

VI. RESPONSE OF COTTON TO NEMATOCIDES AND INSECTICIDES (Kenny Edwards Farm, Branchville, VA)

- A. PURPOSE: To determine the growth and yield response of cotton to treatments with nematocides and insecticides at planting
- B. EXPERIMENTAL DESIGN:
1. Four randomized complete blocks
 2. Alleyways between blocks of 15 ft planted to cotton
 3. Two, 30-ft rows spaced 36 in. apart per plot
- C. APPLICATION OF TREATMENTS: Soil fumigant was applied 8 in. deep with a single chisel per row (C) on 26 Apr and rows were bedded after application (24 in. wide and 4 in. high). Granular in-furrow treatments (F) were applied to the seed furrow at planting. Band treatments (B) were 8 in. wide and applied over rows during cultivation on 29 Jun. Seed treatments (S) were applied by Bayer CropScience.
- D. TREATMENT AND RATE:
1. Untreated check
 2. Gaucho FS 600 12.8 fl oz/cwt (S)
 3. Temik 15G 5 lb/A (F)
 4. Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (F)
 5. Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (B)
 6. Temik 15G 5 lb/A (F) + Temik 15G 5 lb/A (B)
 7. Vapam 42% 5 gal/A (C) + Gaucho 600FS 12.8 fl oz/cwt (S)
- E. ADDITIONAL INFORMATION:
1. Location: Kenny Edwards Farm, The Hall Rd., Branchville, VA
 2. Crop history: Cotton 2004-2001
 3. Planting date: 9 May 2005
 4. Herbicide:
 - Pre-emergence - Cotoran 1 pt + Prowl 1 pt/A (12 May)
 - Post-emergence - Roundup Ultra Max 22 fl oz/A (9 Jun)
 - Cotton Pro 1 pt + Roundup Ultra Max 1 pt/A under hood (1 Jul)
 5. Insecticide: Orthene 97S 6 oz/A (9 Jun)
 6. Cultivation: 30 Jun
 7. Growth regulator: Pix 10 fl oz (1 Jul)
 8. Defoliant/Boll opener: Finish 24 fl oz + Def 6 oz (30 Sep)
 9. Fertilization: 350 lb 6-18-36 (27 Apr), 350 lb 17-0-10 (15 Jun)
 10. Harvest date: 20 Oct 2005

Table 16. Effect of treatments on emergence and growth of cotton.

Treatment and rate ¹	Plants/ft ² (Jun 15)	Plant height (in.) ³ (Jul 26)	No. of flowers ⁴ (Jul 26)
Untreated check.....	1.94 b	23.6 d	34 c
Gaucho FS 600 12.8 fl oz/cwt (S).....	1.95 b	24.9 cd	43 bc
Temik 15G 5 lb/A (F)	2.03 ab	26.2 a-c	60 a
Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (F)	1.89 b	27.4 ab	62 a
Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (B).....	1.95 b	27.8 a	60 a
Temik 15G 5 lb/A (F) + Temik 15G 5 lb/A (B).....	2.11 a	25.9 bc	54 ab
Vapam 42% 5 gal/A (C) + Gaucho 600FS 12.8 fl oz/cwt (S).....	2.12 a	27.8 bc	60 a
LSD.....	0.1	1.7	13

¹ S=seed treatment, F=in furrow, B=band application (Jun 29), C=chisel application.

² Determined from counts of two, 30-ft rows per plot.

³ Data are measurements of four randomly-selected plants per plot.

⁴ Counts of flowers in a six-ft section of each row.

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05).

Table 17. Effect of treatments on nematode populations and root galling in cotton.

Treatment and rate ¹	Nematodes/500 cc soil ²				Root galling ³ (0-6)
	Root- knot	Stunt	Spiral	Stubby root	
Untreated check.....	1340	0	10	140	5.0 a
Gaucho FS 600 12.8 fl oz/cwt (S).....	2030	20	230	240	4.9 a
Temik 15G 5 lb/A (F)	780	30	20	140	3.2 c
Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (F)	2690	120	270	400	3.4 c
Gaucho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (B).....	490	0	100	50	1.8 d
Temik 15G 5 lb/A (F) + Temik 15G 5 lb/A (B).....	550	10	20	30	1.9 d
Vapam 42% 5 gal/A (C) + Gaucho 600FS 12.8 fl oz/cwt (S)...	930	40	20	560	4.2 b
LSD.....	--	--	--	--	0.5

¹ S=seed treatment, F=in furrow, B=band application (29 Jun), C=chisel application.

² Soil was sampled on 12 Aug. Data are counts of nematodes in a composite sample from four reps of each treatment.

³ Rating scale: 0=none, 1=1-10%, 2=11-25%, 3=26-50%, 4=51-75%, 5=76-90%, 6=91-100% of root system with galls. Ratings were made on 13 Nov.

Means followed by the same letter(s) in a column are not significantly different according to Fisher's Protected LSD (P=0.05). "--" denotes data is from a composite sample of four replications and no statistical analysis performed.

Table 18. Effect of treatments on earliness and yield of cotton.

Treatment and rate ¹	Open bolls ² (Sep 15)	Total bolls ² (Sep 15)	Yield ³	
			lb/A	bales/A
Untreated check.....	2.0	12.6	1739 b	1.38 b
Gaicho FS 600 12.8 fl oz/cwt (S).....	2.0	9.7	1951 b	1.55 b
Temik 15G 5 lb/A (F)	2.8	10.5	2662 a	2.11 a
Gaicho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (F)	2.7	11.6	2813 a	2.23 a
Gaicho FS 600 12.8 fl oz/cwt (S) + Temik 15G 5 lb/A (B).....	3.1	10.4	2662 a	2.11 a
Temik 15G 5 lb/A (F) + Temik 15G 5 lb/A (B).....	2.4	11.3	2617 a	2.08 a
Vapam 42% 5 gal/A (C) + Gaicho 600FS 12.8 fl oz/cwt (S)....	2.3	9.6	2768 a	2.20 a
LSD	n.s.	n.s.	435	0.35

¹ S=seed treatment, F=in furrow, B=band application (Jun 29), C=chisel application.

² Data are measurements of four randomly-selected plants per plot.

³ Weight (lb/A) includes lint + seed; bales/A are weight of lint only. One pound samples were ginned and lint was determined to be 38% of total weight and 480 lb/bale. Plots were harvested on 19 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.