

# 2016 High Plains Verticillium wilt trial results



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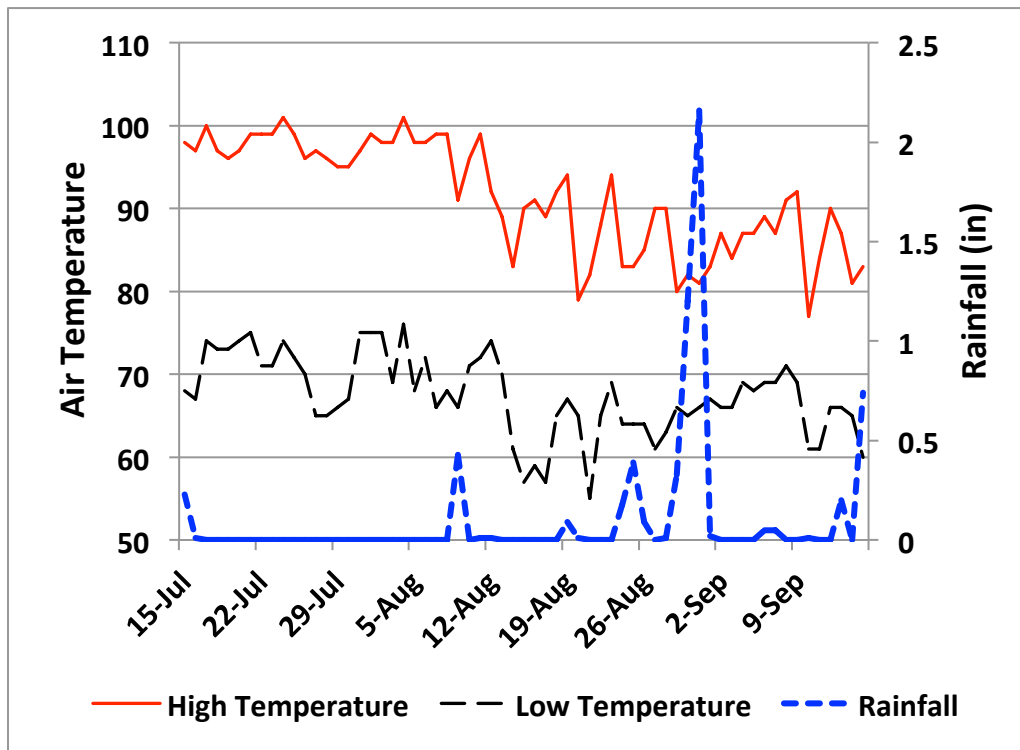
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## Trials in 2016 in Verticillium wilt Fields

The severity of Verticillium wilt is partially dependent on the weather during flowering and the boll opening time (i.e. late July through early September). In 2016, the month of July was hot, with an average high temperature for the month of 99.5°F. These high temperatures continued into August until August 12<sup>th</sup>, and then changed dramatically for the rest of August and September (Fig. 1). As a result of these cool, wet conditions, Verticillium wilt began to show up near the end of August, and then caused substantial defoliation, even in fields with relatively low amounts of the fungus (*Verticillium dahliae*) in the soil. Four sites were planted in fields with a history of low to high levels of Verticillium wilt. The Plainview site had the highest amount of disease, followed by the Floydada and Ropesville sites. The Plains site had low levels of Verticillium wilt and the field was co-infested with the root-knot nematode.



**Figure 1.** High and low temperatures and rainfall for Lubbock in 2016.

The Plainview, Floydada, Ropesville, and Plains sites were planted on 10, 9, 21, and 21 May, respectively. Plots were 2-rows wide and 36 feet long. Cultivars were arranged in a randomized complete block design and replicated four times within a site. Each cultivar was planted at a minimum of two locations. Data collected included plant stands, incidence of wilt in late August, % defoliation in September, and lint yield. The Plainview, Floydada, Ropesville, and Plains sites were harvested on 29, 23, 16, and 13 November, respectively.

**Table 1.** Cultivar responses to Verticillium wilt near Plainview

<b>Cultivar<sup>1</sup></b>	<b>Yield x Loan (\$/acre)</b>	<b>Lbs of lint/a</b>	<b>Plants/ ft row</b>	<b>Wilt (%)</b>	<b>Defoliation (%)</b>	<b>Turnout (%)</b>	<b>Loan (\$/lb)</b>
BX 1734GLT	676.43	1,450	1.31	73.5	9.5	31.6	0.467
NG 3640XF	602.10	1,191	1.98	60.1	27.8	25.5	0.506
FM 1900GLT	530.78	1,069	1.75	68.1	33.9	27.2	0.497
FM 2322GL	486.21	992	1.27	59.6	31.4	26.6	0.490
ST 4747GLB2	483.70	1,230	1.58	82.6	24.3	24.9	0.393
PHY 223WRF	471.03	1,043	1.62	80.3	27.0	23.7	0.452
FM 1888GL	437.20	1,017	1.42	68.0	32.4	24.6	0.430
FM 2484B2F	421.82	917	2.02	52.1	10.0	23.1	0.460
AMX 1608BXF	411.78	905	1.89	69.8	52.4	23.5	0.455
PHY 243WRF	404.32	974	1.63	62.7	29.9	22.0	0.415
FM 2334GLT	398.60	825	1.48	43.6	21.0	23.8	0.483
FM 1911GLT	396.74	853	1.44	63.2	37.4	23.5	0.465
FM 1830GLT	342.59	712	1.44	58.2	30.5	23.5	0.481
FM 2011GT	335.05	699	1.88	58.0	52.6	25.4	0.480
CG 3226B2XF	311.23	671	1.22	62.8	17.7	27.6	0.464
PHY 333WRF	289.49	645	2.09	66.7	58.0	22.2	0.449
ST 5115GLT	281.39	688	1.68	64.2	43.0	22.7	0.409
NG 3406B2XF	253.22	558	1.50	91.6	80.6	23.8	0.454
DP 1518B2XF	235.90	605	1.95	66.6	67.3	24.5	0.390
NG 3517B2XF	228.38	547	1.82	58.2	49.6	19.3	0.418
PHY 308WRF	218.83	561	2.06	51.4	59.7	18.4	0.390
ST 4949GLT	216.83	514	1.52	58.8	44.2	21.7	0.422
PHY 312WRF	213.42	565	1.74	65.8	61.7	20.8	0.378
PHY 222WRF	212.98	524	1.81	55.2	58.8	20.7	0.406
NG 3405B2XF	204.19	479	1.90	60.3	74.4	22.4	0.427
DP 1612B2XF	194.65	467	1.54	85.7	79.6	22.8	0.417
CG 3475B2XF	179.62	473	1.76	65.0	80.6	19.5	0.380
FM 1953GLTP	163.75	392	1.63	72.3	66.3	17.3	0.418
DP 1410B2RF	162.53	412	1.81	61.1	58.0	17.4	0.394
DP 1614B2XF	133.86	347	1.27	60.8	69.4	21.9	0.386
BX 1775GLTP	102.18	263	2.07	71.2	74.8	16.8	0.389
BX 1737GLT	56.95	140	2.07	65.4	76.4	17.0	0.408
<i>MSD(0.05)</i>	<i>69.38</i>	<i>154</i>	<i>0.56</i>	<i>25.9</i>	<i>14.5</i>	<i>5.1</i>	<i>0.081</i>

