

SOUTHERN UNIFORM WINTER WHEAT SCAB NURSERY
2024 NURSERY REPORT

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Location Notes

Champaign, Illinois

Cooperator: Jana Murche
KWS Cereals USA

Clarksville, Maryland

Cooperator: Vijay Tiwari
University of Maryland

College Station, Texas

Cooperator: Shuyu Liu
Texas A&M University

Fayetteville, Arkansas

Cooperator: Eshan Shakiba
University of Arkansas

Florence, South Carolina

Cooperator: Rick Boyles
Clemson University

Kinston, North Carolina

Cooperator: Paul Murphy
North Carolina State University

Lexington, Kentucky

Cooperator: Dave Van Sanford
University of Kentucky

Plains, Georgia

Cooperator: Mohamed Mergoum
University of Georgia

Raleigh, North Carolina

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

Urbana, Illinois

Cooperator: Jessica Rutkoski
University of Illinois

Warsaw, Virginia

Cooperator Nicholas Santantonio
Virginia Tech

West Lafayette, Indiana

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

Winnsboro and Alexandria, Louisiana

Cooperators: Stephen Harrison, Noah
DeWitt
Louisiana State University

Entry List and Pedigrees 2024

ENTRY	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	<i>Check</i>	CHECK(RES)	1999-00
2	COKER9835	<i>Check</i>	CHECK(SUS)	2000-01
3	BESS	<i>MO11769/Madison</i>	CHECK(RES)	2006-07
4	JAMESTOWN	<i>Roane / Pioneer 2691</i>	CHECK(RES)	2007-08
5	SS 8641	<i>881130/2*881582 (formally GA96229-3A4)</i>	CHECK(SUS)	2018-19
6	15VDH-FHB-MAS22-14	<i>MD08-26-H2-7-12-9 [SS8641//McCormick*2/ Ning7840] / Featherstone 73 (VA09W-73) // USG 3118"S" (VA12W-54)</i>	CHECK(RES)	2020-21
7	GA15577-3-10-2 -22LE38	<i>AGS 2033/HILLIARD</i>	Mergoum	2023-24
8	GA151450-13-6-9 -22LE29	<i>GA141579 (061349-13LE29/041293-11E54) / GA06493-13LE6</i>	Mergoum	2023-24
9	GA141028-13-3-4 -22LE25	<i>GA10338-G1-G1-I1/SH 5550</i>	Mergoum	2023-24
10	GA16349 ID-8-1-5 -22LE31	<i>GA15146 (VA 12W-72 / 04417-12E33) / LA 06146E-P04</i>	Mergoum	2023-24
11	GA151433-23-5-6 -22LE27	<i>GA141240 (04570-10E46/07163-12LE9) / VA 12W-72</i>	Mergoum	2023-24
12	GA131176 -24-6-7-6-8-22E8	<i>06110-9-2-4 / SH 5550</i>	Mergoum	2023-24
13	GA101153-3-G2-1-19-5 -22LE24F	<i>GA091093 (MD 08#22-7/AGS 2020) / AGS 2020</i>	Mergoum	2023-24
14	GA15560-5-4-1-5-22E18	<i>GA071171-6-3-2/GA08377-4-5</i>	Mergoum	2023-24
15	KWS501	<i>KWS126 / P25R25</i>	KWS	2023-24
16	KWS527	<i>KWS074 / P25R25</i>	KWS	2023-24
17	KWS534	<i>P25R25 / SYVIPER // VA09MAS1-12-8-4</i>	KWS	2023-24
18	KWS542	<i>KWS133 / P0762A1-2-8</i>	KWS	2023-24
19	KWS543	<i>KWS095 / P25R25 // VA12W-101</i>	KWS	2023-24
20	KWS553	<i>P25R40 / AR06146E-1-4</i>	KWS	2023-24
21	LA13176CB-15-1-3	<i>MD08-26-H2-7-12-21/LA12001, F1(AGS 2060/P26R94)</i>	Harrison	2023-24
22	LA14188C-28-3-1-4-1-2	<i>LA13175, F1(MD08-26-H2-7-12-21/LA05102C-8-8) / VA11W-278</i>	Harrison	2023-24
23	LA14272C-20-1-1-3-1-1	<i>VA11W-278 / LA03200E-2</i>	Harrison	2023-24
24	LA15203-LDH197	<i>AGS3000/Hilliard</i>	Harrison	2023-24
25	LA18003-NDH069	<i>GA061471-15LE38 / MD09W272-8-4-14-8</i>	Harrison	2023-24
26	LA18003-NDH119	<i>GA061471-15LE38 / MD09W272-8-4-14-8</i>	Harrison	2023-24
27	LA19333-NDH34	<i>LA15203-LDH112/GA15VDH-FHB-MAS23-18LE43</i>	Harrison	2023-24
28	LAAR15172W-42-1-3-1-3	<i>AR06024-7-2/AR06066-3-2</i>	Harrison	2022-23
29	NC16VT30-7-47	<i>NC8248-14 / VA12W-54 // MDC07026-F2-19-13-1</i>	Murphy	2022-23

ENTRY	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
30	NC14711-12	VA11W-279 / NC13-20076	Murphy	2022-23
31	NC19-20130	NC09-20986 / VA10W-119	Murphy	2023-24
32	NC20-21971	ARS11-02-11 // NC09-20986 / NC09-20036	Murphy	2023-24
33	NC15949-22	NC11546-14 / VA16W202	Murphy	2023-24
34	SC19DH146-2	HILLIARD / 15MW-133 (MDC07026-F2-19-13-3) // 13VTK59-55	Boyles	2023-24
35	SC22W145	NC-Yadkin // NC11-22289 / NC07-24337	Boyles	2023-24
36	SC22W207	VA11W-279 // NC11-22289 / YADKIN	Boyles	2023-24
37	SCLA19418NDH-17	NC14-23372/GA15VDH-FHB-MAS23-18LE43	Boyles	2023-24
38	SC23W106	NC13-21213 / MD09W272-8-4-14-8	Boyles	2023-24
39	SC23W154	NC8248-14 / GA08070-EL21	Boyles	2023-24
40	SC23W271	LA09225C-33-1 / LA16162,F1 (NC8248-14 / TXGA06343-17-3-5-EL2)	Boyles	2023-24
41	SC23W636	AGS 3000 / NC11-22289	Boyles	2023-24
42	TX23D8034	AGS2055/WX15D134	Sutton	2023-24
43	TX23D8342	TX15D9608/NC12642-38	Sutton	2023-24
44	TX23D8423	LA08080C-31-1/VADH320	Sutton	2023-24
45	TX23D8486	TX15D9597/NC12642-38	Sutton	2023-24
46	MDW-107	MD07W280-12-3 // VA05W-151 / MD03-69-15 (McCORMICK/25R42)	Tiwari	2022-23
47	MD47-7	GA07169-14LE24 / SS8641 /McCormick*2/Ning7840	Tiwari	2023-24
48	MD47-2	GA07169-14LE24 / SS8641 /McCormick*2/Ning7840	Tiwari	2023-24
49	MD9-17	HILLIARD/MDC07026-F2-19-13-3	Tiwari	2023-24
50	MD463-6	GA07169-14LE24 / SS8641 /McCormick*2/Ning7840	Tiwari	2023-24
51	MD-195-7	HILLIARD/MDC07026-F2-19-13-3	Tiwari	2023-24
52	VA21W-112	12V51 (VA05W-251=PI 665038) / Pioneer 26R41 // Berkeley (VA12W-72)	Santantonio	2023-24
53	18VTK5-95	13VTK429-3 / VA16W-196	Santantonio	2023-24
54	DH19SRW09-073	Liberty 5658 / Laverne "S" (VA09MAS2-131-6-2-4)	Santantonio	2023-24
55	DH19SRW08-001	VA15W-63 (P992231A1-2-1 / SHIRLEY) / Liberty 5658 (DH12SRW056-058= KY03C-1237-33 / P05247A1-7-3)	Santantonio	2023-24
56	19VDH-FHB-MAS02-06	VA13W-174 / Pioneer W050216N2 // 13VTK59-55	Santantonio	2023-24
57	19VTK7-66	KWS192 / 13VTK429-3	Santantonio	2023-24
58	19VDH-FHB-MAS05-27	VA13W-174 / Pioneer W050216N2 // 13VTK59-55	Santantonio	2023-24
59	DH20SRW02-073	13VTK429-3 / VA16W-202	Santantonio	2023-24

Fusarium Head Blight Rating (0 – 9)

ENTRY	DESIGNATION	SCF	KYX	GAP	LAW	LAA	VAW	ILC	MEAN ALL LOC	MEAN no		GEBV RATING
										VAW LAW	Rank	
1	ERNIE	2.0	3.0	2.6	7.5	1.0	1.0	5.5	3.2	2.8	24	2.6
2	COKER9835	4.0	7.5	5.4	7.5	5.5	7.0	9.0	6.6	6.3	58	3.6
3	BESS	3.0	3.0	0.6	6.0	0.5	4.0	4.5	3.1	2.3	14	2.5
4	JAMESTOWN	4.5	2.5	3.0	7.5	1.5	3.0	4.0	3.7	3.1	30	2.9
5	SS 8641	5.0	5.5	5.8	7.5	5.8	7.0	9.0	6.5	6.2	57	4.7
6	15VDH-FHB-MAS22-14	2.0	4.0	0.4	8.0	2.8	4.0	2.0	3.3	2.2	13	2.7
7	GA15577-3-10-2 - 22LE38	3.5	6.5	0.4	3.5	1.8	4.5	6.5	3.8	3.7	39	3.8
8	GA151450-13-6-9 - 22LE29	3.0	7.5	5.6	5.0	3.5	6.5	8.5	5.7	5.6	56	4.6
9	GA141028-13-3-4 - 22LE25	2.0	7.5	6.4	3.5	3.8	5.0	8.0	5.2	5.5	55	4.0
10	GA16349 ID-8-1-5 - 22LE31	2.0	6.0	4.6	4.5	4.0	6.5	8.5	5.2	5.0	53	4.0
11	GA151433-23-5-6 - 22LE27	3.5	7.0	3.2	4.0	2.8	6.0	8.5	5.0	5.0	52	3.6
12	GA131176 -24-6-7-6-8- 22E8	1.5	7.0	4.0	5.0	3.3	7.0	8.0	5.1	4.8	47	4.6
13	GA101153-3-G2-1-19-5 -22LE24F	4.0	5.0	3.0	4.5	2.0	4.5	6.0	4.1	4.0	42	4.0
14	GA15560-5-4-1-5- 22E18	4.0	7.0	3.2	4.5	4.8	6.5	8.5	5.5	5.5	54	4.0
15	KWS501	1.0	2.5	0.4	3.5	1.5	4.0	3.5	2.3	1.8	3	3.2
16	KWS527	1.5	2.5	0.4	2.0	0.8	3.5	4.0	2.1	1.8	6	2.9
17	KWS534	0.0	3.0	0.2	2.0	0.3	3.5	5.5	2.1	1.8	4	3.1
18	KWS542	1.0	2.0	0.4	2.5	0.8	5.0	2.0	2.0	1.2	1	2.6
19	KWS543	1.0	4.0	1.0	2.5	1.5	4.5	4.5	2.7	2.4	17	3.6
20	KWS553	1.0	3.5	0.2	2.5	1.0	2.5	3.5	2.0	1.8	7	3.3
21	LA13176CB-15-1-3	3.0	4.5	4.8	4.0	3.3	6.0	7.0	4.7	4.5	46	3.9
22	LA14188C-28-3-1-4-1-2	3.5	3.5	2.4	7.0	2.3	4.5	6.0	4.2	3.5	37	3.6
23	LA14272C-20-1-1-3-1-1	3.0	4.5	2.6	7.0	3.0	4.5	7.0	4.5	4.0	43	3.8
24	LA15203-LDH197	4.0	6.5	2.4	5.0	1.3	4.0	7.0	4.3	4.2	44	3.3
25	LA18003-NDH069	1.0	6.5	1.2	2.5	1.3	3.5	2.5	2.6	2.5	19	3.8
26	LA18003-NDH119	2.0	4.5	0.4	3.5	1.0	4.5	3.0	2.7	2.2	11	3.2
27	LA19333-NDH34	4.0	5.5	4.0	2.5	2.0	5.5	6.0	4.2	4.3	45	3.7
28	LAAR15172W-42-1-3-1- 3	2.5	4.5	1.6	7.0	1.8	4.0	2.5	3.4	2.6	22	3.1
29	NC16VT30-7-47	1.5	4.5	0.4	2.5	2.0	4.5	8.0	3.3	3.3	33	2.8
30	NC14711-12	2.5	5.5	1.0	3.0	0.8	4.5	3.0	2.9	2.6	21	3.4
31	NC19-20130	2.5	3.5	2.8	3.0	1.5	6.0	6.5	3.7	3.4	35	3.6
32	NC20-21971	1.5	7.5	3.6	3.0	2.5	6.0	9.0	4.7	4.8	49	3.5
33	NC15949-22	3.0	4.5	0.6	2.5	0.3	4.0	3.5	2.6	2.4	15	2.7
34	SC19DH146-2	4.5	3.0	0.2	3.0	0.8	2.5	2.5	2.4	2.2	12	2.7
35	SC22W145	3.5	4.5	1.2	7.0	2.0	3.5	2.5	3.5	2.7	23	2.7
36	SC22W207	2.5	4.5	1.0	6.5	1.8	3.5	6.5	3.8	3.3	32	2.9

