

XVI. EVALUATION OF SEED TREATMENTS FOR CONTROL OF EARLY SEASON DISEASES OF PEANUT (TAREC Research farm)

- A. PURPOSE: To compare the efficacy of standard seed treatments
- B. EXPERIMENTAL DESIGN:
1. Split-plot design with four randomized complete blocks separated by 15-ft alleyways
  2. Two, 30-ft rows per plot with 36-in. row spacing
  3. Seeding rate of four seed/ft of row
- C. APPLICATION OF TREATMENTS: Dust treatments were applied with a Gustafson lab treater. Seed were planted ca. 2 in. deep and spaced 3 in. apart with a KMC planter.
- D. TREATMENT AND RATE (Main plots):
1. Vitavax PC 4 oz/cwt
  2. Dynasty PD 5.6DS 4 oz/cwt
- E. SEED TYPE (Sub plots): Normal and speckled seed of Virginia 98R. *Cylindrocladium parasiticum* was recovered from 96% of speckled seed and 2% of normal seed in April 2005.
1. Normal seed
  2. Speckled seed
- F. ADDITIONAL INFORMATION:
1. Location: TAREC Research farm, Hare Rd., Suffolk
  2. Crop history: Corn 2004; Peanut 2003, Corn 2002
  3. Planting date and cultivar: May 11, 2005; VA 98R
  4. Soil fertility report:
 

pH.....	6.9	K .....	28 ppm
Ca .....	301 ppm	Zn.....	0.4 ppm
Mg .....	67 ppm	Mn.....	2.3 ppm
P .....	29 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 (19 Apr)
    - Pre-emergence - Dual II Magnum 1 pt + Strongarm 0.23 fl oz/A (13 May)
  6. Soil fumigation: Sectagon 42% 7.5 gal/A (18 Apr)
  7. Insecticide: Orthene 97S 6 oz/A (1 Jun, 14 Jun)
    - Lorsban 15G 13 lb/A (27 Jun)
  8. Acaricide: Danitol 6 fl oz/A (11 Aug, 22 Aug)
  9. Leaf spot control: Bravo WS 1.5 pt (18 Jul, 2 Aug), Headline 9 fl oz/A (22 Aug)
  10. Additional crop management:
    - a. Liquid boron 1 qt/A (31 Mar)
    - b. Landplaster: Peanut Maker 1500 lb/A (23 Jun)
    - c. Liquid Mn 1 qt/A (20 Jun, 18 Jul, 2 Aug)
    - d. Irrigation: ca. 1 in. (24 Jun, 1 Sep, 6 Sep)
    - e. Cultivation: 27 Jun
  11. Harvest date: 5 Oct 2005

Table 53. Effect of seed treatment and seed type on emergence in peanut.

Treatment, rate/cwt seed and seed type	Plants/ft*				Diseased plants** (Jun 13)	
	May 25		Jun 8		Normal	Speckled
	Normal	Speckled	Normal	Speckled		
Vitavax PC 4 oz .....	2.9	2.5	3.6	3.4	0.3	1.5
Dynasty PD 5.6DS 4 oz .....	3.0	2.7	3.7	3.5	0.0	1.0
<b>LSD</b> .....	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>
<b>Treatment mean</b>						
Vitavax PC 4 oz .....	2.7		3.5		0.9	
Dynasty PD 5.6DS 4 oz .....	2.9		3.6		0.5	
<b>LSD</b> .....	<b>n.s.</b>		<b>n.s.</b>		<b>n.s.</b>	
<b>Seed-type mean</b>						
Normal seed .....	2.9	a	3.7		0.1	b
Speckled seed.....	2.6	b	3.4		1.3	a
<b>LSD</b> .....	<b>0.3</b>		<b>n.s.</b>		<b>0.9</b>	
<b>Split-plot analysis</b>						
Treatment .....	.1987		.5038		.5195	
Seed type.....	.0373		.0948		.0240	
Treatment x seed type .....	.6464		.8742		.7502	

\* Determined from counts of two, 30-ft rows per plot.

\*\* Total number of dead and dying seedlings per plot.

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 54. Effect of seed treatment and seed type on seedling disease and incidence of *Cylindrocladium* Black Rot (CBR) in peanut.

Treatment, rate/cwt seed and seed type	CBR*			
	Aug 29		Sep 26	
	Normal	Speckled	Normal	Speckled
Vitavax PC 4 oz .....	5.3	11.0	22.8	37.3
Dynasty PD 5.6DS 4 oz .....	7.5	11.0	29.5	39.8
<b>LSD</b> .....	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>
<b>Treatment mean</b>				
Vitavax PC 4 oz .....	8.1		30.0	
Dynasty PD 5.6DS 4 oz .....	9.3		34.6	
<b>LSD</b> .....	<b>n.s.</b>		<b>n.s.</b>	
<b>Seed-type mean</b>				
Normal seed .....	6.4		26.1	b
Speckled seed.....	11.0		38.5	a
<b>LSD</b> .....	<b>n.s.</b>		<b>7.1</b>	
<b>Split-plot analysis</b>				
Treatment .....	.6302		.3803	
Seed type.....	.1375		.0052	
Treatment x seed type .....	.6913		.4893	

\* Number of symptomatic plants per plot.

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 55. Effect of seed treatment and seed type on incidence of Southern stem rot and yield.

Treatment, rate/cwt seed and seed type	Southern stem rot (Aug 29)*		Yield (lb/A)**	
	Normal	Speckled	Normal	Speckled
Vitavax PC 4 oz .....	0.5	0.3	2614	2001
Dynasty PD 5.6DS 4 oz .....	1.0	1.0	2410	2235
<b>LSD</b> .....	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>	<b>n.s.</b>
<b>Treatment mean</b>				
Vitavax PC 4 oz .....	0.4		2308	
Dynasty PD 5.6DS 4 oz .....	1.0		2322	
<b>LSD</b> .....	<b>n.s.</b>		<b>n.s.</b>	
<b>Seed*type mean</b>				
Normal seed .....	0.8		2512 a	
Speckled seed.....	0.6		2118 b	
<b>LSD</b> .....	<b>n.s.</b>		<b>254</b>	
<b>Split-plot analysis</b>				
Treatment .....	.3416		.9508	
Seed type.....	.8770		.0089	
Treatment x seed type .....	.8770		.0789	

\* Counts of infection centers in the two center rows of each plot or a total of 60 ft of row. An infection center was a point of active growth by *Sclerotium rolfsii* and included 6 in. on either side of that point.

\*\* Yields are weight of peanuts with 7% moisture. Peanuts were dug on 28 Sep and harvested on 5 Oct.

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