

*2007  
National  
Cotton  
Fusarium  
Wilt  
Report*



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THIS REPORT IS A JOINT CONTRIBUTION BETWEEN  
USDA-ARS, CROP SCIENCE RESEARCH LABORATORY, MISSISSIPPI STATE UNIVERSITY, MISSISSIPPI, AND  
THE ALABAMA AGRICULTURAL EXPERIMENT STATION, AUBURN UNIVERSITY, ALABAMA

## 2007 NATIONAL COTTON FUSARIUM WILT REPORT

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Cotton cultivars and elite breeding lines submitted by 29 cooperators were evaluated for Fusarium wilt resistance under field conditions at the E. V. Smith Research Center, Plant Breeding Unit, Tallahassee, Alabama. These entries were grown on an Independence loamy fine sand highly infested with the Fusarium wilt fungus (*Fusarium oxysporum*) Schlecht. f. *vasinfectum* [Atk.] (Snyd. & Hans.) and southern root-knot nematodes (*Meloidogyne incognita*).

In 1994, a soil analysis for nematodes revealed that southern root-knot (*Meloidogyne incognita*) and lance (*Hoplolaimus galeatus*) are the predominant nematode species in the test plots. High populations of both species are found throughout the test area. Other nematode genera present are stubby root (*Trichodorus* sp.) and stunt (*Tylenchorhynchus* sp.). Root-knot nematodes, however, appear to be causing the major damage to cotton in the Fusarium Wilt Test as indicated by the high galling indices found on the roots of all cotton lines.

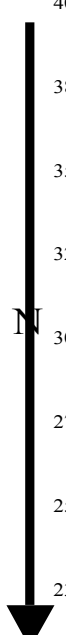
Entries were planted in single 20-foot rows on 36-inch centers, separated by 6-foot alleys. Four replications of the test entries and checks were evaluated in a randomized complete block design with a split plot restriction on randomization. The set of eight test cultivars submitted by a cooperator was always evaluated as a group together with two control plots within each replicate. Both susceptible (Rowden) and resistant (M-315) cultivars were included as check subplots in the two center rows of each main plot (Fig. 1).

Lack of moisture delayed planting until June 14. Initial plant counts were made on July 13. Wilted plants were counted and removed on August 10, September 7 and September 26. The remaining live plants were counted and recorded on October 5. Total percent wilted plants were then determined and mean wilting for a given entry calculated.

The average % wilted plants for the susceptible check **Rowden** was 17%, with a range from 0 to 62% on an individual plot basis (Fig. 1). Wilt development was quite uniform in all blocks with rep averages ranging from 12 to 18%. The resistant check **M-315** had an average of 2% wilted plants, with a range of 0 to 15%. **Critical evaluations of breeding lines should be made relative to the Rowden check listed at the bottom of each group.**

**Fig. 1.** Field plot layout and % wilt for control plot of Rowden (suceptible) and M-315 (resistant). Distances (ft) from the NE corner of the trial are given in the left hand column and the bottom row.

