

Table 10. The relationship between the number of bright greenish-yellow (BGY) spots observed when cotton trailers contains seed cotton are irradiated with UV (blacklight) light and aflatoxins detected in trailer sub-samples. (1979)

BGY spots #	cotton trailers #	Range of Aflatoxins (B ₁ + B ₂) in ppb				x ^{2a}
		ND-10 #	11-20 #	21-50 #	50+ #	
0	63	50	7	4	2	--
1	26	24	1	0	1	3.46 NS
2	16	12	0	3	1	6.21 NS
3	16	10	1	3	2	9.19*
4-10	13	7	2	2	2	8.93*
11-38	20	2	0	5	13	264.16***
Total	154					

^aNS = not significant (p >0.05). Triple (***), double (**) or single (*) asterisk indicate significant difference from expected value by Chi-square (x²) evaluation at p = 0.001, 0.01 or 0.05, respectively.

1981 Arizona Cottonseed Treatment Study

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Cottonseed treatment plots were established on the Yuma, Phoenix (CRC) and Marana Experiment Stations in order to test the efficacy of fungicides and combinations thereof for the control of Rhizoctonia soreshin seedling disease of cotton.

All seed treatments were provided and applied by the distributors to a common lot of Deltapine 61 acid delinted seed. The only exceptions were the Terracoat L-21 and Terraflor 21 treatments which were applied by us.

The Rhizoctonia for soil infestation was prepared by growing cultures on steam sterilized wheat seed at 24C. After two weeks of incubation the infested seed was dried, ground to a granular size and packaged in 10 g lots.

Planting was by cone planters and the addition of Rhizoctonia or Super X granules was made into the hopper just prior to incorporation into the soil. The seedling rate was 100 seed/28 feet (46,643 plants/acre).

Stand counts were made at 10 and 30 day post-planting intervals. Only the data for the 30 day counts in Yuma (Tables 1 and 4) and Phoenix (Tables 2 and 5), and the 10 day Marana (Tables 3 and 6) are presented.

Conclusions

The best and most consistent commercially available treatment for the control of Rhizoctonia in these tests was Super X granules at 10 lbs/Ac. It was quite evident that the Terracoat L-21 and Terraflor 21 seed treatments played little or no role in achieving the stands observed when combined with Super X.

The next best treatment, and at times it was comparable to Super X, was Chloroneb (Demosan) at the 2.66 oz and 4.23 oz rates. The lower rates of Chloroneb and higher rates of Carboxin (Vitavax) (2.4 oz and 3.00 oz) were the third best treatment with the lower rates of Carboxin including the commercially applied 1.75 oz rate, Terracoat L-21 and Terraflor 21 being the least effective of all materials and concentrations tested.

A new material BAS 389-01F (Gustafson's "Campogran") which is not registered as a cottonseed treatment performed better than any of the other "seed treatments" for the control of Rhizoctonia.

1981 Arizona Cottonseed Treatment Study
 Table 1. Field Location Yuma Experiment Station, Sampling Period 30 days after planting, Variety Deltapine 61

Treatments	Dosage (a.i.)/cwt	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	12.1	jk
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	16.0	hijk
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	14.0	ijk
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	19.1	ghij
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	25.0	efghi
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	26.0	efgh
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	23.2	fghi
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	34.4	def
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	29.6	efg
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	28.7	efg
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	42.8	cd
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	35.9	cde
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	45.2	cd
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	41.1	cd
(161-170) Terracoat L-21 (01in)	12.0	34.3	def
(181-190) Terraflo 21 (01in)	13.5	22.3	ghij
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 1b/Ac	61.5	b
(191-200) Terraflo 21 + Super X (01in)	13.5 + 10 1b/Ac	61.2	b
(131-140) Captan + BAS 389-01Fa	1.0 + 2.0	45.2	cd
(141-150) Captan + BAS 389-01Fa + CGA 48988 ^b	1.2 + 2.0 + 0.25	46.5	c
(151-160) CGA 48988 ^b + BAS 389-01Fa	0.25 + 2.0	59.1	b
(231-240) Check (No Rhizoctonia)	----	85.5	a
(221-230) Check (Plus Rhizoctonia)	----	4.0	k1

^aGustafson's - "Campogran"

^bGustafson's - "Apron"

^cDuncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the x value for emergence.

