

**THE INFLUENCE OF IN-FURROW  
TREATMENTS UPON EARLY VIGOR  
AND FIBER QUALITY OF UPLAND COTTON**  
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**Abstract**

In a short season environment it is essential to get the crop off to a good start in order for it to mature properly. The test was conducted using two planting dates, early and late May. Temik and Gaucho were compared. Both gave good control of thrips. Lint percent was reduced with both insecticide treatments the first year. Fiber quality remained unchanged except for length which was shortened some years. Temik along with Ridomil, PGRIV, and starter fertilizer had little effect upon plant growth. Lint percent was increased with the application of Ridomil most years. Yields and fiber properties were unchanged by the Temik along with PGRIV and starter fertilizer treatments. Ridomil gave a slight yield increase.

**Introduction**

At planting time cotton is very susceptible to seedling diseases and insects, especially when it is cool and wet. Application of insecticides and fungicides should aid in protecting the small seedlings. A starter fertilizer and a growth regulator should allow the young crop to get off to a fast start.

**Materials and Methods**

The test was conducted for three years beginning in 1994 with two planting dates for each year. The two planting dates were early and late May. The variety was D&PL 50 (with standard seed treatment). Each year the test was divided into two parts with one part having Temik and Gaucho compared to a untreated control. This part of the test was conducted in 1995 and 1996. Temik was applied at a rate of 4 pounds per acre in-furrow. Gaucho was used at a rate of 8 ounces per 100 pounds of planting seed. The second part of the test used Temik (4 lbs/A) as a control. Temik was then added to Ridomil (8.5 lbs/A), PGRIV (7 oz/A) and starter fertilizer (11-37-0) in all combinations.

**Discussion**

Gaucho and Temik both provided good control of thrips. In 1995 Gaucho was superior and in 1996 Temik performed best. Internode length and plant height was less on the untreated check indicating that thrips stunted the plants. There were more fruiting nodes, nodes above vegetative

branch, and nodes above cracked boll in the untreated control. This indicates that the thrips may have delayed maturity. The Gaucho and Temik plots opened before the untreated control. The insecticide treatments did reduce the lint percent the first year. Fiber quality is not affected by the insecticide other than length which was reduced in some years.

The fungicide (Ridomil), growth regulator (PGRIV), and starter fertilizer (11-37-0) had little effect upon plant growth early in the season regardless of planting date. Lint percent was inconsistent. Fungicide usually increased the lint percent. Starter fertilizer and the growth regulator gave inconsistent changes in lint percent. Yields were not affected by the treatments except for a slight increase due to Ridomil. Fiber quality was unchanged by the treatments.

**Summary**

Temik and Gaucho were both very effective in controlling thrips. Lint percent was reduced by the insecticide treatments but the fiber quality remained unchanged. However fiber length was shortened some years. Ridomil, PGRIV, and starter fertilizer had little effect upon plant growth. Fungicide increased lint percent some years. Fiber quality and yields were unchanged by the PGRIV and starter fertilizer treatment. Ridomil gave a slight yield increase.

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Table 1. 1995 and 1996

Treatment	Thrip Counts			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	8.4 a	5.7 a	5.5 a	5.0 a
Temik	5.2 b	4.0 b	1.0 a	0.0 b
Gaicho	3.8 b	4.4 b	2.3 a	2.0 ab
Mean	5.8	4.7	2.9	2.3
LSD 0.05	1.40	0.83	5.26	4.96
C. V. %	14.08	1.29	104.28	122.89

Table 2. 1995 and 1996

Treatment	Height Averages			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	26.6 a	23.0 b	22.2 a	35.5 a
Temik	30.4 a	26.0 a	24.4 a	35.0 a
Gaicho	28.7 a	25.0 a	23.8 a	32.7 a
Mean	28.5	25.0	23.4	34.4
LSD 0.05	ns	2.17	2.78	3.05
C. V. %	8.03	5.08	6.84	5.13

Table 3. 1995 and 1996

Treatment	Fruiting Nodes Late July			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	7.1 a	8.5 a	11.9 a	13.6 a
Temik	6.9 a	7.6 ab	12.3 a	13.3 a
Gaicho	6.9 a	7.2 b	12.2 a	12.6 a
Mean	6.9	7.8	12.1	13.1
LSD 0.05	ns	ns	3.69	1.74
C. V. %	12.67	8.66	17.61	7.66

