

SOUTHERN UNIFORM WINTER WHEAT SCAB NURSERY

2016 NURSERY REPORT

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This is a progress report of cooperative investigations underway and funded by the U. S. Wheat and Barley Scab Initiative, State Agricultural Experiment Stations, private companies and the United States Department of Agriculture, Agricultural Research Service. This report contains preliminary data that have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is a tool for the use of the Cooperator and their official staff and those persons having direct interest in the development of agricultural research programs. This report is not intended for publication and should not be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the authors.

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LOCATION NOTES

Champaign, Illinois

- Cooperator: Jana Murche
- KWS Cereals USA.

Urbana, Illinois

- Cooperator: Fred Kolb.
- University of Illinois.

Fayetteville and Newport, Arkansas

- Cooperator: Esten Mason.
- University of Arkansas.

Lexington, Kentucky

- Cooperator: Dave Van Sanford.
- University of Kentucky.

Blacksburg, Virginia

- Cooperator: Carl A. Griffey.
- Virginia Tech.

Columbia, Missouri

- Cooperators: Anne L. McKendry and David Tague.
- University of Missouri

Winnsboro and Baton Rouge, Louisiana.

- Cooperator: Stephen Harrison.
- Louisiana State University.

Griffin, Georgia

- Cooperator: Mohamed Mergoum and Jerry Johnson.
- University of Georgia.

Szeged, Hungary.

- Cooperator: Akos Mesterhazy.
- Cereal Research Institute

Raleigh, North Carolina

- Cooperator: Gina Brown-Guedira.
- USDA-ARS Eastern Regional Small Grains Genotyping Lab

West Lafayette, Indiana

- Cooperator: Sue Cambron.
- USDA-ARS Crop Production and Pest Control Research Unit:

Wooster, Ohio

- Cooperator: Byung-Kee Baik
- USDA-ARS Soft Wheat Quality Laboratory

Scab Nursery, Lexington, KY, 2016



Entry List and Pedigrees, 2016 Nursery

ENTRY NO	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	Check	CHECK(RES)	1999-00
2	COKER9835	Check	CHECK(SUS)	2000-01
3	BESS	MO11769/Madison	CHECK(RES)	2006-07
4	JAMESTOWN	Roane / Pioneer 2691	Check (RES)	2007-08
5	AR06024-7-2	AR800-1-3-1/VA01W-476	Mason	2014-15
6	ARS10-389	IN9712C1-4 / WX03ARS0214	Marshall	2013-14
7	AR07010-7-1	AR96077-10-1/PAT	Mason	2015-16
8	AR07053-13-1	98068-4-1/97124-4-2	Mason	2015-16
9	AR07078-7-4	AGS2000/DK9577x2	Mason	2015-16
10	AR07108-6-1	FFR8302/BESS	Mason	2015-16
11	ARLA06146E-20-1	JAMESTOWN/AGS2060	Mason	2015-16
12	ARLA07084C-10-1	LA06101,F1/LA99005UC-31-3-C	Mason	2015-16
13	ARS11-2086	GA961565-27-6 / TX99D4664	Marshall	2015-16
14	ARS12-201	LA95283CA78-1-2-B / TX94D4360	Marshall	2015-16
15	ARS13-159	G96195 / MO00202	Marshall	2015-16
16	ARS13-215	WX02ARS081 / LA9560CA4-1	Marshall	2015-16
17	ARS14W0539	WX02ARS081 / LA9560CA4-1	Marshall	2015-16
18	ARS14W0623	ARS05-0676 / ARS05-0670	Marshall	2015-16
19	ARS14W1012	ARS05-0515 / ARS05-0404	Marshall	2015-16
20	ES14-0057	Roane/TAM107	Obert	2015-16
21	ES14-0528	P04287A1-16/BW402	Obert	2015-16
22	ES14-1293	INW9811/Roane	Obert	2015-16
23	ES14-1350	989/30-530//SR30-530	Obert	2015-16
24	GA08250-15ES14	Jamestown / 991336-6E9	Mergoum	2015-16
25	GA08293-15ES3	991109-6E8/ 011444-6-1	Mergoum	2015-16
26	GA09361-15ES38	001170-7E26 / VA 03W-409 // AGS 2020	Mergoum	2015-16
27	GA091252-15ES35	MD 08-26-A10-24 / IL 04-10721	Mergoum	2015-16
28	GA08281-15ES1	991336-6E9/3/VA 01W-476/ 2* 97186// 2*051396	Mergoum	2015-16
29	GANC9337-15ES27	Jamestown / SS 8641	Mergoum	2015-16
30	GA09343-15ES33	Jamestown / 991336-6E9 // USG 3120	Mergoum	2015-16
31	GANC 10014-15ES24	NC 06-19896 / NC 08-140	Mergoum	2015-16
32	KWS 053	SE981059R-13/Eberts501	Murche	2015-16
33	KWS 060	Branson/M05-1526	Murche	2015-16
34	KWS 074	USG3555/Shirley	Murche	2015-16
35	KWS 081	Truman/SEMO9813-21	Murche	2015-16
36	KWS 083	Roane/Sunburst	Murche	2015-16
37	KWS 087	Shirley/P992231A1-2-1	Murche	2015-16
38	LA06146E-P4 JAMESTOWN/AGS2060	Jamestown / AGS 2060	Harrison	2015-16
39	LA08090C-9-2	GA991336-6E9/AGS 2060	Harrison	2015-16
40	LA08265C-50	P26R61/LA07175,F1(JAMESTOWN/SS8641)	Harrison	2015-16
41	LA09011UB-2	AGS2026 / VA05W-510	Harrison	2015-16
42	LA09225C-33	LA01139D-56-1 / GA001492-7E9	Harrison	2015-16
43	NC10435-11	NC05-21937 / Oakes // Jamestown	Murphy	2015-16
44	NC12-22225	PI 611937 / *3 NC99-13022	Murphy	2015-16
45	NC13-20076	Jamestown // GA951231-4E29 / NCAG11	Murphy	2015-16
46	NC13-22350	NC03-11457 / SS 8641// McCORMICK	Murphy	2015-16
47	NC13-23449	NC04-15533 / VA05W-500 // VA05W-108	Murphy	2015-16
48	VA12W-68	PION25R47 / GF951079-2E31 (GA881130/ Gore) // USG3555 (VA02W-555)	Griffey	2015-16
49	VA13W-38	IL99-15867 (IL93-2879/P881705A-1-X-60) / JAMESTOWN (VA02W-370)	Griffey	2015-16
50	VA09MAS6-122-7-1	SHIRLEY / GA991371-6E13 // SS5205 (VA01W-205)	Griffey	2015-16
51	VA08MAS1-188-6-4-1	VA05W-640/ VA05W-693 // SHIRLEY	Griffey	2015-16
52	VA13FHB-26	VA05W-436 / VA05W-641 [PI635148 (VA96-54-326)*2//Futai8944/ PI635148 /3/ PI635148]	Griffey	2015-16
53	VA14FHB-14	VA05W-436 / VA05W-641 [PI635148 (VA96-54-326)*2//Futai8944/ PI635148 /3/ PI635148]	Griffey	2015-16
54	VA14FHB-13	VA05W-436 / VA05W-641 [PI635148 (VA96-54-326)*2//Futai8944/ PI635148 /3/ PI635148]	Griffey	2015-16
55	VA14FHB-28	VT-FHB Recurrent Selection.	Griffey	2015-16

FHB Incidence (1-100)

ENTRY NO	CULTIVAR/ DESIGNATION	LEX'TON COL'BIA F'VILLE N'PORT B'BURG URBANA GRIFFIN KWS									MEAN		
		KY	MO	AR	AR	VA	IL	GA	IL	ALL LOC.	GEBV		
											RANK	RANK	
1	ERNIE	70	70	25	37	28	50	50	60	49	40	57	24
2	COKER9835	75	90	80	78	83	90	100	80	84	55	71	55
3	BESS	65	55	10	3	15	43	13	45	31	6	48	3
4	JAMESTOWN	68	55	0	13	45	43	13	45	35	14	55	16
5	AR06024-7-2	33	88	0	8	40	67	17	15	33	8	49	4
6	ARS10-389	48	88	2	2	13	30	23	70	34	11	51	5
7	AR07010-7-1	58	60	0	3	28	53	10	25	30	4	59	31
8	AR07053-13-1	60	85	1	12	25	42	10	25	33	8	53	9
9	AR07078-7-4	93	85	7	7	58	53	10	40	44	28	60	34
10	AR07108-6-1	50	55	1	0	25	53	10	30	28	2	46	1
11	ARLA06146E-20-1	75	70	7	0	25	73	43	20	39	19	46	1
12	ARLA07084C-10-1	48	45	1	3	30	.	27	20	26	1	64	51
13	ARS11-2086	85	55	100	8	75	40	83	70	65	54	56	21
14	ARS12-201	78	45	100	8	63	43	87	50	59	51	56	21
15	ARS13-159	83	65	92	5	25	67	33	35	51	42	54	12
16	ARS13-215	63	53	3	22	93	.	60	50	50	41	62	44
17	ARS14W0539	48	55	0	3	80	18	30	20	32	7	59	31
18	ARS14W0623	58	50	22	0	50	15	83	45	40	23	62	44
19	ARS14W1012	85	85	2	10	68	80	10	40	47	33	57	24
20	ES14-0057	90	50	28	3	40	33	20	50	39	19	54	12
21	ES14-0528	73	90	77	28	30	47	50	70	58	50	54	12
22	ES14-1293	60	60	4	5	38	23	27	15	29	3	51	5
23	ES14-1350	73	85	83	12	28	63	43	45	54	46	52	8
24	GA08250-15ES14	75	58	0	10	35	50	10	40	35	14	58	28
25	GA08293-15ES3	50	50	0	27	55	80	40	65	46	31	62	44
26	GA09361-15ES38	63	75	0	40	55	82	43	15	47	33	64	51
27	GA091252-15ES35	58	80	35	25	68	83	30	35	52	44	63	48
28	GA08281-15ES1	43	88	6	27	70	69	33	30	46	31	65	53
29	GANC9337-15ES27	65	73	0	3	28	85	57	40	44	28	55	16
30	GA09343-15ES33	63	73	1	30	60	89	87	50	56	48	60	34
31	GANC 10014-15ES24	88	78	1	8	68	57	10	45	44	28	58	28
32	KWS 053	75	35	1	15	38	56	27	65	39	19	51	5
33	KWS 060	83	85	27	7	40	60	77	40	52	44	55	16
34	KWS 074	60	100	15	3	30	37	10	35	36	16	63	48
35	KWS 081	53	88	1	2	20	40	13	50	33	8	53	9
36	KWS 083	73	53	8	2	58	22	10	50	34	11	57	24
37	KWS 087	48	80	8	10	20	57	23	55	38	17	55	16
38	LA06146E-P4	35	75	0	22	55		10	60	38	17	58	28
39	LA08090C-9-2	55	55	3	18	50	48	10	35	34	11	60	34
40	LA08265C-50	50	70	2	22	43	60	37	40	40	23	59	31
41	LA09011UB-2	48	73	0	45	60	63	40	45	47	33	62	44
42	LA09225C-33	68	75	6	13	58	39	27	35	40	23	63	48
43	NC10435-11	53	75	0	37	63	77	40	65	51	42	57	24
44	NC12-22225	78	85	13	2	43	40	10	70	43	27	53	9
45	NC13-20076	53	68	0	7	28	37	17	30	30	4	54	12
46	NC13-22350	68	35	9	10	43	37	83	35	40	23	55	16
47	NC13-23449	63	55	97	27	40	70	33	65	56	48	66	54
48	VA12W-68	45	60	0	27	60	64	20	40	39	19	60	34
49	VA13W-38	45	80	19	65	48	30	57	40	48	39	56	21
50	VA09MAS6-122-7-1	90	70	0	23	53	67	10	65	47	33	61	39
51	VA08MAS1-188-6-4-1	63	68	7	32	65	80	10	55	47	33	61	39
52	VA13FHB-26	85	95	23	13	48	60	17	35	47	33	61	39
53	VA14FHB-14	75	95	80	68	35	40	67	40	62	52	60	34
54	VA14FHB-13	53	60	83	70	40	60	93	55	64	53	61	39
55	VA14FHB-28	63	88	2	40	80	60	50	60	55	47	61	39
Mean		64	70	20	19	46	54	36	45	44	Mean and GEBV		
LSD (0.05)		21	.	19	30	.	37	.	.	37	Correlation = 0.44		
St. Error		7.7	.	11.7	18.3	.	3.0	.	151.3	.			
CV%		17	.	59.1	99.5	.	35.7	.	.	43.0			
Replications		2	.	3	3	.	3	.	2	.			

