REPORT OF THE SOIL FUNGICIDE COMMITTEE G. L. Scuimbato Delta Research and Extension Center Mississippi Agricultural and Forestry Experiment Station Stoneville, MS

Louisiana. K. S. McLean and G. W. Lawrence -(Evaluation of Seed Treatments and In-Furrow Fungicides). Five tests were conducted on the Northeast Louisiana University Johnson farm in 1998 to examine the efficacy of selected fungicides for the control of cotton seedling disease. The field had been in continuous cotton production for the last ten years and has a history of severe seedling disease. All granular in-furrow treatments were applied at the manufacturers recommended rates through applicator boxes mounted on a John Deere 900 series two row planter. The liquid formulations were applied with a single 8001 spray tip adjusted horizontally over the open furrow utilizing a pressurized CO₂ applicator calibrated to 10 All seed treatments were applied by the GPA. manufacturer. Treatments in each test were arranged in a randomized complete block design with five replications. Plots consisted of two rows 40 feet long. and on a 40 inch row spacing. Plots were planted April 24, 1998. Cotton stand was determined bi-weekly for six weeks after planting to determine the percent seedling stand loss due to damping off of the cotton seedlings. Cotton seedlings were collected and aseptically plated to Potato Dextrose Agar to isolate and identify the specific fungi present. All plots were hand harvested September 23, 1998 to determine the effects of the treatments on cotton yield.

Table 1. Seedling stand was lower in the *Pythium spp*. infested plots compared to the naturally infested plots. No significant differences were observed between treatments and the controls. The Terrazole 4E (3oz/a) + Terraclor 2E treatment in the naturally infested and inoculated plots produced significantly greater yields compared to the inoculated control.

Table 2. Seedling stand at 14, 28 and 42 days after planting found no significant differences in stand between any treatment. Seed cotton yields ranged from a low of 2352 lb/a to a high of 2781 lb/a for the control and Terraclor Super X treatments, respectively.

Table 3. Seedling stand at 14 days after planting found six of the nine treatments having significantly greater stands than the control. At 28 and 42 days after planting five of the seed fungicide combination treatments produced cotton stands which were significantly greater than the control treatment. The average yield for all seed fungicide treatments was 2188 lb/a indicating a 404 lb increase in yield over the control.

Table 4. Thirteen of the seed treatment combinations produced a significantly greater stand than the untreated control. The cotton stand in the RTU-PCNB and Apron FL were not significantly better than the control.

Table 5. No significant differences in stand or yield were observed in the 1998 season. Seed cotton yields were 3293 lb/a for the Terraclor Super X treatment compared to 3236 lb/a for the Ridomil Gold treatment.

Louisiana. P. D. Colyer and P. R. Vernon - Louisiana State University Agricultural Center. (Evaluation of In-Furrow Fungicides). Several cotton in-furrow fungicide trials were conducted at the Red River Research Station in Bossier City, LA, to evaluate the efficacy of soil fungicides for the control of cotton seedling diseases. The incidence of seedling disease in most trials was light to moderate.

The results of one trial planted on 9 April are presented in Table 6. Experimental design was a randomized complete block with four replications. Plots were four rows by 100 feet on 40-inch centers. Liquid formulations were applied with a single 2503 flat-fan spray tip over the open furrow using a pressurized CO₂ applicator calibrated to deliver 6.5 gpa. All plant populations and yield data were collected from the two center rows. Minium soil temperatures at four inches were in the lower 60s and 1.3 inches of rainfall were recorded during the final three weeks of April. There were a few differences in plant populations 21 days and 42 days after planting. All of the fungicide treatments except Ridomil Gold 4E had greater plant populations at 21 or 42 days after planting compared with the untreated control. There were no differences in seed cotton yield among treatments.

Mississippi. G. L. Sciumbato - (Evaluation of In-Furrow Fungicides). In-furrow fungicide combinations were evaluated in a test at the Mississippi Delta Research and Extension Center, Stoneville, MS. Stoneville 474 cottonseed, treated with the recommended fungicides, was planted on May 4. The experimental design was a randomized complete block with five replications. Plots were 2 rows, 40 feet long each. Sixty milliliters per 40 row feet of a 1:1 mixture of Rhizoctonia solani and Pythium spp. infested oats were applied in-furrow by means of belt cones at planting. Hopper-box treatments were applied by atomizing treatments onto seed in a tumbling seed treater. In-furrow granular treatments were applied at planting through cone planters mounted on a John Deere 9100 planter. Liquid treatments were applied by means of TX 4 nozzle tips using 46 psi of compressed air, 5 gpa in-furrow, applied at planting. Stand counts were take on May 20 and June 8. This test was harvested on September 30 with a two row picker modified for plot harvesting. Several of the in-furrow treatments significantly increased percent

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seedling survival over the untreated control on both counting dates (Table 7). None of the treatments yielded significantly higher over the untreated control.

