SOUTHERN UNIFORM WINTER WHEAT SCAB NURSERY

2023 NURSERY REPORT

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LOCATION NOTES

Florence, South Carolina,
- Cooperator: Rick Boyles
- Clemson University

Plains, Georgia
- Cooperator: Mohamed Mergoum.
- University of Georgia.

Winnsboro and Alexandria, Louisiana.
- Cooperator: Stephen Harrison.
- Louisiana State University

Fayetteville, Arkansas
- Cooperator: Eshan Shakiba.
- University of Arkansas.

Raleigh, North Carolina
- Cooperator: Paul Murphy
- North Carolina State University

Clarksville, Maryland
- Cooperator: Vijay Tiwari
- University of Maryland

College Station, TX
- Cooperator: Amir Ibrahim
- Texas A&M

West Lafayette, Indiana
- Cooperator: Sue Cambron
  USDA-ARS. Crop Production and Pest Control Research

Warsaw, Virginia
- Cooperator: Nicholas Santantonio.
- Virginia Tech.

Champaign, Illinois
- Cooperator: Jana Murche
- KWS Cereals USA.

Urbana, Illinois
- Cooperator: Jessica Rutkoski.
- University of Illinois.

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

Raleigh, North Carolina
- Cooperator: Gina Brown-Guedira.
- USDA-ARS Eastern Regional Small Grains Genotyping Lab

