

TITLE:

Results of the Nematode Variety Test at AG-CARES, Lamesa, TX 2003.

AUTHORS:

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MATERIALS AND METHODS:

Test: Nematode Resistance  
Planting Date: May 8 (in wheat stubble)  
Row Spacing: 40-in  
Planting Pattern: Solid  
Herbicide: Prowl @ 3 pt/A applied pre-plant  
Fertilizer: 32-0-0 @ 20 lbs/A on April 29  
32-0-0 @ 30 lbs/A on June 19  
32-0-0 @ 30 lbs/A on July 23  
Irrigations: 3.0 inches pre-plant  
(center pivot) May June July August  
8 - .6 in. 19 - .5 in. 5 - .5 in. 1 - .4 in.  
11 - .3 in. 14 - .4 in. 6 - .4 in.  
13 - .3 in. 15 - .4 in. 9 - .4 in.  
15 - .3 in. 18 - .4 in. 15 - .4 in.  
18 - .3 in. 21 - .4 in. 19 - .4 in.  
23 - .4 in. 22 - .4 in.  
26 - .4 in. 24 - .4 in.  
28 - .4 in. 28 - .4 in.  
Insecticide: Temik @ 3.0 lbs/A at planting  
Harvest Aide: Ginstar @ 6 oz/A + Boll'd @ 1.3 pt/A on October 15  
Gramoxone Max @ 20 oz/A on October 23  
Harvest Date: October 31  
Freeze Date: November 23  
Note: Stand of test plots was thinned due to a hailstorm on May 19

RESULTS AND DISCUSSION:

The highest yielding variety was Stoneville 5599 BR at 1,700 lbs of lint/acre, but it was ranked only 13<sup>th</sup> of 28 entries in terms of lowest root-knot nematode reproduction (Table 1). The next closest varieties in terms of yield were Deltapine 494 RR (1,467 lbs of lint, ranked 18<sup>th</sup> in lowest nematode reproduction), and Deltapine 449 BG/RR (1,436 lbs of lint/acre, ranked 10<sup>th</sup> in lowest nematode reproduction). The entry which allowed the lowest nematode reproduction was a breeding line developed by Drs. Gannaway and Wheeler (TW 1318 x TW 1320) which only had 390 root-knot nematode/500 cc of soil, and had the 5<sup>th</sup> highest average yield (Table 1). The nematode resistant check ST LA887 also had excellent yields (1,512 lbs of lint/a [ranked 2<sup>nd</sup>]) and low levels of nematode reproduction [ranked 3<sup>rd</sup>].

Table 1. Results of the irrigated nematode strains cotton variety test at AG-CARES, Lamesa, TX 2003.