Table 4. 1995 and 1996

Treatment	Internode Length Late July			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	1.9 a	1.6 b	1.7 a	2.2 a
Temik	2.0 a	1.9 a	1.7 a	2.1 b
Gaicho	2.0 a	1.8 ab	1.7 a	2.1 b
Mean	2.0	1.8	1.7	2.2
LSD 0.05	ns	ns	0.17	0.10
C. V. %	11.97	7.67	5.99	2.76

Table 5. 1995 and 1996

Treatment	Nodes above vegetative branch			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	15.2 a	15.7 a	14.5 a	13.6 a
Temik	14.7 a	13.9 b	13.6 a	13.3 a
Gaicho	14.8 a	14.0 b	15.3 a	12.6 a
Mean	14.9	14.5	14.4	13.1
LSD 0.05	ns	1.04	1.97	1.74
C. V. %	4.37	4.14	7.88	7.66

Table 6. 1995 and 1996

Treatment	Nodes above cracked boll			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	10.5 a	12.6 a	11.8 a	10.3 a
Temik	9.0 b	10.0 b	10.9 a	10.0 a
Gaicho	9.2 b	9.9 b	12.8 a	9.4 a
Mean	9.6	10.8	11.8	9.9
LSD 0.05	1.05	1.81	2.10	1.76
C. V. %	6.33	9.66	10.28	10.30

Table 7. 1995 and 1996

Treatment	Percent Open			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	70 a	20 b	51 a	21 a
Temik	76 a	48 a	61 a	24 a
Gaicho	73 a	58 a	49 a	26 a
Mean	73	42	54	24
LSD 0.05	ns	15.53	14.70	13.21
C. V. %	11.93	21.54	15.81	32.16

Table 8. 1995 and 1996

Treatment	Lint Percent			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	35.9 a	37.3 a	37.4	37.1
Temik	35.1 a	34.7 c	36.6	37.7
Gaicho	34.9 a	36.1 b	37.6	36.6
Mean	35.3	36.1	37.2	37.1
LSD 0.05	ns	0.61	-	-
C. V. %	2.16	0.98	-	-

Table 9. 1995 and 1996

Treatment	Yield (lbs/A)			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	810 a	621 b	1010 a	963 a
Temik	864 a	630 b	1000 a	1091 b
Gaicho	930 a	780 a	1047 a	1031 b
Mean	868	677	1019	1028
LSD 0.05	71.30	128.98	205.03	60.05
C. V. %	4.74	11.02	11.63	3.38

Table 10. 1995 and 1996

Treatment	Micronaire			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	4.9 a	5.0 a	4.7 a	4.6 a
Temik	4.8 a	4.9 a	4.8 a	4.8 a
Gaicho	4.9 a	4.9 a	4.8 a	4.8 a
Mean	4.9	4.9	4.7	4.7
LSD 0.05	ns	ns	0.63	0.30
C. V. %	5.08	4.31	3.11	1.50

Table 11. 1995 and 1996

Treatment	Length Averages			
	Year 1		Year 2	
	Date 1	Date 2	Date 1	Date 2
Control	1.12 b	1.13 a	1.15 a	1.16 a
Temik	1.11 c	1.12 ab	1.14 b	1.15 a
Gaicho	1.13 a	1.10 b	1.12 c	1.15 a
Mean	1.12	1.11	1.14	1.15
LSD 0.05	4.21	ns	0.09	0.11
C. V. %	2.18	1.31	1.90	2.22

Table 12a. 1994

Treatment	Lint Percent	
	Year 1	
	Date 1	Date 2
With Ridomil	37.35 a	37.25 a
W/O Ridomil	36.68 a	36.73 b
With PGRIV	36.53 a	36.86 a
W/O PGRIV	37.50 a	37.12 a
With Starter Fert.	37.33 a	36.73 b
W/O Starter Fert.	36.70 a	37.25 a
Mean	37.01	36.99
LSD 0.05	1.70	0.35
C.V. %	6.26	1.29