FHB Severity (1-100)

CULTIVAR/ DESIGNATION	F'VILLE		N'PORT		LX'TON		COL'BIA		B'BURG		URBANA		SZEGED ¹		GRIFFIN		KWS		MEAN		GEBV	
	AR		AR		KY		MO		VA		IL		HUN		GA		IL		ALL LOC.			
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK		RANK
1 ERNIE	43	45	13	46	30	29	15	17	10	10	53	29	18	29	10	21	35	19	25	33	31	26
2 COKER9835	95	51	38	53	63	55	34	51	39	54	81	52	40	45	25	45	90	55	56	55	42	51
3 BESS	7	33	3	8	15	1	15	17	7	2	49	25	12	15	5	1	35	19	17	12	21	2
4 JAMESTOWN	0	1	5	22	34	41	19	27	15	32	37	14	12	15	5	1	40	26	19	15	27	10
5 AR06024-7-2	2	11	5	22	18	3	13	12	8	4	48	22	2	1	5	1	15	3	13	3	20	1
6 ARS10-389	2	11	3	8	31	34	19	27	6	1	16	1	24	40	8	20	15	3	14	5	29	18
7 AR07010-7-1	2	11	5	22	31	34	17	22	11	13	51	28	18	29	5	1	30	15	19	15	32	28
8 AR07053-13-1	5	28	8	38	18	3	24	39	12	23	46	21	18	29	5	1	35	19	19	15	31	26
9 AR07078-7-4	3	20	7	31	40	48	23	37	25	48	75	50	6	3	5	1	60	44	27	36	40	44
10 AR07108-6-1	3	20	0	1	29	26	17	22	8	4	62	37	10	10	7	19	15	3	17	12	24	4
11 ARLA06146E-20-1	7	33	0	1	20	8	17	22	11	13	71	46	9	8	15	35	25	12	19	15	22	3
12 ARLA07084C-10-1	3	20	5	22	19	6	12	9	9	6	.	.	6	3	10	21	10	1	13	3	39	42
13 ARS11-2086	98	54	5	22	33	38	10	4	16	37	31	8	29	43	30	51	55	40	34	50	30	22
14 ARS12-201	98	54	5	22	35	43	15	17	11	13	38	16	26	42	25	45	30	15	31	47	29	18
15 ARS13-159	47	47	3	8	24	17	23	37	9	6	68	43	14	20	10	21	60	44	29	42	32	28
16 ARS13-215	2	11	7	31	43	51	13	12	39	54	.	.	18	29	25	45	50	34	28	41	37	37
17 ARS14W0539	0	1	3	8	37	46	15	17	13	26	16	1	13	18	10	21	40	26	16	8	37	37
18 ARS14W0623	17	38	0	1	19	6	19	27	14	29	50	26	23	39	30	51	40	26	24	30	40	44
19 ARS14W1012	3	20	5	22	44	52	24	39	11	13	67	42	10	10	5	1	70	49	27	36	37	37
20 ES14-0057	22	40	3	8	21	10	8	1	12	23	54	30	.	.	5	1	35	19	19	15	28	13
21 ES14-0528	43	45	7	31	26	21	15	17	11	13	20	4	.	.	20	40	40	26	21	22	28	13
22 ES14-1293	2	11	3	8	16	2	10	4	18	39	33	10	.	.	10	21	10	1	12	1	26	8
23 ES14-1350	78	49	0	1	21	10	25	43	15	32	72	48	.	.	10	21	20	8	29	42	24	4
24 GA08250-15ES14	0	1	2	5	22	12	13	12	11	13	50	26	8	5	5	1	30	15	16	8	32	28
25 GA08293-15ES3	0	1	17	50	41	50	20	31	23	47	63	39	11	12	15	35	75	52	29	42	45	54
26 GA09361-15ES38	0	1	13	46	46	53	29	47	32	51	76	51	17	28	15	35	55	40	31	47	48	55
27 GA091252-15ES35	20	40	7	31	33	38	11	7	14	29	71	46	24	40	10	21	35	19	25	33	34	31
28 GA08281-15ES1	5	28	7	31	30	29	22	35	20	43	69	44	18	29	10	21	35	19	24	30	41	50
29 GANC9337-15ES27	0	1	3	8	30	29	21	32	7	2	48	22	19	35	20	40	35	19	20	20	27	10
30 GA09343-15ES33	5	28	8	38	46	53	12	9	18	39	73	49	19	35	30	51	75	52	32	49	35	34
31 GANC 10014-15ES24	3	20	3	8	40	48	24	39	20	43	45	20	12	15	5	1	45	32	22	26	30	22
32 KWS 053	2	11	2	5	27	23	9	2	10	10	22	5	.	.	10	21	20	8	12	1	26	8
33 KWS 060	5	28	5	22	27	25	12	9	21	45	58	32	.	.	25	45	70	49	27	36	34	31
34 KWS 074	17	38	3	8	20	8	21	32	15	32	34	12	.	.	5	1	25	12	16	8	42	51
35 KWS 081	3	20	3	8	18	3	10	4	11	13	61	35	.	.	5	1	30	15	16	8	27	10
36 KWS 083	10	37	3	8	23	15	9	2	13	26	44	19	.	.	5	1	25	12	15	6	28	13
37 KWS 087	8	35	2	5	25	18	25	43	10	10	55	31	.	.	10	21	50	34	22	26	29	18
38 LA06146E-P4	0	1	10	43	36	44	28	45	11	13	.	.	14	20	5	1	40	26	21	22	34	31
39 LA08090C-9-2	3	20	8	38	32	36	33	50	15	32	64	40	9	8	5	1	50	34	24	30	37	37
40 LA08265C-50	2	11	7	31	30	29	40	52	25	48	58	32	11	12	15	35	60	44	27	36	36	36
41 LA09011UB-2	2	11	18	51	32	36	54	55	21	45	33	10	15	26	20	40	70	49	29	42	40	44
42 LA09225C-33	5	28	8	38	33	38	43	54	33	53	69	44	8	5	10	21	50	34	29	42	44	53
43 NC10435-11	0	1	15	49	29	26	41	53	16	37	64	40	14	20	20	40	40	26	27	36	28	13
44 NC12-22225	35	44	3	8	25	18	22	35	11	13	41	17	31	44	5	1	20	8	21	22	24	4
45 NC13-20076	0	1	5	22	25	18	29	47	9	6	36	13	4	2	10	21	20	8	15	6	25	7
46 NC13-22350	22	40	3	8	22	12	14	16	9	6	31	8	14	20	30	51	15	3	18	14	30	22
47 NC13-23449	93	50	8	38	30	29	13	12	14	29	61	35	14	20	18	39	55	40	34	50	37	37
48 VA12W-68	0	1	7	31	34	41	11	7	18	39	37	14	11	12	10	21	50	34	20	20	30	22
49 VA13W-38	33	43	12	44	36	44	21	32	15	32	17	3	13	18	25	45	15	3	21	22	28	13
50 VA09MAS6-122-7-1	2	11	12	44	29	26	19	27	25	48	48	22	8	5	1	60	44	23	28	35	34	
51 VA08MAS1-188-6-4-1	8	35	13	46	26	21	17	22	13	26	58	32	15	26	5	1	55	40	23	28	29	18
52 VA13FHB-26	50	48	3	8	22	12	28	45	18	39	27	7	19	35	10	21	45	32	25	33	40	44
53 VA14FHB-14	97	52	63	54	23	15	24	39	12	23	42	18	18	29	20	40	50	34	39	53	39	42
54 VA14FHB-13	97	52	65	55	27	24	18	26	11	13	25	6	19	35	30	51	60	44	39	54	40	44
55 VA14FHB-28	3	20	25	52	38	47	32	49	32	51	62	37	14	20	25	45	85	54	35	52	40	44

Mean	20	9	30	21	16	50	15	13	42	24	Mean and GEBV
LSD (0.05)	22	17	11	.	.	33	7	.	.	28	Correlation = 0.55
St. Error	13.6	10.7	3.8	.	.	2.7	.	.	226.3	.	
CV%	67.1	117.2	18.2	.	.	34.6	.	.	.	59.6	

**FHB Severity following inoculation with four isolates of
F. graminearum and *F. culmorum*,
Szeged, Hungary**

Cultivar / Designation	F. gram.	F. culm.	F. gram.	F. culm.	Mean
	Isol 19.42	Isol 12.51	Isol Mix	Isol Mix	
1 ERNIE	24	22	17	8	18
2 COKER9835	61	47	42	11	40
3 BESS	27	11	7	4	12
4 JAMESTOWN	21	14	10	4	12
5 AR06024-7-2	4	1	1	0	2
6 ARS10-389	41	24	25	7	24
7 AR07010-7-1	35	18	16	4	18
8 AR07053-13-1	25	20	21	5	18
9 AR07078-7-4	9	9	6	1	6
10 AR07108-6-1	20	12	6	1	10
11 ARLA06146E-20-1	16	8	9	3	9
12 ARLA07084C-10-1	11	9	5	2	6
13 ARS11-2086	33	39	32	11	29
14 ARS12-201	34	29	31	8	26
15 ARS13-159	23	13	14	7	14
16 ARS13-215	35	15	22	2	18
17 ARS14W0539	23	14	14	2	13
18 ARS14W0623	40	33	15	5	23
19 ARS14W1012	27	7	5	1	10
20 ES14-0057	.	.	.	.	.
21 ES14-0528	.	.	.	.	.
22 ES14-1293	.	.	.	.	.
23 ES14-1350	.	.	.	.	.
24 GA08250-15ES14	10	10	10	2	8
25 GA08293-15ES3	19	15	10	2	11
26 GA09361-15ES38	31	22	10	6	17
27 GA091252-15ES35	41	27	21	9	24
28 GA08281-15ES1	30	23	12	7	18
29 GANC9337-15ES27	35	22	19	2	19
30 GA09343-15ES33	31	21	16	7	19
31 GANC 10014-15ES24	18	18	8	4	12
32 KWS 053	.	.	.	.	.
33 KWS 060	.	.	.	.	.
34 KWS 074	.	.	.	.	.
35 KWS 081	.	.	.	.	.
36 KWS 083	.	.	.	.	.
37 KWS 087	.	.	.	.	.
38 LA06146E-P4	34	14	6	2	14
39 LA08090C-9-2	23	6	7	1	9
40 LA08265C-50	20	15	8	3	11
41 LA09011UB-2	22	19	7	13	15
42 LA09225C-33	15	8	7	2	8
43 NC10435-11	21	22	8	5	14
44 NC12-22225	42	36	37	8	31
45 NC13-20076	9	6	1	2	4
46 NC13-22350	25	13	14	4	14
47 NC13-23449	14	17	19	6	14
48 VA12W-68	17	15	8	2	11
49 VA13W-38	22	17	9	3	13
50 VA09MAS6-122-7-1	15	7	9	3	8
51 VA08MAS1-188-6-4-1	25	18	12	4	15
52 VA13FHB-26	32	23	15	5	19
53 VA14FHB-14	25	18	26	5	18
54 VA14FHB-13	33	25	16	4	19
55 VA14FHB-28	17	19	14	4	14
Mean	25	18	14	4	15
LSD (0.05)	.	.	.	.	7

FHB Index (1-100)