<sup>1</sup>AMX=experimental line from Americot; BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville.

**Table 2.** Fiber properties for a trial near Plainview

<b>Cultivar<sup>1</sup></b>	<b>Mic<sup>2</sup></b>	<b>Length</b>	<b>Unif</b>	<b>Strength</b>	<b>Elon</b>	<b>Rd</b>	<b>+b</b>	<b>Leaf</b>
AMX 1608BXF	2.65	1.12	79.40	28.65	6.70	79.45	7.75	5.0
NG 3640XF	3.15	1.09	80.35	28.80	8.80	79.20	8.55	3.5
FM 1888GL	2.60	1.15	80.25	28.75	6.45	80.25	7.05	5.0
BX 1734GLT	3.00	1.14	81.25	30.05	7.05	79.45	7.20	6.5
BX 1737GLT	2.15	1.10	77.80	24.85	7.30	79.15	7.60	5.0
FM 1953GLTP	2.20	1.13	78.20	26.40	7.60	80.45	7.05	5.0
BX 1775GLTP	2.10	1.08	76.45	23.65	7.40	78.80	7.55	5.0
CG 3226B2XF	3.15	1.06	80.65	26.80	9.00	79.20	7.60	6.0
CG 3475B2XF	2.15	1.10	77.20	26.15	8.40	76.45	7.20	6.5
DP 1410B2RF	2.20	1.14	77.05	26.70	7.30	78.75	6.95	6.0
DP 1518B2XF	2.45	1.12	78.85	27.45	7.60	78.15	7.20	6.5
DP 1612B2XF	2.70	1.14	79.90	28.50	8.60	77.00	6.95	6.5
DP 1614B2XF	2.55	1.13	78.25	26.25	8.55	76.10	7.75	7.5
FM 1830GLT	2.65	1.17	79.80	27.75	7.00	82.85	7.55	3.5
FM 1900GLT	3.15	1.16	80.20	29.10	6.45	80.30	7.10	5.0
FM 1911GLT	2.60	1.15	79.45	27.80	7.30	81.45	6.80	4.0
FM 2011GT	2.75	1.12	79.05	27.45	7.45	80.30	7.30	4.0
FM 2322GL	3.20	1.14	80.35	28.90	6.85	81.40	7.35	5.0
FM 2334GLT	2.55	1.20	79.35	28.40	7.15	81.80	7.40	3.0
FM 2484B2F	2.50	1.16	78.95	26.95	6.85	82.55	7.60	4.0
NG 3405B2XF	2.50	1.08	78.05	25.00	8.05	78.40	7.80	4.5
NG 3406B2XF	2.65	1.10	80.30	27.35	9.10	79.05	7.55	5.0
NG 3517B2XF	2.30	1.11	79.60	28.35	8.15	79.75	7.75	5.5
PHY 222WRF	2.65	1.10	79.45	26.90	9.20	77.75	7.60	6.0
PHY 223WRF	2.80	1.20	81.25	29.50	8.40	78.90	7.10	5.5
PHY 243WRF	2.40	1.16	77.75	26.55	8.05	80.15	6.75	5.5
PHY 308WRF	2.55	1.13	79.90	28.90	8.45	75.60	7.55	7.5
PHY 312WRF	2.30	1.10	77.70	25.75	7.35	78.85	7.55	6.5
PHY 333WRF	2.65	1.11	77.95	26.30	7.55	77.65	8.20	5.0
ST 4747GLB2	2.65	1.14	78.50	26.50	6.80	78.85	6.25	6.5
ST 4949GLT	2.40	1.08	78.15	25.65	7.95	79.40	8.05	3.5
ST 5115GLT	2.45	1.11	78.05	27.25	8.25	79.85	7.40	5.5
<i>MSD(0.05)</i>	<i>0.44</i>	<i>0.04</i>	<i>2.19</i>	<i>2.15</i>	<i>0.54</i>	<i>1.76</i>	<i>0.56</i>	<i>2.4</i>

<sup>1</sup>AMX=experimental line from Americot; BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville.

<sup>2</sup>Mic=micronaire, unif=uniformity, elon=elongation.