NS	25	1	7	0	11	1	5	0	
510	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden	M-315	
484	39	3	12	1	0	3	1	0	5 0
	Rowden	M-315	Rowden	M-315	M-315	Rowden	Rowden	M-315	Rowden M-315
458	40	6	26	0	0	1	3	5	0 0
	Rowden	M-315	Rowden	M-315	M-315	Rowden	M-315	Rowden	Rowden M-315
432	25	8	0	13	0	4	7	0	0 3
	Rowden	M-315	M-315	Rowden	M-315	Rowden	Rowden	M-315	M-315 Rowden
406	26	0	0	13	1	0	1	8	4 0
	Rowden	M-315	M-315	Rowden	Rowden	M-315	M-315	Rowden	Rowden M-315
380	7	25	29	3	6	0	3	21	11 0
	M-315	Rowden	Rowden	M-315	Rowden	M-315	M-315	Rowden	Rowden M-315
354	3	35	0	27	18	0	19	0	23 0
	M-315	Rowden	M-315	Rowden	Rowden	M-315	Rowden	M-315	Rowden M-315
328	4	35	4	16	16	1	1	16	3 24
	M-315	Rowden	M-315	Rowden	Rowden	M-315	M-315	Rowden	M-315 Rowden
302	40	3	1	11	13	2	28	2	1 15
	Rowden	M-315	M-315	Rowden	Rowden	M-315	Rowden	M-315	M-315 Rowden
276	0	27	3	13	0	13	18	2	2 7
	M-315	Rowden	M-315	Rowden	M-315	Rowden	Rowden	M-315	M-315 Rowden
250	2	25	16	2	0	15	1	13	5 1
	M-315	Rowden	Rowden	M-315	M-315	Rowden	M-315	Rowden	Rowden M-315
234	22	10	13	0	3	0	25	0	1 10
	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden	M-315	M-315 Rowden
208	27	13	16	1	7	0	47	0	5 6
	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden	M-315	M-315 Rowden
182	34	3	1	9	4	0	21	4	2 15
	Rowden	M-315	M-315	Rowden	Rowden	M-315	Rowden	M-315	M-315 Rowden
156	48	6	3	17	6	2	23	3	21 0
	Rowden	M-315	M-315	Rowden	Rowden	M-315	Rowden	M-315	Rowden M-315
130	62	15	0	13	3	1	4	22	1 9
	Rowden	M-315	M-315	Rowden	Rowden	M-315	M-315	Rowden	M-315 Rowden
104	18	4	17	3	0	20	0	21	8 0
	Rowden	M-315	Rowden	M-315	M-315	Rowden	M-315	Rowden	Rowden M-315
78	38	3	1	21	3	16	0	17	9 0
	Rowden	M-315	M-315	Rowden	M-315	Rowden	M-315	Rowden	Rowden M-315
52	37	4	9	0	19	4	19	5	12 0
	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden M-315
26	2	28	0	4	4	6	1	14	19 0
	M-315	Rowden	M-315	Rowden	M-315	Rowden	M-315	Rowden	Rowden M-315
0	3	16	12	0	0	6	0	15	12 0
	M-315	Rowden	Rowden	M-315	M-315	Rowden	M-315	Rowden	Rowden M-315
EW	24		54		84		114		144



8 rows

8 rows

8 rows

8 rows

8 rows

8 rows

**Table 1.** Percent wilted plants for entries and check in each replicate, least squares estimate of the average, *P*-value based on Dunnett's versus the resistant check M-315, and initial average number of plants per plot.

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Gary L. Rea, Delta and Pine Land Co., 247 US HWY 380 W, Haskell, TX 79521								
101	GLR-1	2	0	1	1	1	0.64	61
102	GLR-2	2	1	9	1	3	0.07	52
103	GLR-3	2	2	2	0	1	0.48	58
104	GLR-4	0	0	3	0	1	0.66	67
105	GLR-5	1	1	2	1	1	0.64	36
106	GLR-6	5	5	3	3	3	0.02	67
107	GLR-7	6	2	9	0	3	0.02	58
108	GLR-8	2	3	4	0	2	0.16	62
	Rowden	16	9	28	4	12	<0.001	66
	M-315	3	1	1	0	1		69
Sally Clayshulte, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
201	JC-1	0	1	0	4	1	0.99	86
202	JC-2	8	3	1	0	3	0.91	75
203	JC-3	5	5	2	0	3	0.88	78
204	JC-4	1	0	1	0	1	0.99	74
205	JC-5	3	1	0	3	2	0.98	77
206	JC-6	4	6	1	4	4	0.80	78
Tim Culpepper, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
207	TC-1	2	9	2	2	4	0.72	56
208	TC-2	4	7	1	3	4	0.76	59
	Rowden	17	22	13	25	19	<0.001	63
	M-315	3	10	3	8	5		56
O. Lloyd May, Delta and Pine Land Co., 381 William Gibbs Rd, Tifton, GA 31794								
301	LM-1	4	4	0	0	2	0.14	60
302	LM-2	2	1	2	1	1	0.22	59
303	LM-3	3	6	1	3	3	0.05	64
304	LM-4	7	7	5	0	4	0.02	48
305	LM-5	7	18	9	6	9	0.00	55
306	LM-6	6	2	2	0	2	0.10	60
307	LM-7	1	11	3	10	7	0.01	43
308	LM-8	0	3	0	4	2	0.13	59
	Rowden	19	4	6	11	11	0.00	78
	M-315	0	1	0	1	1		72

*continued*

† The number listed in the average column is the estimate of the average wilt percentage based on a generalized linear mixed model with the binomial distribution for fixed effects. This estimate will generally be close, but may or may not be identical, to the arithmetic average obtained by averaging the numbers in the columns representing the 4 reps.