CULTIVAR/ DESIGNATION	LEX'TON		COL'BIA		F'VILLE		B'BURG		URBANA		N'PORT		GRIFFIN		KWS		MEAN			
	KY	MO	AR	VA	IL	AR	GA	IL	ALL	LOC.	GEBV									
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	
1 ERNIE	21	41	11	23	16	46	3	9	26	25	7	47	5	34	22	35	14	29	21	20
2 COKER9835	47	55	31	52	76	50	34	54	73	52	33	53	25	50	72	55	49	55	24	41
3 BESS	10	5	8	12	1	33	1	1	22	21	0	1	1	1	16	26	7	5	18	4
4 JAMESTOWN	23	44	10	18	0	1	7	27	17	14	1	23	1	1	19	31	10	18	20	13
5 AR06024-7-2	7	1	12	26	0	1	3	9	38	37	0	1	1	1	2	1	8	8	23	32
6 ARS10-389	15	14	17	33	0	1	1	1	6	3	0	1	2	20	10	11	6	3	24	41
7 AR07010-7-1	19	34	10	18	0	1	3	9	28	29	0	1	1	1	11	15	9	15	21	20
8 AR07053-13-1	11	7	20	41	0	1	3	9	20	20	2	33	1	1	10	11	8	8	22	26
9 AR07078-7-4	37	54	19	39	0	1	14	47	39	38	1	23	1	1	24	37	17	38	23	32
# AR07108-6-1	15	16	10	18	0	1	2	3	34	31	0	1	1	1	5	4	8	8	17	1
# ARLA06146E-20-1	15	21	12	26	0	1	3	9	54	47	0	1	7	38	5	4	12	24	19	7
# ARLA07084C-10-1	9	2	5	3	0	1	3	9	.	.	0	1	3	25	2	1	5	2	24	41
# ARS11-2086	28	49	5	3	98	54	12	44	13	10	1	23	25	50	39	50	27	51	19	7
# ARS12-201	27	47	7	9	98	54	7	27	19	17	1	23	22	49	15	22	24	50	18	4
# ARS13-159	20	38	15	31	44	48	2	3	44	40	0	1	3	25	22	35	19	42	21	20
# ARS13-215	27	48	7	9	0	1	36	55	.	.	2	33	15	47	29	45	19	42	23	32
# ARS14W0539	17	27	9	15	0	1	10	38	3	1	0	1	3	25	8	9	6	3	24	41
# ARS14W0623	11	6	10	18	5	41	7	27	8	4	0	1	25	50	19	31	10	18	24	41
# ARS14W1012	37	53	20	41	0	1	8	33	54	47	1	23	1	1	28	41	19	42	22	26
# ES14-0057	19	35	4	2	7	43	5	22	19	17	0	1	1	1	17	27	9	15	19	7
# ES14-0528	18	32	14	29	36	47	3	9	10	6	2	33	10	42	28	41	15	32	20	13
# ES14-1293	10	3	6	7	0	1	7	27	8	4	0	1	3	25	2	1	4	1	24	41
# ES14-1350	16	22	21	44	63	49	4	16	48	44	0	1	4	33	9	10	21	47	19	7
# GA08250-15ES14	16	25	8	12	0	1	4	16	26	25	1	23	1	1	12	17	8	8	22	26
# GA08293-15ES3	20	39	10	18	0	1	12	44	50	45	5	43	6	36	49	53	19	42	25	49
# GA09361-15ES38	29	51	21	44	0	1	17	51	62	50	7	47	7	38	10	11	19	42	25	49
# GA091252-15ES35	19	33	8	12	7	43	10	38	59	49	4	42	3	25	13	18	15	32	27	55
# GA08281-15ES1	13	11	19	39	0	1	14	47	47	42	3	37	3	25	11	15	14	29	26	53
# GANC9337-15ES27	20	37	15	31	0	1	2	3	42	39	0	1	11	43	15	22	13	28	21	20
# GA09343-15ES33	28	50	9	15	0	1	11	41	65	51	5	43	26	54	39	50	23	48	23	32
# GANC 10014-15ES2	35	52	18	35	0	1	14	47	24	22	0	1	1	1	20	33	14	29	21	20
# KWS 053	21	40	3	1	0	1	4	16	16	12	1	23	3	25	14	20	8	8	20	13
# KWS 060	23	43	11	23	1	33	9	35	35	32	0	1	19	48	28	41	16	37	18	4
# KWS 074	12	10	21	44	3	39	5	22	11	8	0	1	1	1	10	11	8	8	23	32
# KWS 081	10	4	9	15	0	1	2	3	26	25	0	1	1	1	15	22	8	8	22	26
# KWS 083	17	26	5	3	1	33	7	27	10	6	0	1	1	1	13	18	7	5	19	7
# KWS 087	11	8	18	35	1	33	2	3	37	36	1	23	2	20	28	41	12	24	17	1
# LA06146E-P4	12	9	21	44	0	1	6	25	.	.	3	37	1	1	25	39	12	24	23	32
# LA08090C-9-2	18	29	18	35	0	1	8	33	32	30	3	37	1	1	18	28	12	24	26	53
# LA08265C-50	15	18	28	50	0	1	11	41	35	32	2	33	6	36	24	37	15	32	22	26
# LA09011UB-2	15	19	39	55	0	1	13	46	25	24	10	52	8	40	32	47	18	40	25	49
# LA09225C-33	23	42	32	54	0	1	19	52	27	28	1	23	3	25	18	28	15	32	25	49
# NC10435-11	15	17	31	52	0	1	10	38	50	45	8	50	8	40	26	40	18	40	20	13
# NC12-22225	20	36	18	35	4	40	5	22	17	14	0	1	1	1	14	20	10	18	20	13
# NC13-20076	13	12	20	41	0	1	2	3	16	12	0	1	2	20	6	6	7	5	19	7
# NC13-22350	15	15	5	3	2	38	4	16	12	9	1	23	25	50	6	6	9	15	21	20
# NC13-23449	18	30	7	9	90	53	6	25	46	41	5	43	5	34	37	49	27	51	22	26
# VA12W-68	15	20	6	7	0	1	11	41	24	22	3	37	2	20	18	28	10	18	17	1
# VA13W-38	16	24	17	33	9	45	7	27	5	2	9	51	14	46	7	8	11	23	20	13
# VA09MAS6-122-7-1	26	46	14	29	0	1	15	50	36	34	3	37	1	1	39	50	17	38	23	32
# VA08MAS1-188-6-4-	16	23	12	26	1	33	9	35	47	42	6	46	1	1	31	46	15	32	20	13
# VA13FHB-26	18	31	27	49	6	42	9	35	17	14	0	1	2	20	15	22	12	24	23	32
# VA14FHB-14	17	28	23	48	78	51	4	16	19	17	62	54	13	44	20	33	30	53	24	41
# VA14FHB-13	14	13	11	23	82	52	4	16	15	11	64	55	28	55	33	48	31	54	23	32
# VA14FHB-28	23	45	28	50	0	1	26	53	36	34	7	47	13	44	52	54	23	48	24	41

Mean	19	15	13	8	30	5	7	20	14	Mean and GEBV
LSD (0.05)	10	.	20	.	32	18	.	.	26	Correlation = 0.13
St. Error	3.5	.	12.3	.	2.4	10.8	.	72.5	.	
CV%	26.5	.	92.8	.	56.4	228.1	.	.	90.1	
Replications	2	.	3	.	3	3	.	2	.	

Percent *Fusarium* Damaged Kernels (FDK)

CULTIVAR/ DESIGNATION	F'VILLE		N'PORT URBANA		SZEGED ¹		L'EXTON		COL'BIA		B'BURG		MEAN					
	AR		AR		IL		HUN		KY		MO		VA					
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK				
1 ERNIE	27	37	34	29	17	6	50	38	15	51	33	28	48	43	32	38	27	23
2 COKER9835	45	43	80	52	47	37	56	42	23	55	80	48	63	53	56	54	43	52
3 BESS	1	2	3	1	22	12	20	10	5	2	25	15	31	21	15	3	16	3
4 JAMESTOWN	1	2	34	29	33	27	18	7	10	32	28	19	37	29	23	16	21	9
5 AR06024-7-2	1	2	19	19	70	49	8	1	2	1	18	6	24	8	20	10	13	1
6 ARS10-389	1	2	18	14	27	16	53	40	8	12	35	30	38	30	26	21	26	22
7 AR07010-7-1	2	12	26	22	37	30	46	34	10	32	23	10	32	24	25	20	36	43
8 AR07053-13-1	13	34	42	35	13	4	24	14	8	12	13	2	28	17	20	8	29	26
9 AR07078-7-4	8	31	30	25	50	40	11	2	9	22	28	19	30	20	24	17	38	46
10 AR07108-6-1	3	16	6	2	30	20	20	10	9	22	25	15	25	11	17	5	20	6
11 ARLA06146E-20-1	14	35	35	31	30	20	15	5	9	22	35	30	31	21	24	19	17	4
12 ARLA07084C-10-1	1	2	18	14	.	.	28	20	5	2	38	36	39	32	23	14	42	51
13 ARS11-2086	78	50	63	49	63	45	61	44	13	45	80	48	45	41	58	55	25	18
14 ARS12-201	77	48	48	41	35	29	64	45	9	22	83	51	32	24	50	50	25	18
15 ARS13-159	83	53	47	38	20	9	25	16	8	12	80	48	56	51	46	47	24	17
16 ARS13-215	3	16	43	36	.	.	25	16	8	12	25	15	49	44	27	26	36	43
17 ARS14W0539	2	12	53	44	67	46	19	8	13	45	30	22	52	47	34	40	30	29
18 ARS14W0623	67	47	73	50	6	1	58	43	9	22	53	47	61	52	47	48	34	37
19 ARS14W1012	6	26	85	54	37	30	26	18	17	53	35	30	72	55	40	46	35	41
20 ES14-0057	38	41	10	9	27	16	.	.	8	12	23	10	25	11	22	13	23	11
21 ES14-0528	60	45	30	25	10	3	.	.	7	7	30	22	42	35	30	34	21	9
22 ES14-1293	4	20	9	7	50	40	.	.	5	2	10	1	27	16	18	7	25	18
23 ES14-1350	85	54	22	20	60	44	.	.	8	12	88	52	24	8	48	49	15	2
24 GA08250-15ES14	1	2	9	7	23	14	12	3	7	7	13	2	21	6	12	1	25	18
25 GA08293-15ES3	2	12	49	42	67	46	28	20	22	54	30	22	50	45	35	42	43	52
26 GA09361-15ES38	3	16	37	32	18	8	38	31	12	43	33	28	52	47	27	27	46	55
27 GA091252-15ES35	6	26	43	36	69	48	45	33	15	51	23	10	39	32	34	41	32	34
28 GA08281-15ES1	4	20	22	20	49	39	47	36	8	12	35	30	38	30	29	31	40	49
29 GANC9337-15ES27	1	2	18	14	21	10	20	10	8	12	18	6	23	7	15	4	20	6
30 GA09343-15ES33	2	12	48	39	31	26	46	34	11	38	30	22	43	38	30	33	32	34
31 GANC 10014-15ES24	6	26	53	44	37	30	37	30	13	45	40	38	63	53	36	43	29	26
32 KWS 053	4	20	16	12	34	28	.	.	10	32	13	2	26	13	17	6	20	6
33 KWS 060	11	33	8	5	13	4	.	.	11	38	28	19	54	49	21	11	27	23
34 KWS 074	63	46	18	14	8	2	.	.	9	22	35	30	35	27	28	30	38	46
35 KWS 081	27	37	6	2	30	20	.	.	7	7	38	36	47	42	26	23	23	11
36 KWS 083	32	39	17	13	30	20	.	.	9	22	18	6	14	2	20	9	23	11
37 KWS 087	21	36	27	23	30	20	.	.	7	7	50	46	35	27	28	29	28	25
38 LA06146E-P4	1	2	52	43	.	.	27	19	11	38	45	43	42	35	30	35	31	30
39 LA08090C-9-2	5	24	48	39	70	49	24	14	6	5	40	38	28	17	32	36	36	43
40 LA08265C-50	1	2	37	32	37	30	43	32	8	12	40	38	44	39	30	32	31	30
41 LA09011UB-2	5	24	62	48	70	51	35	26	13	45	30	22	51	46	38	45	32	34
42 LA09225C-33	7	29	40	34	26	15	19	8	12	43	40	38	55	50	28	28	39	48
43 NC10435-11	3	16	33	28	30	20	23	13	9	22	35	30	19	4	22	12	23	11
44 NC12-22225	50	44	10	9	27	16	35	26	9	22	30	22	24	8	26	25	23	11
45 NC13-20076	0	1	7	4	17	6	14	4	7	7	45	43	12	1	15	2	17	4
46 NC13-22350	38	41	10	9	47	37	15	5	11	38	18	6	31	21	24	18	31	30
47 NC13-23449	78	50	32	27	50	40	31	23	9	22	45	43	18	3	37	44	34	37
48 VA12W-68	4	20	57	46	21	10	30	22	13	45	13	2	44	39	26	24	44	54
49 VA13W-38	37	40	18	14	22	12	31	23	6	5	40	38	26	13	26	22	23	11
50 VA09MAS6-122-7-1	1	2	8	5	53	43	34	25	13	45	23	10	28	17	23	15	34.2	37
51 VA08MAS1-188-6-4-1	8	31	28	24	77	#	35	26	10	#	23	10	42	35	32	37	28.95	26
52 VA13FHB-26	77	48	77	51	27	16	35	26	10	32	93	54	32	24	50	51	34.4	37
53 VA14FHB-14	80	52	85	54	43	36	55	41	8	12	95	55	20	5	55	53	30.69	30
54 VA14FHB-13	85	54	80	53	37	30	51	39	10	32	88	52	26	13	54	52	34.95	41
55 VA14FHB-28	7	29	58	47	40	35	48	37	11	38	25	15	40	34	33	39	39.9	49
Mean	23		35		37		33		10		38		37		30		Mean and GEBV	
LSD (0.05)	19		41		41		16		5		.		.		34		Correlation = 0.30	
St. Error	11.6		17.3		2.7		.		1.8		.		.		.			
CV%	51.2		51.4		61.3		.		26.0		.		.		56.4			
Replications	3		3		3		.		2		.		.		.			