Designation	Source	Agronomic Properties											Nematodes
		% Turnout		% Lint				% Open			Boll 3-Oct	Storm Resistance	
		Yield	Lint	Seed	Picked	Pulled	Boll Size	Seed Index	Lint Index	Seed Per Boll			
Stoneville 5599 BR	Comm	1700	32.5	43.5	41.6	32.7	5.3	9.7	7.2	30.6	60	2.9	4950 a-d
Stoneville LA 887		1514	29.6	42.1	41.0	31.1	5.4	10.7	7.7	28.5	51	2.8	1770 d
Deltapine 494 RR		1467	31.7	43.9	41.2	31.8	4.5	8.7	6.4	28.7	69	2.6	7470 abc
Deltapine 449 BG/RR		1436	31.7	47.9	41.0	31.3	4.2	8.4	6.0	28.6	67	2.6	4245 a-d
TW 1318xTW 1320		02-T-RR-23	1364	29.6	41.9	41.4	32.0	5.4	10.5	7.7	28.6	75	3.1
Syngenta NX 25105 N		1363	31.2	43.0	41.9	32.4	5.0	9.9	7.6	27.5	74	3.1	4235 a-d
Suregrow 215 BG/RR		1339	30.3	43.6	40.8	31.2	4.8	9.5	6.8	28.7	63	2.8	9030 a-d
Stoneville 5242 BR		1338	30.8	41.4	41.8	32.6	5.6	10.8	8.1	28.7	69	2.6	6750 a-d
Beltwide Cotton Genetics 24R		1316	29.6	44.2	40.6	31.4	4.2	8.5	6.1	27.9	78	2.8	4890 a-d
Syngenta NX 24519		1279	28.5	43.3	39.4	29.8	5.0	10.6	7.2	27.2	57	3.1	3320 a-d
Beltwide Cotton Genetics 28R		1237	31.9	47.0	40.8	31.2	4.3	8.6	6.2	27.9	77	2.6	3750 a-d
Deltapine 451 B/RR		1181	27.7	47.4	38.6	30.4	4.6	10.0	6.4	28.2	62	2.8	4860 a-d
Gannaway	02-T-43-104	1181	26.3	47.0	35.5	26.7	5.3	12.4	7.1	26.2	70	3.1	4110 a-d
Stoneville 3990 BR		1159	29.6	45.4	38.6	29.6	5.4	10.9	7.2	29.2	73	2.6	7890 a-d
All-Tex 85039 BG/R		1143	27.6	45.8	37.5	28.8	5.5	10.5	6.6	30.8	68	3.0	1960 bcd
Acala NemX	Comm	1126	25.6	42.9	39.6	28.2	5.1	12.1	8.3	24.4	63	2.7	1680 cd
Hazera HA-195		1117	21.5	43.6	34.1	26.3	3.6	11.7	6.5	18.6	65	1.5	11070 ab
Paymaster HS 26		1110	25.1	42.5	36.7	27.5	5.2	10.6	6.4	29.5	78	3.0	7890 abc
Stoneville 5303 R		1110	29.8	42.6	40.7	30.9	4.9	9.9	7.0	28.1	68	2.9	8010 a-d
Stoneville 2448 R		1091	28.1	46.0	38.3	29.6	5.1	10.2	6.7	29.0	82	2.9	7740 abc
All-Tex Top-Pick		1081	26.1	44.2	38.0	28.2	4.5	9.1	5.8	29.6	74	2.9	8640 abc
All-Tex Excess RR		1074	27.3	45.8	36.7	27.6	5.2	10.9	6.6	29.1	75	2.9	5460 a-d
Paymaster 2200RR		1072	29.9	47.2	38.1	29.9	5.1	10.6	6.7	29.0	74	3.1	13110 abc
Holland x TW 1318	02-T-RR-24	1023	26.4	43.7	38.0	29.5	5.0	10.5	6.8	28.0	86	3.0	3930 bcd
All-Tex 005		997	27.0	44.2	38.7	29.9	4.7	10.3	6.8	26.6	71	2.7	12780 abc

Table 1. Results of the irrigated nematode strains cotton variety test at AG-CARES, Lamesa, TX 2003.

Designation	Source	Agronomic Properties											Nematodes
		% Turnout		% Lint				% Open			Boll	Storm	
		Yield	Lint	Seed	Picked	Pulled	Boll Size	Seed Index	Lint Index	Seed Per Boll	Boll 3-Oct	Resistance	
Hazera HA-14		906	19.0	45.0	29.7	21.3	3.7	12.8	5.9	18.5	57	1.5	5110 a-d
Hazera HA-175		879	19.7	42.8	31.8	22.6	3.4	12.3	6.2	17.2	67	1.2	16710 a-d
Stoneville 1553 R		846	26.9	46.0	36.6	28.3	4.6	9.9	6.0	27.9	97	2.9	5190 a-d
Mean		1194	27.9	44.4	38.5	29.4	4.8	10.4	6.8	27.2	70	2.7	
C.V.%		11.8	3.8	3.8	2.3	2.8	3.7	3.8	4.0	5.1	18.0	7.2	
LSD 0.05		166	1.8	2.8	1.5	1.4	0.3	0.7	0.5	2.4	15	0.2	

Nematode Counts were obtained October 7, 2003.

Table 1A. Results of the irrigated nematode strains cotton variety test at AG-CARES, Lamesa, TX 2003.