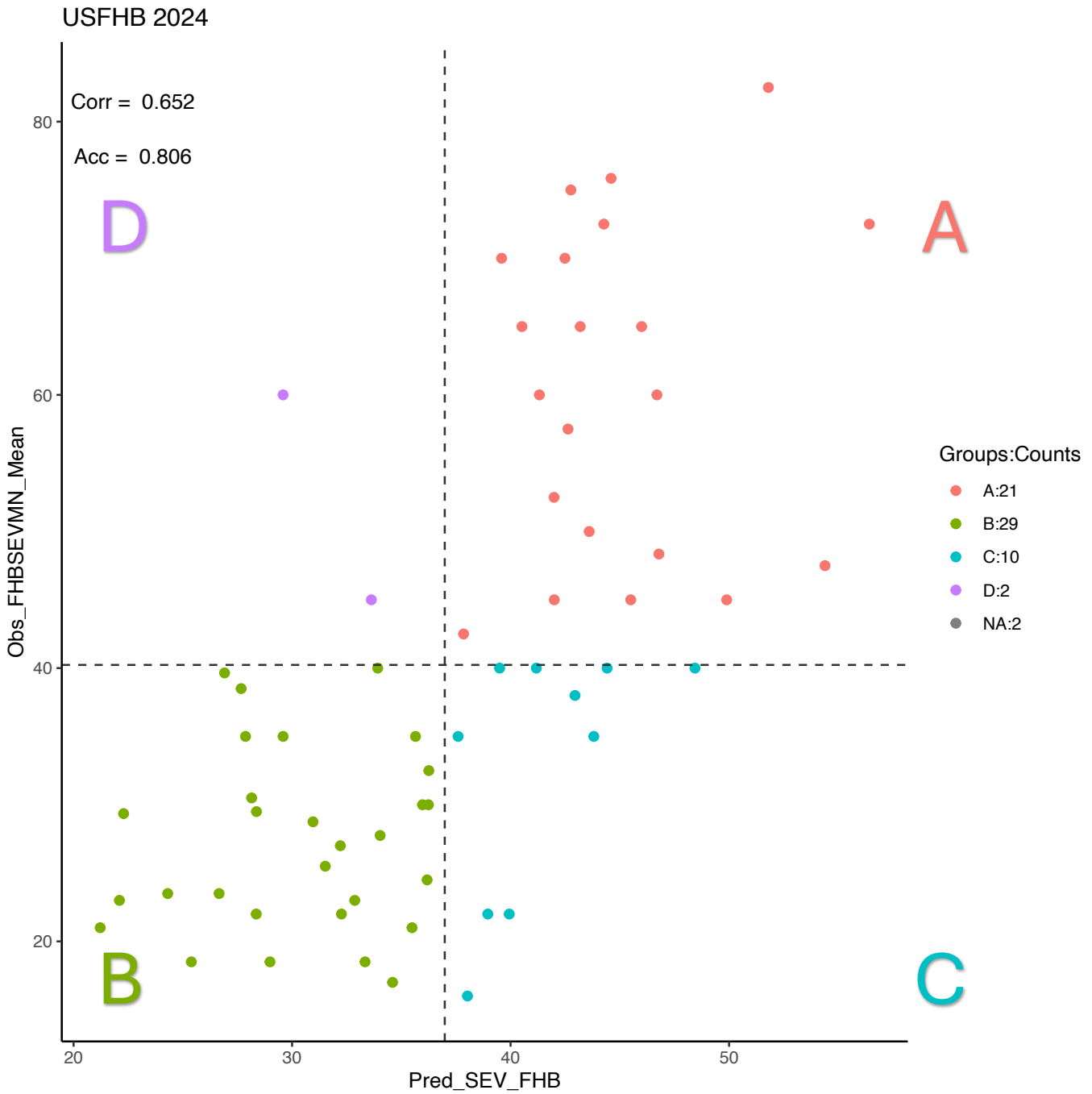
ENTRY	DESIGNATION	SCF	KYX	GAP	LAW	LAA	VAW	ILC	MEAN ALL LOC	MEAN no	Rank	GEBV RATING
										VAW LAW		
37	SCLA19418NDH-17	3.5	3.5	0.4	5.0	1.0	4.5	2.5	2.9	2.2	11	2.5
38	SC23W106	2.0	4.5	1.4	3.0	0.3	5.5	2.5	2.7	2.1	9	3.2
39	SC23W154	5.0	3.0	1.6	3.5	1.5	4.5	6.5	3.7	3.5	36	3.1
40	SC23W271	4.0	2.5	2.8	3.5	0.8	5.5	5.0	3.4	3.0	26	3.7
41	SC23W636	3.0	4.0	1.6	2.5	1.0	4.0	3.0	2.7	2.5	20	2.8
42	TX23D8034	2.5	6.0	3.6	4.5	4.8	6.0	8.0	5.1	5.0	51	3.7
43	TX23D8342	5.5	4.0	4.0	6.5	3.8	5.0	7.5	5.2	5.0	50	3.2
44	TX23D8423	7.5	6.0	7.2	7.5	4.5	4.5	9.0	6.6	6.8	59	4.2
45	TX23D8486	3.5	4.5	2.2	5.0	1.3	6.5	5.0	4.0	3.3	34	4.4
46	MDW-107	2.5	3.0	3.4	5.0	2.0	6.5	7.5	4.3	3.7	38	4.3
47	MD47-7	3.0	6.0	2.8	3.0	1.0	4.0	7.0	3.8	4.0	41	3.6
48	MD47-2	3.0	5.5	2.2	3.5	0.8	6.5	8.0	4.2	3.9	40	3.6
49	MD9-17	0.0	4.5	0.0	1.5	0.5	4.0	4.0	2.1	1.8	5	2.9
50	MD463-6	2.5	5.0	0.2	4.5	0.8	5.5	7.0	3.6	3.1	28	3.9
51	MD-195-7	0.5	5.0	1.0	3.0	0.5	6.5	8.5	3.6	3.1	30	3.7
52	VA21W-112	3.5	5.5		4.5	2.0	5.0	8.0	4.8	4.8	48	3.5
53	18VTK5-95	0.5	4.5	1.4	3.5	1.3	3.5	7.5	3.2	3.0	27	3.8
54	DH19SRW09-073	0.0	5.0	0.0	3.5	1.0	4.5	6.0	2.9	2.4	17	3.2
55	DH19SRW08-001	2.0	5.0	2.2	4.0	1.8	4.5	5.0	3.5	3.2	31	2.8
56	19VDH-FHB-MAS02-06	0.5	4.0	0.2	2.0	0.8	5.0	3.0	2.2	1.7	2	3.2
57	19VTK7-66	2.5	4.0	0.2	2.0	1.5	5.0	4.0	2.7	2.4	18	3.3
58	19VDH-FHB-MAS05-27	1.0	3.5	0.2	2.5	0.5	4.5	5.0	2.5	2.0	8	2.7
59	DH20SRW02-073	1.5	4.5	0.0	3.5	1.5	5.5	7.0	3.4	2.9	25	3.2
	Mean	2.6	4.7	2.1	4.2	1.8	4.8	5.7	3.7	3.4		
	CV%	42.9			43.8	81.7	36.2		33.8	35.6		
	LSD	1.9			1.8	1.7	3.5		1.3	1.5		
	R-Square	0.6	0.7						0.7	0.8		
	Correl w/ GEBV	0.2	0.6	0.7	0.1	0.6	0.7	0.6	0.7	0.7		

Incidence and Severity

ENTRY	DESIGNATION	INC % ILU	INC % TXCS	INC % MEAN	INC Rank	SEV % ILU	SEV% TXCS	SEV % MEAN	SEV Rank	GEBV SEV %
1	ERNIE	95.9	65.0	80.5	48	19.3	60.0	39.7	33	26.9
2	COKER9835	94.1	75.0	84.6	54	86.7	65.0	75.9	58	44.6
3	BESS	85.9	40.0	63.0	13	18.7	40.0	29.4	21	22.3
4	JAMESTOWN	100.0	55.0	77.5	44	22.0	55.0	38.5	32	27.7
5	SS 8641	100.0	85.0	92.5	58	100.0	65.0	82.5	59	51.8
6	15VDH-FHB- MAS22-14	85.0	65.0	75.0	39	10.5	45.0	27.8	19	34.0
7	GA15577-3-10-2 -22LE38	85.0	20.0	52.5	2	40.0	30.0	35.0	29	43.8
8	GA151450-13-6- 9 -22LE29	77.8	55.0	66.4	23	90.0	55.0	72.5	56	56.4
9	GA141028-13-3- 4 -22LE25	102.2	55.0	78.6	45	80.0	65.0	72.5	56	44.3
10	GA16349 ID-8-1- 5 -22LE31	87.8	60.0	73.9	37	80.0	70.0	75.0	57	42.8
11	GA151433-23-5- 6 -22LE27	102.2	65.0	83.6	52	90.0	50.0	70.0	54	39.6
12	GA131176 -24-6- 7-6-8-22E8	97.8	50.0	73.9	37	30.0	60.0	45.0	42	49.9
13	GA101153-3-G2- 1-19-5 -22LE24F	92.2	60.0	76.1	41	30.0	65.0	47.5	44	54.4
14	GA15560-5-4-1- 5-22E18	92.2	55.0	73.6	33	80.0	50.0	65.0	52	46.0
15	KWS501	90.0	30.0	60.0	11	14.0	30.0	22.0	10	39.0
16	KWS527	87.8	30.0	58.9	9	7.0	25.0	16.0	1	38.0
17	KWS534	92.2	55.0	73.6	33	14.0	45.0	29.5	22	28.4
18	KWS542	92.2	35.0	63.6	15	7.0	30.0	18.5	4	25.4
19	KWS543	102.2	50.0	76.1	41	30.0	40.0	35.0	29	37.6
20	KWS553	87.8	30.0	58.9	9	7.0	30.0	18.5	4	29.0
21	LA13176CB-15- 1-3	95.0	65.0	80.0	47	50.0	50.0	50.0	46	43.6
22	LA14188C-28-3- 1-4-1-2	102.2	25.0	63.6	15	30.0	35.0	32.5	26	36.3
23	LA14272C-20-1- 1-3-1-1	102.2	70.0	86.1	56	50.0	55.0	52.5	47	42.0
24	LA15203-LDH197	97.8	40.0	68.9	25	21.0	25.0	23.0	13	32.9
25	LA18003- NDH069	67.8	30.0	48.9	1	14.0	30.0	22.0	10	39.9
26	LA18003- NDH119	92.2	30.0	61.1	12	7.0	30.0	18.5	4	33.3
27	LA19333-NDH34	82.2	35.0	58.6	6	50.0	30.0	40.0	36	41.2
28	LAAR15172W-42- 1-3-1-3	87.8	40.0	63.9	19	14.0	30.0	22.0	10	32.3
29	NC16VT30-7-47	95.0	75.0	85.0	55	17.5	40.0	28.8	20	31.0
30	NC14711-12	92.2	25.0	58.6	6	21.0	30.0	25.5	17	31.5
31	NC19-20130	102.2	60.0	81.1	50	30.0	40.0	35.0	29	29.6
32	NC20-21971	97.8	80.0	88.9	57	50.0	40.0	45.0	42	42.0
33	NC15949-22	87.8	40.0	63.9	19	21.0	25.0	23.0	13	22.1

ENTRY	DESIGNATION	INC % ILU	INC % TXCS	INC % MEAN	INC Rank	SEV % ILU	SEV% TXCS	SEV % MEAN	SEV Rank	GEBV SEV %
34	SC19DH146-2	92.2	25.0	58.6	6	14.0	20.0	17.0	2	34.6
35	SC22W145	87.8	40.0	63.9	19	7.0	35.0	21.0	7	21.2
36	SC22W207	87.8	80.0	83.9	53	21.0	40.0	30.5	25	28.2
37	SCLA19418NDH-17	77.8	30.0	53.9	4	7.0	40.0	23.5	15	26.7
38	SC23W106	87.8	40.0	63.9	19	14.0	30.0	22.0	10	28.4
39	SC23W154	97.8	40.0	68.9	25	14.0	35.0	24.5	16	36.2
40	SC23W271	92.2	35.0	63.6	15	21.0	55.0	38.0	31	43.0
41	SC23W636	102.2	40.0	71.1	29	7.0	40.0	23.5	15	24.3
42	TX23D8034	92.2	50.0	71.1	29	75.0	45.0	60.0	50	41.3
43	TX23D8342	87.8	60.0	73.9	37	60.0	55.0	57.5	48	42.6
44	TX23D8423	97.8	60.0	78.9	46	80.0	50.0	65.0	52	40.5
45	TX23D8486	102.2	60.0	81.1	50	30.0	60.0	45.0	42	45.5
46	MDW-107	95.9	50.0	73.0	31	36.7	60.0	48.4	45	46.8
47	MD47-7	97.8	55.0	76.4	43	70.0	50.0	60.0	50	46.7
48	MD47-2	97.8		97.8	59	40.0		40.0	36	39.5
49	MD9-17	87.8	30.0	58.9	9	14.0	40.0	27.0	18	32.2
50	MD463-6	92.2	40.0	66.1	22	50.0	30.0	40.0	36	48.4
51	MD-195-7	97.8	55.0	76.4	43	30.0	50.0	40.0	36	44.4
52	VA21W-112	97.8	65.0	81.4	51	80.0	60.0	70.0	54	42.5
53	18VTK5-95	92.2	40.0	66.1	22	40.0	45.0	42.5	39	37.9
54	DH19SRW09-073	92.2	15.0	53.6	3	40.0	20.0	30.0	24	36.0
55	DH19SRW08-001	87.8	60.0	73.9	37	40.0	40.0	40.0	36	33.9
56	19VDH-FHB-MAS02-06	102.2	45.0	73.6	33	40.0	20.0	30.0	24	36.2
57	19VTK7-66	92.2	50.0	71.1	29	30.0	40.0	35.0	29	27.9
58	19VDH-FHB-MAS05-27	92.2	50.0	71.1	29	50.0	40.0	45.0	42	33.6
59	DH20SRW02-073	87.8	50.0	68.9	25	7.0	35.0	21.0	7	35.5
	Mean	92.7	48.5	71.1		36.4	42.6	39.5		
	CV%	9.0	34.1			30.3		39.4		
	LSD	17.7	33.1			24.7		31.2		
	R-Square	1.0				0.9		0.7		
	Correl w/ GEBV					0.7	0.5	0.7		