Mississippi. G. L. Sciumbato - (Evaluation of In-Furrow Fungicides). A trial was conducted at the Mississippi Delta Research and Extension Center, Stoneville, MS, to evaluate in-furrow fungicide treatments. On May 5, Stoneville 474 cottonseed, treated with the recommended fungicides, was planted. Plots were 2 rows, 40 feet long each. The experimental design was a randomized complete block with five replications. Sixty milliliters per 40 row feet of a 1:1 mixture of Rhizoctonia solani and Pythium spp. infested oats were applied in-furrow by means of belt cones at Hopper-box treatments were applied by planting. atomizing treatments onto seed in a tumbling seed treater. In-furrow granule treatments were applied at planting through cone planters mounted on a John Deere 9100 planter. Liquid treatments were applied by means of TX 4 nozzle tips using 46 psi of compressed air, 5 gpa in-furrow, applied at planting. On May 20 and June 8 stand counts were taken. This trial was harvested on September 30 with a two row picker modified for plot harvesting. Several of the in-furrow treatments significantly increased percent seedling survival on both counting dates (Table 8). None of the treatments significantly increased seed cotton yield over the untreated control.

Table 1. Effect of selected fungicides on cotton plant stand and seed cotton yield, Northeast Louisiana University, Monroe, LA 1998.

	Stand*		Seed	
Treatment and Rate/A	14	28	42	Yield lb/a
Inoculated				
Control	154	155	151	2367
Terrazole 4E 4oz + Terraclor 2E 2qt	157	159	154	2644
Terrazole 4E 3oz + Terraclor 2E 2qt	158	170	165	3067
TSX 18.8 G 7 lb	155	157	149	2496
Ridomil Gold 7lb	142	155	160	2745
Naturally infested				
Control	165	165	164	2758
Terrazole 4E 4oz + Terraclor 2E 2qt	163	172	164	2916
Terrazole 4E 3oz + Terraclor 2E 2qt	166	169	145	3074
TSX 18.8 G 7lb	149	145	149	2976
Ridomil Gold 7lb	172	177	171	2721
LSD P=(0.05)	18	15	28	687

*Number of live cotton plants per 40 foot of row; all rows received 180 seed. Means compared using Fisher's protected least significant difference test.

Table 2. Effect of selected fungicides on cotton plant stand and seed cotton yield, Northeast Louisiana University, Monroe, LA 1998.

		Stand*			
		14	28	42	
Treatment	Rate	DAP	DAP	DAP	Yield lb/a
Delta Coat AD	11.75 oz.cwt	153	142	142	2774
WE 140	11.75 oz.cwt	150	140	143	2368
Ridomil GR	7 lb/a	150	142	143	2430
TSX 18.8 G	7 lb/a	152	141	147	2781
ACT	2 oz/a	154	143	136	2625
Control		147	132	133	2352
LSD P=(0.05)		21	16	19	524

*Live cotton plants per 40 foot of row; all rows received 180 seed. Means compared using Fisher's protected least significant difference test.

Fable 3.	Effect o	f selected s	eed treat	ments on	cotton	plant stand	and seed
cotton yie	eld, Nortl	neast Louis	iana Uni [,]	versity, N	Ionroe,	LA 1998.	

Treatment	Rate oz/cwt	S	tand*		
		14 DAP	28 DA P	42 DA P	Seed Cotton lb/a
Nu-Flow T	2.25 +				
Nu-Flow M	1.25 +				
Apron XL	0.32 +	1.60	1.5.4	150	2116
CF Clear	0.4	169	154	153	2116
Nu-Flow T	2 25 +				
Nu-Flow M	1.75 +				
Apron XL	0.32 +				
CF Clear	0.4	153	150	139	2439
Nu-Flow T	2.25 +				
Maxim	0.08 +				
NuFlow M	1.25 +				
Apron AL	0.32 + 0.4	166	157	157	2157
CF Clear	0.4	100	157	137	2137
Maximum	0.08 +				
Nu-Flow M	1.25 +				
Apron XL	0.43 +				
CF Clear	0.4	153	136	139	1790
WE 400 C					
WE 120C	0.24 +				
NU-FIOW M Aprop VI	1.25 + 0.32 +				
CE Clear	0.32 + 0.4	178	165	160	2223
CI ⁺ Cieai	0.4	178	105	100	2323
WE 120C	0.24 +				
Nu-Flow T	1.25 +				
Nu-Flow M	1.25 +				
Apron XL	0.32 +				
CF Clear	0.4	176	154	150	2390
Nu Flow ND	75				
Nu-Flow M	7.5 + 1 75 ⊥				
Apron XI	$0.32 \pm$				
CF Clear	0.4	164	153	153	2234
RTU Bayton /Thiram	3.0 +				
Apron XL	0.75 +				
CF Clear	0.4	170	165	162	2061
Control		140	106	108	1784
SD P=(0.05)		14	18	25	758