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Will Lambert, Delta and Pine Land Co., 381 William Gibbs Rd, Tifton, GA 31794								
401	WL 1	0	1	5	0	1	0.42	62
402	WL 2	1	1	11	1	2	0.39	23
403	WL 3	1	3	1	1	1	0.54	52
404	WL 4	1	14	1	1	2	0.17	38
405	WL 5	3	2	8	2	3	0.09	50
406	WL 6	5	2	5	0	2	0.12	59
407	WL 7	1	5	15	0	4	0.02	61
408	WL 8	1	2	4	1	1	0.45	53
	Rowden	9	16	35	4	13	<0.001	69
	M-315	1	1	4	0	1		67
Laval Verhalen, Oklahoma State University, 368 Agricultural Hall, Stillwater, OK 74078								
501	OKLA-1	3	1	2	1	2	0.79	58
502	OKLA-2	4	6	3	4	4	0.23	51
503	OKLA-3	2	11	1	0	3	0.51	62
504	OKLA-4	13	2	4	0	2	0.68	39
505	OKLA-5	3	4	2	1	2	0.65	64
506	OKLA-6	2	3	4	0	2	0.68	60
507	OKLA-7	4	1	9	1	3	0.36	66
508	OKLA-8	7	2	2	0	2	0.73	64
	Rowden	16	34	25	3	18	<0.001	61
	M-315	3	3	7	0	3		63
Don Keim, Delta and Pine Land Co., P.O. Box 157, Scott, MS 38772								
601	LMS-1	2	2	5	3	3	0.07	51
602	LMS-2	8	8	3	3	3	0.09	22
603	LMS-3	1	2	2	1	1	0.56	49
604	LMS-4	3	1	5	3	3	0.15	20
605	LMS-5	1	1	2	1	1	0.62	40
606	LMS-6	2	1	0	0	1	0.80	66
607	LMS-7	3	6	1	6	3	0.08	38
608	LMS-8	1	2	4	0	2	0.32	47
	Rowden	6	13	27	5	12	<0.001	72
	M-315	4	1	0	0	1		71

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Richard Sheetz, Delta and Pine Land Co., RR 2, Box 60, Hale Center, TX 79041								
701	RHS-1	8	17	1	0	5	0.14	71
702	RHS-2	2	0	0	6	2	0.67	67
703	RHS-3	6	2	0	4	2	0.59	69
704	RHS-4	4	3	1	2	2	0.68	44
705	RHS-5	0	4	1	3	2	0.69	77
706	RHS-6	3	15	11	8	9	0.03	64
707	RHS-7	14	10	1	0	5	0.19	57
708	RHS-8	1	4	3	0	2	0.65	47
	Rowden	28	48	13	39	32	<0.001	57
	M-315	2	6	2	3	3		63
Curtis Williams, Delta and Pine Land Co., 381 William Gibbs Rd, Tifton, GA 31794								
801	CW-1	3	9	7	1	5	0.07	71
802	CW-2	5	4	0	0	2	0.42	62
803	CW-3	2	10	3	6	5	0.09	54
804	CW-4	7	8	5	2	5	0.06	57
805	CW-5	4	15	3	1	5	0.06	63
806	CW-6	12	0	8	5	6	0.03	69
807	CW-7	2	15	5	4	7	0.03	62
808	CW-8	3	0	2	2	2	0.48	67
	Rowden	20	7	23	12	15	0.00	77
	M-315	4	0	0	1	2		74
Steve Calhoun, Emergent Genetics, 7624 Moore Road, Memphis, TN 38120								
901	SC-1	3	1	0	0	1	0.88	70
902	SC-2	4	1	0	0	1	0.82	75
903	SC-3	1	0	0	0	0	0.99	79
904	SC-4	5	1	0	0	1	0.74	72
905	SC-5	3	2	0	0	1	0.72	76
906	SC-6	1	3	1	0	1	0.82	78
Tim Culpepper, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
907	TC-3	4	0	0	0	1	0.89	84
908	TC4	4	1	0	0	1	0.71	63
	Rowden	18	10	7	3	8	<0.001	67
	M-315	4	1	2	0	1		63