Observed Mean Severity Versus Predicted Severity

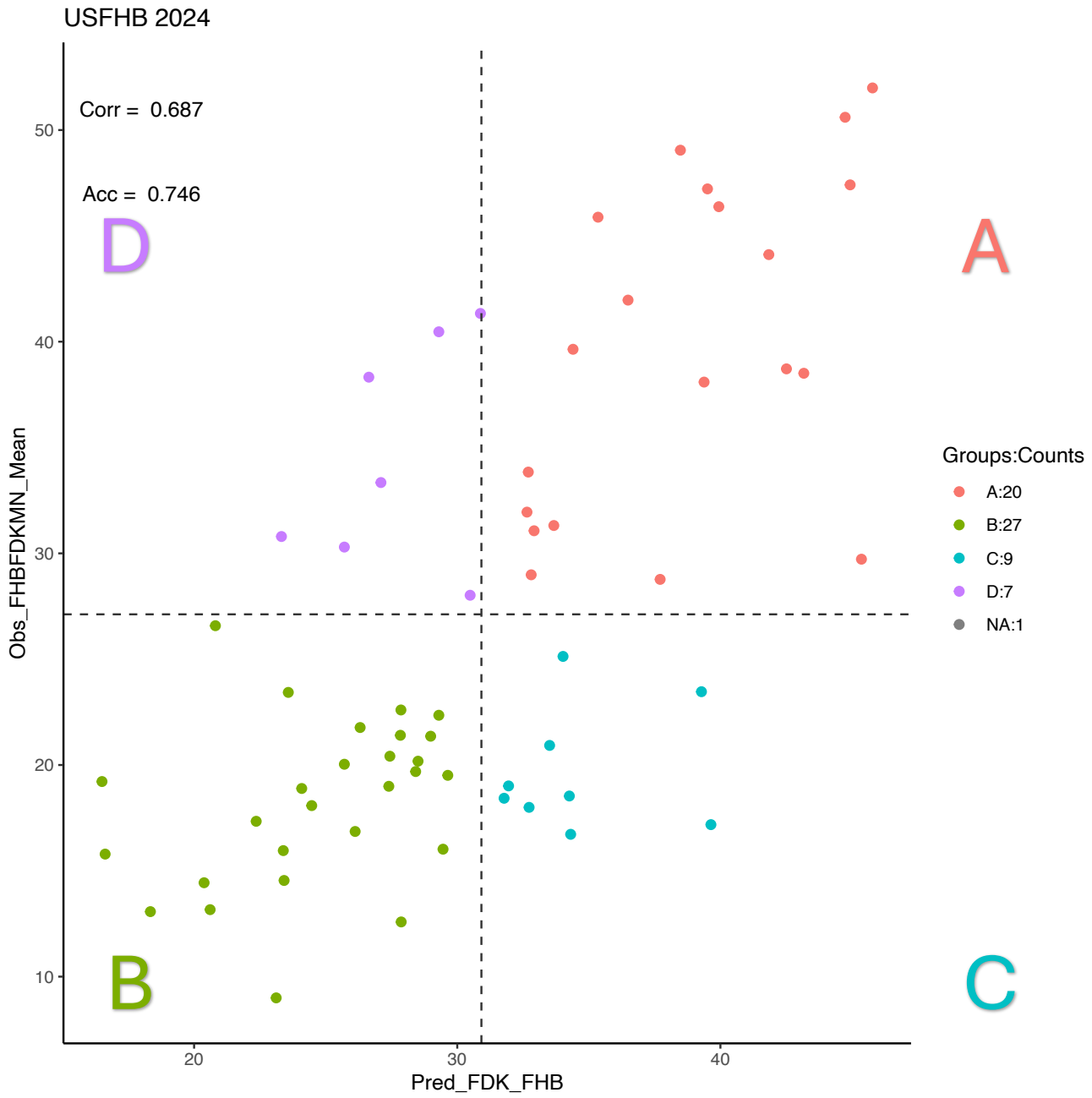


Percent Fusarium Damaged Kernels

ENTRY	DESIGNATION	ILU	SCF	LAW	LAA	TXCS	VAW	MEAN	Rank	GEBV FDK
								ALL LOC		
1	ERNIE	56.7	21.7	10.6	3.0	3.0	7.5	17.1	12	22.4
2	COKER9835	80.0	8.4	31.8	55.0	22.5	35.0	38.8	45	43.2
3	BESS	43.3	11.9	9.2	15.0	6.3	7.5	15.5	6	16.6
4	JAMESTOWN	35.0	11.5	13.6	7.5	21.3	5.0	15.7	7	23.4
5	SS 8641	95.0	30.7	32.9	77.5	23.8	25.0	47.5	55	44.9
6	15VDH-FHB-MAS22-14	20.0	17.3	14.4	22.5	6.3	5.0	14.2	5	23.4
7	GA15577-3-10-2 -22LE38	60.0	7.2	30.7	25.0	10.0	17.5	25.1	32	34.0
8	GA151450-13-6-9 -22LE29	100.0	17.0	29.1	85.0	27.5	57.5	52.7	59	45.8
9	GA141028-13-3-4 -22LE25	90.0	17.4	23.1	52.5	50.0	45.0	46.3	53	35.4
10	GA16349 ID-8-1-5 -22LE31	90.0	13.4	32.5	82.5	36.3	52.5	51.2	58	44.7
11	GA151433-23-5-6 -22LE27	90.0	14.4	27.0	65.0	23.8	47.5	44.6	52	41.8
12	GA131176 -24-6-7-6-8-22E8	60.0	7.0	41.1	30.0	11.3	30.0	29.9	37	45.4
13	GA101153-3-G2-1-19-5 -22LE24F	50.0	4.7	11.6	12.5	12.5	7.5	16.5	9	34.3
14	GA15560-5-4-1-5-22E18	80.0	15.3	37.3	45.0	31.3	30.0	39.8	48	34.4
15	KWS501	55.0	17.1	43.7	10.0	20.0	22.5	28.1	34	30.5
16	KWS527	30.0	22.5	31.8	10.0	13.8	7.5	19.3	21	29.6
17	KWS534	30.0	4.8	9.6	10.0	23.8	17.5	16.0	8	29.5
18	KWS542	40.0	17.8	20.2	15.0	18.8	22.5	22.4	28	29.3
19	KWS543	40.0	11.6	13.1	15.0	3.8	25.0	18.1	14	32.7
20	KWS553	40.0	19.3	23.7	15.0	12.5	17.5	21.3	26	27.8
21	LA13176CB-15-1-3	70.0	12.8	31.3	50.0	18.8	20.0	33.8	43	32.7
22	LA14188C-28-3-1-4-1-2	60.0	11.0	9.5	7.5	16.3	7.5	18.6	17	24.1
23	LA14272C-20-1-1-3-1-1	90.0	13.4	23.8	17.5	11.3	17.5	28.9	36	32.8
24	LA15203-LDH197	50.0	7.0	14.4	20.0	11.3	10.0	18.8	18	27.4
25	LA18003-NDH069	40.0	6.8	12.6	20.0	12.5	10.0	17.0	11	39.6
26	LA18003-NDH119	60.0	6.2	11.6	20.0	5.0	10.0	18.8	19	32.0
27	LA19333-NDH34	50.0	8.5	11.3	15.0	6.3	20.0	18.5	16	34.3
28	LAAR15172W-42-1-3-1-3	60.0	8.5	16.4	5.0	5.0	15.0	18.3	15	31.8
29	NC16VT30-7-47	50.0	16.3	5.6	27.5	17.5	10.0	21.2	25	29.0
30	NC14711-12	50.0	12.5	13.2	5.0	18.8	7.5	17.8	13	24.5
31	NC19-20130	60.0	7.5	7.2	12.5	30.0	12.5	21.6	27	26.3
32	NC20-21971	50.0	10.2	4.7	22.5	22.5	15.0	20.8	24	33.5
33	NC15949-22	30.0	10.1	7.6	1.0	16.3	12.5	12.9	3	18.3
34	SC19DH146-2	20.0	14.5	1.2	3.0	6.3	7.5	8.7	1	23.1
35	SC22W145	40.0	19.1	26.9	12.5	10.0	5.0	18.9	20	16.5
36	SC22W207	60.0	8.7	35.4	17.5	10.0	7.5	23.2	30	23.6
37	SCLA19418NDH-17	20.0	19.3	18.3	10.0	10.0	7.5	14.2	4	20.4
38	SC23W106	50.0	13.0	25.0	7.5	11.3	12.5	19.9	22	25.7
39	SC23W154	30.0	12.1	6.9	7.5	10.0	7.5	12.3	2	27.9
40	SC23W271	60.0	19.6	13.9	10.0	10.0	7.5	20.2	23	27.4
41	SC23W636	40.0	7.6	8.5	17.5	16.3	10.0	16.7	10	26.1

ENTRY	DESIGNATION	ILU	SCF	LAW	LAA	TXCS	VAW	MEAN	Rank	GEBV FDK
								ALL LOC		
42	TX23D8034	90.0	12.5	26.4	27.5	18.8	57.5	38.8	46	39.4
43	TX23D8342	80.0	24.7	44.1	15.0	10.0	17.5	31.9	41	32.7
44	TX23D8423	90.0	22.1	52.1	40.0	7.5	42.5	42.4	51	36.5
45	TX23D8486	70.0	12.7	17.0	10.0	8.8	22.5	23.5	31	39.3
46	MDW-107	93.3	10.4	49.9	35.0	12.5	32.5	38.9	47	42.5
47	MD47-7	70.0	14.4	27.1	17.5	21.3	22.5	28.8	35	37.7
48	MD47-2	80.0	13.5	45.8	72.5		35.0	49.4	57	38.5
49	MD9-17	50.0	8.9	35.6	20.0	33.8	10.0	26.4	33	20.8
50	MD463-6	90.0	12.1	43.1	80.0	17.5	37.5	46.7	54	39.9
51	MD-195-7	50.0	11.0	32.6	35.0	20.0	40.0	31.4	40	32.9
52	VA21W-112	60.0	14.2	64.4	87.5	15.0	45.0	47.7	56	39.5
53	18VTK5-95	40.0	13.3	34.5	45.0	36.3	15.0	30.7	39	23.3
54	DH19SRW09-073	70.0	14.1	25.3	50.0	25.0	15.0	33.2	42	27.1
55	DH19SRW08-001	90.0	14.2	48.4	62.5	15.0	17.5	41.3	50	30.9
56	19VDH-FHB-MAS02-06	30.0	8.0	23.1	32.5	17.5	25.0	22.7	29	27.9
57	19VTK7-66	60.0	11.4	33.6	27.5	22.5	27.5	30.4	38	25.7
58	19VDH-FHB-MAS05-27	70.0	14.1	33.9	82.5	20.0	22.5	40.5	49	29.3
59	DH20SRW02-073	80.0	13.8	46.2	42.5	16.3	32.5	38.5	44	26.6
	Mean	59.1	13.2	24.8	29.0	16.7	20.9	27.5		
	CV%	23.3	25.8	63	86.6	43.2	32.0	45.4		
	LSD	30.5	5.7	19.2	22.1	14.5	13.4	14.1		
	R-Square	0.7	0.7					0.7		
	Correl w/ GEBV	0.7	0.0	0.4	0.6	0.2	0.7	0.7		

Observed Mean FDK vs Predicted FDK

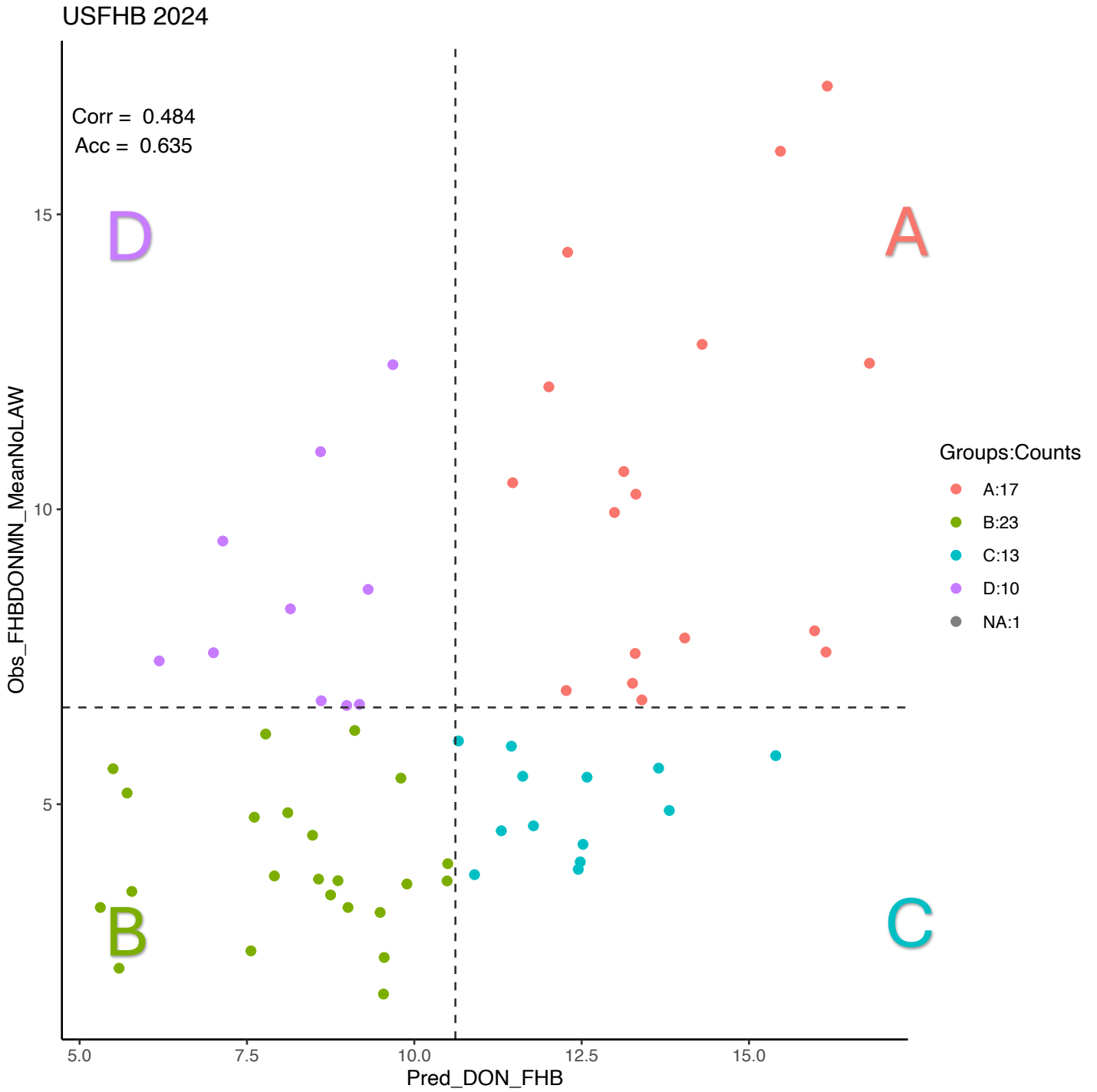


DON (ppm)

ENTRY	DESIGNATION	SCF	TXCS	KYX	LAW	LAA	VAW	MEAL	MEAN	Rank	GEBV DON
								ALL LOCS	no LAW		
1	ERNIE	0.5	0.8	5.3	2.6	2.5	2.9	2.4	2.4	3	9.6
2	COKER9835	1.5	2.1	12.3	3.2	11.5	10.6	6.9	7.6	42	16.2
3	BESS	0.6	2.5	5.8	2.6	4.8	3.6	3.3	3.5	7	8.8
4	JAMESTOWN	0.4	9.5	7.4	2.1	2.2	4.5	4.3	4.8	21	7.6
5	SS 8641	1.5	4.4	29.8	4.0	17.6	10.7	11.3	12.8	56	14.3
6	15VDH-FHB-MAS22-14	0.4	5.3	4.7	2.4	3.9	2.0	3.1	3.3	6	9.0
7	GA15577-3-10-2 -22LE38	0.4	3.4	7.3	4.9	5.1	5.5	4.4	4.3	18	12.5
8	GA151450-13-6-9 -22LE29	3.4	2.6	24.5	4.2	23.0	32.4	15.0	17.2	59	16.2
9	GA141028-13-3-4 -22LE25	1.2	17.9	12.4	3.0	12.8	27.5	12.5	14.4	57	12.3
10	GA16349 ID-8-1-5 -22LE31	1.9	16.5	21.7	4.0	13.1	27.3	14.1	16.1	58	15.5
11	GA151433-23-5-6 -22LE27	2.1	6.1	21.9	3.7	11.6	20.8	11.0	12.5	55	16.8
12	GA131176 -24-6-7-6-8-22E8	1.4	3.7	11.7	5.9	9.3	13.6	7.6	7.9	44	16.0
13	GA101153-3-G2-1-19-5 -22LE24F	0.5	5.9	11.4	3.4	4.0	6.4	5.2	5.6	29	13.7
14	GA15560-5-4-1-5-22E18	0.7	13.6	12.7	6.4	15.4	9.9	9.8	10.5	50	11.5
15	KWS501	0.7	4.3	10.3	6.3	4.8	7.3	5.6	5.5	27	11.6
16	KWS527	0.5	6.6	4.2	3.1	5.1	3.7	3.8	4.0	16	10.5
17	KWS534	0.3	17.1	5.3	3.6	3.9	4.4	5.8	6.2	33	7.8
18	KWS542	1.2	6.8	5.1	2.4	6.2	10.7	5.4	6.0	31	11.5
19	KWS543	0.7	2.2	8.2	2.9	5.0	14.4	5.5	6.1	32	10.7
20	KWS553	1.9	6.0	10.4	4.5	5.5	9.6	6.3	6.7	34	9.0
21	LA13176CB-15-1-3	0.6	9.3	8.5	3.8	6.4	9.1	6.3	6.8	37	13.4
22	LA14188C-28-3-1-4-1-2	0.0	2.7	2.3	2.5	2.0	2.0	1.9	1.8	1	9.5
23	LA14272C-20-1-1-3-1-1	0.4	2.2	13.6	2.9	5.2	5.9	5.0	5.4	25	9.8
24	LA15203-LDH197	0.5	2.7	6.3	2.6	3.6	5.4	3.5	3.7	10	10.5
25	LA18003-NDH069	1.1	4.0	17.3	1.8	6.1	10.6	6.8	7.8	43	14.0
26	LA18003-NDH119	0.3	1.0	3.9	3.9	3.9	6.8	3.3	3.2	5	9.5
27	LA19333-NDH34	0.5	3.2	8.8	2.9	3.6	7.1	4.3	4.6	20	11.8
28	LAAR15172W-42-1-3-1-3	0.3	0.7	9.4	2.0	2.0	5.9	3.4	3.6	9	9.9
29	NC16VT30-7-47	0.5	11.2	8.6	2.3	7.1	6.2	6.0	6.7	35	9.2
30	NC14711-12	0.3	2.4	7.2	1.9	2.6	5.2	3.3	3.5	8	5.8
31	NC19-20130	0.6	3.4	7.9	1.3	3.7	6.9	3.9	4.5	19	8.5
32	NC20-21971	0.7	11.4	11.7	1.5	7.5	6.6	6.5	7.6	40	13.3
33	NC15949-22	0.2	4.6	7.2	0.3	1.6	5.3	3.2	3.8	13	7.9
34	SC19DH146-2	0.3	2.3	5.7	3.0	1.4	3.0	2.6	2.5	4	7.6
35	SC22W145	0.5	2.7	2.3	1.0	2.7	3.0	2.0	2.2	2	5.6
36	SC22W207	0.7	5.1	12.1	1.4	4.4	3.7	4.6	5.2	24	5.7
37	SCLA19418NDH-17	0.3	5.2	5.9	2.3	2.6	4.8	3.5	3.7	12	8.6
38	SC23W106	0.4	10.8	7.1	2.0	2.7	7.1	5.0	5.6	28	5.5
39	SC23W154	0.1	2.9	7.2	1.7	3.2	5.7	3.5	3.8	14	10.9
40	SC23W271	0.5	3.4	5.8	1.6	3.0	5.9	3.4	3.7	11	8.9
41	SC23W636	0.4	5.8	5.8	1.5	3.5	8.9	4.3	4.9	22	8.1
42	TX23D8034	0.8	5.5	12.1	3.7	9.3	23.6	9.2	10.3	49	13.3