*Live cotton plants per 40 ft of row; all rows received 180 seed.

Means compared using Fisher's protected least significant difference test.

Table 4. Effect of selected	seed treatments on	cotton plant stand	, Northeast
Louisiana University, LA 1	998.		

Treatment and rate oz/cwt		Stand*
	2.0	42 DAP
RTU Baytan-Thiram	3.0 +	
Apron FL Thirom 42S	0.75 + 1.0	1446
1 mrain 425	1.0	144a
Vitavax 20Off	60+	
Baytan 30 FL	.25 +	
Apron FL	0.75	139 a
1		
RTU Baytan-Thiram	3.0 +	
Apron FL	0.75 +	
Thiram 42S	1.0 +	
LS151	0.25	136 ab
Vitavax -PCNB FL	7.0 +	
Baytan 30 FL	0.25 +	
Apron FL Thimse 428	0.75 + 2.5	151 -
Thirani 425	2.5	151 a
1 \$001	20 +	
Baytan 30 FL	0.5 +	
LS 146	0.75	151 a
20110	0170	101 u
Nu-Flow ND	7.5 +	
Nu-Flow M	1.75 +	
Apron XL	0.32	144 a
-		
Nu-Flow T	2.25 +	
Nu-Flow M	1.25 +	
Apron XL	0.32	140 a
Nu-Flow T	2.25 +	
Maxim	0.08 +	
Nu-Flow M	1.75 +	106.1
Apron X	0.32	136 ab
WE 120C	0.24	
WE 120C Nu Flow M	0.24 +	
Aprop XI	0.32	1/139
Aproli AL	0.32	1454
Apron XL 3LS	0.42 +	
Maxim 4FS	0.08 +	
Dividend 3FS	1.0	141 a
Apron XL 3LS	0.42 +	
Maxim 4FS	0.08 +	
Nu-Flow M 2EC	1.75	146 a
TCMTB 30	2.0 +	
Baytan 30	0.5 +	
Apron FL	0.75	145 a
CI 20	0.75	
GI 30 DB 40	0.75 +	
PR40 Aprop FI	0.23 + 0.75	130 0
Aprolitie	0.75	157 a
HM-9801	12.0	135 ab
	1210	100 40
HM-9802	12.0	140 a
RTU-PCNB	14.5	114 c
Apron FL	1.5	115 c
Vitavax-PCNB	6.0 +	
Apron FL	0.75	137 a
Untroated		1101
LSD (0.05)		118 00

Table 5. Effect of Terraclor Super X and Ridomil Gold on cotton stand and seed cotton yield, Northeast Louisiana University, Monroe, LA .

m		C . 14	.,	<u> </u>
Treatment		Stand*	Seed Cotton	
	14	28	42	lb/a
TSX 18.8 G 7lb/a	5.2 a	5.5 a	4.3 a	3293 a
Ridomil Gold 7lb/a	5.3 a	5.3 a	5.5 a	3236 a
LSD (0.05)	3.8	3.8	4.3	972

*Stand per foot of row.

Means compared using Fisher's protected least significant difference test. Table 6. Effect of experimental fungicides on plant populations and seed cotton yield, Red River Research Station, Bossier City, LA 1998.

	Rate	Plant Po	Seed	
Treatment	(prod/a)	1 mill 1 opunuton		Cotton
	(prou/u)	14 DAP	42 DAP	(lb/a)
Untreated	_	367 b ²	372 b	1910 a
Terrazole 4EC	8.0 oz	392 a	396 a	1823 a
Ridomil Gold 4 EC	2.0 oz	381 ab	382 b	1767 a
Terraclor 2E	64 oz	389 a	398 a	1834 a
Start 4SC	3.9 oz	398 a	404 a	1970 a
TSX ³ 2.5 EC	64 oz	395 a	400 a	1918 a
Start 4SC +				
Ridomil Gold 4EC	3.9 oz+			
	2.0 oz	397 a	403 a	1825 a
Start 4SC +	3.9 oz+			
Terrazole 4EC	8.0 oz	398 a	402 a	1750 a
Terraclor 2EC +				
Ridomil Gold 4	64 oz +			
EC	2.0 oz	397 a	397 a	1802 a
Quadris 2.08 SC	5.0 oz	396 a	398 a	1939 a
Quadris 2.08 SC	7.5 oz	391 a	399 a	1799 a

¹Plants per 100 row feet; DAP=days after planting.

