PEANUT (*Arachis hypogaea* 'Gregory')
Late leaf spot; *Cercosporidium personatum*
Early leaf spot; *Cercospora arachidicola*
Southern stem rot; *Sclerotium rolfsii*

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Evaluation of foliar fungicides for the control of peanut diseases in North Carolina, 2006.

A trial was established in an irrigated field at the Peanut Belt Research Station in Lewiston-Woodville, NC. Plots were four rows wide x 35 ft long and were arranged in a randomized complete block design with four replications. Except for disease control, standard production practices as recommended by the NC State University Extension Service (NC Agric. Extension Serv. Bull AG-331) were followed. Fungicide treatments were applied with a four-row tractor-mounted sprayer equipped with hollow cone nozzles. Spray volume was 15 gal/A. Fungicide sprays were applied according to a calendar-based schedule starting on 17 Jul (spray 1). Subsequent sprays were applied at ca. 2-wk intervals on 31 Jul (spray 2), 15 Aug (spray 3), 28 Aug (spray 4), and 11 Sep (spray 5). All data were collected on the center two rows of each plot. Foliar disease was evaluated on 6 Sep and 2 Oct by estimating the percentage of leaflets with one or more leaf spot lesions. Southern stem rot was evaluated by counting the number of symptomatic plants immediately after digging on 4 Oct. Plots were harvested on 13 Oct.

Rainfall was above normal during the growing season, except for a hot, dry period in Aug. Late leaf spot was the predominant foliar disease but early leaf spot was also present. Southern stem rot was less severe than normal, and incidence of web blotch, Cylindrocladium black rot, Sclerotinia blight, and Tomato Spotted Wilt was very low and scattered in the field. Leaf spot incidence in untreated plots had reached 50% by 6 Sep and exceeded 90% on 2 Oct (Table 1). Except for the treatment with three consecutive sprays of V-10135 at 16 fl oz/A, all spray programs resulted in significantly less leaf spot than the untreated control. Similarly, all treatments reduced defoliation and increased yield relative to the untreated control. Stem rot incidence was highest (36 infected plants/70 ft of row) in untreated plots. Stem rot incidence in many treatments was statistically equal to the treatment with Folicur 7.6 fl oz/A (sprays 2,3,4) and Bravo 1.5 pt/A (sprays 1,5), which had an average of 3.3 infected plants/70 ft of row. Contrasts indicated that mixing Folicur or Tebuzol with Bravo improved leaf spot control over the unmixed fungicides, and that treatments with two or more applications of Folicur or Tebuzol resulted in significantly greater incidence of leaf spot than treatments with other fungicides (Table 2). Defoliation, stem rot control, and yield effects were not significant for either contrast.

Table 1.

Treatment[Z], rate/A, spray timing	Leaf spot[Y, X] % Sep 6		Leaf spot[Y, X] % Oct 2		Defoliation[X] %		Stem rot count[X, W]		Yield[X, V] lb/A	
Untreated	50.0	a	93.0	a	92.4	a	36.5	a	2789	e
Bravo 1.5 pt (1,5), Folicur 3.6F 7.2 fl oz + Induce 1.25% (2,3) Headline 250EC 9 fl oz (4)	4.5	c	26.3	fgh	36.3	d	12.5	abcd	4505	abc
Bravo 1.5 pt (1,5), V-10116 4 fl oz (2,3), Headline 250EC 9 fl oz	3.4	c	36.9	efg	36.9	d	12.0	bcd	4703	a
Bravo 1.5 pt (1,4,5), Headline 250EC 9 fl oz (2,3)	2.5	c	33.8	efg	38.8	cd	12.5	abcd	4074	bcd
Bravo 1.5 pt (1,5), V-10116 4 fl oz + Induce 1.25% (2,3,4)	1.4	c	56.9	bcd	40.6	cd	10.8	abcd	4535	abc
V-10116 4 fl oz + Induce 1.25% (1,2,5), Headline 250EC 9 fl oz (3,4)	1.4	c	22.5	gh	33.1	d	5.5	bcd	4545	abc
Bravo 1.5 pt (1,5), V-10135 16 fl oz (1,2,3)	14.6	b	91.1	a	70.0	b	26.5	abc	3647	d
Bravo 1.5 pt (1,3,5), Absolute 500SC 3.5 fl oz + Induce 1.25% (2,4)	2.9	c	48.8	cde	39.4	cd	24.5	abc	4084	bcd
Bravo 1.5 pt (1,5), Tebuzol 3.6F 7.2 fl oz (2,3,4)	2.1	c	64.4	bc	40.6	cd	12.5	abcd	4567	abc

Bravo 1.5 pt (1,5), Folicur 3.6F 7.2 fl oz (2,3,4)	3.3	c	69.4	b	48.1	c	3.3	d	4037	cd
Bravo 1.5 pt (1,5), Tebuzol 3.6F 7.2 fl oz + Bravo .75 pt (2,3,4)	1.3	c	40.0	defg	38.8	cd	12.5	abcd	4130	bcd
Bravo 1.5 pt (1,5), Folicur 3.6F 7.2 fl oz + Bravo .75 pt (2,3,4)	2.3	c	49.4	cde	39.4	cd	10.0	bcd	4229	abc
Tilt Bravo SE 2 pt (1,2,3,4,5)	1.5	c	41.9	def	36.3	d	13.0	abcd	4572	abc
Tilt/Bravo SE 2 pt (1), Abound 2.08F 12 oz (2,4), Folicur 3.6F 7.2 fl oz + Bravo 1 pt (3), Bravo 1.5 pt (5)	4.8	c	46.3	de	38.8	cd	18.3	abcd	4317	abc
Bravo 1.5 pt (1), Headline 250EC 9 fl oz (2), Folicur 3.6F 7.2 fl oz + Bravo 1.5 pt (3,5), Headline 250EC 12 oz	2.6	c	11.6	h	36.3	d	4.3	cd	4298	abc
Bravo 1.5 pt (1,3,5), Headline 250 EC 12 fl oz (2,4)	1.4	c	13.8	h	35.0	d	18.0	abcd	4622	ab
Bravo 1.5 pt (1), Headline 250 EC 12 fl oz (2,4), Endura 9 oz (3,5)	4.9	c	37.5	efg	36.9	d	16.0	abcd	4646	ab
MSD	6.8		17.7		10.0		19.6		572.2	

[Z] Bravo Weather Stik formulation was used in all Bravo treatments.
[Y] Percentage of leaflets with one or more leaf spot lesions
[X] Means followed by the same letter within a column are not significantly different according to Waller-Duncan *k*-ratio *t*-test (*k* = 100);
[W] Incidence of stem rot per 70 ft of row based on counts of symptomatic plants taken immediately after digging
[V] Yield at 7% moisture.

Table 2.

	Effect mean			
Contrast	Leaf spot [Z] % Oct 2	Defoliation %	Stem rot count [Y]	Yield [X] lb/A
Folicur or Tebuzol without Bravo vs	66.9	44.4	7.9	4302
Folicur or Tebuzol mixed with Bravo	44.7	39.1	11.3	4180
P > F	*0.0020*	*.1793*	*0.5553*	*0.5615*
Folicur or Tebuzol vs	49.9	40.6	10.2	4295
Other fungicides	40.1	40.2	14.7	4368
P > F	*0.0101*	*.8298*	*0.1475*	*0.5137*

[Z] Percentage of leaflets with one or more leaf spot lesions
[Y] Incidence of stem rot per 70 ft of row based on counts of symptomatic plants taken immediately after digging
[X] Yield at 7% moisture