ENTRY	DESIGNATION	SCF	TXCS	KYX	LAW	LAA	VAW	MEAL ALL LOCS	MEAN no LAW	Rank	GEBV DON
43	TX23D8342	0.3	1.3	7.4	3.0	5.6	5.6	3.9	4.0	17	12.5
44	TX23D8423	0.8	1.3	7.5	3.5	7.5	12.1	5.4	5.8	30	15.4
45	TX23D8486	0.3	1.5	7.0	2.0	3.9	6.8	3.6	3.9	15	12.5
46	MDW-107	0.8	3.8	8.9	5.8	5.5	8.4	5.5	5.5	26	12.6
47	MD47-7	0.4	3.6	7.2	3.9	4.1	9.2	4.7	4.9	23	13.8
48	MD47-2	0.8		13.6	6.0	7.2	21.0	9.7	10.6	51	13.1
49	MD9-17	3.4	7.4	13.9	7.9	6.7	5.8	7.5	7.4	39	6.2
50	MD463-6	1.1	4.6	11.2	8.1	6.9	10.8	7.1	6.9	38	12.3
51	MD-195-7	2.7	15.6	11.6	8.8	10.5	21.9	11.8	12.5	54	9.7
52	VA21W-112	1.8	5.4	19.6	9.1	10.5	23.2	11.6	12.1	53	12.0
53	18VTK5-95	1.0	21.3	9.9	11.0	9.7	5.6	9.7	9.5	47	7.1
54	DH19SRW09-073	1.4	2.1	17.3	4.1	7.4	5.7	6.3	6.8	36	8.6
55	DH19SRW08-001	3.1	7.8	19.8	8.9	11.6	7.5	9.8	9.9	48	13.0
56	19VDH-FHB-MAS02-06	1.5	9.2	7.6	0.7	6.6	12.9	6.4	7.6	41	7.0
57	19VTK7-66	1.2	10.9	14.5	6.8	6.0	10.7	8.3	8.6	46	9.3
58	19VDH-FHB-MAS05-27	1.5	13.7	9.0	13.1	10.5	6.9	9.1	8.3	45	8.2
59	DH20SRW02-073	2.6	15.2	10.7	14.8	12.5	13.9	11.6	11.0	52	8.6
	Mean	1.0	6.3	9.9	3.9	6.5	9.6	6.3	6.7		
	CV%	0.6	51.9		91.4	72.2	33.2	59.1	57.2		
	LSD	0.9	6.5		5.7	5.4	6.4	4.1	4.8		
	R-Square	0.6		0.8				0.7	0.7		
	Correl w/ GEBV	0.2	-0.1	0.5	0.1	0.5	0.5	0.4	0.5		

Observed Mean DON vs Predicted DON



Genotypic Analyses of Regions Associated with FHB Resistance and Other Loci

Table 1: FHB QTL

ENTRY	DESIGNATION	Fhb1	Fhb_5A_Ernie	Fhb_5A_Ning7840	Fhb_3B_Massey	Fhb_1B_Jamestown	Fhb_2B_Bess	Fhb7
1	ERNIE	non-Fhb1	Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
2	COKER9835	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
3	BESS	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	Fhb_2B_Bess	non-Fhb7
4	JAMESTOWN	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
5	SS 8641	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
6	15VDH-FHB-MAS22-14	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
7	GA15577-3-10-2 -22LE38	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
8	GA151450-13-6-9 -22LE29	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
9	GA141028-13-3-4 -22LE25	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
10	GA16349 ID-8-1-5 -22LE31	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
11	GA151433-23-5-6 -22LE27	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey_het	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
12	GA131176 -24-6-7-6-8-22E8	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
13	GA101153-3-G2-1-19-5 -22LE24F	Fhb1	non-Fhb_5A_Ernie	Fhb_5A_Ning7840_het	non-Fhb_3B_Massey	Fhb_1B_JT_het	non-Fhb_2B_Bess	non-Fhb7
14	GA15560-5-4-1-5-22E18	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey_het	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
15	KWS501	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
16	KWS527	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
17	KWS534	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
18	KWS542	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
19	KWS543	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
20	KWS553	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
21	LA13176CB-15-1-3	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
22	LA14188C-28-3-1-4-1-2	non-Fhb1	non-Fhb_5A_Ernie	Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7

ENTRY	DESIGNATION	Fhb1	Fhb_5A_Ernie	Fhb_5A_Ning7840	Fhb_3B_Massey	Fhb_1B_Jamestown	Fhb_2B_Bess	Fhb7
23	LA14272C-20-1-1-3-1-1	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
24	LA15203-LDH197	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
25	LA18003-NDH069	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
26	LA18003-NDH119	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
27	LA19333-NDH34	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
28	LAAR15172W-42-1-3-1-3	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
29	NC16VT30-7-47	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
30	NC14711-12	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
31	NC19-20130	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT_het	non-Fhb_2B_Bess	non-Fhb7
32	NC20-21971	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
33	NC15949-22	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
34	SC19DH146-2	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
35	SC22W145	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	Fhb_1B_JT_het	non-Fhb_2B_Bess	non-Fhb7
36	SC22W207	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	ND	Fhb_1B_JT_het	non-Fhb_2B_Bess	non-Fhb7
37	SCLA19418NDH-17	Fhb1	Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
38	SC23W106	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
39	SC23W154	non-Fhb1	Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
40	SC23W271	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
41	SC23W636	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	ND	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
42	TX23D8034	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
43	TX23D8342	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT_het	non-Fhb_2B_Bess	non-Fhb7
44	TX23D8423	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
45	TX23D8486	Fhb1_het	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
46	MDW-107	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
47	MD47-7	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
48	MD47-2	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7

ENTRY	DESIGNATION	Fhb1	Fhb_5A_Ernie	Fhb_5A_Ning7840	Fhb_3B_Massey	Fhb_1B_Jamestown	Fhb_2B_Bess	Fhb7
49	MD9-17	Fhb1	ND	ND	ND	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
50	MD463-6	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
51	MD-195-7	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
52	VA21W-112	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
53	18VTK5-95	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
54	DH19SRW09-073	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
55	DH19SRW08-001	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
56	19VDH-FHB-MAS02-06	Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
57	19VTK7-66	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	ND	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
58	19VDH-FHB-MAS05-27	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7
59	DH20SRW02-073	non-Fhb1	non-Fhb_5A_Ernie	non-Fhb_5A_Ning7840	non-Fhb_3B_Massey	non-Fhb_1B_JT	non-Fhb_2B_Bess	non-Fhb7

Table 2: Additional Important QTL

ENTRY	DESIGNATION	Rht-B1	Rht-D1	Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	Sr36/Pm6	Pm1a	Pm54	H13	H13b	HF_7D
1	ERNIE	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
2	COKER9835	Rht-B1a	Rht-D1b	Lr9	non-Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	non-Pm1a	Pm54	non-H13	non-H13b	non-HF_7D
3	BESS	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
4	JAMESTOWN	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
5	SS 8641	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
6	15VDH-FHB-MAS22-14	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL_het	Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
7	GA15577-3-10-2 -22LE38	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	Yr17/Lr37/Sr38_het	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D
8	GA151450-13-6-9 -22LE29	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
9	GA141028-13-3-4 -22LE25	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13_het	non-H13b	HF_7D_het
10	GA16349 ID-8-1-5 -22LE31	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	HF_7D
11	GA151433-23-5-6 -22LE27	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	Pm54	non-H13	non-H13b	non-HF_7D
12	GA131176 -24-6-7-6-8-22E8	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
13	GA101153-3-G2-1-19-5 -22LE24F	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	Yr17/Lr37/Sr38_het	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
14	GA15560-5-4-1-5-22E18	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
15	KWS501	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D
16	KWS527	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D
17	KWS534	Rht-B1b_het	Rht-D1b_het	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
18	KWS542	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
19	KWS543	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D

ENTRY	DESIGNATION	Rht-B1	Rht-D1	Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	Sr36/Pm6	Pm1a	Pm54	H13	H13b	HF_7D
20	KWS553	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
21	LA13176CB-15-1-3	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
22	LA14188C-28-3-1-4-1-2	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
23	LA14272C-20-1-1-3-1-1	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	H13b	non-HF_7D
24	LA15203-LDH197	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D
25	LA18003-NDH069	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	Pm54	non-H13	non-H13b	HF_7D
26	LA18003-NDH119	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D
27	LA19333-NDH34	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D_het
28	LAAR15172W-42-1-3-1-3	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
29	NC16VT30-7-47	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	Pm1a	non-Pm54	H13_het	non-H13b	non-HF_7D
30	NC14711-12	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
31	NC19-20130	Rht-B1b	Rht-D1a	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13_het	non-H13b	non-HF_7D
32	NC20-21971	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	non-Pm1a	non-Pm54	H13_het	ND	non-HF_7D
33	NC15949-22	Rht-B1b	Rht-D1a	Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	H13	ND	non-HF_7D
34	SC19DH146-2	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
35	SC22W145	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
36	SC22W207	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
37	SCLA19418NDH-17	Rht-B1a	Rht-D1b	non-Lr9	ND	Yr17/Lr37/Sr38	Yr4BL	ND	Pm1a	non-Pm54	non-H13	non-H13b	HF_7D_het
38	SC23W106	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	HF_7D
39	SC23W154	Rht-B1a	ND	non-Lr9	non-Lr18	Yr17/Lr37/Sr38_het	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
40	SC23W271	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D

ENTRY	DESIGNATION	Rht-B1	Rht-D1	Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	Sr36/Pm6	Pm1a	Pm54	H13	H13b	HF_7D
41	SC23W636	Rht-B1a	Rht-D1b	non-Lr9	Lr18_het	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	HF_7D_het
42	TX23D8034	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
43	TX23D8342	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	Pm54_het	H13	non-H13b	non-HF_7D
44	TX23D8423	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
45	TX23D8486	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
46	MDW-107	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
47	MD47-7	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13_het	non-H13b	non-HF_7D
48	MD47-2	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
49	MD9-17	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
50	MD463-6	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
51	MD-195-7	Rht-B1a	Rht-D1b	non-Lr9	Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
52	VA21W-112	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
53	18VTK5-95	Rht-B1a	Rht-D1b	Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
54	DH19SRW09-073	Rht-B1a	Rht-D1b	Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
55	DH19SRW08-001	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D
56	19VDH-FHB-MAS02-06	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
57	19VTK7-66	Rht-B1a	Rht-D1b	non-Lr9	Lr18	non-Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
58	19VDH-FHB-MAS05-27	Rht-B1a	Rht-D1b	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	H13	non-H13b	non-HF_7D
59	DH20SRW02-073	Rht-B1b	Rht-D1a	non-Lr9	non-Lr18	Yr17/Lr37/Sr38	non-Yr4BL	non-Sr36/Pm6	non-Pm1a	non-Pm54	non-H13	non-H13b	non-HF_7D

Efficacy of Selected FHB Resistance QTL

Mean Rating (RAT), Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2024 Uniform Southern Winter Wheat Scab Nurseries with and without resistance alleles at quantitative trait loci (QTL) associated with resistance to (FHB). FHB Rating (RAT) data included for 2018-2024 nurseries only.

With data as of 12/18/24.

QTL†	Allele‡	n§	SEV		FDK		DON		RAT (2018-24)	
<i>Qfhb.nc-2B.1 (Bess)</i>	S	519	32.0	p = 0.367	29.0	p = 0.103	7.9	p = 0.024	3.5	p = 0.109
	R	38	30.9	-1.2	27.2	-1.8	6.9	-1.0	3.2	-0.3
<i>Qfhb.nc-3B.2 (Bess)</i>	S	501	32.3	p = 0.015	29.0	p < 0.0001	7.9	p = 0.997	3.5	p = 0.004
	R	16	28.2	-4.0	23.3	-5.7	7.9	0.0	2.9	-0.5
<i>Ning_5A</i>	S	511	31.8	p = 0.009	30.2	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.090
	R	17	27.3	-4.5	22.6	-7.6	5.3	-2.9	3.2	-0.2
<i>Ernie_5A</i>	S	503	31.2	p = 0.174	29.6	p < 0.0001	8.0	p = 0.018	3.5	p < 0.0001
	R	24	32.9	1.7	33.9	4.2	8.9	0.9	2.8	-0.7
<i>Wuhan-1_2DL</i>	S	467	31.9	p = 0.003	29.9	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.212
	R	12	26.7	-5.2	22.0	-7.9	4.8	-3.4	3.2	-0.2
<i>Sumai 3_Fhb1</i>	S	433	34.5	p < 0.0001	30.4	p < 0.0001	8.5	p < 0.0001	3.7	p < 0.0001
	R	123	22.7	-11.8	24.4	-6.0	5.9	-2.6	2.8	-0.9
<i>QTL_3BL (Massey)</i>	S	504	32.5	p < 0.0001	29.0	p = 0.058	7.9	p < 0.0001	3.5	p < 0.0001
	R	47	27.2	-5.3	27.6	-1.3	6.7	-1.2	3.0	-0.5
<i>QTL_1A (Neuse)</i>	S	265	33.6	p = 0.011	29.5	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.007
	R	218	31.8	-1.8	27.8	-1.7	7.4	-0.8	3.3	-0.2
<i>QTL_6A (Neuse)</i>	S	367	32.3	p = 0.685	29.0	p = 0.753	8.2	p = 0.004	3.5	p < 0.0001
	R	122	31.8	-0.5	29.3	0.3	7.0	-1.2	3.2	-0.3
<i>QTL_1B (Jamestown)</i>	S	275	33.1	p < 0.0001	28.7	p < 0.0001	8.1	p < 0.0001	3.5	p = 0.029
	R	164	29.6	-3.6	26.9	-1.7	6.8	-1.3	3.4	-0.1

† QTL, quantitative trait loci.

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

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

¶ Significance levels of mean comparisons are indicated as: NS (P > 0.05), * (P < 0.05), ** (P < 0.01), *** (P < 0.001).

Mean Rating (RAT), Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2024 Uniform Southern Winter Wheat Scab Nurseries with and without resistance alleles at quantitative trait loci (QTL) associated with resistance to (FHB). FHB Rating (RAT) data included for 2018-2024 nurseries only.