¹DATA BY INDIVIDUAL ISOLATES ON FOLLOWING PAGES

**FHB Severity following inoculation with four isolates of
F. graminearum and *F. culmorum*,
Szeged, Hungary**

Cultivar / Designation	F. gram.	F. culm.	F. gram.	F. culm.	Mean
	Isol 19.42	Isol 12.51	Isol Mix	Isol Mix	
1 ERNIE	65	65	58	11	50
2 COKER9835	65	68	63	28	56
3 BESS	45	18	15	1	20
4 JAMESTOWN	35	23	15	1	18
5 AR06024-7-2	15	9	6	2	8
6 ARS10-389	73	60	55	25	53
7 AR07010-7-1	70	68	39	8	46
8 AR07053-13-1	38	33	20	5	24
9 AR07078-7-4	20	13	8	3	11
10 AR07108-6-1	60	14	5	3	20
11 ARLA06146E-20-1	29	18	11	3	15
12 ARLA07084C-10-1	38	45	25	5	28
13 ARS11-2086	85	78	63	20	61
14 ARS12-201	83	75	85	15	64
15 ARS13-159	63	28	9	1	25
16 ARS13-215	60	10	20	10	25
17 ARS14W0539	25	21	30	1	19
18 ARS14W0623	73	70	70	18	58
19 ARS14W1012	73	20	8	4	26
20 ES14-0057	.	.	.	.	.
21 ES14-0528	.	.	.	.	.
22 ES14-1293	.	.	.	.	.
23 ES14-1350	.	.	.	.	.
24 GA08250-15ES14	23	14	9	4	12
25 GA08293-15ES3	48	30	30	5	28
26 GA09361-15ES38	85	23	30	13	38
27 GA091252-15ES35	80	45	48	9	45
28 GA08281-15ES1	70	60	38	20	47
29 GANC9337-15ES27	50	13	13	3	20
30 GA09343-15ES33	73	48	45	19	46
31 GANC 10014-15ES24	70	48	25	4	37
32 KWS 053	.	.	.	.	.
33 KWS 060	.	.	.	.	.
34 KWS 074	.	.	.	.	.
35 KWS 081	.	.	.	.	.
36 KWS 083	.	.	.	.	.
37 KWS 087	.	.	.	.	.
38 LA06146E-P4	60	23	20	4	27
39 LA08090C-9-2	58	20	18	2	24
40 LA08265C-50	60	55	43	13	43
41 LA09011UB-2	78	43	9	13	35
42 LA09225C-33	55	6	10	5	19
43 NC10435-11	60	10	15	6	23
44 NC12-22225	65	35	30	9	35
45 NC13-20076	23	15	18	3	14
46 NC13-22350	30	15	15	2	15
47 NC13-23449	45	35	35	9	31
48 VA12W-68	63	35	18	5	30
49 VA13W-38	60	30	25	10	31
50 VA09MAS6-122-7-1	65	28	38	6	34
51 VA08MAS1-188-6-4-1	75	43	18	4	35
52 VA13FHB-26	70	43	25	3	35
53 VA14FHB-14	65	70	68	18	55
54 VA14FHB-13	70	70	50	13	51
55 VA14FHB-28	70	63	53	9	48
Mean	57	37	30	8	33
LSD (0.05)	.	.	.	.	16

**Incidence, Severity, Kernel Rating (ISK) Index
(0.3 * Incidence + 0.3 * Severity + 0.4 * *Fusarium* Damaged Kernels)**

CULTIVAR/ DESIGNATION	LX'TON	URBANA	F'VILLE	N'PORT	COL'BIA	B'BURG	MEAN		GEBV
	KY	IL	AR	AR	MO	VA	ALL LOC.		
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK
1 ERNIE	36 42	38 16	24 41	18 31	39 24	30 27	31 32	37 25	
2 COKER9835	51 55	70 50	47 48	44 53	69 53	61 55	57 55	51 54	
3 BESS	26 8	37 10	2 15	2 1	31 9	19 2	19 1	27 3	
4 JAMESTOWN	35 36	38 16	1 5	15 27	33 13	32 30	26 16	32 10	
5 AR06024-7-2	16 1	62 46	1 5	9 17	37 20	24 13	25 14	24 1	
6 ARS10-389	27 10	24 3	1 5	8 13	46 34	21 5	21 5	33 11	
7 AR07010-7-1	31 23	46 28	1 5	12 23	32 10	24 13	24 10	39 29	
8 AR07053-13-1	27 10	32 7	7 33	19 33	38 22	22 6	24 10	35 18	
9 AR07078-7-4	44 52	58 42	4 27	13 24	43 29	37 36	33 36	43 40	
# AR07108-6-1	27 10	47 30	2 15	2 1	32 10	20 4	22 8	30 5	
# ARLA06146E-20-1	32 28	55 39	8 34	14 25	40 25	23 10	29 23	26 2	
# ARLA07084C-10-1	22 2	.	2 15	9 17	32 10	27 19	21 5	47 51	
# ARS11-2086	40 50	47 30	61 53	27 47	51 46	45 47	45 52	36 21	
# ARS12-201	37 46	38 16	61 52	21 39	51 46	35 34	40 47	36 21	
# ARS13-159	35 36	48 32	48 49	20 38	59 51	33 32	40 47	38 26	
# ARS13-215	35 36	.	2 15	19 33	30 8	59 54	32 34	43 40	
# ARS14W0539	30 22	37 10	1 5	22 40	33 13	49 49	29 23	40 33	
# ARS14W0623	27 10	21 1	32 45	29 48	42 27	44 45	32 34	46 49	
# ARS14W1012	46 54	59 43	4 27	36 52	47 38	52 53	40 47	43 40	
# ES14-0057	36 42	37 10	22 39	5 6	27 7	25 15	25 14	33 11	
# ES14-0528	32 28	24 3	37 46	14 25	44 30	29 25	30 27	33 11	
# ES14-1293	25 5	37 10	2 15	5 6	25 3	27 19	20 2	30 5	
# ES14-1350	31 23	65 48	55 50	9 17	68 52	22 6	42 50	29 4	
# GA08250-15ES14	32 28	39 19	0 1	4 4	26 4	22 6	21 5	36 21	
# GA08293-15ES3	36 42	70 50	1 5	25 45	33 13	43 44	34 39	46 49	
# GA09361-15ES38	37 46	54 37	1 5	19 33	44 30	47 48	34 39	51 54	
# GA091252-15ES35	33 33	65 48	8 34	19 33	36 18	40 38	34 39	40 33	
# GA08281-15ES1	25 5	52 35	3 23	11 20	47 38	42 43	30 27	47 51	
# GANC9337-15ES27	32 28	48 32	0 1	8 13	35 17	19 2	24 10	31 8	
# GA09343-15ES33	37 46	61 45	2 15	22 40	37 20	41 41	33 36	39 29	
# GANC 10014-15ES24	44 52	45 27	3 23	22 40	46 34	51 52	35 43	39 29	
# KWS 053	35 36	37 10	2 15	7 11	18 1	25 15	20 2	33 11	
# KWS 060	37 46	41 23	6 31	5 6	40 25	40 38	28 20	36 21	
# KWS 074	28 16	24 3	30 43	8 13	50 44	28 22	28 20	47 51	
# KWS 081	24 3	42 24	12 37	3 3	44 30	28 22	26 16	34 15	
# KWS 083	32 28	32 7	16 38	8 13	26 4	27 19	23 9	34 15	
# KWS 087	24 3	46 28	11 36	11 20	51 46	23 10	28 20	35 18	
# LA06146E-P4	25 5	.	0 1	24 44	49 41	36 35	30 27	39 29	
# LA08090C-9-2	28 16	62 46	3 23	22 40	42 27	31 28	31 32	43 40	
# LA08265C-50	27 10	50 34	1 5	17 30	49 41	38 37	30 27	42 37	
# LA09011UB-2	29 20	57 41	3 23	30 49	50 44	44 45	35 43	41 36	
# LA09225C-33	35 36	43 26	4 27	19 33	51 46	49 49	34 39	45 48	
# NC10435-11	28 16	54 37	1 5	18 31	49 41	31 28	30 27	35 18	
# NC12-22225	34 35	35 9	31 44	5 6	44 30	25 15	29 23	31 8	
# NC13-20076	26 8	29 6	0 1	4 4	47 38	15 1	20 2	30 5	
# NC13-22350	31 23	39 19	22 39	5 6	22 2	28 22	24 10	38 26	
# NC13-23449	31 23	59 43	58 51	15 27	38 22	23 10	38 46	42 37	
# VA12W-68	29 20	39 19	2 15	25 45	26 4	41 41	27 18	44 46	
# VA13W-38	27 10	23 2	25 42	11 20	46 34	29 25	27 18	34 15	
# VA09MAS6-122-7-1	41 51	56 40	1 5	7 11	36 18	34 33	29 23	40 33	
# VA08MAS1-188-6-4-1	31 23	72 52	6 31	15 27	34 16	40 38	33 36	38 26	
# VA13FHB-26	36 42	37 10	46 47	32 50	74 54	32 30	43 51	43 40	
# VA14FHB-14	33 33	42 24	61 53	53 55	74 54	22 6	48 54	42 37	
# VA14FHB-13	28 16	40 22	63 55	52 54	58 50	26 18	45 52	44 46	
# VA14FHB-28	35 36	53 36	4 27	30 49	46 34	50 51	36 45	43 40	

Mean	32	45	15	17	42	33	31	Mean and GEBV
LSD (0.05)	8.1	26	11	14	.	.	23	Correlation = 0.49
St. Error	2.9	2.2	6.6	8.6	.	.	.	
CV%	12.7	30.5	44.0	51.4	.	.	37.3	
Replications	2	3	3	3	.	.	.	

GRAIN YIELD

CULTIVAR/ DESIGNATION	WARSAW VA		WARSAW VA		WARSAW VA	
	bu / ac		% of Mean		Test Wt	
	RANK		RANK		RANK	
1 ERNIE	49	42	87	42	55.7	51
2 COKER9835	63	11	110	13	57.0	45
3 BESS	54	35	95	37	57.8	37
4 JAMESTOWN	53	40	93	40	59.0	21
5 AR06024-7-2	46	49	81	48	60.5	3
6 ARS10-389	48	43	85	43	57.2	43
7 AR07010-7-1	54	35	96	35	64.4	1
8 AR07053-13-1	57	24	100	28	57.9	33
9 AR07078-7-4	57	24	101	24	57.5	39
10 AR07108-6-1	47	44	83	44	58.7	24
11 ARLA06146E-20-1	58	23	102	23	58.4	27
12 ARLA07084C-10-1	59	21	104	21	58.2	28
13 ARS11-2086	46	47	81	48	57.9	33
14 ARS12-201	47	44	83	44	59.5	11
15 ARS13-159	61	17	108	17	55.5	52
16 ARS13-215	36	52	63	52	56.7	47
17 ARS14W0539	.	.	.	.	.	.
18 ARS14W0623	.	.	.	.	.	.
19 ARS14W1012	54	35	95	37	53.8	53
20 ES14-0057	43	51	75	51	60.1	5
21 ES14-0528	63	11	112	11	57.1	44
22 ES14-1293	57	24	100	28	57.4	40
23 ES14-1350	65	9	115	9	59.3	15
24 GA08250-15ES14	66	7	116	7	60.7	2
25 GA08293-15ES3	46	47	82	47	56.1	49
26 GA09361-15ES38	66	7	116	7	59.6	10
27 GA091252-15ES35	56	30	99	31	60.2	4
28 GA08281-15ES1	55	34	97	34	60.1	5
29 GANC9337-15ES27	56	30	100	28	59.3	15
30 GA09343-15ES33	47	44	83	44	59.0	21
31 GANC 10014-15ES24	62	14	110	13	57.8	36
32 KWS 053	52	41	93	40	58.0	30
33 KWS 060	70	1	124	1	56.8	46
34 KWS 074	68	5	120	5	57.3	41
35 KWS 081	61	17	108	17	56.1	49
36 KWS 083	54	35	96	35	59.9	7
37 KWS 087	62	14	109	15	56.5	48
38 LA06146E-P4	32	53	57	53	58.0	30
39 LA08090C-9-2	59	21	104	21	59.8	8
40 LA08265C-50	60	19	106	19	59.4	12
41 LA09011UB-2	57	24	101	24	59.3	15
42 LA09225C-33	56	30	98	32	59.3	15
43 NC10435-11	44	50	79	50	59.4	12
44 NC12-22225	60	19	106	19	57.8	37
45 NC13-20076	56	30	98	32	59.4	12
46 NC13-22350	57	24	101	24	58.6	26
47 NC13-23449	70	1	124	1	59.6	9
48 VA12W-68	62	14	109	15	58.1	29
49 VA13W-38	64	10	113	10	57.9	33
50 VA09MAS6-122-7-1	69	3	122	4	59.1	20
51 VA08MAS1-188-6-4-1	54	35	95	37	57.3	41
52 VA13FHB-26	69	3	123	3	58.0	30
53 VA14FHB-14	63	11	111	12	59.3	15
54 VA14FHB-13	57	24	101	24	58.7	24
55 VA14FHB-28	67	6	118	6	59.0	21
Mean	56		100		58.4	

DON
(ppm)