²Means within a column followed by the same letter are not significantly different according to LSD ($P \ge 0.05$).

³TSX = Terraclor Super X

Table 7. 1998 Cotton In-Furrow Trial One. Inoculated with Oats. MAFES, Delta Research and Extension Center, Stoneville, MS¹.

Treatment	Percen	t Stand ²	Yield in LB
	1st Count	2 nd Count	Seed Cotton/A
Untreated Check	29.6 cd ³	27.8 cd	1812.6 a-c
TSX 18.8GR, 1.04 lb	51.5 ab	49.2 ab	1780.0 a-c
Ridomil Gold PC 10.5GR,			
0.739 lb	23.5 d	22.6 d	1506.4 c
Ridomil Gold 45WP, 0.035 lb			
+CGA-279202 50WG, 0.16 lb	42.0 b	42.3 ab	1784.1 a-c
Ridomil Gold 45WP, 0.035 lb			
+CGA-279202 50WG, 0.25 lb	54.1 a	53.8 a	2033.1 a
Ridomil Gold 45WP, 0.035 lb +			
Rovral 50WG, 0.16 lb	48.5 ab	46.1 ab	1869.8 a-c
Ridomil Gold 45WP, 0.035 lb +			
Quadris 2.08FL, 0.1 oz	46.8 ab	45.9 ab	1755.5 а-с
Ridomil Gold 2EC, 0.15 oz +			
Start 4SC, 0.3 oz	45.7 ab	45.4 ab	2016.8 ab
Quadris 2.08FL, 0.1 oz	40.6 bc	39.8 bc	1628.9 bc
Quadris 2.08FL, 0.15 oz	49.8 ab	48.1 ab	1722.8 a-c
M.S.D.	11.7	12.4	388.1
C.V.	18.7	20.0	12.0
F Value	5.8	5.3	2.2

¹Plots were 2 rows wide and 40 feet long.

²Percent stand of 400 seed planted (two rows). Two rows analyzed together. ³Mean of five replications. Means followed by the same letter in the same column are not significantly different according to the Waller Duncan <u>t</u> test (K ratio = 100).

*Number of live cotton plants per 40 ft of row; all rows received 180 seed. Means compared using Fisher's protected least significant difference test.

Table 8. 1998 Cotton In-furrow Applied Fungicide Trial Two. Inoculated with Oats. MAFES, Delta Research and Extension Center, Stoneville, MS^1 .

Treatment	Percen	Yield in	
_	1 st		LB Seed
	Count	2 nd Count	Cotton/A
Untreated Control	$46.4 d^3$	46.2 c	2094.3 a-c
TSX 18.8GR, 1.04 lb	72.8 a	65.4 ab	2090.2 a-c
TSX 2.5EC, 48 fl oz	62.3 c	60.6 ab	1980.0 a-c
TSX G/W 49, 7 lb	64.9 bc	62.9 ab	2171.9 ab
TSX FL, .24 oz	71.6 ab	66.3 ab	2229.0 a
TSX 18.8GR, 1.316 lb	73.4 a	70.6 a	2049.4 a-c
Terraclor 10G, 1.316 lb	68.9 a-c	65.0 ab	2094.3 a-c
Quadris 2.01EC, 0.1 lb			
+Ridomil Gold 45WP,			
0.035 lb	66.7 a-c	64.1 ab	1731.0 c
CGA-279202 50WG, 0.16			
lb +Ridomil Gold 45WP,			
0.035 lb	67.9 a-c	65.9 ab	1784.1 bc
Start 4F, 0.16 lb +			
Ridomil Gold 45WP, 0.035			
lb	64.3 c	58.9 b	1992.3 a-c
M.S.D.	6.8	10.3	438.1
C.V.	7.5	10.6	11.4
F Value	10.0	4.0	1.9

¹Plots were 2 rows wide and 40 feet long. ²Percent stand of 400 seed planted (two rows). Two rows analyzed together. ³Mean of five replications. Means followed by the same letter in the same column are not significantly different according to the Waller Duncan <u>t</u> test (K ratio = 100).