With data as of 12/18/24.

QTL†	Allele‡	n§	SEV		FDK		DON		RAT (2018-24)	
<i>Qfhb.nc-2B.1 (Bess)</i>	S	519	32.0	p = 0.367	29.0	p = 0.103	7.9	p = 0.015	3.5	p = 0.109
	R	38	30.9	-4%	27.2	-6%	6.9	-13%	3.2	-8%
<i>Qfhb.nc-3B.2 (Bess)</i>	S	501	32.3	p = 0.015	29.0	p < 0.0001	7.9	p = 0.997	3.5	p = 0.004
	R	16	28.2	-13%	23.3	-20%	7.9	0%	2.9	-16%
<i>Ning_5A</i>	S	511	31.8	p = 0.009	30.2	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.090
	R	17	27.3	-14%	22.6	-25%	5.3	-35%	3.2	-7%
<i>Ernie_5A</i>	S	503	31.2	p = 0.174	29.6	p < 0.0001	8.0	p = 0.026	3.5	p < 0.0001
	R	24	32.9	6%	33.9	14%	8.9	11%	2.8	-19%
<i>Wuhan-1_2DL</i>	S	467	31.9	p = 0.003	29.9	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.212
	R	12	26.7	-16%	22.0	-26%	4.8	-41%	3.2	-6%
<i>Sumai 3_Fhb1</i>	S	433	34.5	p < 0.0001	30.4	p < 0.0001	8.5	p < 0.0001	3.7	p < 0.0001
	R	123	22.7	-34%	24.4	-20%	5.9	-31%	2.8	-25%
<i>QTL_3BL (Massey)</i>	S	504	32.5	p < 0.0001	29.0	p = 0.058	7.9	p < 0.0001	3.5	p < 0.0001
	R	47	27.2	-16%	27.6	-5%	6.7	-15%	3.0	-13%
<i>QTL_1A (Neuse)</i>	S	265	33.6	p = 0.011	29.5	p < 0.0001	8.2	p < 0.0001	3.5	p = 0.007
	R	218	31.8	-5%	27.8	-6%	7.4	-10%	3.3	-4%
<i>QTL_6A (Neuse)</i>	S	367	32.3	p = 0.685	29.0	p = 0.753	8.2	p = 0.004	3.5	p < 0.0001
	R	122	31.8	-1%	29.3	1%	7.0	-14%	3.2	-9%
<i>QTL_1B (Jamestown)</i>	S	275	33.1	p < 0.0001	28.7	p < 0.0001	8.1	p < 0.0001	3.5	p = 0.029
	R	164	29.6	-11%	26.9	-6%	6.8	-16%	3.4	-3%

† QTL, quantitative trait loci.

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

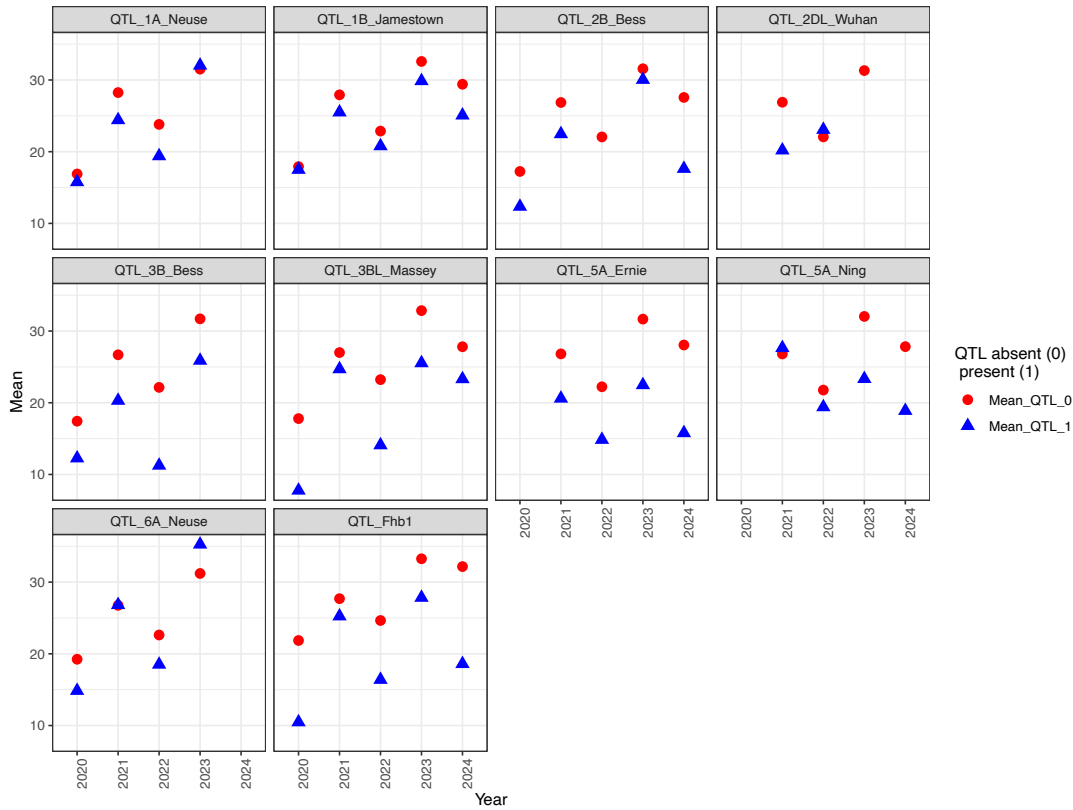
§ n indicates the number of lines in the allele group.

¶ Significance levels of mean comparisons are indicated as: NS (P > 0.05), * (P < 0.05), ** (P < 0.01), *** (P < 0.001).

Efficacy of Selected FHB Resistance QTL For FDK (Top) and DON (Bottom), by year, for 2020 through 2024

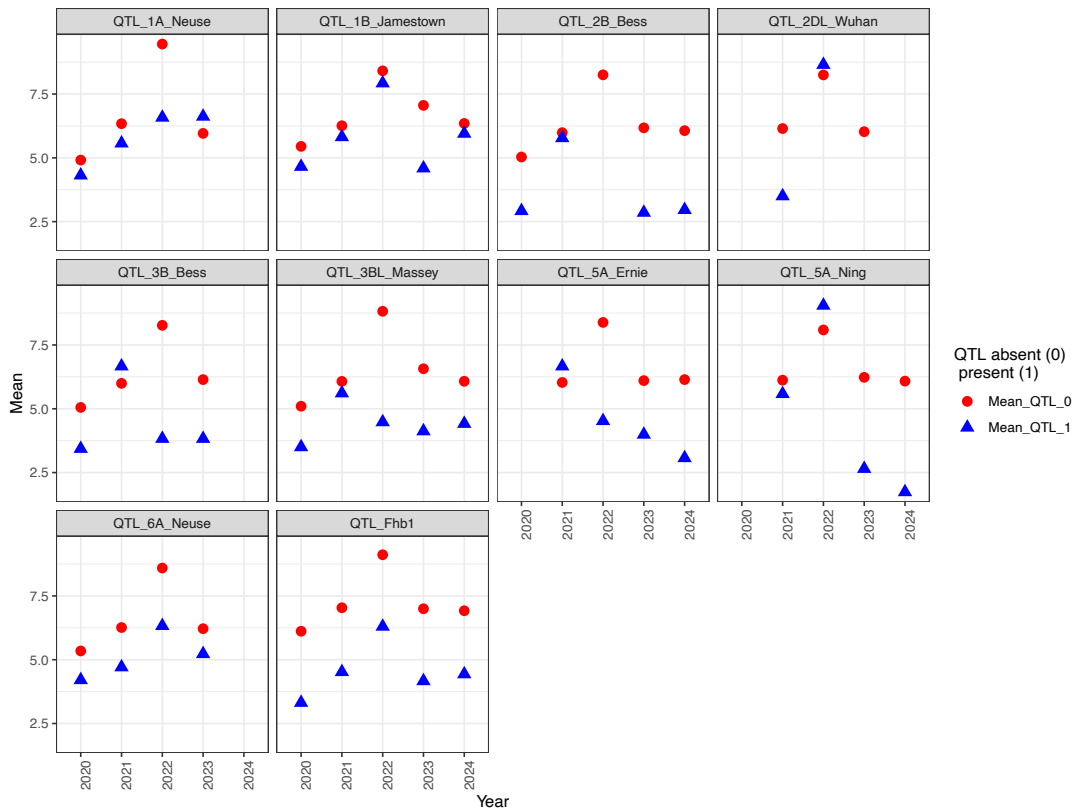
FHB mean FDK in each year for each QTL

QTL absent = 0, QTL present = 1



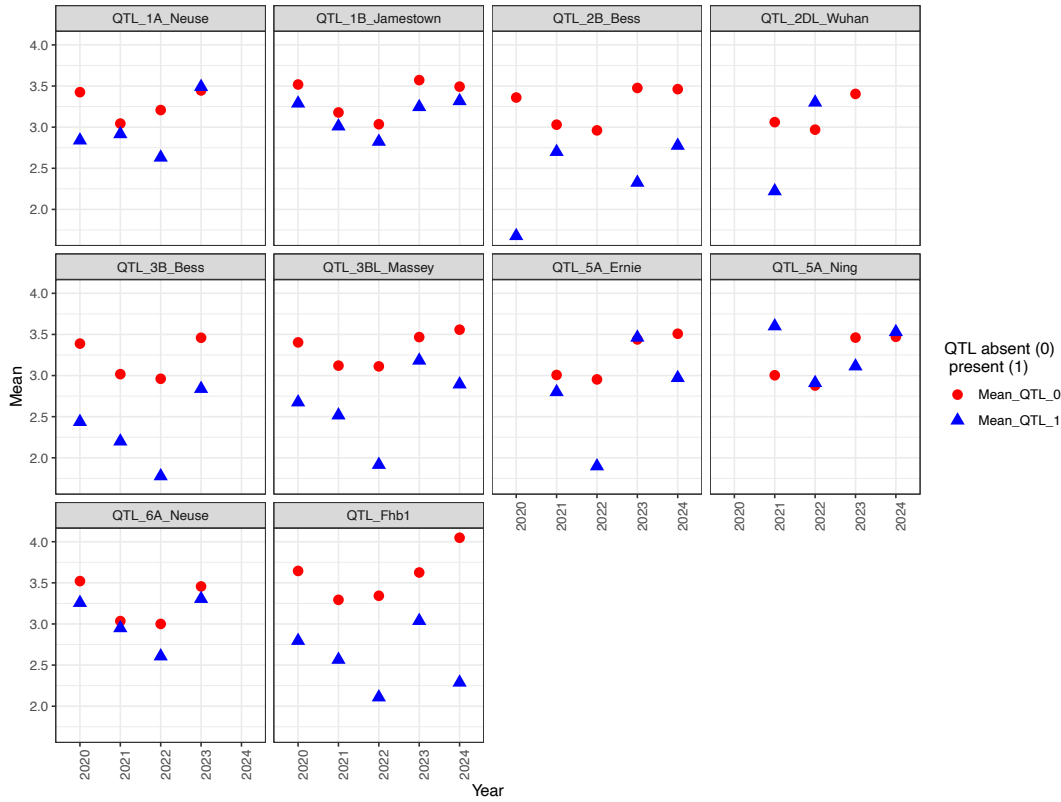
FHB mean DON in each year for each QTL

QTL absent = 0, QTL present = 1

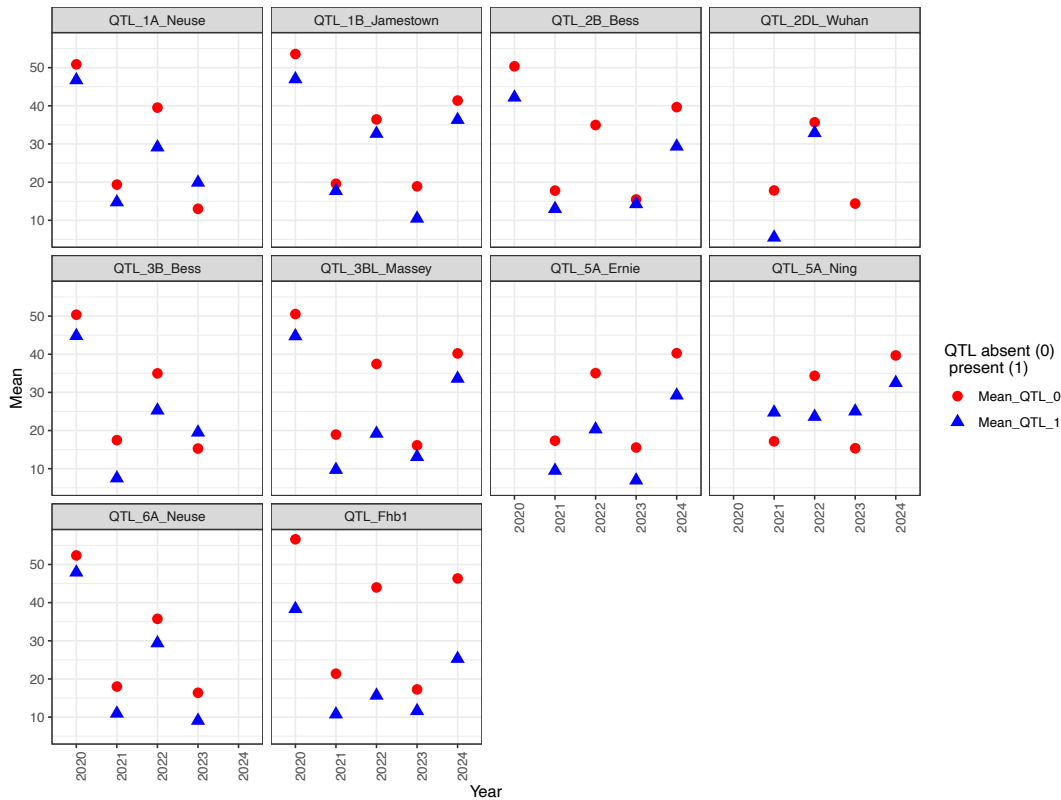


Efficacy of Selected FHB Resistance QTL For FHB Rating (Top) and Severity (Bottom), by year, for 2020 through 2024

FHB mean RATING in each year for each QTL
 QTL absent = 0, QTL present = 1



FHB mean SEV in each year for each QTL
 QTL absent = 0, QTL present = 1



Heading Date (Julian Day)