Designation	Source	Micro- naire	Length	Uni- formity	Strength	Elon- gation	Leaf Index	Rd	+b	Color Grade <sup>1/</sup>	Loan Value/lb.	Loan Value/A
Stoneville 5599 BR		5.1	1.04	81.1	28.8	5.2	1	75.1	8.8	41-3,31-3	0.4758	808.86
Stoneville LA 887	Comm	4.3	1.13	81.6	27.8	6.9	1	75.3	8.7	31-2,31-4	0.5530	837.24
Deltapine 494 RR		4.9	1.12	82.9	30.9	6.5	1	75.4	8.6	31-4	0.5420	795.11
Deltapine 449 BG/RR		4.6	1.09	82.1	30.4	5.5	1	78.3	8.0	31-1	0.5483	787.36
TW 1318xTW 1320	02-T-RR-23	5.0	0.99	80.0	25.8	6.4	1	75.6	8.5	31-2,31-4	0.4550	620.62
Syngenta NX 25105 N		4.8	1.12	83.0	29.0	6.9	2	76.2	8.9	31-3,31-4	0.5538	754.83
Suregrow 215 BG/RR		4.9	1.03	82.1	25.4	8.3	1	77.4	8.8	21-2,31-3	0.5010	670.84
Stoneville 5242 BR		5.2	1.01	82.8	26.3	6.7	1	76.7	9.1	31-3	0.4550	608.79
Beltwide Cotton Genetics 24R		4.5	1.06	82.1	27.8	7.5	1	78.7	8.2	21-2,31-1	0.5358	705.11
Syngenta NX 24519		4.9	1.06	81.2	28.6	6.8	1	76.9	8.6	31-1,31-3	0.5083	650.12
Beltwide Cotton Genetics 28R		5.0	1.08	80.9	27.6	5.5	1	75.5	8.7	31-4	0.5230	646.95
Deltapine 451 B/RR		5.1	1.07	82.1	27.5	5.3	1	78.0	8.3	31-1	0.5048	596.17
Gannaway	02-T-43-104	4.9	1.06	83.5	31.0	5.1	1	76.7	8.1	31-2	0.5148	607.98
Stoneville 3990 BR		4.4	1.00	81.2	25.5	7.4	1	76.5	8.3	31-2	0.4913	569.42
All-Tex 85039 BG/R		4.6	1.01	81.5	27.2	7.5	1	76.6	8.3	31-2	0.4870	556.64
Acala NemX	Comm	4.2	1.13	84.0	35.0	5.0	1	76.1	8.4	31-2	0.5650	636.19
Hazera HA-195		3.4	1.33	84.2	35.9	6.7	1	71.1	10.1	32-2,42-1	0.5103	570.01
Paymaster HS 26		4.8	1.03	81.8	30.7	7.1	1	74.3	8.0	41-1	0.4840	537.24
Stoneville 5303 R		5.2	1.06	83.9	31.1	5.3	1	76.0	8.8	31-1,31-3	0.4848	538.13
Stoneville 2448 R		4.6	1.06	82.0	31.2	6.3	1	75.0	8.5	31-2,41-3	0.5345	583.14
All-Tex Top-Pick		4.3	1.15	82.8	29.0	6.6	1	77.8	8.5	31-1	0.5585	603.74
All-Tex Excess RR		4.6	1.06	83.2	30.0	6.8	1	76.6	8.0	31-2	0.5400	579.96
Paymaster 2200RR		5.0	1.04	82.0	29.2	6.1	1	75.9	8.8	31-3,31-4	0.4828	517.56
Holland x TW 1318	02-T-RR-24	4.9	1.01	80.2	27.6	7.1	1	73.8	9.0	31-4,41-3	0.4905	501.78
All-Tex 005		5.0	1.00	82.1	29.4	5.4	1	73.3	7.9	41-1,41-2	0.4668	465.40

Table 1A Cont. Results of the irrigated nematode strains cotton variety test at AG-CARES, Lamesa, TX 2003.

Designation	Source	Micro- naire	Length	Uni- formity	Strength	Elon- gation	Leaf Index	Rd	+b	Color Grade	Loan Value/lb.	Loan Value/A
Hazera HA-14		3.3	1.36	83.6	35.6	5.8	2	68.7	10.1	42-1,43-1	0.4610	417.67
Hazera HA-175		3.6	1.28	84.1	36.6	6.6	1	69.8	9.7	42-1	0.5080	446.53
Stoneville 1553 R		3.7	1.10	81.2	30.9	6.2	1	76.4	8.5	31-2	0.5583	472.32
Mean		4.6	1.09	82.2	29.7	6.4	1	75.5	8.6		0.5100	
C.V.%		4.3	2.1	0.8	3.8	6.1	12.7	1.0	2.9		5.0	
LSD 0.05		0.3	0.04	1.1	1.9	0.7	0	1.3	0.4		0.0438	

<sup>1/</sup> Fiber quality determinations were made on samples from two reps. If the color grade from these two samples were identical, only one color grade is reported. If they were different, both are reported.