**Table 3.** Cultivar response to Verticillium wilt near Floydada

<b>Cultivar<sup>1</sup></b>	<b>Yield x Loan (\$/acre)</b>	<b>Lbs of lint/a</b>	<b>Plants/ ft row</b>	<b>Wilt (%)</b>	<b>Defoliation (%)</b>	<b>Turnout (%)</b>	<b>Loan (\$/lb)</b>
FM 2484B2F	994.71	1,751	2.59	20.4	25.6	29.5	0.568
NG 3500XF	864.02	1,551	2.47	19.7	35.1	27.8	0.557
NG 4545B2XF	859.77	1,579	2.63	22.6	36.1	30.6	0.545
FM 2322GL	855.78	1,666	2.41	11.8	10.5	28.5	0.514
FM 2334GLT	810.28	1,539	2.00	26.9	29.3	29.5	0.527
NG 4689B2XF	792.16	1,425	3.10	17.0	44.0	29.6	0.556
PHY 243WRF	786.27	1,593	3.22	8.6	17.4	26.9	0.494
FM 1900GLT	769.71	1,414	2.77	30.7	56.5	30.1	0.544
FM 1830GLT	764.03	1,412	1.99	27.7	38.8	29.4	0.541
FM 1911GLT	761.31	1,530	2.76	13.7	33.6	28.5	0.498
BX 1774GLTP	753.00	1,413	2.67	24.1	44.6	27.4	0.533
PHY 333WRF	705.89	1,342	2.57	40.0	64.2	28.9	0.526
NG 3306B2RF	704.09	1,397	2.19	36.2	58.8	30.5	0.504
DP 1321B2RF	696.55	1,416	2.74	30.3	54.9	28.5	0.492
ST 4848GLT	692.45	1,401	2.34	31.5	59.5	29.2	0.494
BX 1734GLT	690.08	1,385	2.77	22.5	34.7	27.4	0.498
CG 3475B2XF	679.59	1,270	2.74	41.8	59.0	26.8	0.535
NG 3405B2XF	677.46	1,326	2.72	32.5	60.9	28.1	0.511
NG 3699B2XF	676.75	1,310	3.14	14.7	42.7	25.7	0.517
DP 1522B2XF	669.40	1,353	2.51	34.8	65.0	28.0	0.495
DP 1518B2XF	661.54	1,242	3.02	36.8	62.9	27.8	0.533
DP 1614B2XF	653.92	1,294	1.75	37.4	62.7	28.8	0.505
PHY 312WRF	645.02	1,362	2.63	35.0	50.8	28.2	0.474
FM 2007GLT	642.85	1,361	2.71	23.3	46.8	27.2	0.472
PHY 222WRF	640.24	1,255	2.55	34.0	51.6	27.3	0.510
PHY 223WRF	634.32	1,334	3.04	27.7	46.0	25.0	0.476
BX 1733GLT	623.60	1,317	2.27	29.0	52.2	27.7	0.474
DP 1612B2XF	614.23	1,252	2.89	34.1	59.4	27.3	0.491
ST 5020GLT	608.11	1,298	2.78	34.8	64.0	28.0	0.469
DP 1219B2RF	592.56	1,235	2.57	31.4	52.6	26.4	0.480
NG 3522B2XF	584.57	1,199	2.66	33.8	57.2	25.8	0.488
WF 16XA7B2XF	495.87	1,086	1.35	49.9	71.2	26.0	0.457
BX 1776GLTP	446.55	1,047	2.98	35.0	54.1	27.5	0.427
<i>MSD (0.05)</i>	<i>64.45</i>	<i>132</i>	<i>0.28</i>	<i>20.0</i>	<i>15.3</i>	<i>NS</i>	<i>0.121</i>

<sup>1</sup>BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville; WF=experimental line from Croplan Genetics.

**Table 4.** Fiber properties for a trial near Floydada

<b>Cultivar<sup>1</sup></b>	<b>Mic<sup>2</sup></b>	<b>Length</b>	<b>Unif</b>	<b>Strength</b>	<b>Elon</b>	<b>Rd</b>	<b>+b</b>	<b>Leaf</b>
BX 1733GLT	2.85	1.16	79.75	30.10	7.75	79.35	7.30	3.5
BX 1734GLT	3.55	1.14	81.55	30.85	7.45	79.40	6.45	5.5
BX 1774GLTP	3.50	1.15	80.75	29.15	7.75	81.30	6.45	3.5
BX 1776GLTP	2.95	1.14	79.55	27.65	8.55	75.50	7.20	6.0
CG 3475B2XF	4.10	1.16	81.10	30.65	7.10	78.80	6.75	4.0
DP 1219B2RF	2.85	1.16	80.40	31.40	7.95	80.10	6.55	3.5
DP 1321B2RF	3.30	1.13	81.90	30.15	9.75	78.30	6.90	5.0
DP 1518B2XF	3.55	1.16	81.10	29.30	8.15	80.35	6.55	4.5
DP 1522B2XF	3.40	1.13	81.40	30.00	10.10	78.50	6.50	5.5
DP 1612B2XF	3.35	1.16	81.25	30.30	9.35	77.80	6.85	5.5
DP 1614B2XF	3.35	1.15	81.60	29.95	8.95	78.20	7.40	4.0
FM 1830GLT	3.40	1.22	80.75	30.85	7.40	81.10	6.40	3.5
FM 1900GLT	3.70	1.16	81.60	29.70	6.80	79.00	6.55	4.0
FM 1911GLT	3.35	1.14	81.20	29.65	7.90	80.25	6.85	5.0
FM 2007GLT	3.05	1.17	80.20	29.80	7.95	81.35	6.30	4.5
FM 2322GL	3.65	1.15	81.95	30.50	8.25	78.85	6.85	4.5
FM 2334GLT	3.90	1.17	81.50	29.95	8.35	79.55	6.75	4.0
FM 2484B2F	3.80	1.21	81.70	29.80	7.10	81.80	6.40	2.5
NG 3306B2RF	3.60	1.17	81.60	30.55	8.55	78.85	7.15	4.5
NG 3405B2XF	3.40	1.09	79.05	27.00	8.35	79.60	7.25	3.0
NG 3500XF	3.85	1.12	82.10	30.90	8.70	79.10	7.85	3.5
NG 3522B2XF	2.95	1.08	78.70	26.80	8.35	79.20	7.50	3.5
NG 3699B2XF	4.00	1.16	80.50	29.80	6.90	78.30	7.40	4.0
NG 4545B2XF	4.10	1.12	81.65	29.75	7.25	79.95	7.20	3.0
NG 4689B2XF	4.05	1.10	81.85	30.30	7.40	79.60	7.85	2.0
PHY 222WRF	3.50	1.13	80.30	27.95	8.65	78.10	7.35	4.5
PHY 223WRF	3.15	1.19	82.55	30.45	8.55	79.45	6.75	5.0
PHY 243WRF	3.75	1.14	79.50	27.45	8.50	79.65	6.60	5.5
PHY 312WRF	3.30	1.14	81.85	29.55	8.30	78.30	6.70	6.0
PHY 333WRF	3.60	1.17	82.10	29.80	7.75	80.30	6.95	3.5
ST 4848GLT	3.25	1.13	80.80	29.90	8.45	78.70	7.00	4.5
ST 5020GLT	3.00	1.18	81.55	31.50	8.60	78.25	6.55	5.0
WF 16XA7B2XF	3.10	1.14	79.90	28.10	8.70	76.35	7.25	6.0
<i>MSD (0.05)</i>	<i>0.86</i>	<i>0.04</i>	<i>2.22</i>	<i>2.22</i>	<i>1.29</i>	<i>2.69</i>	<i>0.81</i>	<i>2.8</i>

