

XX. EVALUATION OF IN-FURROW AND FOLIAR TREATMENTS FOR CONTROL OF SOILBORNE DISEASES OF PEANUT (TAREC Research farm)

- A. PURPOSE: To determine the efficacy of in-furrow and foliar treatments for control of soilborne and foliar diseases of peanut
- B. EXPERIMENTAL DESIGN:
1. Four randomized complete blocks separated by 15-ft alleyways
 2. Two, 35-ft rows per plot with 36-in. row spacing
 3. Seeding rate of three seed/ft of row
- C. APPLICATION OF TREATMENTS: In-furrow treatments (F) were mixed in water and applied in a volume of 5 gal/A through a microtube to the seed furrow when planting (Apr 28). Foliar sprays of fungicides were applied with three, D₃23 nozzles/row delivering 15 gal/A. The initial application was applied at flowering (R₁ – Jul 5) and thereafter according to the Va. Peanut Leaf Spot Advisory Program until beginning maturity (R₇ – Sep 8).
- D. TREATMENT AND RATE/A:
1. Untreated check
 2. Echo 720SC 1.5 pt (1st, 2nd, 3rd, 4th, 5th spray)
 3. JAU6476 480SC 5.7 fl oz (F)
Echo 720SC 1.5 pt (1st, 2nd, 3rd, 4th, 5th spray)
 4. JAU6476 480SC 2.38 fl oz + Folicur 432SC 5.3 fl oz (1st, 2nd, 3rd spray)
Echo 720SC 1.5 pt (4th, 5th spray)
 5. JAU6476 480SC 5.7 fl oz (F)
JAU6476 480SC 2.38 fl oz + Folicur 432SC 5.3 fl oz (1st, 2nd, 3rd spray)
Echo 720SC 1.5 pt (4th, 5th spray)
 6. Headline 250EC 12 fl oz (1st, 3rd spray)
Echo 720SC 1.5 pt (2nd, 4th, 5th spray)
 7. Folicur 3.6F 7.2 fl oz (1st, 2nd, 3rd spray)
Echo 720SC 1.5 pt (4th, 5th spray)
 8. Headline 250EC 12 fl oz (1st, 3rd spray)
Folicur 3.6F 7.2 fl oz (2nd spray)
Echo 720SC 1.5 pt (4th, 5th spray)
- E. ADDITIONAL INFORMATION:
1. Location: TAREC Research Farm, Hare Rd., Suffolk
 2. Crop history: Corn 2004; Peanut 2003, Corn 2002
 3. Planting date and cultivar: 28 April 2005; VA 98R
 4. Soil fertility report:

pH.....	6.4
Ca	327ppm
Mg	37 ppm
P	29 ppm
K.....	42 ppm
Zn	0.4 ppm
Mn	2.0 ppm
Soil type	Kenansville loamy sand

5. Herbicide:
 - Pre-plant - Prowl 1 pt/A (31 Mar)
 - Dual II Magnum 1 pt + Strongarm 0.23 fl oz/A (7 Apr)
 - Pre-emergence - Dual II Magnum 1 pt + Strongarm 0.23 fl oz/A (13 May)
 - Post-emergence – Poast Plus 2 pt + ChemOil 1 pt/A (21 Jul)
6. *Cylindrocladium* black rot control: Sectagon 15 gal/A (1 Apr)
7. Insecticide: Temik 15G 7 lb/A in furrow (28 Apr)
 - Orthene 97S 6 oz/A (27 May, 14 Jun)
 - Lorsban 13 lb/A (27 Jun)
8. Acaricide: Danitol 6 fl oz/A (22 Aug)
9. Additional crop management:
 - a. Liquid boron 1 qt/A (31 Mar)
 - b. Liquid Mn 1 qt/A (20 Jun, 18 Jul, 2 Aug)
 - c. Landplaster: Peanut Maker 1500 lb/A (22 Jun)
 - d. Cultivation: 27 Jun
 - e. Irrigation: ca. 1 in. (23 Jun, 10 Aug, 1 Sep, 13 Sep)
10. Harvest date: 18 Oct 2005

Table 76. Effect of treatments on emergence and disease incidence in peanut.

Treatment, rate/A and application date ¹	Plants/ft ² (Jun 13)	Seedling disease ³ (Jun 21)	% leaf spot ⁴		
			Aug 5	Aug 27	Oct 4
Untreated check	2.3	0.5	5.5 a	38.8 a	94.8 a
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8).	2.4	1.3	0.1 b	0.1 b	0.5 b
JAU6476 480SC 5.7 fl oz (F)					
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8).	2.6	0.0	0.1 b	0.0 b	0.8 b
JAU6476 480SC 2.38 fl oz					
+ Folicur 432SC 5.3 fl oz (7/5, 7/21, 8/4)					
Echo 720SC 1.5 pt (8/19, 9/8).....	2.2	0.8	0.0 b	0.1 b	0.5 b
JAU6476 480SC 5.7 fl oz (F)					
JAU6476 480SC 2.38 fl oz					
+ Folicur 432SC 5.3 fl oz (7/5, 7/21, 8/4)					
Echo 720SC 1.5 pt (8/19, 9/8).....	2.5	0.0	0.1 b	0.0 b	0.3 b
Headline 250EC 12 fl oz (7/5, 8/4)					
Echo 720SC 1.5 pt (7/21, 8/19, 9/8).....	2.4	1.0	0.1 b	0.0 b	0.6 b
Folicur 3.6F 7.2 fl oz (7/5, 7/21, 8/4)					
Echo 720SC 1.5 pt (8/19, 9/8).....	2.3	0.3	0.1 b	0.3 b	1.0 b
Headline 250EC 12 fl oz (7/5, 8/4)					
Folicur 3.6F 7.2 fl oz (7/21)					
Echo 720SC 1.5 pt (8/19, 9/8).....	2.4	0.5	0.0 b	0.3 b	0.5 b
LSD.....	n.s.	n.s.	3.4	11.9	2.0