CULTIVAR/ DESIGNATION	F'VILLE		N'PORT		B'BURG		LEX'TON		URBANA		W'BORO		MEAN			
	AR	AR	VA	KY	IL	LA	ALL LOC.	GEBV	RANK	RANK	RANK	RANK	RANK	RANK		
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK		
1 ERNIE	1.9	20	6.9	21	1.8	15	33	45	2.2	28	9	5	9	20	10	28
2 COKER9835	2.8	38	14.2	51	7.7	54	43	53	5.0	47	16	22	15	48	14	48
3 BESS	2.0	23	4.0	5	2.3	23	14	5	0.5	1	9	5	5	1	9	22
4 JAMESTOWN	1.4	10	8.3	31	2.1	19	27	29	2.6	34	13	13	9	20	5	3
5 AR06024-7-2	2.1	28	4.5	8	1.4	8	9	1	1.5	16	10	10	5	1	5	3
6 ARS10-389	1.0	6	4.5	8	0.7	1	16	7	1.2	12	16	22	7	9	6	8
7 AR07010-7-1	5.7	51	10.2	41	3.3	33	27	29	1.2	12	23	43	12	36	14	48
8 AR07053-13-1	7.6	53	12.7	48	3.1	31	29	36	2.1	24	17	29	12	36	10	28
9 AR07078-7-4	6.9	52	10.8	44	3.8	38	42	52	2.7	37	33	52	17	51	13	43
# AR07108-6-1	5.6	50	5.6	15	1.7	11	31	37	1.2	12	16	22	10	24	7	14
# ARLA06146E-20-1	4.2	48	7.4	28	1.8	15	28	34	1.0	6	19	35	10	24	4	1
# ARLA07084C-10-1	3.3	43	9.2	39	3.4	34	31	37	.	.	32	51	16	49	16	52
# ARS11-2086	3.0	41	11.0	46	4.3	40	31	37	1.3	15	18	33	11	30	8	15
# ARS12-201	4.1	47	11.3	47	2.9	26	22	17	1.5	16	17	29	10	24	8	15
# ARS13-159	1.5	13	8.3	31	1.1	5	15	6	0.8	3	9	5	6	4	6	8
# ARS13-215	7.7	54	25.8	54	13.4	55	27	29	.	.	28	46	20	52	10	28
# ARS14W0539	3.4	44	8.5	34	5.7	49	11	2	2.2	28	33	52	11	30	9	22
# ARS14W0623	10.5	55	25.9	55	4.6	42	21	15	1.5	16	16	22	13	43	13	43
# ARS14W1012	2.0	23	9.0	38	3.0	30	36	47	3.8	43	28	46	14	46	12	36
# ES14-0057	3.6	46	6.3	20	1.8	15	25	26	1.1	10	3	1	7	9	8	15
# ES14-0528	1.7	18	6.1	19	1.3	6	24	24	1.7	20	14	15	8	15	6	8
# ES14-1293	3.1	42	5.1	12	1.7	11	16	7	0.8	3	6	2	6	4	6	8
# ES14-1350	2.0	23	3.9	4	0.9	2	12	3	2.0	21	15	18	6	4	5	3
# GA08250-15ES14	1.0	6	7.2	24	2.2	21	23	20	2.1	24	15	18	8	15	9	22
# GA08293-15ES3	0.8	3	7.7	30	4.4	41	47	54	6.1	50	21	41	15	48	13	43
# GA09361-15ES38	2.6	34	13.7	50	5.6	48	38	49	2.1	24	17	29	13	43	16	52
# GA091252-15ES35	1.6	15	10.2	41	7.0	52	31	37	4.2	45	19	35	12	36	14	48
# GA08281-15ES1	1.9	20	7.1	24	5.1	47	28	34	2.6	34	16	22	10	24	16	52
# GANC9337-15ES27	0.5	1	5.9	17	1.5	10	17	10	4.2	45	20	40	8	15	5	3
# GA09343-15ES33	2.9	40	8.9	37	5.9	51	24	24	5.3	48	19	35	11	30	13	43
# GANC 10014-15ES24	2.7	36	9.7	40	4.8	46	32	44	2.9	38	16	22	11	30	8	15
# KWS 053	0.6	2	4.1	6	3.4	34	23	20	2.2	28	9	5	7	9	4	1
# KWS 060	1.6	15	4.5	8	0.9	2	23	20	2.0	21	9	5	7	9	8	15
# KWS 074	2.4	32	8.6	35	2.9	26	47	54	1.0	6	19	35	14	46	14	48
# KWS 081	1.4	10	2.6	1	1.7	11	16	7	0.7	2	15	18	6	4	10	28
# KWS 083	4.3	49	8.3	31	3.6	37	31	37	1.1	10	10	10	10	24	8	15
# KWS 087	2.5	33	4.1	6	2.2	21	18	12	2.2	28	14	15	7	9	9	22
# LA06146E-P4	1.0	6	10.3	43	5.8	50	27	29	.	.	17	29	12	36	9	22
# LA08090C-9-2	2.7	36	14.3	52	4.7	45	19	14	2.6	34	28	46	12	36	12	36
# LA08265C-50	0.9	4	7.5	29	3.1	31	22	17	3.1	40	15	18	9	20	9	22
# LA09011UB-2	2.1	28	12.8	49	4.0	39	31	37	6.8	52	36	55	15	48	10	28
# LA09225C-33	3.5	45	10.8	44	4.6	42	36	47	2.2	28	34	54	15	48	13	43
# NC10435-11	1.7	18	5.4	13	2.9	26	23	20	3.1	40	14	15	8	15	11	34
# NC12-22225	2.3	31	5.0	11	1.9	18	18	12	0.9	5	8	3	6	4	5	3
# NC13-20076	0.9	4	3.3	2	1.0	4	17	10	3.0	39	16	22	7	9	6	8
# NC13-22350	1.5	13	3.4	3	1.3	6	12	3	1.0	6	8	3	5	1	8	15
# NC13-23449	2.8	38	7.3	27	2.9	26	25	26	2.1	24	13	13	9	20	11	34
# VA12W-68	2.6	34	16.4	53	7.3	53	40	50	6.6	51	21	41	16	49	12	36
# VA13W-38	1.4	10	5.8	16	1.7	11	27	29	1.0	6	30	49	11	30	6	8
# VA09MAS6-122-7-1	2.0	23	5.5	14	2.6	24	31	37	5.3	48	27	45	12	36	12	36
# VA08MAS1-188-6-4-1	2.0	23	7.0	22	2.1	19	22	17	2.0	21	12	#	8	15	10	28
# VA13FHB-26	1.9	20	7.1	24	3.4	34	25	26	2.3	33	18	33	10	24	12	36
# VA14FHB-14	1.3	9	6.0	18	1.4	8	21	15	1.6	19	31	50	11	30	12	36
# VA14FHB-13	1.6	15	7.0	22	2.6	24	41	51	3.5	42	19	35	12	36	12	36
# VA14FHB-28	2.1	28	8.6	35	4.6	42	35	46	3.8	43	25	44	13	43	17	55

Mean	3	8	3	27	2	18	4	Mean and GEBV
LSD (0.05)	2.6	5.0	.	.	2.2	.	4	Correlation = 0.65
St. Error	1.6	3.1	.	4.2	1.1	.	.	
CV%	58.4	36.6	.	.	38.9	.	50.1	
Replications	3	3	.	.	2	.	.	

Genotypic Analyses of Regions Associated with FHB Resistance and Other Pertinent Loci

DESIGNATION	Rht-B1	Rht-D1	Fhb1	Fhb Massey 3BL	Fhb 2DL- Wuhan1/W14	Fhb 5A	Lr34 / Yr18	Sr24/Lr24	Lr37/Yr17/Sr38	Lr9	Sr36	H13	Sbm1	Tsn1	Sucrose Synthase
1 ERNIE	Rht-B1b	Rht-D1a	no	yes	no	yes	no	no	no	no	yes	no	no	no	yes
2 COKER9835	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	yes	yes	no	yes	no	yes
3 BESS	Rht-B1b	Rht-D1a	no	no	no	no	no	no	no	no	no	no	yes	Tsn1	no
4 JAMESTOWN	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
5 AR06024-7-2	Rht-B1a	Rht-D1a	het	no	no	no	no	no	yes	no	no?	no	yes	no	no
6 ARS10-389	Rht-B1a	Rht-D1a	no	no	no	no	no	no	no	no	yes	no	no	no	yes
7 AR07010-7-1	Rht-B1b	Rht-D1a	no	no	no	no	no	no	no	no	no	no	yes	no	no
8 AR07053-13-1	Rht-B1a	Rht-D1a	no	no	no	no	no	no	no	yes	no	yes	no	yes	yes
9 AR07078-7-4	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
10 AR07108-6-1	Rht-B1a	Rht-D1a	no	no	no	no	no	no	no	no	no	no	yes	no	no
11 ARLA06146E-20-1	Rht-B1a	Rht-D1a	no	no	no	no	no	no	no	no	no	ND	yes	no	no
12 ARLA07084C-10-1	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	yes	no	no	no	no	no
13 ARS11-2086	Rht-B1a	Rht-D1b	no	no	no	yes	no	no	no	no	yes	no	yes	no	yes
14 ARS12-201	Rht-B1a	Rht-D1b	no	no	no	yes	no	no	no	no	yes	no	yes	no	yes
15 ARS13-159	Rht-B1b	Rht-D1a	no	yes	no	no	no	no	no	no	no	no	yes	no	no
16 ARS13-215	Rht-B1b	Rht-D1a	no	no	no	no	no	yes	no	no	yes	no	yes	no	yes
17 ARS14W0539	Rht-B1b	Rht-D1a	no	yes	no	no	no	no	no	no	no	no	yes	yes	no
18 ARS14W0623	Rht-B1a	Rht-D1b	no	yes	no	no	no	no	no	yes	no?	no	yes	yes	no
19 ARS14W1012	Rht-B1b	Rht-D1a	no	no	no	no	no	yes	no	no	no	no	no	no	yes
20 ES14-0057	Rht-B1a	Rht-D1b	no	no	no	no	no	no	het	no	no	no	yes	no	no
21 ES14-0528	Rht-B1b	Rht-D1a	no	yes	no	ND	no	no	no	no	yes	ND	yes	no	yes
22 ES14-1293	Rht-B1b_het	Rht-D1a	no	no	no	no	no	no	no	no	ND	ND	yes	no	yes
23 ES14-1350	Rht-B1a	Rht-D1a	no	yes	no	no	no	no	no	no	yes	no	no	no	yes
24 GA08250-15ES14	Rht-B1a	Rht-D1b	no	no	no	no	no	no	het	no	no	ND	yes	no	no
25 GA08293-15ES3	Rht-B1b	Rht-D1a	no	no	no	no	no	no	yes	no	no?	no	yes	no	no
26 GA09361-15ES38	Rht-B1a	Rht-D1b	no	no	no	yes	no	no	no	no	no?	no	yes	no	no
27 GA091252-15ES35	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	no	yes	no	no	no	yes
28 GA08281-15ES1	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	no	no	no	no	no	no
29 GANC9337-15ES27	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
30 GA09343-15ES33	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
31 GANC 10014-15ES24	Rht-B1a	Rht-D1b	no	no	no	yes	no	no	yes	no	yes	no	yes	no	yes
32 KWS 053	Rht-B1a	Rht-D1a	no	no	no	no	no	no	no	no	yes	no	yes	no	yes
33 KWS 060	Rht-B1b	Rht-D1a	no	yes	no	no	no	no	no	no	no	no	yes	no	no
34 KWS 074	Rht-B1b	Rht-D1b_het	no	no	no	no	no	no	no	no	no	no	yes	no	no
35 KWS 081	Rht-B1b	Rht-D1a	no	no	no	no	no	no	no	no	no?	no	yes	Tsn1	no
36 KWS 083	Rht-B1a	Rht-D1b	no	no	no	no	no	yes	no	no	no	no	no	no	no
37 KWS 087	Rht-B1b	Rht-D1a	no	no	no	no	no	no	no	no	no?	het	yes	no	no
38 LA06146E-P4	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	yes	no	no	yes	no	no
39 LA08090C-9-2	Rht-B1a	ND	no	no	no	no	no	no	yes	yes	het	no	no	no	het
40 LA08265C-50	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
41 LA09011UB-2	Rht-B1a	Rht-D1b	no	no	ND	no	no	no	yes	no	het	yes	yes	no	het
42 LA09225C-33	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	no	no	no	het	no	no
43 NC10435-11	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	yes	no	yes	no	yes
44 NC12-22225	Rht-B1b_het	Rht-D1a	Fhb1	yes	no	no	no	yes	no	no	yes	no	yes	no	yes
45 NC13-20076	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
46 NC13-22350	Rht-B1a	Rht-D1b	Fhb1	yes?	no	Ning	no	yes	no	no	no	no	yes	no	no
47 NC13-23449	Rht-B1b	ND	no	no	no	no	no	no	no	no	yes	no	yes	no	yes
48 VA12W-68	Rht-B1a	Rht-D1b	no	yes?	no	no	no	no	yes	no	no	yes	yes	no	no
49 VA13W-38	Rht-B1b	Rht-D1a	no	no	no	no	no	no	no	no	yes	no	yes	no	yes
50 VA09MAS6-122-7-1	Rht-B1a	Rht-D1b	no	no	no	no	no	no	yes	no	yes	no	yes	no	yes
51 VA08MAS1-188-6-4-1	Rht-B1b	Rht-D1a	het	no	no	yes	no	no	no	no	yes	no	no	no	yes
52 VA13FHB-26	Rht-B1a	Rht-D1b	no	no	no	het	no	no	no	no	no	no	yes	no	no
53 VA14FHB-14	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
54 VA14FHB-13	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	yes	no	no
55 VA14FHB-28	Rht-B1a	Rht-D1b	no	no	no	no	no	no	no	no	no	no	no	no	no

Efficacy of Selected FHB Resistance QTL

Mean Incidence, Severity, Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2016 Uniform Southern Winter Wheat Scab Nurseries with and without resistance alleles at quantitative trait loci (QTL) associated with resistance to (FHB).