ENTRY	DESIGNATION	ILU	KYX	SCF	LAW	ILC	MEAN ALL LOC	Rank
1	ERNIE	123	118	95.7	88	126	110	8
2	COKER9835	128	121	99.9	89	130	113	31
3	BESS	125	121	100.8	96	127	114	34
4	JAMESTOWN	122	115	91.0	86	124	107	1
5	SS 8641	126	120	96.0	89	127	111	15
6	15VDH-FHB-MAS22-14	125	116	95.5	89	126	110	7
7	GA15577-3-10-2 -22LE38	125	115	98.2	93	125	111	14
8	GA151450-13-6-9 -22LE29	125	122	102.4	93	129	114	36
9	GA141028-13-3-4 -22LE25	128	122	101.5	95	129	115	42
10	GA16349 ID-8-1-5 -22LE31	128	122	105.6	95	129	116	47
11	GA151433-23-5-6 -22LE27	128	121	102.1	96	128	115	40
12	GA131176 -24-6-7-6-8-22E8	124	118	97.4	90	126	111	12
13	GA101153-3-G2-1-19-5 - 22LE24F	128	120	100.5	91	128	113	32
14	GA15560-5-4-1-5-22E18	127	121	96.3	91	129	113	22
15	KWS501	128	122	105.3	98	128	116	48
16	KWS527	128	120	107.1	99	128	116	50
17	KWS534	125	117	106.0	99	127	115	39
18	KWS542	124	119	108.7	99	126	115	43
19	KWS543	128	122	100.1	97	128	115	41
20	KWS553	128	119	105.9	99	127	116	45
21	LA13176CB-15-1-3	126	118	100.6	92	128	113	21
22	LA14188C-28-3-1-4-1-2	123	113	94.5	90	124	109	3
23	LA14272C-20-1-1-3-1-1	127	118	95.8	92	127	112	17
24	LA15203-LDH197	122	114	94.8	91	125	109	5
25	LA18003-NDH069	130	126	102.0	95	134	117	54
26	LA18003-NDH119	124	121	100.1	91	131	113	26
27	LA19333-NDH34	128	120	96.4	93	128	113	23
28	LAAR15172W-42-1-3-1-3	125	121	96.6	88	127	111	16
29	NC16VT30-7-47	123	120	101.3	97	126	113	28
30	NC14711-12	125	118	100.9	94	125	112	18
31	NC19-20130	125	120	101.9	95	125	113	30
32	NC20-21971	124	117	102.8	97	126	113	28
33	NC15949-22	125	117	101.8	95	127	113	24
34	SC19DH146-2	125	116	100.9	94	127	112	20
35	SC22W145	124	114	98.0	92	124	110	10
36	SC22W207	126	121	102.1	94	127	114	35
37	SCLA19418NDH-17	123	116	96.4	90	126	110	9
38	SC23W106	129	121	101.3	95	127	115	38
39	SC23W154	122	114	95.7	92	125	110	6
40	SC23W271	128	122	96.4	95	128	114	33
41	SC23W636	123	122	100.6	93	128	113	25
42	TX23D8034	125	120	100.5	90	127	112	19
43	TX23D8342	125	114	94.0	87	126	109	4

ENTRY	DESIGNATION	ILU	KYX	SCF	LAW	ILC	MEAN ALL LOC	Rank
44	TX23D8423	123	114	90.3	86	125	108	2
45	TX23D8486	128	121	100.8	91	127	113	28
46	MDW-107	124	117	97.1	91	126	111	13
47	MD47-7	122	115	98.6	92	126	111	11
48	MD47-2	128	119	102.5	93	129	114	37
49	MD9-17	130	125	108.4	99	133	119	59
50	MD463-6	128	122	105.5	99	130	117	52
51	MD-195-7	125	119	105.8	99	128	115	44
52	VA21W-112	128	122	103.4	96	133	116	49
53	18VTK5-95	127	119	106.0	101	127	116	46
54	DH19SRW09-073	130	123	105.8	102	130	118	57
55	DH19SRW08-001	130	122	104.0	98	130	117	51
56	19VDH-FHB-MAS02-06	128	122	108.8	105	128	118	58
57	19VTK7-66	128	122	106.3	102	129	117	56
58	19VDH-FHB-MAS05-27	130	119	107.4	101	129	117	55
59	DH20SRW02-073	131	121	105.8	99	130	117	53
	Mean	126.07	119	101	94.10	127.3	113.4	
	CV%	1.20		1.8	4.71			
	LSD(0.10)	3.32		3	3.53			
	R-Square	0.67	0.89	0.84				

Leaf Disease Ratings

ENTRY	DESIGNATION	Powdery Mildew	Powdery Mildew	Powdery Mildew	Leaf Rust	Leaf Rust	Leaf Rust	Leaf Rust	Leaf Rust	Stripe Rust	BYD	BYD	BYD
		Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
		0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9
		SCF	VAW	MEAN	LAA	ILC	SCF	VAW	MEAN	LAA	SCF	VAW	MEAN
1	ERNIE	0.0	1.0	0.5	0.0	8.0	0.0	6.5	3.6	7.5	0.0	1.5	0.8
2	COKER9835	0.0	4.5	2.3	0.0	3.5	0.0	1.0	1.1	5.5	1.3	3.0	2.2
3	BESS	3.0	1.5	2.3	4.0	6.5	0.0	9.0	4.9	3.0	0.5	1.0	0.8
4	JAMESTOWN	1.8	5.5	3.7	0.0	4.0	0.0	1.5	1.4	1.0	0.1	0.5	0.3
5	SS 8641	1.6	1.0	1.3	0.0	2.0	0.0	1.0	0.8	3.5	1.1	1.5	1.3
6	15VDH-FHB-MAS22-14	0.4	1.5	1.0	0.0	4.5	0.0	1.0	1.4	8.5	0.5	0.5	0.5
7	GA15577-3-10-2 -22LE38	1.8	5.5	3.7	0.0	2.5	0.0	1.0	0.9	1.5	1.0	1.0	1.0
8	GA151450-13-6-9 -22LE29	0.0	5.0	2.5	0.0	2.5	0.0	1.0	0.9	3.0	0.1	0.0	0.1
9	GA141028-13-3-4 -22LE25	0.0	8.0	4.0	0.0	4.0	0.0	1.0	1.3	1.5	0.0	0.5	0.3
10	GA16349 ID-8-1-5 -22LE31	2.4	9.0	5.7	2.0	5.0	0.0	3.5	2.6	0.0	0.0	1.5	0.8
11	GA151433-23-5-6 -22LE27	3.3	4.5	3.9	0.0	2.5	1.5	2.5	1.6	0.0	0.8	0.0	0.4
12	GA131176 -24-6-7-6-8-22E8	4.4	4.0	4.2	0.0	2.5	0.0	5.0	1.9	0.0	0.1	0.0	0.1
13	GA101153-3-G2-1-19-5 -22LE24F	3.3	8.5	5.9	0.0	3.0	2.0	1.0	1.5	6.0	1.1	0.5	0.8
14	GA15560-5-4-1-5-22E18	0.2	1.0	0.6	0.0	3.0	0.0	1.0	1.0	2.5	0.2	0.5	0.4
15	KWS501	5.3	9.0	7.2	5.5	8.0	1.0	7.5	5.5	0.0	0.7	2.0	1.4
16	KWS527	2.4	1.0	1.7	3.0	8.0	1.5	8.5	5.3	1.5	0.8	2.0	1.4
17	KWS534	3.9	4.5	4.2	3.0	7.5	0.0	9.0	4.9	0.0	0.5	1.0	0.8
18	KWS542	2.4	5.0	3.7	1.5	7.5	0.0	6.0	3.8	0.0	1.3	1.0	1.2
19	KWS543	3.7	9.0	6.4	1.5	8.0	0.5	8.0	4.5	0.0	0.4	1.0	0.7
20	KWS553	1.9	4.5	3.2	4.0	8.5	0.0	8.5	5.3	0.0	0.5	1.5	1.0
21	LA13176CB-15-1-3	1.8	1.5	1.7	0.0	2.0	0.0	1.0	0.8	0.0	0.0	0.5	0.3
22	LA14188C-28-3-1-4-1-2	0.9	2.5	1.7	0.0	2.5	0.0	1.0	0.9	0.0	0.1	2.0	1.1
23	LA14272C-20-1-1-3-1-1	4.1	1.0	2.6	0.0	2.0	0.0	1.0	0.8	0.0	0.2	1.0	0.6

ENTRY	DESIGNATION	Powdery	Powdery	Powdery	Leaf	Leaf	Leaf	Leaf	Leaf	Stripe	BYD	BYD	BYD
		Mildew	Mildew	Mildew	Rust	Rust	Rust	Rust	Rust	Rust	Reaction	Reaction	Reaction
		Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
		0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9
		SCF	VAW	MEAN	LAA	ILC	SCF	VAW	MEAN	LAA	SCF	VAW	MEAN
24	LA15203-LDH197	1.6	9.0	5.3	0.0	4.5	0.0	1.0	1.4	0.0	0.0	0.0	0.0
25	LA18003-NDH069	0.8	1.0	0.9	0.0	2.0	0.0	1.0	0.8	0.0	0.1	0.0	0.1
26	LA18003-NDH119	0.9	1.5	1.2	0.0	2.0	0.0	1.5	0.9	0.0	1.3	0.5	0.9
27	LA19333-NDH34	0.0	1.0	0.5	0.0	2.5	0.0	1.0	0.9	0.0	0.0	1.0	0.5
28	LAAR15172W-42-1-3-1-3	4.4	6.0	5.2	0.0	2.0	0.0	1.0	0.8	3.5	2.2	0.5	1.4
29	NC16VT30-7-47	0.7	1.0	0.9	0.0	3.0	0.0	1.0	1.0	4.0	0.1	1.0	0.6
30	NC14711-12	1.9	1.0	1.5	0.0	2.0	2.0	1.0	1.3	0.0	0.0	1.0	0.5
31	NC19-20130	3.2	2.0	2.6	0.0	3.5	0.0	1.5	1.3	5.0	1.1	1.0	1.1
32	NC20-21971	1.1	1.0	1.1	0.0	3.5	0.0	1.0	1.1	6.0	0.1	0.0	0.1
33	NC15949-22	0.0	1.5	0.8	0.0	3.5	0.0	1.0	1.1	5.0	0.6	0.0	0.3
34	SC19DH146-2	1.3	5.0	3.2	0.0	3.0	2.0	1.0	1.5	5.5	2.3	2.0	2.2
35	SC22W145	0.2	4.0	2.1	0.0	6.5	0.0	8.0	3.6	8.0	0.8	1.0	0.9
36	SC22W207	1.1	1.0	1.1	0.0	4.5	0.0	1.0	1.4	7.0	1.2	0.5	0.9
37	SCLA19418NDH-17	1.0	2.0	1.5	0.0	2.5	0.0	1.0	0.9	0.0	0.1	0.5	0.3
38	SC23W106	1.2	1.0	1.1	0.0	3.0	0.0	1.0	1.0	4.5	0.3	1.0	0.7
39	SC23W154	0.4	6.0	3.2	0.0	3.0	0.0	1.0	1.0	4.5	0.9	0.5	0.7
40	SC23W271	3.5	5.5	4.5	0.0	2.5	0.0	1.0	0.9	0.0	0.7	1.5	1.1
41	SC23W636	0.1	1.0	0.6	0.0	2.5	0.0	2.0	1.1	0.0	0.7	0.5	0.6
42	TX23D8034	6.3	8.5	7.4	0.0	3.5	0.0	1.0	1.1	3.0	0.4	1.5	1.0
43	TX23D8342	0.0	4.5	2.3	0.0	3.0	0.0	1.0	1.0	0.0	1.4	0.5	1.0
44	TX23D8423	4.0	8.5	6.3	0.0	4.0	0.0	8.5	3.1	4.5	2.5	1.0	1.8
45	TX23D8486	0.0	1.0	0.5	0.0	2.5	0.0	1.0	0.9	0.0	0.1	1.5	0.8
46	MDW-107	0.0	9.0	4.5	0.0	3.0	0.0	3.5	1.6	0.0	1.4	2.5	2.0
47	MD47-7	0.0	1.0	0.5	0.0	2.0	0.0	1.0	0.8	0.0	0.8	1.0	0.9
48	MD47-2	0.0	1.0	0.5	0.0	2.0	0.0	1.0	0.8	0.0	0.0	1.0	0.5

ENTRY	DESIGNATION	Powdery Mildew	Powdery Mildew	Powdery Mildew	Leaf Rust	Leaf Rust	Leaf Rust	Leaf Rust	Leaf Rust	Stripe Rust	BYD	BYD	BYD
		Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
		0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9	0-9
		SCF	VAW	MEAN	LAA	ILC	SCF	VAW	MEAN	LAA	SCF	VAW	MEAN
49	MD9-17	2.7	6.5	4.6	0.0	3.5	0.0	1.0	1.1	4.0	0.7	1.0	0.9
50	MD463-6	0.2	1.0	0.6	0.0	4.0	0.0	1.0	1.3	4.0	1.3	1.0	1.2
51	MD-195-7	0.0	1.5	0.8	0.0	3.0	0.0	1.0	1.0	4.0	1.0	0.5	0.8
52	VA21W-112	0.3	8.0	4.2	0.0	2.5	0.0	1.0	0.9	0.0	1.6	1.0	1.3
53	18VTK5-95	0.0	2.0	1.0	0.0	2.0	0.0	1.0	0.8	0.0	0.1	0.5	0.3
54	DH19SRW09-073	1.3	1.0	1.2	0.0	2.0	0.0	1.0	0.8	0.0	0.3	0.5	0.4
55	DH19SRW08-001	1.1	1.0	1.1	0.0	5.0	0.0	1.0	1.5	4.5	0.8	1.5	1.2
56	19VDH-FHB-MAS02-06	0.3	1.5	0.9	0.0	3.0	0.0	1.0	1.0	1.5	0.5	1.5	1.0
57	19VTK7-66	0.0	1.0	0.5	0.0	4.5	0.0	1.0	1.4	1.5	0.2	2.5	1.4
58	19VDH-FHB-MAS05-27	1.0	1.0	1.0	0.0	7.0	0.0	3.5	2.6	3.5	0.9	0.1	0.5
59	DH20SRW02-073	0.9	1.0	1.0	0.0	6.0	0.0	2.0	2.0	2.0	0.3	0.5	0.4
Mean		1.5	3.5		0.4	3.8	0.2	2.5		2.2	0.6	1.0	
CV%		69.4	68.4		338.0		383.6	52.3		119.1	135.6	78.5	
LSD (0.10)		1.8	4.8		1.8		1.1	2.6		2.3	1.4	1.5	
R-Square		0.6					0.4				0.3		

Hessian Fly Screening (Resistant - Susceptible Plants)