<sup>1</sup>BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville; WF=experimental line from Croplan Genetics.

<sup>2</sup>Mic=micronaire, unif=uniformity, elon=elongation.

**Table 5.** Cultivar response to Verticillium wilt at a field near Ropesville

<b>Cultivar<sup>1</sup></b>	<b>Yield x Loan (\$/acre)</b>	<b>Lbs of lint/a</b>	<b>Plants/ ft row</b>	<b>Wilt (%)</b>	<b>Defoliation (%)</b>	<b>Turnout (%)</b>	<b>Loan (\$/lb)</b>
FM 1911GLT	739.32	1,358	3.07	3.6	0.0	29.1	0.544
NG 3500XF	664.07	1,318	2.98	17.3	7.2	26.5	0.505
NG 3699B2XF	622.06	1,188	3.15	14.6	7.9	26.3	0.524
FM 2334GLT	614.72	1,251	2.36	28.6	4.8	28.1	0.491
NG 4689B2XF	563.31	1,082	3.36	15.4	0.0	24.3	0.518
NG 4545B2XF	555.49	1,162	3.15	23.7	1.7	25.8	0.478
FM 2484B2F	555.13	1,195	3.01	21.8	1.7	26.3	0.458
BX 1735GLT	523.08	1,314	2.92	24.1	6.2	24.1	0.399
FM 1830GLT	520.31	1,121	2.66	25.1	5.2	27.6	0.465
BX 1739GLT	512.38	1,046	2.60	21.2	2.5	29.9	0.485
BX 1736GLT	502.69	1,104	2.47	16.2	6.2	24.7	0.445
CG 3226B2XF	474.53	1,056	2.52	23.3	2.7	28.2	0.446
DP 1646B2XF	452.43	1,015	2.25	36.6	27.4	28.6	0.445
FM 2007GLT	448.74	1,013	2.92	19.8	4.3	25.4	0.442
DP 1522B2XF	437.50	972	2.55	25.4	21.7	25.7	0.445
ST 4946GLB2	431.20	1,069	2.69	29.1	14.9	25.9	0.403
DP 1321B2RF	429.85	944	2.83	14.7	25.0	25.8	0.455
ST 5020GLT	399.29	885	2.95	46.9	43.3	26.2	0.446
BX 1774GLTP	398.17	938	3.20	37.8	33.6	24.1	0.424
NG 3306B2RF	387.42	848	2.54	45.8	24.4	24.3	0.440
DP 1639B2XF	385.44	820	2.55	35.1	30.5	25.2	0.458
PHY 487WRF	364.17	916	3.01	33.4	30.6	25.4	0.397
ST 6182GLT	360.19	751	2.25	42.5	47.7	27.7	0.464
PHY 333WRF	358.51	819	2.90	40.6	53.2	24.6	0.422
PHY 490W3FE	355.83	843	3.07	35.2	17.3	23.2	0.414
ST 4848GLT	351.46	811	2.46	31.2	19.4	24.3	0.431
BX 1733GLT	337.81	777	2.65	34.2	17.4	24.5	0.433
DP 1410B2RF	332.96	724	2.89	43.9	17.3	22.2	0.443
PHY 495W3RF	331.56	869	2.87	42.1	34.5	27.8	0.383
NG 4601B2XF	326.31	669	2.40	34.8	35.7	24.8	0.480
DP 1359B2RF	319.86	751	2.28	29.6	16.1	27.1	0.424
DP 1549B2XF	298.15	691	2.44	29.0	18.0	21.1	0.431
NG 5007B2XF	292.61	654	2.18	46.5	34.3	22.6	0.430
NG 3522B2XF	279.81	692	2.84	41.6	45.4	25.1	0.403
PHY 444WRF	277.34	676	2.75	53.3	30.5	26.6	0.408
DP 1553B2XF	270.34	612	1.97	32.9	22.3	21.4	0.441
BX 1776GLTP	265.52	598	3.01	39.9	74.5	23.4	0.436
DP 1538B2XF	229.96	542	1.96	57.9	44.0	20.7	0.405
WF 16XA7B2XF	220.14	561	1.25	41.8	31.2	23.5	0.393
CG 3885B2XF	219.70	546	2.23	62.0	43.5	20.4	0.382
<i>MSD (0.05)</i>	<i>110.74</i>	<i>195</i>	<i>0.27</i>	<i>24.5</i>	<i>29.3</i>	<i>NS</i>	<i>0.140</i>

<sup>1</sup>BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville; WF=experimental line from Croplan Genetics.