QTL	Allele [‡]	n [§]	INC	SEV	FDK	DON
<i>Qfhb.nc-2B.1 (Bess)</i>	S	164	57.6 p=0.1160	32.3 p=0.1883	32.1 p=0.0055	9.5 p<0.0001
	R	32	55.3	31.0	28.6	7.5
<i>Qfhb.nc-3B.2 (Bess)</i>	S	189	57.7 p=0.0010	32.4 p<0.0001	31.8 p=0.0002	9.2 p=0.2238
	R	11	51.6	26.6	25.6	9.9
Ning_5A	S	195	57.4 p=0.1647	32.4 p=0.0059	31.8 p<0.0001	9.4 p<0.0001
	R	7	54.1	27.9	22.7	4.9
Ernie_5A	S	183	56.9 p=0.0003	31.5 p<0.0001	30.6 p<0.0001	9.0 p<0.0001
	R	17	62.2	38.3	40.0	12.0
Wuhan-1_2DL	S	197	57.4 p=0.7902	32.3 p=0.0053	31.7 p<0.0001	9.3 p<0.0001
	R	6	58.1	27.3	21.6	4.5
Sumai 3_Fhb1	S	176	57.4 p=0.3305	32.8 p=0.0004	32.2 p=0.0009	9.7 p<0.0001
	R	23	58.9	29.2	28.1	6.4
<i>QTL_3BL (Massey)</i>	S	187	57.4 p=0.7414	32.2 p=0.9184	31.2 p=0.0046	9.2 p=0.3626
	R	15	58.0	32.3	35.5	8.7
<i>QTL_1A (Neuse)</i>	S	90	58.1 p=0.3281	33.4 p=0.0011	33.0 p<0.0001	10.1 p<0.0001
	R	97	57.1	31.2	29.9	8.4
<i>QTL_6A (Neuse)</i>	S	105	55.9 p=0.0852	31.0 p=0.0861	31.4 p=0.7574	9.9 p=0.0266
	R	84	59.2	33.3	31.9	8.4
<i>QTL_1B (Jamestown)</i>	S	57	54.8 p=0.4689	30.3 p=0.0013	34.4 p=0.0179	9.9 p<0.0001
	R	36	53.8	27.1	31.3	7.8
<i>QTL_6A (Jamestown)</i>	S	86	54.6 p=0.3119	29.0 p=0.8173	33.5 p=0.3594	8.9 p=0.3289
	R	10	52.8	29.4	31.8	9.4

[‡] Indicates presence of resistance allele (R) or susceptibility allele (S) at the respective QTL.

[§] n indicates the number of lines in the allele group.

Heading Date (Julian Days*)

CULTIVAR/ DESIGNATION	COL'BIA WARSAW URBANA			LEX'TON		KWS		MEAN	
	MO	VA	IL	KY	IL	ALL LOC.	Rank	GEBV	Rank
1 ERNIE	125	111	128	120	129	123	12	125	7
2 COKER9835	131	112	131	126	131	126	27	128	53
3 BESS	131	116	132	125	131	127	33	126	27
4 JAMESTOWN	125	106	127	119	129	121	1	125	7
5 AR06024-7-2	128	110	132	124	131	125	22	126	27
6 ARS10-389	123	110	124	120	128	121	1	125	7
7 AR07010-7-1	131	117	134	128	133	129	51	126	27
8 AR07053-13-1	130	118	133	128	132	128	39	124	2
9 AR07078-7-4	132	120	134	130	134	130	53	125	7
10 AR07108-6-1	131	118	133	128	131	128	39	126	27
11 ARLA06146E-20-1	128	114	130	127	133	126	27	125	7
12 ARLA07084C-10-1	132	111		130	135	128	39	126	27
13 ARS11-2086	131	113	133	130	133	128	39	127	27
14 ARS12-201	131	115	133	128	132	128	39	128	53
15 ARS13-159	131	118	130	124	132	127	33	125	7
16 ARS13-215	131	110		130	135	128	39	125	7
17 ARS14W0539	137		135	131	133	131	54	126	27
18 ARS14W0623	137		136	133	140	133	55	126	27
19 ARS14W1012	130	118	131	127	131	127	33	127	27
20 ES14-0057	131	120	133	130	131	129	51	126	27
21 ES14-0528	128	113	125	124	130	124	16	126	27
22 ES14-1293	132	119	132	126	132	128	39	124	2
23 ES14-1350	130	115	131	125	130	126	27	123	1
24 GA08250-15ES14	130	115	130	124	129	125	22	126	27
25 GA08293-15ES3	124	106	127	124	129	122	7	124	2
26 GA09361-15ES38	131	108	130	124	134	125	22	126	27
27 GA091252-15ES35	128	109	133	124	131	125	22	125	7
28 GA08281-15ES1	128	109	132	123	130	124	16	126	27
29 GANC9337-15ES27	128	108	128	119	129	122	7	125	7
30 GA09343-15ES33	124	106	127	121	128	121	1	126	27
31 GANC 10014-15ES24	130	119	132	128	132	128	39	125	7
32 KWS 053	125	112	124	121	129	122	7	126	27
33 KWS 060	130	116	129	125	130	126	27	125	7
34 KWS 074	128	117	128	126	131	126	27	126	27
35 KWS 081	130	116	130	126	131	127	33	126	27
36 KWS 083	131	119	131	127	131	128	39	127	27
37 KWS 087	128	116	131	126	130	126	27	125	7
38 LA06146E-P4	127	98		121	133	121	1	125	7
39 LA08090C-9-2	133	115	134	127	133	128	39	125	7
40 LA08265C-50	128	107	130	126	131	124	16	127	27
41 LA09011UB-2	124	107	126	121	129	121	1	124	2
42 LA09225C-33	131	114	133	130	133	128	39	125	7
43 NC10435-11	125	109	129	124	129	123	12	127	27
44 NC12-22225	131	119	131	129	132	128	39	125	7
45 NC13-20076	130	109	130	121	132	124	16	125	7
46 NC13-22350	132	116	132	125	132	127	33	128	53
47 NC13-23449	131	116	131	123	133	127	33	125	7
48 VA12W-68	126	110	127	121	129	123	12	125	7
49 VA13W-38	128	110	125	118	128	122	7	125	7
50 VA09MAS6-122-7-1	127	113	130	122	129	124	16	124	2
51 VA08MAS1-188-6-4-1	126	112	128	123	129	124	16	126	27
52 VA13FHB-26	130	116	127	124	129	125	22	127	27
53 VA14FHB-14	128	111	127	120	129	123	12	126	27
54 VA14FHB-13	126	103	125	125	129	122	7	126	27
55 VA14FHB-28	123	105	129	120	129	121	1	127	27
Mean	129	113	130	125	131	125		Mean and GEBV	
LSD (0.05)	.	.	2.9	3	.	4		Correlation = 0.20	
St. Error	.	.	3.9	1.0	0.5	.			
CV%	.	.	1.2	1.1	.	1.7			
Replications	.	.	3	2	2	.			

*Days after December 31, 2015

Plant Height (in)

CULTIVAR/ DESIGNATION	WARSAW SZEGED LEX'TON MEAN						Early Spring	
	VA	HUN	KY	ALL LOC.	GEBV	WARSAW		
						VA		
					RANK	RANK		
1 ERNIE	29	42	29	33	12	32	3	15
2 COKER9835	27	42	28	32	3	33	4	18
3 BESS	32	42	33	35	31	37	55	21
4 JAMESTOWN	28	42	29	33	12	36	48	17
5 AR06024-7-2	30	46	33	36	37	36	48	14
6 ARS10-389	30	46	31	35	31	34	15	14
7 AR07010-7-1	33	50	33	39	50	34	15	.
8 AR07053-13-1	35	46	37	39	50	34	15	15
9 AR07078-7-4	34	48	35	39	50	34	15	18
# AR07108-6-1	35	48	37	40	53	36	48	14
# ARLA06146E-20-1	39	46	35	40	53	35	32	15
# ARLA07084C-10-1	32	44	36	37	45	35	32	10
# ARS11-2086	30	38	29	32	3	34	15	18
# ARS12-201	30	40	30	33	12	34	15	19
# ARS13-159	32	46	36	38	48	36	48	21
# ARS13-215	29	42	31	34	20	33	4	18
# ARS14W0539	.	40	29	32	3	35	32	14
# ARS14W0623	.	46	34	37	45	34	15	18
# ARS14W1012	31	38	29	33	12	35	32	17
# ES14-0057	30	0	34	36	37	36	48	20
# ES14-0528	32	0	32	36	37	35	32	13
# ES14-1293	34	0	39	40	53	34	15	21
# ES14-1350	31	0	32	36	37	34	15	12
# GA08250-15ES14	33	42	33	36	37	35	32	12
# GA08293-15ES3	29	42	30	34	20	33	4	15
# GA09361-15ES38	31	40	32	34	20	35	32	12
# GA091252-15ES35	27	46	29	34	20	31	1	16
# GA08281-15ES1	27	40	31	32	3	34	15	14
# GANC9337-15ES27	27	42	29	33	12	36	48	15
# GA09343-15ES33	27	42	27	32	3	34	15	16
# GANC 10014-15ES24	27	42	30	33	12	33	4	19
# KWS 053	28	0	31	34	20	33	4	17
# KWS 060	31	0	34	37	45	34	15	18
# KWS 074	30	0	30	34	20	35	32	13
# KWS 081	32	0	35	38	48	35	32	22
# KWS 083	28	0	33	35	31	35	32	13
# KWS 087	28	0	32	34	20	35	32	18
# LA06146E-P4	26	42	28	32	3	36	48	13
# LA08090C-9-2	29	46	32	35	31	33	4	17
# LA08265C-50	30	46	29	35	31	35	32	17
# LA09011UB-2	26	40	25	30	1	33	4	13
# LA09225C-33	31	46	31	36	37	34	15	11
# NC10435-11	27	44	30	34	20	33	4	17
# NC12-22225	28	42	29	33	12	33	4	14
# NC13-20076	32	44	31	36	37	35	32	15
# NC13-22350	31	40	32	34	20	34	15	15
# NC13-23449	31	46	32	36	37	33	4	14
# VA12W-68	29	38	31	32	3	34	15	20
# VA13W-38	30	38	29	32	3	33	4	12
# VA09MAS6-122-7-1	25	42	27	31	2	31	1	17
# VA08MAS1-188-6-4-	27	40	30	32	3	34	15	.
# VA13FHB-26	32	40	34	35	31	35	32	20
# VA14FHB-14	28	42	31	34	20	35	32	15
# VA14FHB-13	31	38	29	33	12	35	32	18
# VA14FHB-28	31	42	30	34	20	34	15	12

Mean	30	102	31	34	Mean and GEBV
LSD (0.05)	.	.	3	4	Correlation = 0.30
St. Error	.	.	1.1	.	
CV%	.	.	5.2	5.6	
Replications	.	.	2	.	

Leaf Disease Ratings

CULTIVAR/ DESIGNATION	Leaf Rust		Leaf Rust Reaction		Powdery Mildew	Stripe Rust		Stripe Rust
	0-9	0-100	0-3	(TNRK + MFQS)	0-9	0-100	0-100	0-100
	W'RSAW	N'PORT	TNRJ		W'RSAW	F'VILLE 1	F'VILLE 2	
	VA	AR	VA	VA	VA	AR	AR	
1 ERNIE	5	0	3	3	3	96	96	90
2 COKER9835	1	.	3	;23	2	96	98	90
3 BESS	4	0	3	3	4	62	90	30
4 JAMESTOWN	4	1	3;	3	3	2	1	5
5 AR06024-7-2	5	7	3-	;23	4	5	12	7
6 ARS10-389	1	1	23;/Tr0;	3	0	4	5	3
7 AR07010-7-1	3	2	3	3	5	2	0	60
8 AR07053-13-1	6	8	3	23;	4	6	37	7
9 AR07078-7-4	4	12	3	3	3	1	3	7
# AR07108-6-1	2	1	3	3	6	4	12	7
# ARLA06146E-20-1	5	1	3	3	1	12	12	3
# ARLA07084C-10-1	0	0	;1=	0;	4	0	0	30
# ARS11-2086	2	.	3	12;	0	95	99	95
# ARS12-201	1	.	3+	12-;	0	95	99	90
# ARS13-159	1	.	3;	3	3	78	96	80
# ARS13-215	0	.	3	3	1	73	92	60
# ARS14W0539	.	1	N/A	N/A	.	1	0	10
# ARS14W0623	.	.	N/A	N/A	.	80	94	60
# ARS14W1012	2	0	3/Tr0;	12-;	0	43	54	3
# ES14-0057	6	7	3	3	6	68	73	.
# ES14-0528	4	.	3	3	5	90	94	.
# ES14-1293	3	2	3	3	3	38	62	.
# ES14-1350	3	.	3	3;	3	98	99	.
# GA08250-15ES14	2	1	23;	12;/3	1	1	0	1
# GA08293-15ES3	0	0	23;	23	2	2	1	5
# GA09361-15ES38	0	1	23;	23-;	1	1	4	3
# GA091252-15ES35	2	0	23;	23;/3	5	57	71	5
# GA08281-15ES1	0	0	23;	23;/3	4	50	50	7
# GANC9337-15ES27	4	0	23;	3	2	4	2	7
# GA09343-15ES33	0	0	;1=	23;	6	12	25	3
# GANC 10014-15ES24	0	1	;1Tr3	;1=	3	1	0	3
# KWS 053	2	0	3	3	4	20	32	.
# KWS 060	5	.	3	3	3	55	95	.
# KWS 074	3	.	3	3	1	68	88	.
# KWS 081	6	.	21CN	1-;	2	85	78	.
# KWS 083	3	3	3	3	1	48	84	.
# KWS 087	5	11	1-;	;1/3	0	78	73	.
# LA06146E-P4	0	0	23;	1;	3	1	1	1
# LA08090C-9-2	0	0	23;/Tr0;	;12	3	20	32	10
# LA08265C-50	3	1	3	3	0	3	16	70
# LA09011UB-2	4	2	3;	23;	2	4	4	5
# LA09225C-33	0	1	2;	2;	5	3	4	7
# NC10435-11	4	.	3	3	6	10	7	7
# NC12-22225	1	.	23	23	0	79	90	95
# NC13-20076	2	1	23;	3	2	0	1	10
# NC13-22350	3	0	23;	32	4	80	88	30
# NC13-23449	1	.	3	3	1	93	96	15
# VA12W-68	2	1	23;	3;	2	1	0	7
# VA13W-38	1	.	1;	2;	0	88	94	3
# VA09MAS6-122-7-1	0	0	23;	3;	0	1	1	3
# VA08MAS1-188-6-4-1	0	0	;1=Tr3	3	0	90	90	50
# VA13FHB-26	0	.	3	23;/0;	1	95	96	85
# VA14FHB-14	1	.	3-	23;	6	95	96	50
# VA14FHB-13	1	.	3	23;	2	98	98	50
# VA14FHB-28	0	.	0;/Tr3	23	3	38	67	50
Mean	2	2	.	.	3	42	49	28
LSD (0.05)	.	5	.	.	.	18	19	.
Str. Error	.	2.7	.	.	.	10.8	11.4	.
CV%	.	131.5	.	.	.	25.5	23.2	.