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Table 2. Field Location Phoenix, Sampling Period 30 days after planting, Variety Deltapine 61

Treatments	Dosage (a.i.)/cwt.	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	28.2	hi
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	33.0	fg hi
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	32.0	ghi
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	28.5	ghi
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	36.9	efgh
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	43.2	e
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	37.5	efgh
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	44.5	de
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	41.2	ef
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	42.1	e
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	52.1	cd
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	43.0	e
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	53.1	bcd
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	55.2	bc
(161-170) Terracoat L-21 (01in)	12.0	27.2	i
(181-190) Terraflo 21 (01in)	13.5	25.9	i
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 1b/Ac	62.3	ab
(191-200) Terraflo 21 + Super X (01in)	13.5 + 10 1b/Ac	58.7	abc
(131-140) Captan + BAS 389-01Fa ^a	1.0 + 2.0	59.1	abc
(141-150) Captan + BAS 389-01Fa + CGA 48988 ^b	1.2 + 2.0 + 0.25	60.6	abc
(151-160) CGA 48988 ^b + BAS 389-01Fa	0.25 + 2.0	57.6	abc
(231-240) Check (No Rhizoctonia)	----	64.7	a
(221-230) Check (Plus Rhizoctonia)	----	5.7	j

^a Gustafson's - "Campogran"

^b Gustafson's - "Apron"

^c Duncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the \bar{x} value for emergence.

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Table 3. Field Location Marana Experiment Station, Sampling Period 10 days after planting (plots destroyed before 30 day count), Variety Deltapine 61

Treatments	Dosage (a.i.)/cwt	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	4.6	fghi
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	3.9	ghi
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	5.8	efghi
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	4.5	fghi
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	6.7	efghi
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	6.7	efghi
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	7.1	efghi
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	9.1	efg
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	7.5	efgh
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	6.0	efghi
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	14.6	cd
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	11.0	cde
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	14.5	cd
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	16.4	c
(161-170) Terracoat L-21 (01in)	12.0	3.3	ghi
(181-190) Terraflor 21 (01in)	13.5	5.1	efghi
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 lb/Ac	34.1	b
(191-200) Terraflor 21 + Super X (01in)	13.5 + 10 lb/Ac	33.2	b
(131-140) Captan + BAS 389-01F ^a	1.0 + 2.0	28.8	b
(141-150) Captan + BAS 389-01F ^a + CGA 48988 ^b	1.2 + 2.0 + 0.25	31.1	b
(151-160) CGA 48988 ^b + BAS 389-01F ^a	0.25 + 2.0	32.8	b
(231-240) Check (No Rhizoctonia)	-----	40.0	a
(221-230) Check (Plus Rhizoctonia)	-----	1.0	i

^aGustafson's - "Campogran"

^bGustafson's - "Apron"

^cDuncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the x value for emergence.

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 Table 4. Field Location Yuma Experiment Station, Sampling Period 30 days after planting, Variety Pima S-5

Treatments	Dosage (a.i.)/cwt	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	18.7	i
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	17.6	i
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	25.7	ghi
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	18.7	i
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	27.3	fghi
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	34.8	fg
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	34.6	fg
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	37.6	ef
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	52.5	bcd
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	49.1	cd
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	50.8	cd
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	50.4	cd
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	56.3	bcd
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	58.5	bc
(161-170) Terracoat L-21 (01in)	12.0	16.5	i
(181-190) Terraflo 21 (01in)	13.5	23.5	hi
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 1b/Ac	48.0	cde
(191-200) Terraflo 21 + Super X (01in)	13.5 + 10 1b/Ac	54.3	bcd
(131-140) Captan + BAS 389-01F ^a	1.0 + 2.0	52.7	bcd
(141-150) Captan + BAS 389-01F ^a + CGA 48988 ^b	1.2 + 2.0 + 0.25	63.1	ab
(151-160) CGA 48988 ^b + BAS 389-01F ^a	0.25 + 2.0	45.9	d
(231-240) Check (No Rhizoctonia)	----	70.7	a
(221-230) Check (Plus Rhizoctonia)	----	2.8	j

^aGustafson's - "Campogran"

^bGustafson's - "Apron"

^cDuncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the x value for emergence.

