

Cottonseed Treatment Research
(Two Year Summary - 1981 & 82)

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Summary

Based on these two years of data, it is suggested that when moderate to heavy Rhizoctonia pressure is a possibility and stand losses might exceed 30-40% as is often the case in early season cool temperature plantings (soil temperature less than 63^oF) cotton planting seed should be treated with either 2.4 oz of Vitavax, or 2.66 oz of Demosan or Terracoat L-21 at 12.00 oz + Super X granules at 10 lbs/Ac. No plot data are available comparing these seed treatments (with the exception of L-21) when combined with Super X granules, but commercial field observations suggest that the Super X in-furrow treatment in combination with a Vitavax seed treatment is compatible and offers a strong deterrent to Rhizoctonia.

It also appears that higher concentrations of the tested fungicides are necessary when seed vigor is low.

1981 Combined Location Results
(Deltapine 61)

Seed from two varieties was treated with various fungicides by the respective manufacturers, formulators or seed treaters and planted in replicated plots in Marana, Phoenix and Yuma.

Rhizoctonia pressure was very heavy as represented by the fact that the mean stand percentage for all DP-61 and Pima treatments with Rhizoctonia were 34% and 44%, respectively.

The 1.2 oz and 1.75 oz doses (including the commercially applied material) of Vitavax were significantly (statistically) less effective than the 2.4 oz rate of Vitavax or the 2.66 and 4.23 oz of Demosan. The 3.0 oz dosage of Vitavax was actually significantly less effective than the 2.4 oz rate.

The Demosan dosages of 2.66 and 4.23 oz were significantly more effective than any Vitavax treatment.

Terracoat L-21 alone was no more or less effective than the Vitavax treatments, but less effective than the 2.66 and 4.23 oz rates of Demosan.

L-21 + Super X granules was the superior control combination in this variety.

(Pima S-5)

The average emergence for Pima S-5 was 44% or about 10% higher than for Deltapine 61. We attribute this to greater seedling vigor in the Pima S-5 variety.

In this variety, the 1.2 oz dosage of Vitavax was not significantly different from other Vitavax dosages with the exception of the 1.75 dosage applied commercially which was significantly less effective.

Demosan at the 1.98 and 2.66 oz dosage was not significantly better than the 1.75, 2.4 and 3.00 oz Vitavax rates, but significantly better than the commercially applied 1.75 oz and 1.2 oz dosage.

Demosan at the 4.23 oz rate was significantly better than any of the Vitavax dosages.

Terracoat L-21 was as effective as the 1.2 oz rate of Vitavax or the commercially applied 1.75 oz dosage.

The results of in-furrow Super X in combination with L-21 was equal to all Demosan treatments and significantly higher than all Vitavax treatments.

1982 Location Results
(Marana)

Disease pressure in the plots varied from moderate at Marana to light in Phoenix and Yuma. The average stands for those chemical treatments with Rhizoctonia in Marana, Phoenix and Yuma were 57%, 63% and 63%, respectively. The light to moderate stand loss may be related to the warm weather at planting and a vigorous seed. In Marana, the 1.2 oz dosage of Vitavax was not significantly different from the other Vitavax dosages, or the 1.98 oz of Demosan or Terracoat L-21, but provided significantly lower stand numbers than did the higher rates of Demosan.

L-21 + Super X and Super X alone were significantly better than any of the registered seed treatments.

(Phoenix)

There was no significant difference among either the seed treatments or the in-furrow application of Super X granules.

(Yuma)

The 1.2 oz dosage of Vitavax was equal to all seed treatments including the commercially applied 1.75 dosage with the exception of the laboratory applied 1.75 oz of Vitavax and the 4.23 oz dosage of Demosan which provided significantly greater stands.

The Super X alone, the laboratory applied 1.75 oz dosage of Vitavax, and Demosan at the 4.23 oz dosage were not significantly different but were significantly better than Terracoat L-21, Demosan at the 4.56 oz rate and Vitavax at the 1.2 oz dosage.

(1982 Combined Locations)

In combining all the replications from all three locations, it was determined statistically that overall the 1.2 oz dosage of Vitavax was not significantly different from the 1.75, 2.40 and 3.00 dosages of Vitavax or the 1.98 oz dosage of Demosan. The 1.75 oz dosage (both laboratory and commercially applied) was equivalent to all rates of Vitavax and all rates of Demosan. L-21 + Super X granules was significantly better than all Vitavax dosages with the exception of the 2.4 oz dosage and the 2.66, 4.23 and 4.56 rates of Demosan. Super X granules alone were only superior to the 1.2 oz dosage rate of Vitavax.