Hessian Fly Screening (Resistant - Susceptible Plants)¹

CULTIVAR/ DESIGNATION	Bio B	Bio C	Bio O	Bio L	H13
	R-S	R-S	R-S	R-S	
1 ERNIE	0-20	0-21	0-18	0-19	no
2 COKER9835	8-11	2-15	0-15	0-17	no
3 BESS	0-21	0-19	0-18	0-19	no
4 JAMESTOWN	23-0	18-0	0-16	0-18	no
5 AR06024-7-2	0-19	0-19	0-18	0-19	no
6 ARS10-389	17-0	0-15	0-12	0-16	no
7 AR07010-7-1	0-14	0-13	0-15	0-18	no
8 AR07053-13-1	12-2	8-2	0-17	0-13	no
9 AR07078-7-4	0-17	0-13	18-0	0-16	no
# AR07108-6-1	0-14	0-15	0-17	0-18	no
# ARLA06146E-20-1	14-0	6-0	0-13	0-14	ND
# ARLA07084C-10-1	0-15	0-13	0-16	0-12	no
# ARS11-2086	11-7	9-5	10-3	14-6	no
# ARS12-201	12-7	5-12	12-4	4-13	no
# ARS13-159	0-17	5-11	0-15	0-18	no
# ARS13-215	0-13	11-3	0-13	0-16	no
# ARS14W0539	0-18	0-16	0-17	0-20	no
# ARS14W0623	18-0	15-2	0-17	0-17	no
# ARS14W1012	0-16	0-17	0-18	0-13	no
# ES14-0057	6-2	2-15	0-18	0-18	no
# ES14-0528	0-22	0-19	0-16	0-19	ND
# ES14-1293	17-0	20-0	15-0	18-0	ND
# ES14-1350	0-21	5-13	0-17	0-19	no
# GA08250-15ES14	16-0	15-0	0-15	0-16	ND
# GA08293-15ES3	0-19	0-18	15-0	0-18	no
# GA09361-15ES38	0-17	0-20	0-17	0-20	no
# GA091252-15ES35	0-18	0-21	0-18	0-19	no
# GA08281-15ES1	0-18	5-16	0-16	0-19	no
# GANC9337-15ES27	20-0	18-0	0-20	0-18	no
# GA09343-15ES33	0-18	0-16	0-18	0-20	no
# GANC 10014-15ES24	17-0	17-0	0-15	0-15	no
# KWS 053	20-2	16-0	0-17	0-18	no
# KWS 060	0-18	12-5	0-12	0-20	no
# KWS 074	0-23	0-20	0-16	0-23	no
# KWS 081	0-19	0-19	0-18	0-16	no
# KWS 083	0-20	0-17	0-19	0-19	no
# KWS 087	11-0	14-0	16-0	21-0	het
# LA06146E-P4	0-15	12-4	0-17	0-17	no
# LA08090C-9-2	0-18	6-9	0-18	0-20	no
# LA08265C-50	0-14	0-16	0-19	0-17	no
# LA09011UB-2	20-0	17-0	18-1	15-2	yes
# LA09225C-33	0-16	0-14	0-18	0-14	no
# NC10435-11	19-1	16-0	17-0	13-1	no
# NC12-22225	17-4	12-8	14-2	17-5	no
# NC13-20076	22-0	18-0	0-17	1-19	no
# NC13-22350	19-1	22-0	20-0	13-4	no
# NC13-23449	0-19	0-20	0-17	0-16	no
# VA12W-68	21-0	17-0	20-1	21-0	yes
# VA13W-38	0-19	0-18	0-22	0-18	no
# VA09MAS6-122-7-1	0-21	0-20	0-21	0-20	no
# VA08MAS1-188-6-4-1	0-18	0-19	0-21	0-19	no
# VA13FHB-26	0-21	0-18	0-22	0-19	no
# VA14FHB-14	0-20	0-16	0-18	0-18	no
# VA14FHB-13	0-21	0-18	0-17	0-17	no
# VA14FHB-28	0-22	0-19	0-16	0-20	no

¹Sue Cambron, USDA-ARS, Dept Entomology, Purdue Univ.

Milling and Baking Quality Scores¹

Cultivar/ Designation	FLOUR	SOFT.	TEST	KERNEL	FLOUR	LACTIC	Na ₂ CO ₃	SKCS	SKCS	SKCS
	YIELD	EQUIV.	WEIGHT	PROT.	PROT.	ACID	SRC	Ker.	Ker. Dia.	Ker. Wt
	%	%	Lb/Bu	(at 12%)	(at 14%)	SRC(%)	%	Hardness	mm	mg
1 ERNIE	63	52	55.5	11.2	8.4	115	74	7	2.9	36.5
2 COKER9835	66	60	58.0	10.1	8.2	103	75	10	2.7	33.3
3 BESS	65	54	58.8	10.2	8.3	102	70	15	2.6	32.4
4 JAMESTOWN	65	54	59.5	10.3	8.0	121	77	16	2.9	34.9
5 AR06024-7-2	64	55	61.5	11.7	9.3	108	70	21	2.8	30.8
6 ARS10-389	71	39	58.0	11.4	10.4	111	76	58	2.8	30.8
7 AR07010-7-1	66	52	58.0	11.3	8.8	99	69	29	2.6	28.9
8 AR07053-13-1	66	54	58.5	11.1	9.2	94	68	22	2.7	32.4
9 AR07078-7-4	68	54	58.7	10.9	8.7	104	70	28	2.7	31.7
10 AR07108-6-1	67	55	59.4	11.2	9.1	102	71	18	2.8	34.9
11 ARLA06146E-20-1	65	56	60.0	11.7	9.1	114	71	15	2.8	33.1
12 ARLA07084C-10-1	67	60	59.2	10.7	8.2	101	73	13	2.7	33.0
13 ARS11-2086	68	53	58.9	12.5	10.1	107	65	17	2.8	35.0
14 ARS12-201	69	51	60.0	12.1	10.0	104	64	17	2.9	36.3
15 ARS13-159	68	61	57.4	10.8	9.0	108	67	10	2.6	30.8
16 ARS13-215	69	47	60.7	11.2	9.3	94	68	21	3.0	45.5
17 ARS14W0539	.	.	.	.	.	.	.	.	.	.
18 ARS14W0623	.	.	.	.	.	.	.	.	.	.
19 ARS14W1012	66	48	54.4	11.3	8.7	107	78	45	2.9	36.9
20 ES14-0057	65	58	61.5	11.3	9.1	94	71	22	2.7	30.7
21 ES14-0528	70	54	57.9	10.3	8.3	94	68	24	2.8	32.9
22 ES14-1293	67	54	59.4	11.9	9.4	104	65	12	2.7	30.2
23 ES14-1350	66	47	60.2	11.2	9.2	118	72	30	2.7	29.2
24 GA08250-15ES14	69	55	62.2	10.9	8.7	121	69	18	2.7	33.5
25 GA08293-15ES3	62	46	58.5	10.9	8.6	117	80	36	2.9	35.7
26 GA09361-15ES38	70	52	61.0	10.4	8.5	125	69	14	2.9	42.2
27 GA091252-15ES35	70	53	61.9	10.9	8.7	120	68	23	2.9	38.0
28 GA08281-15ES1	67	55	61.4	11.0	9.2	131	71	19	2.9	37.4
29 GANC9337-15ES27	66	56	60.4	10.6	8.0	124	78	17	2.9	35.1
30 GA09343-15ES33	68	56	60.4	11.1	9.0	121	76	17	3.0	38.9
31 GANC 10014-15ES24	63	54	59.1	11.2	9.0	132	78	23	2.9	35.5
32 KWS 053	68	54	60.1	11.4	9.0	135	70	10	2.8	36.8
33 KWS 060	68	61	57.9	9.5	7.6	110	68	9	2.8	35.2
34 KWS 074	65	61	58.8	10.3	8.1	122	72	12	2.7	31.7
35 KWS 081	67	60	57.4	10.2	8.3	114	68	7	2.5	31.7
36 KWS 083	63	55	61.6	11.4	9.4	119	79	34	2.7	35.2
37 KWS 087	67	56	58.0	11.1	8.6	97	69	10	2.8	36.8
38 LA06146E-P4	65	47	60.2	12.0	9.4	134	74	28	3.1	41.5
39 LA08090C-9-2	67	48	62.1	11.5	9.5	113	65	25	2.9	35.7
40 LA08265C-50	68	54	60.7	10.6	8.6	137	67	21	2.9	37.0
41 LA09011UB-2	68	51	60.0	11.1	9.0	123	73	21	2.9	36.4
42 LA09225C-33	69	54	60.2	10.9	9.0	121	67	11	2.9	39.9
43 NC10435-11	68	53	60.1	12.0	9.8	121	72	15	3.0	36.9
44 NC12-22225	65	53	59.2	11.3	9.0	124	68	22	2.6	30.3
45 NC13-20076	66	56	60.1	11.3	9.1	122	75	16	2.8	34.6
46 NC13-22350	66	56	59.6	10.7	8.5	137	71	18	2.7	31.3
47 NC13-23449	69	56	60.4	10.6	8.3	114	66	14	2.7	32.5
48 VA12W-68	66	53	58.8	11.6	9.8	113	67	12	3.1	45.8
49 VA13W-38	67	53	58.7	11.4	9.1	122	68	9	2.9	35.1
50 VA09MAS6-122-7-1	68	57	59.6	10.7	8.7	116	65	9	2.8	36.3
51 VA08MAS1-188-6-4-1	66	53	58.6	11.8	9.4	112	72	10	2.8	34.8
52 VA13FHB-26	65	55	59.0	10.8	9.1	122	70	20	2.8	34.4
53 VA14FHB-14	67	58	59.9	10.7	8.7	127	73	9	2.8	34.8
54 VA14FHB-13	66	55	59.5	10.7	8.9	148	74	13	2.9	36.4
55 VA14FHB-28	69	54	60.2	10.3	8.4	110	76	16	3.0	43.5
Tribute	67	53	61.2	11.0	9.1	126	75	31	2.8	34.3
Hilliard	66	58	59.9	10.9	8.5	122	72	16	2.8	34.7
Shirley	68	57	57.5	10.7	8.4	94	69	6	2.7	36.3
Mean	67	54	59.4	11.0	8.9	115	71	18	2.8	35.2
St. Deviation	1.7	4.2	1.5	0.6	0.6	12.5	3.9	9.6	0.1	3.6

¹Seed kindly supplied to USDA-ARS Wooster Quality Lab by Carl Griffey, Va Tech.