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Jack E. Jones, Jajo Genetics, 246 Maxine Dr., Baton Rouge, LA 70808-6831								
1001	JJ-1	4	0	1	1	2	0.66	73
1002	JJ-2	2	1	1	1	1	0.82	59
1003	JJ-3	6	2	2	4	4	0.25	61
1004	JJ-4	2	1	4	0	2	0.63	70
1005	JJ-5	0	2	0	2	1	0.84	66
1006	JJ-6	13	6	2	0	4	0.23	48
1007	JJ-7	2	0	5	0	2	0.53	61
1008	JJ-8	1	14	1	3	4	0.21	49
	Rowden	19	17	28	1	15	<0.001	69
	M-315	5	3	2	0	2		67
Dawn Fraser, Delta and Pine Land Co., P.O. Box 1529, Hartsville, SC 29550								
1101	DF-1	1	0	1	2	1	0.22	45
1102	DF-2	1	5	0	19	6	0.01	51
1103	DF-3	2	4	1	9	4	0.01	48
1104	DF-4	2	3	2	4	3	0.04	59
1105	DF-5	5	4	4	6	5	0.01	42
1106	DF-6	3	2	12	4	5	0.01	59
1107	DF-7	2	4	1	4	3	0.04	57
1108	DF-8	3	9	2	4	4	0.02	35
	Rowden	15	13	13	13	13	<0.001	71
	M-315	0	0	0	0	0		72
Frank Bordelon, PhytoGen Cottonseed, P.O. Box 27, Leland, MS 38756								
1201	PHY-FB1	4	2	0	0	2	0.59	68
1202	PHY-FB2	6	3	2	2	3	0.29	72
1203	PHY-FB3	5	3	2	6	4	0.16	75
1204	PHY-FB4	13	3	9	14	9	0.01	71
1205	PHY-FB5	7	0	3	1	2	0.43	61
1206	PHY-FB6	15	2	1	1	3	0.23	75
1207	PHY-FB7	1	1	16	8	6	0.06	75
1208	PHY-FB8	11	0	17	6	9	0.02	71
	Rowden	38	16	35	26	28	<0.001	59
	M-315	3	2	3	1	2		52

*continued*



Table 1. *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Peggy Thaxton, Mississippi State University, P.O. Box 197, Stoneville, MS 38776								
1301	DREC-1	12	0	3	6	5	0.02	65
1302	DREC-2	6	4	3	6	5	0.02	73
1303	DREC-3	14	7	9	9	10	<0.001	52
1304	DREC-4	15	10	3	7	8	0.00	65
1305	DREC-5	7	3	6	6	5	0.01	67
1306	DREC-6	0	1	0	1	1	0.65	71
1307	DREC-7	1	2	3	2	2	0.27	53
1308	DREC-8	1	2	2	0	1	0.57	58
	Rowden	9	22	18	13	16	<0.001	70
	M-315	0	4	0	0	1		75
Mark Barfield, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1401	MB-1	11	5	0	0	3	0.10	85
1402	MB-2	3	0	2	0	1	0.48	90
1403	MB-3	0	0	0	0	0	0.86	85
1404	MB-4	13	3	12	1	5	0.01	81
1405	MB-5	0	0	2	0	1	0.77	95
1406	MB-6	0	0	19	0	3	0.07	87
Laura Barham, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1407	LB-1	0	1	1	0	1	0.72	78
1408	LB-2	6	3	4	0	2	0.16	74
	Rowden	17	15	29	1	12	<0.001	78
	M-315	0	2	3	0	1		79
Byron Witty, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1501	BW-1	2	3	3	0	2	0.33	81
1502	BW-2	3	1	0	0	1	0.69	89
1503	BW-3	14	7	17	5	10	<0.001	80
1504	BW-4	21	8	3	1	6	0.01	72
1505	BW-5	3	3	12	7	6	0.01	43
1506	BW-6	2	2	1	2	2	0.45	52
Laura Barham, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1507	LB-3	0	3	3	0	1	0.50	78
1508	LB-4	3	3	2	1	2	0.19	80
	Rowden	21	23	13	7	15	<0.001	65
	M-315	1	3	1	0	1		75

