

XIII. EVALUATION OF SEED TREATMENTS FOR CONTROL OF SEEDLING DISEASES OF PEANUT (TAREC Research farm)

- A. PURPOSE: To compare the efficacy of seed and in-furrow treatments for control of seedling diseases of peanut
- B. EXPERIMENTAL DESIGN:
1. Four randomized complete blocks separated by 15-ft alleyways
 2. Two, 30-ft rows per plot
 3. Seeding rate of three seed/row ft
- C. APPLICATION OF TREATMENTS: Dust and liquid treatments were applied to seed with a Gustafson lab treater. The volume of liquid treatment was standardized at 12 fl oz/cwt by dilution with water. Seed were planted ca. 2 in. deep and spaced ca. 4 in. apart with a KMC planter.
- D. TREATMENT AND RATE:
1. Untreated check
 2. Vitavax PC 4 oz/cwt
 3. Allegiance FL 0.75 fl oz/cwt
 4. Dynasty PD 3 oz/cwt
 5. KNF 4332 3 oz/cwt
 6. KNF 4332 2.5 oz/cwt
- 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: 2 May 2005, Perry, Seed Lot 313, 65% germination.
Biopsy of 50 seed prior to treatment found the following incidence of fungi in seed:
14% Rhizopus, 74% Pennicillium, 8% Fusarium, 52% Aspergillus (flavus group), 12% Trichoderma.
 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, 22 Sep), 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 (6 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 42. Effect of seed treatment on emergence and disease incidence.

Treatment and rate/cwt seed	Plants/ft*		Diseased plants ** (Jun 13)
	May 16	May 31	
Untreated check	0.05	2.55 a	3.5 a-c
Vitavax PC 4 oz/cwt	0.05	2.10 c	2.0 bc
Allegiance FL 0.75 fl oz/cwt	0.02	2.13 bc	5.0 ab
Dynasty PD 3 oz/cwt	0.01	2.39 ab	1.5 c
KNF 4332 3 oz/cwt.....	0.05	2.17 bc	1.8 c
KNF 4332 2.5 oz/cwt.....	0.03	2.18 bc	6.0 a
LSD.....	n.s.	0.29	3.0

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

** Counts of symptomatic and/or dead plant per plot. Note: a random sample of 10 dying seedlings was assayed on Jun 13: 40% tested positive for *Cylindrocladium parasiticum*., 10% were positive for *Rhizoctonia solani*.

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 43. Disease incidence in peanut.

Treatment and rate/cwt seed	TSWV*		CBR*		Stem rot**	
	Jun 21	Aug 29	Aug 29	Sep 26	Aug 29	Sep 26
Untreated check	2.3	13.5	2.3	10.3	0.0	0.3
Vitavax PC 4 oz/cwt	3.0	15.0	3.0	9.0	0.0	0.0
Allegiance FL 0.75 fl oz/cwt	2.3	11.0	3.5	7.0	0.5	0.5
Dynasty PD 3 oz/cwt	1.5	16.3	2.5	11.3	0.8	0.3
KNF 4332 3 oz/cwt.....	2.8	17.5	2.5	11.5	0.0	0.5
KNF 4332 2.5 oz/cwt.....	3.8	13.8	2.8	10.0	0.5	0.0
LSD.....	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

* Number of symptomatic plants per plot.

** 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.

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 44. Yield of peanut.

Treatment and rate/cwt seed	Yield* (lb/A)
Untreated check	2873
Vitavax PC 4 oz/cwt	2521
Allegiance FL 0.75 fl oz/cwt	3034
Dynasty PD 3 oz/cwt	2477
KNF 4332 3 oz/cwt.....	2961
KNF 4332 2.5 oz/cwt.....	2448
LSD.....	n.s.

* Yields are weight of peanuts with 7% moisture. Peanuts were dug on 27 Sep and harvested on 1 Oct 2005.

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.