**Table 6.** Fiber properties for a trial near Ropesville

<b>Cultivar<sup>1</sup></b>	<b>Mic<sup>2</sup></b>	<b>Length</b>	<b>Unif</b>	<b>Strength</b>	<b>Elon</b>	<b>Rd</b>	<b>+b</b>	<b>Leaf</b>
BX 1733GLT	2.50	1.13	78.10	28.75	7.75	77.75	7.35	4.0
BX 1735GLT	2.55	1.19	80.30	30.95	8.15	76.65	7.75	6.0
BX 1736GLT	3.10	1.19	81.60	29.45	8.85	76.10	8.20	6.0
BX 1739GLT	3.45	1.12	79.80	29.90	7.20	79.50	6.65	4.5
BX 1774GLTP	2.80	1.15	79.55	28.90	7.55	79.25	6.30	6.0
BX 1776GLTP	2.65	1.09	78.75	26.20	8.50	77.00	6.85	4.0
CG 3226B2XF	3.10	1.07	79.75	28.45	9.45	75.85	7.45	5.5
CG 3885B2XF	2.40	1.10	79.05	25.80	9.05	74.70	7.55	6.0
DP 1321B2RF	3.10	1.11	79.90	30.05	10.30	77.15	7.10	5.0
DP 1359B2RF	2.60	1.13	78.00	29.65	7.75	76.40	7.85	5.0
DP 1410B2RF	3.00	1.12	79.65	28.65	8.25	75.95	7.35	5.0
DP 1522B2XF	3.20	1.12	80.10	27.60	9.75	76.60	7.55	6.0
DP 1538B2XF	2.45	1.07	78.55	26.00	8.85	76.05	7.30	5.0
DP 1549B2XF	2.70	1.13	79.80	29.05	7.85	75.05	7.45	5.0
DP 1553B2XF	2.60	1.11	78.70	27.75	9.15	77.35	7.20	4.5
DP 1639B2XF	2.95	1.12	80.45	28.70	9.25	76.15	7.55	5.0
DP 1646B2XF	2.95	1.18	79.55	29.00	9.20	78.90	7.05	5.0
FM 1830GLT	3.10	1.21	80.45	30.90	7.75	79.30	6.75	4.5
FM 1911GLT	4.10	1.14	81.90	30.70	7.85	80.45	7.05	3.5
FM 2007GLT	3.05	1.16	79.80	29.90	8.35	79.25	6.50	6.0
FM 2334GLT	3.05	1.22	82.10	30.65	7.50	79.20	7.40	4.0
FM 2484B2F	3.25	1.18	81.10	30.35	7.25	79.30	7.15	4.5
NG 3306B2RF	2.90	1.14	80.45	29.90	9.10	76.10	7.55	6.0
NG 3500XF	3.55	1.09	81.75	29.70	9.05	77.15	8.60	3.5
NG 3522B2XF	2.50	1.08	79.00	26.45	8.20	77.35	7.35	5.5
NG 3699B2XF	3.65	1.17	80.55	30.50	7.50	77.20	7.80	4.0
NG 4545B2XF	3.00	1.13	80.85	32.30	7.20	77.60	7.55	4.0
NG 4601B2XF	3.00	1.12	80.05	29.15	8.65	76.50	7.30	4.5
NG 4689B2XF	3.20	1.10	81.20	31.00	7.50	77.85	8.10	3.5
NG 5007B2XF	2.80	1.10	78.00	26.25	9.05	76.35	7.45	4.0
PHY 333WRF	3.25	1.12	79.95	28.75	8.20	74.15	7.80	6.0
PHY 444WRF	2.20	1.15	77.80	27.20	7.25	76.85	7.60	5.0
PHY 487WRF	2.45	1.07	79.40	27.60	8.80	75.00	7.55	5.5
PHY 490W3FE	2.65	1.13	80.55	29.65	9.35	75.50	7.45	6.5
PHY 495W3RF	2.40	1.09	78.80	28.55	8.70	74.80	7.40	6.0
ST 4848GLT	2.85	1.13	80.90	28.85	8.15	74.80	7.55	6.0
ST 4946GLB2	2.45	1.15	80.40	31.20	8.95	77.30	7.60	5.5
ST 5020GLT	2.80	1.16	80.85	31.10	8.70	77.15	6.90	5.5
ST 6182GLT	2.95	1.09	78.95	26.80	8.55	77.95	7.25	4.0
WF 16XA7B2XF	2.50	1.14	79.10	28.40	8.50	74.70	7.95	6.0
<i>MSD (0.05)</i>	<i>1.11</i>	<i>0.04</i>	<i>1.94</i>	<i>1.91</i>	<i>0.68</i>	<i>2.88</i>	<i>0.59</i>	<i>NS</i>

<sup>1</sup>BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville; WF=experimental line from Croplan Genetics.

<sup>2</sup>Mic=micronaire, unif=uniformity, elon=elongation.