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Randy Wood, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1601	RW-1	1	1	0	1	1	0.38	86
1602	RW-2	0	1	2	0	1	0.34	83
1603	RW-3	4	5	3	0	2	0.05	69
1604	RW-4	5	6	10	1	5	0.01	67
1605	RW-5	8	16	4	0	5	0.01	68
1606	RW-6	2	12	12	1	6	0.00	61
Laura Barham, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1607	LB-5	0	2	0	0	1	0.57	80
1608	LB-6	0	0	0	0	0	0.72	77
	Rowden	21	7	19	0	10	<0.001	76
	M-315	0	2	0	0	1		70
Mustafa McPherson, PhytoGen Cottonseed, P.O. Box 27, Leland, MS 38756								
1701	PHY- MM1	2	0	1	0	1	0.96	85
1702	PHY- MM2	8	0	0	0	2	0.82	70
1703	PHY- MM3	5	8	3	1	4	0.43	65
1704	PHY- MM4	0	1	0	1	1	0.97	79
1705	PHY- MM5	0	0	0	1	1	0.98	83
1706	PHY- MM6	4	11	2	4	5	0.25	57
1707	PHY- MM7	3	4	3	0	2	0.74	67
1708	PHY- MM8	0	4	0	0	1	0.95	81
	Rowden	14	27	24	8	18	<0.001	71
	M-315	1	13	3	2	3		65
Mike Robinson, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1801	MR-1	2	1	0	0	1	0.51	50
1802	MR-2	4	0	9	7	5	0.00	86
1803	MR-3	2	0	3	5	2	0.04	77
1804	MR-4	0	0	5	2	2	0.15	71
1805	MR-5	0	3	4	2	2	0.06	79
1806	MR-6	0	2	5	3	2	0.03	86
Tim Culpepper, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
1807	TC-5	2	0	3	3	2	0.11	70
1808	TC-6	1	2	2	1	1	0.27	58
	Rowden	6	10	16	26	14	<0.001	67
	M-315	0	1	1	0	1		77

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Albert Santos, Delta and Pine Land Co., P.O. Box 157, Scott, MS 38772								
1901	SM-1	1	1	0	0	1	0.63	66
1902	SM-2	1	3	1	1	1	0.56	36
1903	SM-3	2	1	3	3	2	0.18	69
1904	SM-4	2	0	4	0	1	0.30	58
1905	SM-5	2	12	8	1	5	0.01	67
1906	SM-6	1	8	9	4	5	0.01	43
1907	SM-7	1	24	7	4	10	0.00	39
1908	SM-8	3	15	9	1	6	0.01	46
	Rowden	12	3	18	1	7	0.00	66
	M-315	0	2	2	0	1		68
Larry Burdett, Delta and Pine Land Co., P.O. Box 157, Scott, MS 38772								
2001	LB-1	6	4	4	2	4	0.39	45
2002	LB-2	1	2	17	2	3	0.56	37
2003	LB-3	7	1	6	1	3	0.71	37
2004	LB-4	1	1	0	1	1	0.98	45
2005	LB-5	7	6	1	3	4	0.42	39
2006	LB-6	17	5	10	14	11	<0.001	46
2007	LB-7	14	3	7	5	6	0.10	18
2008	LB-8	6	1	5	2	3	0.67	41
	Rowden	37	21	40	21	29	<0.001	61
	M-315	4	4	3	3	3		62
Fred Bourland, University of Arkansas, P.O. Box 48, Keiser, AR 72351								
2101	FB-1	9	0	1	0	2	0.26	64
2102	FB-2	0	3	3	0	2	0.47	66
2103	FB-3	1	9	1	0	2	0.39	51
2104	FB-4	3	3	2	2	2	0.34	54
2105	FB-5	1	2	2	0	1	0.66	60
2106	FB-6	2	14	1	0	4	0.09	69
2107	FB-7	2	2	4	0	2	0.45	60
2108	FB-8	2	4	4	1	3	0.21	63
	Rowden	20	26	5	5	12	<0.001	68
	M-315	0	2	1	3	2		68