Means Across Locations 2015-16

Cultivar/ Designation	FHB Incidence		FHB Severity		FHB Index		FDK		ISK		DON	
	RANK		RANK		RANK		RANK		RANK		RANK	
1 ERNIE	49	40	25	33	14	29	32	38	31	32	9	20
2 COKER9835	84	55	56	55	49	55	56	54	57	55	15	48
3 BESS	31	6	17	12	7	5	15	3	19	1	5	1
4 JAMESTOWN	35	14	19	15	10	18	23	16	26	16	9	20
5 AR06024-7-2	33	8	13	3	8	8	20	10	25	14	5	1
6 ARS10-389	34	11	14	5	6	3	26	21	21	5	7	9
7 AR07010-7-1	30	4	19	15	9	15	25	20	24	10	12	36
8 AR07053-13-1	33	8	19	15	8	8	20	8	24	10	12	36
9 AR07078-7-4	44	28	27	36	17	38	24	17	33	36	17	51
10 AR07108-6-1	28	2	17	12	8	8	17	5	22	8	10	24
11 ARLA06146E-20-1	39	19	19	15	12	24	24	19	29	23	10	24
12 ARLA07084C-10-1	26	1	13	3	5	2	23	14	21	5	16	49
13 ARS11-2086	65	54	34	50	27	51	58	55	45	52	11	30
14 ARS12-201	59	51	31	47	24	50	50	50	40	47	10	24
15 ARS13-159	51	42	29	42	19	42	46	47	40	47	6	4
16 ARS13-215	50	41	28	41	19	42	27	26	32	34	20	52
17 ARS14W0539	32	7	16	8	6	3	34	40	29	23	11	30
18 ARS14W0623	40	23	24	30	10	18	47	48	32	34	13	43
19 ARS14W1012	47	33	27	36	19	42	40	46	40	47	14	46
20 ES14-0057	39	19	19	15	9	15	22	13	25	14	7	9
21 ES14-0528	58	50	21	22	15	32	30	34	30	27	8	15
22 ES14-1293	29	3	12	1	4	1	18	7	20	2	6	4
23 ES14-1350	54	46	29	42	21	47	48	49	42	50	6	4
24 GA08250-15ES14	35	14	16	8	8	8	12	1	21	5	8	15
25 GA08293-15ES3	46	31	29	42	19	42	35	42	34	39	15	48
26 GA09361-15ES38	47	33	31	47	19	42	27	27	34	39	13	43
27 GA091252-15ES35	52	44	25	33	15	32	34	41	34	39	12	36
28 GA08281-15ES1	46	31	24	30	14	29	29	31	30	27	10	24
29 GANC9337-15ES27	44	28	20	20	13	28	15	4	24	10	8	15
30 GA09343-15ES33	56	48	32	49	23	48	30	33	33	36	11	30
31 GANC 10014-15ES24	44	28	22	26	14	29	36	43	35	43	11	30
32 KWS 053	39	19	12	1	8	8	17	6	20	2	7	9
33 KWS 060	52	44	27	36	16	37	21	11	28	20	7	9
34 KWS 074	36	16	16	8	8	8	28	30	28	20	14	46
35 KWS 081	33	8	16	8	8	8	26	23	26	16	6	4
36 KWS 083	34	11	15	6	7	5	20	9	23	9	10	24
37 KWS 087	38	17	22	26	12	24	28	29	28	20	7	9
38 LA06146E-P4	38	17	21	22	12	24	30	35	30	27	12	36
39 LA08090C-9-2	34	11	24	30	12	24	32	36	31	32	12	36
40 LA08265C-50	40	23	27	36	15	32	30	32	30	27	9	20
41 LA09011UB-2	47	33	29	42	18	40	38	45	35	43	15	48
42 LA09225C-33	40	23	29	42	15	32	28	28	34	39	15	48
43 NC10435-11	51	42	27	36	18	40	22	12	30	27	8	15
44 NC12-22225	43	27	21	22	10	18	26	25	29	23	6	4
45 NC13-20076	30	4	15	6	7	5	15	2	20	2	7	9
46 NC13-22350	40	23	18	14	9	15	24	18	24	10	5	1
47 NC13-23449	56	48	34	50	27	51	37	44	38	46	9	20
48 VA12W-68	39	19	20	20	10	18	26	24	27	18	16	49
49 VA13W-38	48	39	21	22	11	23	26	22	27	18	11	30
50 VA09MAS6-122-7-1	47	33	23	28	17	38	23	15	29	23	12	36
51 VA08MAS1-188-6-4-1	47	33	23	28	15	32	32	37	33	36	8	15
52 VA13FHB-26	47	33	25	33	12	24	50	51	43	51	10	24
53 VA14FHB-14	62	52	39	53	30	53	55	53	48	54	11	30
54 VA14FHB-13	64	53	39	54	31	54	54	52	45	52	12	36
55 VA14FHB-28	55	47	35	52	23	48	33	39	36	45	13	43

Mean	44	24	14	30	31	10
LSD (0.05)	37	28	26	34	23	4
CV%	43.0	59.6	90.1	56.4	37.3	50.1
Mean v GEBV Correlation	0.44	0.55	0.13	0.30	0.49	0.65

Means Across Locations 2015 - 2016

Cultivar/ Designation	Heading		Plant		Flour		Softness		Hessian Fly	Fhb1	Fhb Massey 3BL	Fhb 5A	Fhb 2DL- Wuhan1/W14	Bess 2B	Bess 3B	Jamestown 1B	Jamestown 6A	NC-Neuse 1A	NC-Neuse 6A
	O	Date	Height	Height	Yield	Yield	Equivalent	Equivalent											
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	Biotype L											
1 ERNIE	123	12	33	12	63	50	52	42	0-19	no	yes	yes	no	no	no	no	no	yes	yes
2 COKER9835	126	27	32	3	66	30	60	4	0-17	no	no	no	no	no	no	no	no	no	no
3 BESS	127	33	35	31	65	41	54	24	0-19	no	no	no	no	yes	yes	yes	no	yes	no
4 JAMESTOWN	121	1	33	12	65	41	54	24	0-18	no	no	no	no	no	no	yes	yes	yes	no
5 AR06024-7-2	125	22	36	37	64	49	55	17	0-19	het	no	no	no	no	no	yes	no	yes	no
6 ARS10-389	121	1	35	31	71	1	39	53	0-16	no	no	no	no	no	no	no	no	no	no
7 AR07010-7-1	129	51	39	50	66	30	52	42	0-18	no	no	no	no	no	no	no	no	no	no
8 AR07053-13-1	128	39	39	50	66	30	54	24	0-13	no	no	no	no	no	no	no	no	no	no
9 AR07078-7-4	130	53	39	50	68	11	54	24	0-16	no	no	no	no	no	no	no	het	no	no
10 AR07108-6-1	128	39	40	53	67	21	55	17	0-18	no	no	no	no	no	yes	het	no	yes	no
11 ARLA06146E-20-1	126	27	40	53	65	41	56	10	0-14	no	no	no	no	no	no	yes	yes	yes	no
12 ARLA07084C-10-1	128	39	37	45	67	21	60	4	0-12	no	no	no	no	no	no	no	no	no	no
13 ARS11-2086	128	39	32	3	68	11	53	35	14-6	no	no	yes	no	no	no	yes?	no	yes	yes
14 ARS12-201	128	39	33	12	69	5	51	45	4-13	no	no	yes	no	no	no	yes	no	yes	yes
15 ARS13-159	127	33	38	48	68	11	61	1	0-18	no	yes	no	no	no	no	yes	no	no	no
16 ARS13-215	128	39	34	20	69	5	47	49	0-16	no	no	no	no	no	no	no	no	yes	no
17 ARS14W0539	131	54	32	3	.	.	.	.	0-20	no	yes	no	no	no	no	no	no	no	no
18 ARS14W0623	133	55	37	45	.	.	.	.	0-17	no	yes	no	no	no	no	no	no	no	no
19 ARS14W1012	127	33	33	12	66	30	48	47	0-13	no	no	no	no	no	no	no	no	no	yes
20 ES14-0057	129	51	36	37	65	41	58	7	0-18	no	no	no	no	no	no	het	no	yes	no
21 ES14-0528	124	16	36	37	70	2	54	24	0-19	no	yes	ND	no	no	no	yes	no	no	no
22 ES14-1293	128	39	40	53	67	21	54	24	18-0	no	no	no	no	no	no	no	no	yes	no
23 ES14-1350	126	27	36	37	66	30	47	49	0-19	no	yes	no	no	no	no	yes	no	yes	no
24 GA08250-15ES14	125	22	36	37	69	5	55	17	0-16	no	no	no	no	no	no	no	yes	yes	no
25 GA08293-15ES3	122	7	34	20	62	53	46	52	0-18	no	no	no	no	no	no	no	yes	no	no
26 GA09361-15ES38	125	22	34	20	70	2	52	42	0-20	no	no	yes	no	no	no	het	no	no	no
27 GA091252-15ES35	125	22	34	20	70	2	53	35	0-19	no	no	no	no	no	no	no	no	no	no
28 GA08281-15ES1	124	16	32	3	67	21	55	17	0-19	no	no	no	no	no	no	no	no	no	no
29 GANC9337-15ES27	122	7	33	12	66	30	56	10	0-18	no	no	no	no	no	no	yes	no	yes	no
30 GA09343-15ES33	121	1	32	3	68	11	56	10	0-20	no	no	no	no	no	no	no	no	no	no
31 GANC 10014-15ES24	128	39	33	12	63	50	54	24	0-15	no	no	yes	no	no	no	yes	no	no	yes
32 KWS 053	122	7	34	20	68	11	54	24	0-18	no	no	no	no	no	no	yes	no	yes	no
33 KWS 060	126	27	37	45	68	11	61	1	0-20	no	yes	no	no	no	no	no	no	yes	yes
34 KWS 074	126	27	34	20	65	41	61	1	0-23	no	no	no	no	no	no	no	no	het	no
35 KWS 081	127	33	38	48	67	21	60	4	0-16	no	no	no	no	yes	no	yes	no	no	no
36 KWS 083	128	39	35	31	63	50	55	17	0-19	no	no	no	no	no	no	no	no	yes	no
37 KWS 087	126	27	34	20	67	21	56	10	21-0	no	no	no	no	no	no	no	no	yes	no
38 LA06146E-P4	121	1	32	3	65	41	47	49	0-17	no	no	no	no	no	no	yes	yes	yes	no
39 LA08090C-9-2	128	39	35	31	67	21	48	47	0-20	no	no	no	no	no	no	no	no	no	no
40 LA08265C-50	124	16	35	31	68	11	54	24	0-17	no	no	no	no	no	no	yes	no	yes	no
41 LA09011UB-2	121	1	30	1	68	11	51	45	15-2	no	no	no	ND	no	no	no	no	yes	no
42 LA09225C-33	128	39	36	37	69	5	54	24	0-14	no	no	no	no	no	no	no	no	no	no
43 NC10435-11	123	12	34	20	68	11	53	35	13-1	no	no	no	no	no	no	yes	no	yes	yes
44 NC12-22225	128	39	33	12	65	41	53	35	17-5	Fhb1	yes	no	no	no	no	no	no	yes	no
45 NC13-20076	124	16	36	37	66	30	56	10	1-19	no	no	no	no	no	no	no	no	no	no
46 NC13-22350	127	33	34	20	66	30	56	10	13-4	Fhb1	yes?	Ning	no	no	no	no	no	no	yes
47 NC13-23449	127	33	36	37	69	5	56	10	0-16	no	no	no	no	no	no	yes	no	no	no
48 VA12W-68	123	12	32	3	66	30	53	35	21-0	no	yes?	no	no	ND	no	no	no	no	no
49 VA13W-38	122	7	32	3	67	21	53	35	0-18	no	no	no	no	no	no	yes	yes	no	no
50 VA09MAS6-122-7-1	124	16	31	2	68	11	57	9	0-20	no	no	no	no	no	no	no	no	no	no
51 VA08MAS1-188-6-4-1	124	16	32	3	66	30	53	35	0-19	het	no	yes	no	no	no	no	no	no	no
52 VA13FHB-26	125	22	35	31	65	41	55	17	0-19	no	no	het	no	no	no	no	no	no	no
53 VA14FHB-14	123	12	34	20	67	21	58	7	0-18	no	no	no	no	no	no	no	no	yes?	no
54 VA14FHB-13	122	7	33	12	66	30	55	17	0-17	no	no	no	no	no	no	no	no	yes	no
55 VA14FHB-28	121	1	34	20	69	5	54	24	0-20	no	no	no	no	no	no	no	no	no	no

Mean	125	34	67	54	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LSD (0.05)	4	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
CV%	1.7	5.6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Mean v GEBV Correlator	0.20	0.30	0.43	0.44	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Means Over the 2015 and 2016 Seasons

Cultivar/ Designation	FHB Incidence %	FHB Severity %	FHB Index	FDK %	ISK	DON ppm	Heading Date Julian	Plant Height in	Flour Yield %	Softness Equivalent %
ERNIE	54	31	17	33	34	8	126	33	64.8	53.6
COKER9835	85	62	52	58	59	13	128	32	67.0	62.7
BESS	43	21	11	20	26	5	129	35	66.1	57.7
JAMESTOWN	45	24	13	24	31	7	124	33	66.3	56.3
AR06024-7-2	45	17	10	19	26	4	127	36	65.0	55.6
Mean	54	31	21	31	35	8	127	34	65.8	57.2
CV%	12	4	5	10	9	16	1	1	0.7	2.9
LSD (0.05)	19	3	3	9	9	3	2	1	1.3	4.6