ENTRY	DESIGNATION	Bio B R-S	Bio C R-S	Bio D R-S	Bio O R-S	Bio L R-S	H13	HF_7D
1	ERNIE	0-10		0-9	0-12	0-11	non-H13	non-HF_7D
2	COKER9835	0-14		0-20	0-16	0-12	non-H13	non-HF_7D
3	BESS	0-17		0-18	0-17	0-19	non-H13	non-HF_7D
4	JAMESTOWN	15-0		17-0	0-17	0-15	non-H13	non-HF_7D
5	SS 8641	17-0		18-2	0-18	0-18	non-H13	non-HF_7D
6	15VDH-FHB-MAS22-14	0-17		0-23	0-15	0-15	non-H13	non-HF_7D
7	GA15577-3-10-2 -22LE38	14-0		0-18	0-18	0-13	non-H13	HF_7D
8	GA151450-13-6-9 -22LE29	0-16		0-14	0-19	0-18	non-H13	non-HF_7D
9	GA141028-13-3-4 -22LE25	17-0		18-0	18-0	14-3	H13_het	HF_7D_het
10	GA16349 ID-8-1-5 -22LE31	14-0		19-0	16-0	15-0	H13	HF_7D
11	GA151433-23-5-6 -22LE27	0-17		0-19	0-15	0-14	non-H13	non-HF_7D
12	GA131176 -24-6-7-6-8-22E8	0-20		0-18	0-18	0-20	non-H13	non-HF_7D
13	GA101153-3-G2-1-19-5 -22LE24F	0-17		0-19	0-18	0-19	non-H13	non-HF_7D
14	GA15560-5-4-1-5-22E18	18-0		19-0	20-0	16-0	H13	non-HF_7D
15	KWS501	0-16		0-21	0-18	0-18	non-H13	HF_7D
16	KWS527	0-14		0-21	0-18	0-21	non-H13	HF_7D
17	KWS534	0-16		0-22	0-17	0-17	non-H13	non-HF_7D
18	KWS542	0-16		0-19	0-18	0-14	non-H13	non-HF_7D
19	KWS543	0-19		0-18	0-20	0-16	non-H13	non-HF_7D
20	KWS553	15-0		0-20	0-19	0-18	non-H13	non-HF_7D
21	LA13176CB-15-1-3	17-0		18-0	0-19	0-19	non-H13	non-HF_7D
22	LA14188C-28-3-1-4-1-2	20-0		18-0	17-0	14-0	H13	non-HF_7D
23	LA14272C-20-1-1-3-1-1	21-0		20-0	18-0	19-0	H13	non-HF_7D
24	LA15203-LDH197	19-0		18-0	0-17	0-19	non-H13	HF_7D
25	LA18003-NDH069	0-18		0-19	0-15	0-18	non-H13	HF_7D
26	LA18003-NDH119	15-0		0-19	0-19	0-19	non-H13	HF_7D
27	LA19333-NDH34	0-15		0-19	0-16	0-16	non-H13	HF_7D_het
28	LAAR15172W-42-1-3-1-3	17-0		0-22	0-16	0-18	non-H13	non-HF_7D
29	NC16VT30-7-47	18-0		18-0	17-0	20-0	H13_het	non-HF_7D
30	NC14711-12	17-0		20-0	15-0	19-0	H13	non-HF_7D
31	NC19-20130	19-0		19-0	18-0	19-0	H13_het	non-HF_7D
32	NC20-21971	18-0		17-2	19-0	19-0	H13_het	non-HF_7D
33	NC15949-22	19-0		20-0	22-0	18-0	H13	non-HF_7D
34	SC19DH146-2	20-0		0-18	0-17	0-20	non-H13	non-HF_7D
35	SC22W145	0-17		0-21	0-16	0-17	non-H13	non-HF_7D
36	SC22W207	17-0		23-0	18-0	18-0	H13	non-HF_7D
37	SCLA19418NDH-17	14-0		17-3	16-2	10-4	non-H13	HF_7D_het
38	SC23W106	16-0		18-0	16-0	15-0	H13	HF_7D
39	SC23W154	12-0		4-12	4-17	5-14	non-H13	non-HF_7D
40	SC23W271	17-0		0-18	0-19	0-19	non-H13	non-HF_7D
41	SC23W636	0-15		0-13	0-16	0-19	non-H13	HF_7D_het
42	TX23D8034	0-20		0-17	0-15	0-17	non-H13	non-HF_7D
43	TX23D8342	12-0		19-0	17-0	18-0	H13	non-HF_7D

ENTRY	DESIGNATION	Bio B R-S	Bio C R-S	Bio D R-S	Bio O R-S	Bio L R-S	H13	HF_7D
44	TX23D8423	16-0		13-0	17-0	23-0	H13	non-HF_7D
45	TX23D8486	19-0		17-0	17-0	17-0	H13	non-HF_7D
46	MDW-107	5-12		4-10	3-16	6-7	non-H13	non-HF_7D
47	MD47-7	16-0		14-0	17-0	18-0	H13_het	non-HF_7D
48	MD47-2	16-1		0-17	0-19	0-17	non-H13	non-HF_7D
49	MD9-17	15-0		12-0	18-0	14-0	H13	non-HF_7D
50	MD463-6	13-0		0-11	17-0	0-13	non-H13	non-HF_7D
51	MD-195-7	0-17		0-18	0-18	0-15	non-H13	non-HF_7D
52	VA21W-112	6-0		3-0	4-0	3-0	H13	non-HF_7D
53	18VTK5-95	0-18		0-17	0-16	0-11	non-H13	non-HF_7D
54	DH19SRW09-073	14-0		17-0	12-0	14-0	H13	non-HF_7D
55	DH19SRW08-001	0-10		0-11	0-9	0-7	non-H13	non-HF_7D
56	19VDH-FHB-MAS02-06	15-0		14-0	16-0	17-0	H13	non-HF_7D
57	19VTK7-66	5-0		10-0	1-0	6-0	H13	non-HF_7D
58	19VDH-FHB-MAS05-27	14-0		12-0	16-0	12-0	H13	non-HF_7D
59	DH20SRW02-073	0-3		0-5	0-4	0-3	non-H13	non-HF_7D

Means Across Locations 2024

ENTRY	DESIGNATION	FHB 0-9 RAT	Rank	FHB INC	Rank	FHB SEV	Rank	FDK	Rank	DON	Rank	Head Date
1	ERNIE	2.8	24	80	48	39.7	33	17.3	12	2.4	4	110
2	COKER9835	6.3	58	85	54	75.9	58	38.5	46	6.9	39	113
3	BESS	2.3	14	63	13	29.4	21	15.8	6	3.3	13	114
4	JAMESTOWN	3.1	30	78	44	38.5	32	16.0	7	4.3	27	107
5	SS 8641	6.2	57	93	58	82.5	59	47.4	56	11.3	58	111
6	15VDH-FHB-MAS22-14	2.2	13	75	39	27.8	19	14.5	5	3.1	15	110
7	GA15577-3-10-2 -22LE38	3.7	39	53	2	35.0	29	25.1	32	4.4	22	111
8	GA151450-13-6-9 -22LE29	5.6	56	66	23	72.5	56	52.0	59	15.0	59	114
9	GA141028-13-3-4 -22LE25	5.5	55	79	45	72.5	56	45.9	53	12.5	56	115
10	GA16349 ID-8-1-5 -22LE31	5.0	53	74	37	75.0	57	50.6	58	14.1	57	116
11	GA151433-23-5-6 -22LE27	5.0	52	84	52	70.0	54	44.1	52	11.0	52	115
12	GA131176 -24-6-7-6-8-22E8	4.8	47	74	37	45.0	42	29.7	37	7.6	37	111
13	GA101153-3-G2-1-19-5 -22LE24F	4.0	42	76	41	47.5	44	16.7	9	5.2	31	113
14	GA15560-5-4-1-5-22E18	5.5	54	74	33	65.0	52	39.6	48	9.8	55	113
15	KWS501	1.8	3	60	11	22.0	10	28.0	34	5.6	28	116
16	KWS527	1.8	6	59	9	16.0	1	19.5	21	3.9	23	116
17	KWS534	1.8	4	74	33	29.5	22	16.0	8	5.8	38	115
18	KWS542	1.2	1	64	15	18.5	4	22.4	28	5.4	26	115
19	KWS543	2.4	17	76	41	35.0	29	18.0	13	5.5	20	115
20	KWS553	1.8	7	59	9	18.5	4	21.4	26	6.3	33	116
21	LA13176CB-15-1-3	4.5	46	80	47	50.0	46	33.8	43	6.3	35	113
22	LA14188C-28-3-1-4-1-2	3.5	37	64	15	32.5	26	18.9	17	1.9	1	109
23	LA14272C-20-1-1-3-1-1	4.0	43	86	56	52.5	47	29.0	36	5.0	30	112
24	LA15203-LDH197	4.2	44	69	25	23.0	13	19.0	18	3.5	10	109
25	LA18003-NDH069	2.5	19	49	1	22.0	10	17.2	11	6.8	43	117
26	LA18003-NDH119	2.2	11	61	12	18.5	4	19.0	19	3.3	3	113
27	LA19333-NDH34	4.3	45	59	6	40.0	36	18.5	16	4.3	21	113
28	LAAR15172W-42-1-3-1-3	2.6	22	64	19	22.0	10	18.4	15	3.4	6	111
29	NC16VT30-7-47	3.3	33	85	55	28.8	20	21.4	25	6.0	40	113
30	NC14711-12	2.6	21	59	6	25.5	17	18.1	14	3.3	7	112
31	NC19-20130	3.4	35	81	50	35.0	29	21.8	27	3.9	19	113
32	NC20-21971	4.8	49	89	57	45.0	42	20.9	24	6.5	45	113
33	NC15949-22	2.4	15	64	19	23.0	13	13.1	3	3.2	12	113
34	SC19DH146-2	2.2	12	59	6	17.0	2	9.0	1	2.6	5	112
35	SC22W145	2.7	23	64	19	21.0	7	19.2	20	2.0	2	110
36	SC22W207	3.3	32	84	53	30.5	25	23.4	30	4.6	32	114
37	SCLA19418NDH-17	2.2	11	54	4	23.5	15	14.4	4	3.5	14	110
38	SC23W106	2.1	9	64	19	22.0	10	20.0	22	5.0	29	115

ENTRY	DESIGNATION	FHB 0-9 RAT	Rank	FHB INC	Rank	FHB SEV	Rank	FDK	Rank	DON	Rank	Head Date
39	SC23W154	3.5	36	69	25	24.5	16	12.6	2	3.5	11	110
40	SC23W271	3.0	26	64	15	38.0	31	20.4	23	3.4	8	114
41	SC23W636	2.5	20	71	29	23.5	15	16.9	10	4.3	18	113
42	TX23D8034	5.0	51	71	29	60.0	50	38.1	44	9.2	41	112
43	TX23D8342	5.0	50	74	37	57.5	48	31.9	41	3.9	16	109
44	TX23D8423	6.8	59	79	46	65.0	52	42.0	51	5.4	24	108
45	TX23D8486	3.3	34	81	50	45.0	42	23.5	31	3.6	9	113
46	MDW-107	3.7	38	73	31	48.4	45	38.7	47	5.5	25	111
47	MD47-7	4.0	41	76	43	60.0	50	28.8	35	4.7	17	111
48	MD47-2	3.9	40	98	59	40.0	36	49.0	57	9.7	44	114
49	MD9-17	1.8	5	59	9	27.0	18	26.6	33	7.5	46	119
50	MD463-6	3.1	28	66	22	40.0	36	46.4	54	7.1	34	117
51	MD-195-7	3.1	30	76	43	40.0	36	31.1	40	11.8	50	115
52	VA21W-112	4.8	48	81	51	70.0	54	47.2	55	11.6	49	116
53	18VTK5-95	3.0	27	66	22	42.5	39	30.8	39	9.7	53	116
54	DH19SRW09-073	2.4	17	54	3	30.0	24	33.3	42	6.3	42	118
55	DH19SRW08-001	3.2	31	74	37	40.0	36	41.3	50	9.8	54	117
56	19VDH-FHB-MAS02-06	1.7	2	74	33	30.0	24	22.6	29	6.4	36	118
57	19VTK7-66	2.4	18	71	29	35.0	29	30.3	38	8.3	47	117
58	19VDH-FHB-MAS05-27	2.0	8	71	29	45.0	42	40.5	49	9.1	48	117
59	DH20SRW02-073	2.9	25	69	25	21.0	7	38.3	45	11.6	51	117
Mean		3.4		71.1		39.5		27.5		6.3		113.4
CV%		35.4				39.5		45.1		58.9		2.0
LSD (0.05)		1.5				31.2		14.0		4.2		2.8
R-Square		0.78				0.73		0.74		0.64		0.98
Correl w/ GEBV		0.69				0.68		0.68		0.48		

Cross Predictions

FHB 0-9 Rating

Means and Variances of Genotypic Estimated Breeding Values for RAT of progenies from selected crosses between entries in the 2022-23 and 2023-24 nurseries, plus the means for the 10% most resistant progeny in each cross.

Parent 1	Year in Nursery	Parent 2	Year in Nursery	Rating		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
BESS	USF23	15VDH-FHB-MAS22-14	USF23	2.1	0.08	1.6
ERNIE	USF23	15VDH-FHB-MAS22-14	USF23	2.1	0.06	1.7
BESS	USF23	SCLA19418NDH-17	USF24	2.3	0.07	1.8
JAMESTOWN	USF23	15VDH-FHB-MAS22-14	USF23	2.4	0.10	1.8
ERNIE	USF23	SC22W416	USF23	2.3	0.08	1.9
ERNIE	USF23	SCLA19418NDH-17	USF24	2.2	0.05	1.9
15VDH-FHB-MAS22-14	USF23	NC13217-W2111	USF23	2.3	0.07	1.9
15VDH-FHB-MAS22-14	USF23	SC22W416	USF23	2.3	0.07	1.9
15VDH-FHB-MAS22-14	USF23	SCLA19418NDH-17	USF24	2.2	0.05	1.9
15VDH-FHB-MAS22-14	USF23	UMD-21-MDX10	USF23	2.4	0.10	1.9
BESS	USF23	SC22W416	USF23	2.4	0.08	1.9
15VDH-FHB-MAS22-14	USF23	SC19DH146-2	USF24	2.4	0.10	1.9
ERNIE	USF23	UMD-21-MDX10	USF23	2.4	0.10	1.9
15VDH-FHB-MAS22-14	USF23	SC23W636	USF24	2.4	0.08	1.9
15VDH-FHB-MAS22-14	USF23	SC22W145	USF23	2.4	0.08	2.0
ERNIE	USF23	SC22W145	USF23	2.4	0.07	2.0
BESS	USF23	NC13217-W2111	USF23	2.4	0.05	2.0
ERNIE	USF23	SC19DH146-2	USF24	2.4	0.07	2.0
ERNIE	USF23	NC13217-W2111	USF23	2.3	0.04	2.0
BESS	USF23	UMD-21-MDX10	USF23	2.5	0.08	2.0
BESS	USF23	18VTK12-111	USF23	2.5	0.07	2.0
BESS	USF23	SC22W145	USF23	2.5	0.07	2.0
BESS	USF23	18VDH-FHB-MAS07-173-03	USF23	2.5	0.10	2.0
BESS	USF23	SC23W636	USF24	2.4	0.06	2.0
15VDH-FHB-MAS22-14	USF23	UMD-1-9-20	USF23	2.5	0.07	2.0
15VDH-FHB-MAS22-14	USF23	18VTK12-111	USF23	2.4	0.06	2.0
ERNIE	USF23	SC23W636	USF24	2.4	0.05	2.0
BESS	USF23	MD9-17	USF24	2.5	0.07	2.0
15VDH-FHB-MAS22-14	USF23	17VDH-SRW02-125	USF23	2.5	0.08	2.0
15VDH-FHB-MAS22-14	USF23	LA18003-NDH119	USF24	2.5	0.06	2.0
BESS	USF23	LA18003-NDH119	USF24	2.5	0.07	2.0

Parent 1	Year in Nursery	Parent 2	Year in Nursery	Rating		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
15VDH-FHB-MAS22-14	USF23	NC14706-25	USF23	2.6	0.10	2.0
ERNIE	USF23	18VTK12-111	USF23	2.4	0.05	2.0
ERNIE	USF23	MD9-17	USF24	2.5	0.06	2.0
BESS	USF23	SC19DH146-2	USF24	2.5	0.06	2.0
15VDH-FHB-MAS22-14	USF23	NC19-20002	USF23	2.6	0.10	2.0
ERNIE	USF23	17VDH-SRW02-125	USF23	2.5	0.07	2.0
15VDH-FHB-MAS22-14	USF23	NC15949-22	USF24	2.5	0.08	2.0
BESS	USF23	DH19SRW08-001	USF24	2.5	0.07	2.1
15VDH-FHB-MAS22-14	USF23	18VTK10-23	USF23	2.6	0.09	2.1
ERNIE	USF23	UMD-1-9-20	USF23	2.5	0.05	2.1
ERNIE	USF23	18VDH-FHB-MAS07-173-03	USF23	2.5	0.06	2.1
ERNIE	USF23	LA18003-NDH119	USF24	2.5	0.05	2.1
15VDH-FHB-MAS22-14	USF23	LAAR15172W-42-1-3-1-3	USF23	2.6	0.10	2.1
15VDH-FHB-MAS22-14	USF23	LA15203-LDH197	USF24	2.7	0.11	2.1
15VDH-FHB-MAS22-14	USF23	DH19SRW08-001	USF24	2.5	0.05	2.1
ERNIE	USF23	NC14711-12	USF23	2.5	0.07	2.1
15VDH-FHB-MAS22-14	USF23	NC14711-12	USF23	2.5	0.07	2.1
NC13217-W2111	USF23	SCLA19418NDH-17	USF24	2.5	0.05	2.1

Severity

Means and Variances of Genotypic Estimated Breeding Values for Severity of progenies from selected crosses between entries in the 2022-23 and 2023-24 nurseries, plus the means for the 10 % most resistant progeny in each cross.

