	3314
Tifrunner	4.0	2.0	2999
LSD (P=0.05)			