**Table 7.** Cultivar response to Verticillium wilt and Root-knot nematodes near Plains

<b>Cultivar<sup>1</sup></b>	<b>Yield x Loan (\$/acre)</b>	<b>Lbs of lint/a</b>	<b>Plants /ft row</b>	<b>Wilt (%)</b>	<b>Defol iation (%)</b>	<b>Turn- out (%)</b>	<b><sup>2</sup>RK</b>	<b>Loan (\$/lb)</b>
DP 1558NRB2RF	860.45	1,660	2.73	5.1	17.3	30.3	450	0.519
ST 4946GLB2	849.41	1,610	2.94	7.2	22.9	29.2	30	0.528
DP 1553B2XF	833.57	1,506	2.58	5.2	8.3	30.8	30	0.554
DP 1646B2XF	811.40	1,546	2.58	4.9	11.0	31.4	720	0.525
DP 1538B2XF	808.34	1,460	2.72	9.9	16.7	29.3	450	0.554
NG 3640XF	791.42	1,594	3.64	4.0	10.4	29.4	2220	0.497
ST 4747GLB2	785.96	1,627	3.46	5.8	6.9	30.0	150	0.483
NG 3500XF	781.01	1,554	3.07	1.1	4.8	29.9	2550	0.503
NG 5007B2XF	780.07	1,391	2.73	10.6	21.4	29.1	60	0.561
DP 1639B2XF	773.56	1,469	3.06	3.3	7.1	29.9	600	0.527
FM 1830GLT	771.97	1,380	3.06	4.2	7.3	29.9	720	0.560
CG 3885B2XF	761.13	1,365	2.90	8.2	17.7	28.7	415	0.558
PHY 487WRF	757.37	1,450	3.45	11.6	28.3	26.0	2010	0.523
FM 2484B2F	755.80	1,456	3.42	2.5	9.4	30.6	1890	0.519
DP 1359B2RF	744.66	1,371	2.60	10.5	20.8	30.0	2340	0.543
ST 6182GLT	739.29	1,364	2.72	9.0	17.9	29.9	180	0.542
ST 5115GLT	739.14	1,375	3.33	4.4	6.3	29.0	1500	0.538
FM 1911GLT	735.14	1,350	3.28	2.2	9.4	29.2	270	0.545
AMX 1608B2XF	735.00	1,396	3.68	2.9	2.1	28.2	1380	0.527
DP 1549B2XF	730.01	1,476	2.75	5.9	5.8	30.0	480	0.495
BX 1739GLT	725.82	1,333	2.79	5.2	13.1	30.4	810	0.545
NG 3406B2XF	719.85	1,524	3.21	6.5	8.3	30.0	990	0.473
FM 1953GLTP	710.93	1,342	3.51	6.8	19.4	30.4	1800	0.530
ST 4949GLT	695.63	1,368	2.75	13.8	9.0	29.6	1770	0.509
PHY 333WRF	695.50	1,453	3.16	17.9	25.0	30.0	690	0.479
FM 2334GLT	694.52	1,223	2.80	3.0	2.1	28.5	2100	0.568
BX 1735GLT	687.00	1,437	3.29	1.9	11.0	27.5	300	0.478
FM 1888GL	680.33	1,410	3.18	3.6	8.3	30.4	510	0.483
PHY 490W3FE	679.07	1,328	3.43	15.4	21.0	27.5	2220	0.511
NG 3517B2XF	675.40	1,339	3.09	4.3	6.3	27.3	990	0.505
BX 1736GLT	670.84	1,319	3.14	4.5	10.4	28.1	1440	0.509
PHY 444WRF	659.05	1,338	3.08	17.7	27.7	28.8	5190	0.493
PHY 308WRF	646.71	1,435	3.66	7.7	12.7	26.7	180	0.451
BX 1737GLT	610.35	1,174	3.19	20.6	36.0	27.3	2760	0.520
BX 1775GLTP	595.98	1,184	3.26	17.1	25.0	28.0	4710	0.503
PHY 495W3RF	564.45	1,252	3.09	24.8	38.3	27.7	180	0.451
<i>MSD(0.05)</i>	<i>74.12</i>	<i>148</i>	<i>0.23</i>	<i>6.8</i>	<i>19.9</i>	<i>3.0</i>	<i>---</i>	<i>---</i>

<sup>1</sup>AMX=experimental line from Americot; BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville.

<sup>2</sup>RK=root-knot nematode/500 cm<sup>3</sup> soil.

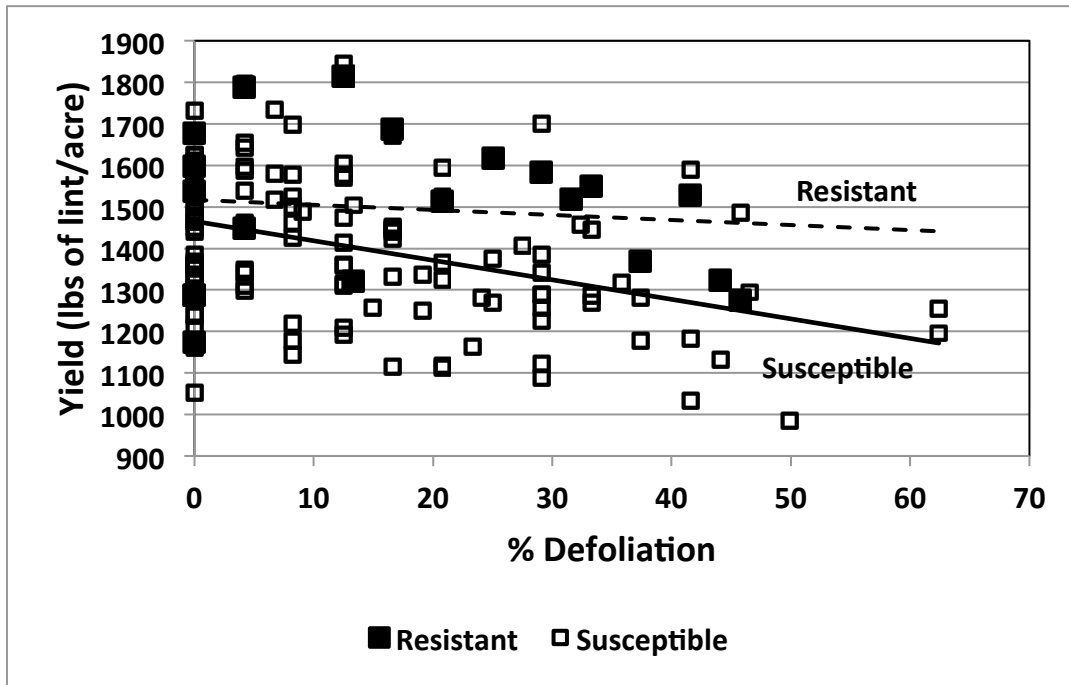
**Table 8.** Fiber properties for a trial near Plains