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 Table 5. Field Location Phoenix, Sampling Period 30 days after planting, Variety Pima S-5

Treatments	Dosage (a.i.)/cwt	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	40.0	fg
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	39.7	fg
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	52.7	de
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	48.7	ef
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	61.6	cd
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	59.3	cde
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	50.7	de
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	61.4	cd
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	62.2	cd
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	52.5	de
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	61.5	cd
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	61.3	cd
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	68.9	bc
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	69.1	bc
(161-170) Terracoat L-21 (01in)	12.0	35.9	g
(181-190) Terraflo 21 (01in)	13.5	30.3	g
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 lb/Ac	79.1	ab
(191-200) Terraflo 21 + Super X (01in)	13.5 + 10 lb/Ac	81.5	a
(131-140) Captan + BAS 389-01F ^a	1.0 + 2.0	79.4	ab
(141-150) Captan + BAS 389-01F ^a + CGA 48988 ^b	1.2 + 2.0 + 0.25	76.7	ab
(151-160) CGA 48988 ^b + BAS 389-01F ^a	0.25 + 2.0	81.3	a
(231-240) Check (No Rhizoctonia)	----	75.2	ab
(221-230) Check (Plus Rhizoctonia)	----	11.4	h

^aGustafson's - "Campogran"

^bGustafson's - "Apron"

^cDuncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the \bar{x} value for emergence.

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Table 6. Field Location Marana Experiment Station, Sampling Period 10 days after planting (plots destroyed before 30 day count), Variety Pima S-5

Treatments	Dosage (a.i.)/cwt	\bar{x} Emergence %	Duncan's Multiple Range Test ^c
(101-110) Captan + Carboxin (Gustafson)	1.2 + 1.20	12.0	ghij
(211-220) Captan + Carboxin (Comm. Appl.)	1.2 + 1.75	6.2	ijk
(1-10) Captan + Carboxin (Cargill)	1.2 + 1.20	8.8	hijk
(111-120) Captan + Carboxin (Gustafson)	1.2 + 1.75	13.6	hijk
(11-20) Captan + Carboxin (Cargill)	1.2 + 1.75	16.4	fg
(21-30) Captan + Carboxin (Cargill)	1.2 + 2.40	18.5	defg
(121-130) Captan + Carboxin (Gustafson)	1.2 + 3.00	15.1	defghi
(31-40) Captan + Carboxin (Cargill)	1.2 + 3.00	19.1	defg
(41-50) Captan + Chloroneb (Cargill)	1.2 + 1.98	22.2	def
(71-80) Thiram + Chloroneb (Cargill)	1.2 + 1.98	23.7	d
(51-60) Captan + Chloroneb (Cargill)	1.2 + 2.66	37.1	c
(81-90) Thiram + Chloroneb (Cargill)	1.2 + 2.66	32.1	c
(61-70) Captan + Chloroneb (Cargill)	1.2 + 4.23	33.1	c
(91-100) Thiram + Chloroneb (Cargill)	1.2 + 4.23	38.5	c
(161-170) Terracoat L-21 (01in)	12.0	13.3	fg
(181-190) Terraflo 21 (01in)	13.5	16.6	defgh
(171-180) Terracoat L-21 + Super X (01in)	12.0 + 10 1b/Ac	71.5	a
(191-200) Terraflo 21 + Super X (01in)	13.5 + 10 1b/Ac	70.7	a
(131-140) Captan + BAS 389-01F ^a	1.0 + 2.0	49.7	b
(141-150) Captan + BAS 389-01F ^a + CGA 48988 ^b	1.2 + 2.0 + 0.25	67.6	a
(151-160) CGA 48988 ^b + BAS 389-01F ^a	0.25 + 2.0	66.7	a
(231-240) Check (No Rhizoctonia)	----	71.0	a
(221-230) Check (Plus Rhizoctonia)	----	4.0	jk

^aGustafson's - "Campogran"

^bGustafson's - "Apron"

^cDuncan's Multiple Range Test (5% level) - Any treatments with the same letter in common are not significantly different from each other no matter what the \bar{x} value for emergence.