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Jose Liscano, Delta and Pine Land Co., P.O. Box 157, Scott, MS 38772								
2201	JL-1	3	1	1	1	2	0.18	64
2202	JL-2	3	2	3	0	2	0.18	58
2203	JL-3	1	5	4	0	2	0.11	58
2204	JL-4	3	2	3	1	2	0.18	40
2205	JL-5	5	16	8	2	7	0.00	49
2206	JL-6	5	0	2	2	2	0.22	44
2207	JL-7	0	6	3	2	2	0.08	63
2208	JL-8	5	4	0	0	2	0.13	51
	Rowden	12	47	11	25	23	<0.001	75
	M-315	0	0	1	1	1		78
Robert Cossar, Emergent Genetics, 7622 Moore Road, Memphis, TN 38120								
2301	RC-1	1	1	2	1	1	0.38	51
2302	RC-2	1	3	1	4	2	0.06	37
2303	RC-3	3	1	0	0	1	0.27	65
2304	RC-4	0	0	1	0	1	0.52	73
2305	RC-5	3	2	5	0	2	0.06	57
2306	RC-6	0	0	0	0	0	0.74	84
Kathryn Glass, Agronomy & Soils Dept., 201 Funchess Hall, Auburn University, AL 36849								
2307	STV 4664 RF	0	3	1	0	1	0.24	75
2308	FM 1735 LLB2	2	8	0	1	2	0.04	72
	Rowden	4	21	16	7	11	<0.001	74
	M-315	0	0	2	0	1		71
Jeff Klingenberg, Bayer Crop Science, 1602 Paradise Dr., Sellers, SC 25992								
2401	BCSI-JK-1	3	1	5	0	2	0.06	43
2402	BCSI-JK-2	5	2	6	0	3	0.01	47
2403	BCSI-JK-3	5	4	1	0	2	0.02	54
2404	BCSI-JK-4	1	1	3	0	1	0.12	40
2405	BCSI-JK-5	7	4	1	0	3	0.01	46
2406	BCSI-JK-6	2	2	0	0	1	0.12	55
2407	BCSI-JK-7	2	2	10	0	3	0.01	54
2408	BCSI-JK-8	2	3	1	0	1	0.09	65
	Rowden	8	25	15	5	12	<0.001	70
	M-315	1	0	0	0	0		69

*continued*

**Table 1.** *continued*

Entry	Cultivar/Line	Percent wilted plants					P-value	Avg. no. of plants
		Rep1	Rep2	Rep3	Rep4	Avg.		
Joe Johnson, Bayer Crop Science, 117 Kennedy Flat Rd., Leland, MS 38756								
2501	BCSI-JJ-1	10	3	4	13	6	0.49	51
2502	BCSI-JJ-2	4	0	3	5	2	0.93	79
2503	BCSI-JJ-3	3	2	0	5	2	0.95	75
2504	BCSI-JJ-4	8	1	11	9	6	0.53	80
2505	BCSI-JJ-5	15	0	7	6	6	0.59	58
2506	BCSI-JJ-6	28	1	2	4	7	0.41	55
2507	BCSI-JJ-7	5	7	2	0	3	0.90	59
2508	BCSI-JJ-8	14	1	2	2	4	0.80	80
	Rowden	62	6	16	40	28	<0.001	67
	M-315	15	5	4	6	6		60
Michael Swindle, Bayer Crop Science, 117 Kennedy Flat Rd., Leland, MS 38756								
2601	BCSI-MS-1	3	1	1	2	1	0.20	50
2602	BCSI-MS-2	0	3	1	0	1	0.21	75
2603	BCSI-MS-3	4	2	1	0	2	0.13	55
2604	BCSI-MS-4	1	4	1	1	1	0.18	52
2605	BCSI-MS-5	7	2	0	6	4	0.01	57
2606	BCSI-MS-6	3	0	0	7	2	0.06	50
2607	BCSI-MS-7	4	1	1	1	1	0.20	32
2608	BCSI-MS-8	2	2	4	3	3	0.11	9
	Rowden	12	3	15	11	10	<0.001	68
	M-315	0	0	1	0	1		79