<b>Cultivar<sup>1</sup></b>	<b>Mic<sup>2</sup></b>	<b>Length</b>	<b>Unif</b>	<b>Strength</b>	<b>Elon</b>	<b>Rd</b>	<b>+b</b>	<b>Leaf</b>
AMX 1608B2XF	4.75	1.12	82.50	32.00	6.70	77.10	8.35	4.5
BX 1735GLT	3.60	1.21	82.85	31.10	7.80	76.00	8.70	5.5
BX 1736GLT	3.65	1.17	81.70	30.35	7.95	76.80	8.30	4.5
BX 1737GLT	3.60	1.13	81.20	29.65	8.25	77.10	7.75	4.5
BX 1739GLT	3.65	1.19	81.05	31.40	6.65	78.70	7.70	4.5
BX 1775GLTP	3.60	1.15	80.70	29.05	9.05	76.45	8.05	5.0
CG 3885B2XF	3.90	1.12	81.70	28.30	8.95	77.80	8.75	2.5
DP 1359B2RF	4.45	1.13	81.25	30.40	7.70	76.25	8.50	3.5
DP 1538B2XF	4.05	1.09	81.60	26.75	8.90	78.40	8.40	2.0
DP 1549B2XF	3.95	1.14	81.00	29.95	7.65	76.60	8.75	5.5
DP 1553B2XF	4.45	1.16	82.55	29.15	8.45	78.60	8.65	2.5
DP 1558NRB2RF	4.05	1.14	81.30	30.85	8.40	76.45	8.50	4.0
DP 1639B2XF	4.35	1.15	83.05	30.25	9.00	76.25	8.55	4.5
DP 1646B2XF	3.80	1.22	81.85	29.10	8.30	78.30	8.00	5.0
FM 1830GLT	4.35	1.21	82.10	31.25	7.10	78.85	7.75	3.5
FM 1888GL	4.55	1.15	81.95	31.20	6.45	76.45	7.60	7.5
FM 1911GLT	4.40	1.14	81.65	31.45	7.30	78.95	7.60	4.5
FM 1953GLTP	4.15	1.17	82.50	32.45	8.80	79.75	7.00	3.5
FM 2334GLT	4.05	1.22	82.05	30.05	6.85	79.40	8.10	2.5
FM 2484B2F	4.20	1.19	81.85	31.70	7.00	78.35	7.50	5.5
NG 3406B2XF	4.35	1.11	82.25	29.10	9.15	76.00	8.45	7.0
NG 3500XF	4.55	1.10	82.20	30.60	8.70	75.15	9.25	3.5
NG 3517B2XF	4.35	1.14	82.15	31.85	8.35	75.95	8.25	5.0
NG 3640XF	4.60	1.11	82.95	30.40	8.80	76.00	8.75	4.5
NG 5007B2XF	4.00	1.13	81.35	27.35	8.85	77.35	8.40	3.0
PHY 308WRF	3.85	1.14	82.50	32.65	8.40	73.90	8.45	7.5
PHY 333WRF	4.00	1.13	82.30	30.40	7.90	74.65	8.50	6.0
PHY 444WRF	3.20	1.18	82.75	30.80	7.70	77.35	8.40	4.5
PHY 487WRF	3.70	1.12	81.85	30.15	8.35	75.40	8.40	4.5
PHY 490W3FE	4.10	1.11	82.65	32.10	9.55	77.20	7.85	5.0
PHY 495W3RF	3.30	1.10	81.70	31.95	8.90	75.90	8.15	6.5
ST 4747GLB2	4.45	1.16	80.55	28.85	6.65	76.40	7.30	6.5
ST 4946GLB2	4.40	1.16	82.45	31.30	8.80	77.00	8.40	4.5
ST 4949GLT	3.50	1.14	81.45	29.10	8.15	76.85	8.40	5.0
ST 5115GLT	3.85	1.12	81.15	29.85	8.20	78.70	8.20	4.0
ST 6182GLT	4.25	1.10	82.05	28.15	8.30	78.50	8.00	4.0
MSD(0.05)	0.68	0.03	1.42	1.88	0.55	1.19	0.42	1.8

<sup>1</sup>AMX=experimental line from Americot; BX=experimental line from Bayer CropScience; CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville.

<sup>2</sup>Mic=micronaire, unif=uniformity, elon=elongation.

Defoliation was related to yield loss for cultivars that were susceptible to root-knot nematodes, but there was no relationship between wilt or defoliation and yield for the cultivars that had some resistance to root-knot nematodes.



**Figure 2.** Relationship between defoliation and yield for root-knot nematode resistant and susceptible cultivars. Root-knot nematode susceptible cultivars lost an average of 4.7 lbs of lint for every percent defoliation.

An analysis was performed on all the varieties (not experimental lines) from 2014 – 2016. Those that had yield, wilt, or defoliation consistent with the resistant check variety (FM 2484B2F) were given an “a” label. Those that had yield, wilt, or defoliation consistent with the susceptible check (PHY 333WRF) were given a “c”. Those that were better than the susceptible check, but worse than the resistant check were given a “b”, and those that were worse than the susceptible check were given a “d”. Being worse or better was statistically significant at P=0.10. The results of the analyses for relative yield, wilt, and defoliation are presented in Table 5. The best performing varieties (a’s for all categories) were: NG 3500XF, ST 4747GLB2, FM 2484B2F, PHY 243WRF, and NG 4545B2XF. NG 3640XF and NG 3699B2XF also performed very well, but were only tested in 2016. The other recommended varieties were tested in multiple years.

**Table 5.** The varieties with the best relative yields during 2014-2016 Verticillium wilt trials, and their relative wilt and defoliation ratings

