

Report to the Georgia Agricultural Commodity Commission for Peanuts-2007**Integration of New Resistant Genotypes, Conservation Tillage Systems and Reduced Fungicide inputs for Peanut Leaf Spot Control**

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Small plot replicated studies were conducted in 2007 to determine the effects of new moderately resistant cultivars and breeding lines, and reduced fungicide inputs on leaf spot epidemics. In addition, the genotype effects on tomato spotted wilt virus, and yield were also examined.

In 2007, leaf spot epidemics in the small plot tests at Tifton were moderate to heavy, especially late in the season. Previous tests had dealt primarily with early leaf spot. Late leaf spot was the prevalent foliar disease in 2007. Leaf spot epidemics were suppressed in cultivars Georgia-01R, Georgia-03L, York and Tifguard and in breeding line CRSP-910 compared to Georgia Green. Suppression of leaf spot in Georgia-03L and Tifguard are particularly noteworthy, since they are medium maturity cultivars with excellent resistance to TSWV as well. The fungicide regimes consisted of a) Application of Headline 9.0 fl oz/A at ca. 45 days after planting, followed by four applications of Provost 8.0 fl oz/A and one application of Bravo 1.5 pt/A; b) a four spray regime of Headline 9 fl oz/A and two applications of Provost 8.0 fl oz/A + 0.5 pt/A of Bravo and one application of Bravo 1.5 pt/A; c) a three spray regime consisting of a delayed application of Headline 9.0 fl oz/A and two applications of Provost 8.0 fl oz/A + 0.5 pt/A of Bravo; and d) nontreated control. In separate experiments, reduced fungicide regimes were examined on York, Georgia-03L, and Carver cultivars as part of Peanut R_x validation.

Leaf spot ratings in nonsprayed plots of several genotypes were considerably better than Georgia Green at the last Oct 17 rating (Table 1). However, none of the later maturing genotypes had final leaf spot ratings lower than those of Georgia-03L or Tifguard at that time, and leaf spot increased dramatically in all the late maturing lines during the last two weeks. There was little difference in leaf spot control or yield among the 3, 4 or 6 application treatments on Georgia-03L, Tifguard or York. These results indicate that the combination of leaf spot resistance with medium maturity may allow reducing number of fungicide applications for leaf spot control without subjecting the peanuts to the time of greatest potential for leaf spot development. Results were similar for leaf spot control on York and Georgia-03L in the Peanut R_x experiments, with reduced regimes providing leaf spot control and yield similar to the full season regimes.

Table 1. Effect of peanut genotype and fungicide regime on late leaf spot, Tifton, GA 2007.

Fungicide Trt. Fung Appl.	Leaf Spot Ratings*					Yield				
	Oct 17, 2007					Lb/A				
	0	3	4	6		0	3	4	6	
	0	2	3	6	Avg	0	2	3	6	Lsd
1. Ga. Green	8.8	5.7	5.9	5.6		2946	4033	4327	4039	518
2. Ga.-03L	7.1	4.8	5.0	4.8		4591	4916	4434	5032	518
3. Tifguard	6.5	5.3	5.2	5.0		4745	5078	4927	5068	518
4. Ga.-01R	6.9	4.9	5.2	5.1		2459	3609	3089	3714	518
5. CRSP-910	8.1	6.5	6.8	6.5		2680	3861	3824	4197	518
6. York	6.5	5.6	5.5	5.4		3360	4320	4178	4581	518
LSD						518				

* Florida 1-10 scale, where 1 = no leaf spot, and 10 = defoliated/killed by leaf spot.

Table 2. Fungicide treatments evaluated in Peanut R_x experiments, 2007

Treatment		APPLICATIONS (Days after Planting)											
1	Headline 9 oz			49									
	Provost 8 oz + Bravo 0.5 pt						64			88			
	Bravo 1.5 pt											109	
2	Headline 9 oz				57								
	Provost 8 oz + Bravo 0.5 pt							74				106	
3	Tilt Bravo 2.25 pt	33		49									
	Abound 18.3 oz					60			88				
	Bravo 1.5 pt							74			106		114
4	Tilt Bravo 2.25 pt		40					74					
	Abound 18.3 oz					60			88				
	Bravo 1.5 pt											109	
5	Tilt Bravo			49									
	Abound 12 oz + Bravo 1.0 pt						64		88				
	Bravo 1.5 pt											109	

Table 3. Effect of fungicide treatment on leaf spot and peanut yield Tifton, GA 2007.

	Leaf Spot						Yield					
	Treatment*						Treatment*					
Cultivar	1	2	3	4	5	lsd	1	2	3	4	5	lsd
Ga-03L	1.2	1.3	1.4	1.2	1.3	Ns**	3692	3936	3956	3944	3628	ns**
York	1.8	2.6	1.7	1.5	1.8	0.7	4148	4405	4178	4125	4369	ns

*Numbers refer to treatment numbers in Table 2. ** "ns" indicates no significant difference