1981 Arizona Cottonseed Treatment Study
(Results of Combined Locations)

Registered Materials	Dosage (a.i.) oz./CWT	Combined Locations 1981 ^{a,b}	
		DP-61	Pima S-5
Vitavax (Gustafson)	* 1.20	20 g	30 g
" (Cargill)	* 1.20	23 fg	38 efg
" (Gustafson)	* 1.75	24 fg	35 g
" (Cargill)	* 1.75	31 ef	44 def
" (Commercial) ^c	* 1.75	25 fg	31 g
" (Cargill)	* 2.40	35 d	48 cde
" (Cargill)	* 3.00	30 ef	45 def
Demosan (Cargill)	* 1.98	35 e	59 bcd
" (Cargill)	* 2.66	48 c	55 bcd
" (Cargill)	* 4.23	49 c	60 b
L-21 (Olin)	*12.00	31 ef	27 g
L-21 + Super X (Olin)	* ---	62 b	60 b
No Seed Treatment	* ---	5 h	9 h
No Seed Treatment	---	74a	71a

* Indicates that Rhizoctonia was incorporated into the seed line at planting time.

^aPercentage of seedlings surviving 30 days after planting (all tests planted in moisture).

^bDuncan's Multiple Range Test--treatment means (%) having the same letter in common are not significantly different at the 5% level.

^cGustafson product applied by commercial seed treating company.

ARIZONA COTTONSEED TREATMENT STUDY (1982)

Registered Materials	Dosage (a.i.) oz./CWT	Plot Locations			Combined 30 dy ^{a,b}
		Marana 30 dy ^{a,b}	Phoenix 30 dy ^{a,b}	Yuma 30 dy ^{a,b}	
Captan + Vitavax (Cargill)	* 1.20 + 1.20	47 g	59 de	54 cd	54 fg
" + " (Cargill)	* 1.20 + 1.75	53 defg	61 de	67 b	60 def
" + " (Gustafson) ^c	* 1.20 + 1.75	49 fg	63 cde	65 bc	59 ef
" + " (Cargill)	* 1.20 + 2.40	57 cdefg	64 bcd	64 bcd	62 cde
" + " (Cargill)	* 1.20 + 3.00	52 efg	63 cde	64 bcd	59 ef
Captan + Demosan (Cargill)	* 1.20 + 1.98	51 efg	64 bcd	63 bcd	59 ef
" + " (Cargill)	* 1.20 + 2.66	61 cde	65 bcd	66 bc	64 bcde
" + " (Cargill)	* 1.20 + 4.23	61 cde	67 bc	66 b	62 cde
Nusan + Demosan (Wilbur-Ellis)	* 1.75 + 4.56	62 cd	66 bcd	61 c	63 bcde
Terracoat L-21 (Olin)	* 12.00	49 fg	57 e	56 cd	54 fg
L-21 + Super X (Olin)	* 12.00 + 10 lb/Ac	72ab	64 bcd	64 bc	67 bc
Super X (Olin)	* 10 lb/Ac	68 b	61 de	69 b	65 bcde
No Seed Treatment	---	23 i	38 f	44 e	32 i
No Seed Treatment	---	72ab	69ab	65 bc	69 b
Captan + Vitavax (Gustafson) ^c	1.20 + 1.75	77ab	74a	82a	78a
<u>Experimental Materials</u>					
Apron + EPIC (Gustafson)	* 1.00 + 2.00	56 defg	79ab	63 bc	63 bcde
" + " (Gustafson)	* 1.00 + 3.00	66 bc	65 bcd	71a	67 bc
" + " (Gustafson)	* 1.00 + 4.00	68 b	69ab	68 b	68 bc
NT 1907 + Lesan (Mobay)	* 2.40 + 1.40	58 cdef	68abc	62 bc	63 bcde
" (Mobay)	* 2.40	49 fg	60 e	55 bcd	55 fg
" (Mobay)	* 4.00	50 fg	61 e	44 de	52 g
Etridiazol + OAC 4360 (Olin)	* 2.00 + 4.00	33 h	41 f	39 e	37 h

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 a Percentage of seedlings surviving 30 days after planting (all tests planted in moisture).
 b Duncan's Multiple Range Test--treatment means (%) having the same letter in common are not significantly different at the 5% level.
 c Gustafson product applied by commercial seed treating company.