Variety <sup>1</sup>	Relative Yield	Rating Yield	Relative % Wilt	Rating wilt	Relative Defoliation	Rating Defoliation
<b>NG 3500XF</b>	<b>0.7393</b>	<b>a</b>	<b>0.1933</b>	<b>a</b>	<b>0.2203</b>	<b>a</b>
DP 1558NRB2RF	0.7018	a	0.2428	a	0.3929	c
<b>ST 4747GLB2</b>	<b>0.6782</b>	<b>a</b>	<b>0.2963</b>	<b>a</b>	<b>0.2054</b>	<b>a</b>
<b>NG 3640XF</b>	<b>0.6722</b>	<b>a</b>	<b>0.2318</b>	<b>a</b>	<b>0.2487</b>	<b>a</b>
<b>FM 2484B2F</b>	<b>0.6703</b>	<b>a</b>	<b>0.2165</b>	<b>a</b>	<b>0.1319</b>	<b>a</b>
<b>FM 2322GL</b>	<b>0.6403</b>	<b>a</b>	<b>0.2180</b>	<b>a</b>	<b>0.1444</b>	<b>a</b>
DG 2615B2RF	0.6271	a	0.1820	a	0.2740	b
<b>PHY 243WRF</b>	<b>0.6260</b>	<b>a</b>	<b>0.2315</b>	<b>a</b>	<b>0.1900</b>	<b>a</b>
<b>NG 3699B2XF</b>	<b>0.6144</b>	<b>a</b>	<b>0.1140</b>	<b>a</b>	<b>0.2169</b>	<b>a</b>
<b>NG 4545B2XF</b>	<b>0.6073</b>	<b>a</b>	<b>0.1784</b>	<b>a</b>	<b>0.2162</b>	<b>a</b>
DP 1441RF	0.6058	a	0.3989	c	0.2976	a
FM 2011GT	0.5920	b	0.2577	a	0.3561	b
ST 4946GLB2	0.5830	b	0.3023	b	0.4121	b
FM 9250GL	0.5714	b	0.3313	b	0.3257	b
NG 4111RF	0.5705	b	0.3447	b	0.3063	b
NG 4689B2XF	0.5621	b	0.1302	a	0.1769	a
FM 1911GLT	0.5617	b	0.1205	a	0.2135	a
PHY 223WR	0.5377	b	0.3542	b	0.2866	b
FM 1944GLB2	0.5269	b	0.2924	a	0.2884	b
PHY 487WRF	0.5258	b	0.4001	c	0.4630	c
FM 9180B2F	0.5246	b	0.4020	c	0.2833	b
FM 2007GLT	0.5164	b	0.2935	a	0.2907	b
FM 1320GL	0.5121	b	0.4354	c	0.3264	b
FM 1830GLT	0.5112	b	0.2111	a	0.1961	a
DP 1522B2XF	0.4879	c	0.2828	a	0.4665	c
FM 2334GLT	0.4859	b	0.2012	a	0.1318	a
DP 1646B2XF	0.4852	c	0.3034	a	0.3218	b

ST 5115GLT	0.4845	c	0.2164	a	0.2542	b
FM 1888GL	0.4785	c	0.3239	b	0.2592	b
PHY 490W3FE	0.4757	c	0.4367	c	0.3403	b
FM 1900GLT	0.4699	c	0.3580	b	0.4277	b
PHY 339WRF	0.4614	c	0.2595	a	0.2796	b
PHY 308WRF	0.4569	c	0.2257	a	0.3695	b
DP 1311B2RF	0.4552	c	0.2811	a	0.2481	b
DP 1549B2XF	0.4542	c	0.2743	a	0.2227	a
ST 4848GLT	0.4480	c	0.2961	a	0.3914	b
NG 3406B2XF	0.4470	c	0.4819	c	0.5056	c
DP 1410B2RF	0.4468	c	0.3046	b	0.3038	b
DP 1639B2XF	0.4463	c	0.2737	a	0.3090	b
PHY 312WRF	0.4441	c	0.3448	b	0.4383	b
CG 3226B2XF	0.4437	c	0.2957	c	0.0712	a
DP 0912B2RF	0.4327	c	0.3464	b	0.3767	b
ST 5020GLT	0.4249	c	0.4042	c	0.5647	c
PHY 417WRF	0.4224	c	0.3108	a	0.4771	c
<b>PHY 333WRF</b>	<b>0.4137</b>	<b>c</b>	<b>0.4635</b>	<b>c</b>	<b>0.5636</b>	<b>c</b>
DP 1321B2RF	0.4124	c	0.3011	b	0.4509	b
DP 1553B2XF	0.4064	c	0.2863	a	0.2690	b
NG 3517B2XF	0.4027	c	0.2191	a	0.2769	b
DP 1518B2XF	0.3937	c	0.3386	b	0.5476	c
PHY 222WRF	0.3934	c	0.2906	b	0.5118	c
DP 1538B2XF	0.3921	c	0.4938	c	0.4672	c
NG 5007B2XF	0.3864	c	0.4370	c	0.4466	c
NG 2051B2RF	0.3787	c	0.2629	a	0.3834	b
NG 1511B2RF	0.3766	c	0.2755	a	0.4792	c
DP 1044B2RF	0.3719	c	0.3436	b	0.2116	a
NG 3522B2XF	0.363	c	0.3681	c	0.5347	c
NG 3306B2RF	0.3629	c	0.4387	c	0.4754	c
DP 1212B2RF	0.3535	c	0.4016	c	0.6676	c
CG 3475B2XF	0.3521	c	0.4051	c	0.6863	c
PHY 444WRF	0.3519	c	0.6338	d	0.4479	b
CG 3885B2XF	0.3476	c	0.4952	c	0.4727	c
DP 1219B2RF	0.3441	c	0.3048	b	0.3070	b
DP 1359B2RF	0.3386	c	0.3393	b	0.3316	b
ST 4949GLT	0.3320	c	0.3917	c	0.3356	b
DP 1133B2RF	0.3295	c	0.4312	c	0.3204	b
DP 1612B2XF	0.3263	c	0.4289	c	0.6825	c
ST 6182GLT	0.3253	c	0.3933	c	0.4997	c
PHY 499WRF	0.3235	d	0.4086	c	0.5024	c
ST 5032GLT	0.3222	c	0.3004	a	0.5423	c
PHY 427WRF	0.3134	d	0.3662	b	0.5241	c
PHY 495W3RF	0.3133	d	0.4620	c	0.5698	c
DP 1137B2RF	0.3104	d	0.5419	c	0.4742	c
NG 4012B2RF	0.2948	c	0.4561	c	0.2401	a

FM 8270GLT	0.2947	c	0.2731	a	0.4219	c
NG 3405B2XF	0.2866	d	0.2861	a	0.6858	d
DG 3109B2XF	0.2819	d	0.2013	a	0.2098	a
DP 1614B2XF	0.2790	d	0.3423	b	0.6423	c
FM 1953GLTP	0.2602	d	0.3282	b	0.5515	c
ST 5289GLT	0.2251	d	0.2686	a	0.2609	a

CG=Croplan Genetics; DP=Deltapine; FM=Fibermax; NG=NexGen; PHY=Phytogen; ST=Stoneville.