¹ F=in furrow (Apr 28). Foliar fungicides were applied at R₁ growth stage (flowering) and thereafter according to the leaf spot advisory.

² Determined from counts of two, 35-ft rows per plot.

³ Number of dead or dying seedlings per plot.

⁴ Leaf spot rating scale: 0=none, 100=spots on all leaflets.

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05). "n.s." = not significant. Arcsine transformation of percentage data was made in analysis to determine statistical significance.

Table 77. Effect of selected treatments on percent colonization of taproots by *Cylindrocladium parasiticum*, *Aspergillus flavus*, *Aspergillus niger* and *Rhizoctonia solani*.

Treatment, rate/A and application date*	Biopsy test (%+)**			
	<i>C. parasiticum</i>	<i>A. flavus</i>	<i>A. niger</i>	<i>R. solani</i>
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8)	7 a	4	0 b	3
JAU6476 480SC 5.7 fl oz (F)				
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8)	1 b	5	10 a	5
JAU6476 480SC 5.7 fl oz (F)				
JAU6476 480SC 2.38 fl oz				
+ Folicur 432SC 5.3 fl oz (7/5, 7/21, 8/4)				
Echo 720SC 1.5 pt (8/19, 9/8)	2 b	15	1 b	6
LSD.....	5	n.s.	7	n.s.

* F=in furrow (28 Apr). Foliar fungicides were applied beginning at R₁ growth stage (flowering) and thereafter according to the leaf spot advisory.

** Data are percent recovery of *Cylindrocladium parasiticum* from 25 taproots selected at random from each plot. Taproots were assayed with a selective medium on 3 Oct.

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05). "n.s." = not significant.

Table 78. Effect of treatments on disease incidence, severity of defoliation and the yield in peanut.

Treatment, rate/A and application date ¹	CBR ² (Oct 4)	% web blotch ³ (Oct 4)	% defoliation ⁴ (Oct 4)	Yield ⁵ (lb/A)
Untreated check	9.0	2.8 a	50.0 a	3557 c
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8)....	7.8	0.0 b	0.0 b	4031 bc
JAU6476 480SC 5.7 fl oz (F)				
Echo 720SC 1.5 pt (7/5, 7/21, 8/4, 8/19, 9/8)....	5.8	0.0 b	0.0 b	4312 ab
JAU6476 480SC 2.38 fl oz				
+ Folicur 432SC 5.3 fl oz (7/5, 7/21, 8/4)				
Echo 720SC 1.5 pt (8/19, 9/8).....	8.0	0.0 b	0.0 b	4555 a
JAU6476 480SC 5.7 fl oz (F)				
JAU6476 480SC 2.38 fl oz				
+ Folicur 432SC 5.3 fl oz (7/5, 7/21, 8/4)				
Echo 720SC 1.5 pt (8/19, 9/8).....	7.3	0.0 b	0.0 b	4581 a
Headline 250EC 12 fl oz (7/5, 8/4)				
Echo 720SC 1.5 pt (7/21, 8/19, 9/8)	10.5	0.0 b	0.0 b	4517 a
Folicur 3.6F 7.2 fl oz (7/5, 7/21, 8/4)				
Echo 720SC 1.5 pt (8/19, 9/8).....	5.5	0.0 b	0.0 b	4478 ab
Headline 250EC 12 fl oz (7/5, 8/4)				
Folicur 3.6F 7.2 fl oz (7/21)				
Echo 720SC 1.5 pt (8/19, 9/8).....	9.5	0.0 b	0.0 b	4632 a
LSD.....	n.s.	0.9	7.3	475

¹ F=in furrow (28 Apr). Foliar fungicides were applied beginning at R₁ growth stage (flowering) and thereafter according to the leaf spot advisory.

² Number of symptomatic plants per plot.

³ Web blotch rating scale: 0=none, 100=blotches on all leaflets. Note: ratings were also made on 27 Aug for CBR, southern stem rot, web blotch and sclerotinia blight. Only traces of these diseases were noted at that time.

⁴ Defoliation rating scale: 0=none, 100=no leaves on plants.

⁵ Yields are weight of peanuts with 7% moisture. Peanuts were dug on 3 Oct and harvested on 18 Oct.

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05). "n.s." = not significant. Arcsine transformation of percentage data was made in analysis to determine statistical significance.