Table 12b. 1995

Treatment	Lint Percent	
	Year 2	
	Date 1	Date 2
With Ridomil	35.61 a	36.65 b
W/O Ridomil	34.04 b	35.95 a
With PGRIV	34.67 a	36.73 a
W/O PGRIV	34.99 a	35.86 b
With Starter Fert.	34.31 b	36.76 a
W/O Starter Fert.	35.36 a	35.86 b
Mean	34.83	36.30
LSD 0.05	0.76	0.43
C.V. %	2.99	1.82

Table 12c. 1996

Treatment	Lint Percent	
	Year 3	
	Date 1	Date 2
With Ridomil	37.48 a	37.50 a
W/O Ridomil	37.15 b	37.53 a
With PGRIV	37.53 a	37.40 a
W/O PGRIV	37.10 b	37.63 a
With Starter Fert.	37.60 a	37.65 a
W/O Starter Fert.	37.03 b	37.38 a
Mean	37.31	37.51
LSD 0.05	0.0000019	0.30
C.V. %	0.0000078	0.67

Table 13a. 1994

Treatment	Yield (lbs/A)	
	Year 1	
	Date 1	Date 2
With Ridomil	1408.19 a	1515.40 a
W/O Ridomil	1393.60 a	1463.92 b
With PGRIV	1363.78 a	1486.72 a
W/O PGRIV	1438.01 a	1492.61 a
With Starter Fert.	1391.05 a	1500.69 a
W/O Starter Fert.	1410.74 a	1478.63 a
Mean	1400.90	1489.66
LSD 0.05	98.93	50.88
C.V. %	9.60	4.65

Table 13b. 1995

Treatment	Yield (lbs/A)	
	Year 2	
	Date 1	Date 2
With Ridomil	886.42 a	702.67 a
W/O Ridomil	855.00 a	690.04 a
With PGRIV	864.09 a	699.94 a
W/O PGRIV	877.33 a	692.77 a
With Starter Fert.	878.74 a	704.82 a
W/O Starter Fert.	862.67 a	687.89 a
Mean	870.71	696.36
LSD 0.05	36.39	39.82
C.V. %	5.68	7.78

Table 13c. 1996

Treatment	Yield (lbs/A)	
	Year 3	
	Date 1	Date 2
With Ridomil	1080.32 a	1048.08 a
W/O Ridomil	1067.70 a	1078.00 a
With PGRIV	1107.02 a	1047.47 a
W/O PGRIV	1040.99 a	1078.61 a
With Starter Fert.	1075.06 a	1078.43 a
W/O Starter Fert.	1072.95 a	1042.65 a
Mean	1074.01	1063.04
LSD 0.05	89.80	54.03
C.V. %	11.37	6.91

Table 14a. 1994

Treatment	Length Averages	
	Year 1	
	Date 1	Date 2
With Ridomil	1.16 a	1.16 a
W/O Ridomil	1.16 a	1.16 a
With PGRIV	1.16 a	1.16 a
W/O PGRIV	1.16 a	1.16 a
With Starter Fert.	1.16 a	1.16 a
W/O Starter Fert.	1.16 a	1.16 a
Mean	1.16	1.16
LSD 0.05	1.07	0.014
C.V. %	1.25	1.70

Table 14b. 1995

Treatment	Length Averages	
	Year 2	
	Date 1	Date 2
With Ridomil	1.11 a	1.12 a
W/O Ridomil	1.11 a	1.12 a
With PGRIV	1.11 a	1.12 a
W/O PGRIV	1.11 a	1.12 a
With Starter Fert.	1.12 a	1.13 a
W/O Starter Fert.	1.10 b	1.11 b
Mean	1.11	1.12
LSD 0.05	0.01	0.02
C.V. %	1.57	1.87

Table 14c. 1996

Treatment	Length Averages	
	Year 3	
	Date 1	Date 2
With Ridomil	1.14 a	1.14 a
W/O Ridomil	1.15 a	1.14 a
With PGRIV	1.13 a	1.14 a
W/O PGRIV	1.16 a	1.14 a
With Starter Fert.	1.15 a	1.14 a
W/O Starter Fert.	1.13 a	1.14 a
Mean	1.14	1.14
LSD 0.05	0.06	0.03
C.V. %	4.22	1.96