Parent 1	Year in Nursery	Parent 2	Year in Nursery	Severity		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
BESS	USF23	15VDH-FHB-MAS22-14	USF23	22.1	18.2	14.7
15VDH-FHB-MAS22-14	USF23	SC22W145	USF23	22.6	19.4	14.9
BESS	USF23	SC22W145	USF23	22.5	18.7	14.9
BESS	USF23	SC23W636	USF24	22.5	14.9	15.8
15VDH-FHB-MAS22-14	USF23	UMD-21-MDW73	USF23	23.4	19.1	15.9
BESS	USF23	NC15949-22	USF24	24.0	20.1	16.2
BESS	USF23	UMD-21-MDW73	USF23	23.4	17.0	16.3
15VDH-FHB-MAS22-14	USF23	UMD-21-MDX10	USF23	24.5	22.8	16.3
BESS	USF23	UMD-21-MDX10	USF23	24.5	21.7	16.4
SC22W145	USF23	SC23W636	USF24	23.1	14.3	16.5
15VDH-FHB-MAS22-14	USF23	SC23W636	USF24	22.6	12.4	16.5
BESS	USF23	SCLA18WF0708-4-1	USF23	24.3	19.5	16.6
15VDH-FHB-MAS22-14	USF23	NC15949-22	USF24	24.0	18.7	16.6
UMD-21-MDW73	USF23	SC23W636	USF24	23.9	17.4	16.7
NC16VT30-7-47	USF23	SC22W145	USF23	24.2	18.2	16.8
15VDH-FHB-MAS22-14	USF23	SCLA18WF0708-4-1	USF23	24.3	18.7	16.8
ERNIE	USF23	SC22W145	USF23	24.8	21.1	16.9
15VDH-FHB-MAS22-14	USF23	19VTK7-66	USF24	25.6	25.7	17.0
15VDH-FHB-MAS22-14	USF23	LA15203-LDH197	USF24	25.9	25.5	17.1
SC22W145	USF23	UMD-21-MDW73	USF23	24.0	15.5	17.1
BESS	USF23	SCLA19418NDH-17	USF24	24.0	15.3	17.2
SC22W145	USF23	SCLA19418NDH-17	USF24	24.6	17.3	17.4
JAMESTOWN	USF23	15VDH-FHB-MAS22-14	USF23	24.7	17.1	17.5
ERNIE	USF23	15VDH-FHB-MAS22-14	USF23	24.4	15.8	17.6
15VDH-FHB-MAS22-14	USF23	18VTK10-23	USF23	26.2	25.4	17.6
JAMESTOWN	USF23	SC22W145	USF23	25.1	18.7	17.6
SC22W145	USF23	UMD-21-MDX10	USF23	25.1	17.9	17.7

Parent 1	Year in Nursery	Parent 2	Year in Nursery	Severity		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
BESS	USF23	19VTK7-66	USF24	25.6	19.4	17.9
NC15949-22	USF24	SC23W636	USF24	24.5	14.1	18.0
BESS	USF23	18VTK10-23	USF23	26.2	21.9	18.1
SC22W145	USF23	SCLA18WF0708-4-1	USF23	24.8	14.8	18.2
BESS	USF23	LA15203-LDH197	USF24	25.9	19.7	18.2
NC16VT30-7-47	USF23	NC15949-22	USF24	25.6	18.2	18.2
UMD-21-MDW73	USF23	SCLA19418NDH-17	USF24	25.4	16.8	18.2
NC16VT30-7-47	USF23	SC23W636	USF24	24.2	11.2	18.3
BESS	USF23	SC22W207	USF24	24.9	13.9	18.3
UMD-21-MDX10	USF23	SC23W636	USF24	25.1	14.8	18.3
15VDH-FHB-MAS22-14	USF23	SC22W416	USF23	24.4	12.4	18.3
NC16VT30-7-47	USF23	UMD-21-MDW73	USF23	25.1	15.1	18.4
BESS	USF23	JAMESTOWN	USF23	24.5	12.3	18.4
ERNIE	USF23	SC23W636	USF24	24.8	13.5	18.4
NC16VT30-7-47	USF23	SCLA18WF0708-4-1	USF23	25.9	18.8	18.4
SC22W145	USF23	SC22W207	USF24	25.6	16.8	18.4
SCLA18WF0708-4-1	USF23	SC23W636	USF24	24.9	14.1	18.4
BESS	USF23	NC16VT30-7-47	USF23	23.7	8.8	18.5
15VDH-FHB-MAS22-14	USF23	17VDH-SRW05-169	USF23	25.8	18.1	18.5
ERNIE	USF23	NC15949-22	USF24	26.3	20.2	18.5
BESS	USF23	SC22W416	USF23	24.4	11.8	18.5
SC22W145	USF23	SC22W416	USF23	25.0	13.9	18.6
SC22W416	USF23	UMD-21-MDW73	USF23	25.9	17.5	18.6

FDK

Means and Variances of Genotypic Estimated Breeding Values for FDK of progenies from selected crosses between entries in the 2022-23 and 2023-24 nurseries, plus the means for the 10% most resistant progeny in each cross.

Parent 1	Year in Nursery	Parent 2	Year in Nursery	FDK		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
BESS	USF23	SCLA19418NDH-17	USF24	16.8	11.2	11.0
BESS	USF23	18VTK12-111	USF23	17.5	12.7	11.3
BESS	USF23	15VDH-FHB-MAS22-14	USF23	17.7	12.8	11.4
BESS	USF23	SC22W416	USF23	17.9	12.7	11.7
BESS	USF23	NC14711-12	USF23	17.8	10.9	12.1
18VTK12-111	USF23	SCLA19418NDH-17	USF24	17.8	10.4	12.2
BESS	USF23	UMD-1-9-33	USF23	18.7	13.5	12.3
BESS	USF23	MD9-17	USF24	18.7	12.6	12.5
BESS	USF23	NC15949-22	USF24	18.5	10.8	12.7
BESS	USF23	SC22W145	USF23	19.0	12.5	12.8
NC14711-12	USF23	SCLA19418NDH-17	USF24	18.2	8.8	13.0
SC22W416	USF23	18VTK12-111	USF23	19.0	11.6	13.0
BESS	USF23	NC19-19942	USF23	18.9	10.5	13.3
15VDH-FHB-MAS22-14	USF23	NC14711-12	USF23	19.0	9.7	13.5
ERNIE	USF23	SCLA19418NDH-17	USF24	18.9	9.1	13.6
15VDH-FHB-MAS22-14	USF23	18VTK12-111	USF23	18.7	7.7	13.9
BESS	USF23	17VDH-SRW02-125	USF23	20.1	12.7	13.9
BESS	USF23	SC19DH146-2	USF24	20.2	13.6	13.9
15VDH-FHB-MAS22-14	USF23	SCLA19418NDH-17	USF24	18.0	5.6	13.9
BESS	USF23	NC13217-W2111	USF23	20.4	13.6	13.9
15VDH-FHB-MAS22-14	USF23	SC22W416	USF23	19.1	9.0	13.9
18VTK12-111	USF23	NC15949-22	USF24	19.4	10.1	13.9
NC14711-12	USF23	SC22W416	USF23	19.3	9.2	14.0
BESS	USF23	18VDH-FHB-MAS07-173-03	USF23	21.2	16.7	14.1
SCLA19418NDH-17	USF24	MD9-17	USF24	19.0	7.9	14.1
18VTK12-111	USF23	MD9-17	USF24	19.6	10.2	14.1
ERNIE	USF23	SC22W416	USF23	19.9	10.8	14.1
BESS	USF23	SC22W207	USF24	19.3	8.4	14.2
NC15949-22	USF24	SCLA19418NDH-17	USF24	18.8	7.1	14.2
NC19-19942	USF23	18VTK12-111	USF23	20.0	11.4	14.2
SC22W145	USF23	18VTK12-111	USF23	20.1	11.4	14.2

Parent 1	Year in Nursery	Parent 2	Year in Nursery	FDK		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
BESS	USF23	LA14188C-28-3-1-4-1-2	USF23	20.9	15.0	14.3
JAMESTOWN	USF23	SCLA19418NDH-17	USF24	19.6	9.5	14.3
NC19-19942	USF23	SCLA19418NDH-17	USF24	19.4	8.2	14.4
15VDH-FHB-MAS22-14	USF23	NC19-19942	USF23	20.1	10.8	14.4
15VDH-FHB-MAS22-14	USF23	NC15949-22	USF24	19.6	8.8	14.4
ERNIE	USF23	15VDH-FHB-MAS22-14	USF23	19.7	9.3	14.4
JAMESTOWN	USF23	15VDH-FHB-MAS22-14	USF23	20.5	12.2	14.4
UMD-1-9-33	USF23	18VTK12-111	USF23	19.8	9.5	14.4
BESS	USF23	SC22W198	USF23	20.9	13.9	14.5
SC22W416	USF23	SCLA19418NDH-17	USF24	18.3	5.0	14.5
SC22W416	USF23	MD9-17	USF24	20.2	10.6	14.5
ERNIE	USF23	18VTK12-111	USF23	19.5	8.5	14.5
SC22W207	USF24	SCLA19418NDH-17	USF24	19.5	8.2	14.5
BESS	USF23	18VTK10-23	USF23	21.0	13.9	14.6
NC14711-12	USF23	18VTK12-111	USF23	18.9	6.2	14.6
UMD-1-9-33	USF23	SCLA19418NDH-17	USF24	19.1	6.7	14.6
ERNIE	USF23	NC14711-12	USF23	19.8	8.5	14.6
BESS	USF23	18VTK5-95	USF24	20.3	10.6	14.7
BESS	USF23	UMD-21-MDX10	USF23	20.5	11.4	14.7
NC14711-12	USF23	NC15949-22	USF24	19.8	8.8	14.7
SC22W145	USF23	SCLA19418NDH-17	USF24	19.4	7.3	14.7

DON

Means and Variances of Genotypic Estimated Breeding Values for DON of progenies from selected crosses between entries in the 2022-23 and 2023-24 nurseries, plus the means for the 10% most resistant progeny in each cross.

Parent 1	Year in Nursery	Parent 2	Year in Nursery	DON (ppm)		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
UMD-1-9-33	USF23	SC22W207	USF24	5.7	2.1	3.2
UMD-1-9-33	USF23	18VTK5-95	USF24	5.9	2.4	3.2
NC14711-12	USF23	UMD-1-9-33	USF23	5.5	1.7	3.2
SC22W145	USF23	UMD-1-9-33	USF23	5.5	1.6	3.3
UMD-1-9-33	USF23	SC23W106	USF24	5.8	1.9	3.4
UMD-1-9-33	USF23	UMD-21-MDW73	USF23	6.0	2.2	3.4
SC22W207	USF24	18VTK5-95	USF24	6.4	2.8	3.5
15VDH-FHB-MAS22-14	USF23	UMD-1-9-33	USF23	6.0	2.1	3.5
SC22W416	USF23	UMD-1-9-33	USF23	5.6	1.4	3.5
SC22W416	USF23	SC22W207	USF24	6.2	2.4	3.5
ERNIE	USF23	UMD-1-9-33	USF23	6.3	2.5	3.6
UMD-1-9-33	USF23	UMD-21-MDX10	USF23	6.7	3.2	3.6
VT-NC-D-33	USF23	UMD-1-9-33	USF23	5.9	1.8	3.6
SC22W145	USF23	SC22W416	USF23	6.0	1.9	3.6
SC22W416	USF23	18VTK5-95	USF24	6.4	2.6	3.7
SC22W207	USF24	SC23W106	USF24	6.3	2.2	3.7
UMD-1-9-33	USF23	SCLA19418NDH-17	USF24	6.1	1.9	3.7
15VDH-FHB-MAS22-14	USF23	SC22W416	USF23	6.6	2.7	3.7
NC14711-12	USF23	SC22W416	USF23	6.0	1.8	3.7
VT-NC-D-33	USF23	SC22W416	USF23	6.4	2.4	3.7
MD9-17	USF24	18VTK5-95	USF24	6.5	2.6	3.7
NC14711-12	USF23	18VTK5-95	USF24	6.3	2.2	3.7
UMD-1-9-33	USF23	18VTK10-23	USF23	6.6	2.6	3.8
UMD-1-9-33	USF23	LA18003-NDH119	USF24	7.0	3.5	3.8
SC22W207	USF24	MD9-17	USF24	6.2	1.9	3.8
NC14711-12	USF23	MD9-17	USF24	6.1	1.7	3.8
SC22W416	USF23	MD9-17	USF24	6.2	1.9	3.8
SC22W205	USF23	UMD-1-9-33	USF23	6.4	2.3	3.8
15VDH-FHB-MAS22-14	USF23	18VTK5-95	USF24	6.9	3.0	3.9
NC14711-12	USF23	SC22W145	USF23	5.9	1.4	3.9
UMD-21-MDW73	USF23	MD9-17	USF24	6.5	2.3	3.9
15VDH-FHB-MAS22-14	USF23	SC23W106	USF24	6.7	2.7	3.9
NC14711-12	USF23	SC22W207	USF24	6.1	1.6	3.9

Parent 1	Year in Nursery	Parent 2	Year in Nursery	DON (ppm)		
				Genotype Estimated Breeding Values of Cross Progenies		
				Mean	Variance	Mean lowest 10%
VT-NC-D-33	USF23	SC23W106	USF24	6.6	2.5	3.9
SC22W145	USF23	18VTK5-95	USF24	6.3	2.0	3.9
SC23W106	USF24	18VTK5-95	USF24	6.6	2.4	3.9
JAMESTOWN	USF23	UMD-1-9-33	USF23	6.2	1.8	3.9
SC22W145	USF23	SC23W106	USF24	6.2	1.7	3.9
BESS	USF23	UMD-1-9-33	USF23	6.5	2.4	3.9
UMD-1-9-33	USF23	18VTK12-111	USF23	6.8	2.8	3.9
UMD-1-9-33	USF23	NC15949-22	USF24	6.4	2.1	3.9
VT-NC-D-33	USF23	18VTK5-95	USF24	6.7	2.6	3.9
NC13217-W2111	USF23	UMD-1-9-33	USF23	6.2	1.8	3.9
UMD-1-9-33	USF23	19VDH-FHB-MAS02-06	USF24	6.1	1.6	3.9
15VDH-FHB-MAS22-14	USF23	NC14711-12	USF23	6.4	2.0	4.0
SC22W416	USF23	UMD-21-MDW73	USF23	6.5	2.1	4.0
UMD-1-9-33	USF23	NC19-20130	USF24	7.2	3.5	4.0
ERNIE	USF23	MD9-17	USF24	6.9	2.9	4.0
NC14711-12	USF23	SC23W106	USF24	6.2	1.6	4.0
SC22W145	USF23	SC22W207	USF24	6.1	1.5	4.0
SC22W145	USF23	MD9-17	USF24	6.1	1.4	4.0
NC14711-12	USF23	VT-NC-D-33	USF23	6.4	1.8	4.0
SC23W106	USF24	MD9-17	USF24	6.3	1.8	4.0