Entry List and Pedigrees, 2023 Nursery

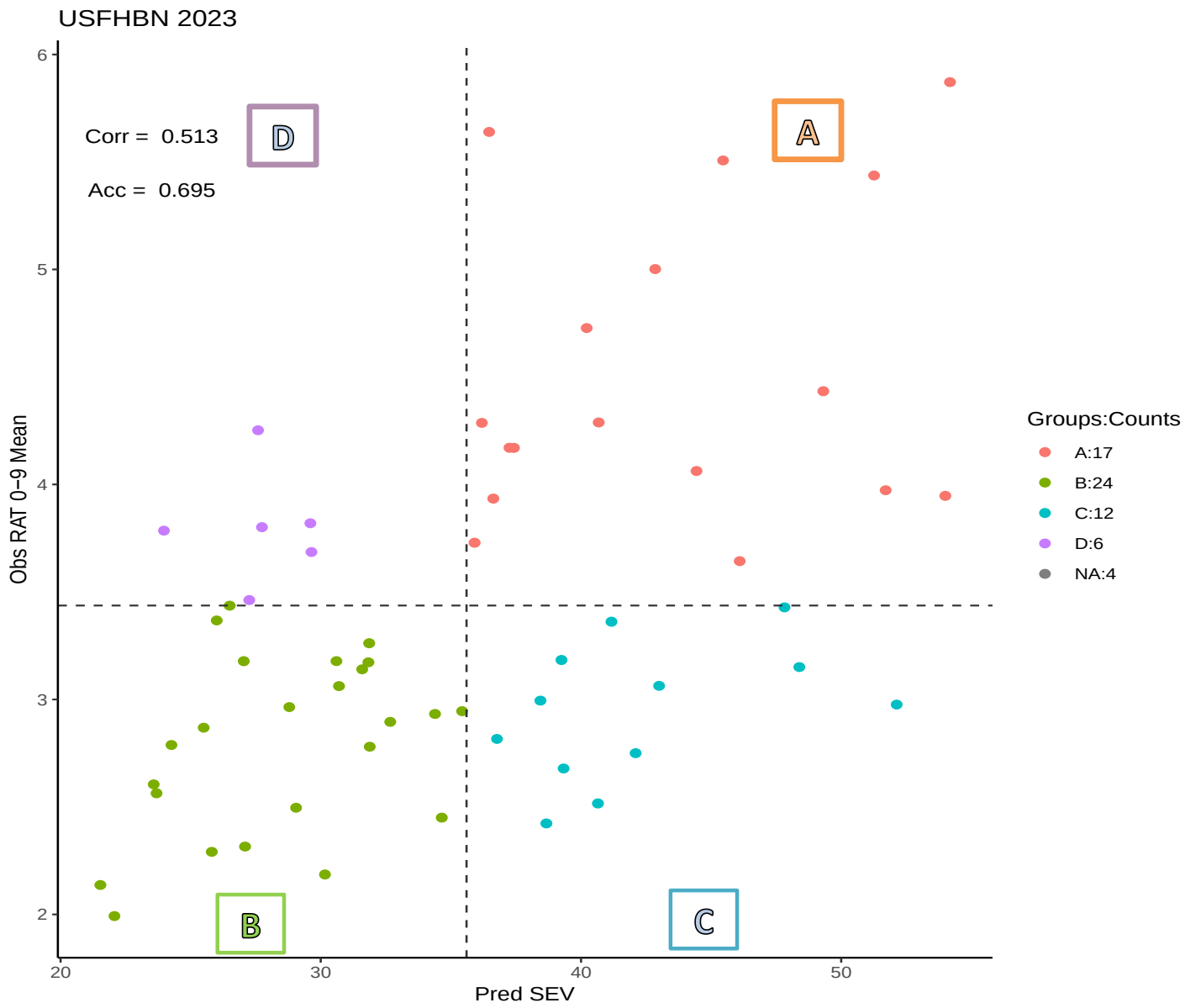
ENTRY NO	CULTIVAR/ DESIGNATION	*PEDIGREE*	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	*Check*	CHECK(RES)	1999-00
2	COKER9835	*Check*	CHECK(SUS)	2000-01
3	BESS	*MO11769/Madison*	CHECK(RES)	2006-07
4	JAMESTOWN	*Roane / Pioneer 2691*	CHECK(RES)	2007-08
5	SS 8641	*881130/2*881582 (formally GA96229-3A4)*	CHECK(SUS)	2018-19
6	15VDH-FHB-MAS22-14	*MD08-26-H2-7-12-9 [SS8641//McCormick*2/ Ning7840] / Featherstone 73 (VA09W-73) // USG 3118"S" (VA12W-54)*	CHECK(RES)	2020-21
7	GA12099-7-2-6-6-21LE35	*GA031238-10LE33/GA031134-10E29*	Mergoum	2022-23
8	GA12213-10-7-21LE24	*GA04510-11LE34/GA081607-G1-G1-1 (991227-6A33 *4 / SS8641)*	Mergoum	2022-23
9	GA131246LDH-86-21E2	*GA04151-11E26 / USG 3120 // GA041323-11E63*	Mergoum	2022-23
10	GA141045-9-3-2-21LE7	*GA06374-9-4-2 /AGS2033 // JT172*	Mergoum	2022-23
11	GA141556-5-1-21LE22	*HILLIARD / JT 172*	Mergoum	2022-23
12	GA15036 ID-13-21E22	*AGS 3000/AGS 3030 (14E45)-14E45//JT 020-14E47*	Mergoum	2022-23
13	GA15340 ID-3-2-21LE29	*PIO 26R53/AGS 2033//GA061086-14LE23*	Mergoum	2022-23
14	GA15490 ID-19-5-21LE2	*GA071368-1-12-2-4 / AGS 2024 / / 05450-28-1*	Mergoum	2022-23
15	GA17634DH-08-21E36	*GA081446-15E47/ MD09W272-8-4-14-8*	Mergoum	2022-23
16	GANC12915-167-21E3	*GA041293-11LE37/VA11W278*	Mergoum	2022-23
17	KWS369	*LCS19229 / VA12FHB-8*	KWS	2021-22
18	KWS382	*Starburst / KWS051*	KWS	2022-23
19	KWS456	*KWS095 / VA11W-106*	KWS	2022-23
20	KWS459	*KWS078 / VA11W-106*	KWS	2022-23
21	KWS460	*KWS126 / MD04W249-11-7*	KWS	2022-23
22	LA13176CB-6-2	*MD08-26-H2-7-12-21/LA12001, F1(AGS 2060/P26R94)*	Harrison	2022-23
23	LA14188C-28-3-1-4-1-2	*LA13175, F1(MD08-26-H2-7-12-21/LA05102C-8-8) / VA11W-278*	Harrison	2022-23
24	LA15099GBW-7-1-3	*NC11-22289 / LA06146E-P4*	Harrison	2022-23
25	LAAR15166W-30-1-3	*AR06024-7-2/AR05079-2-2*	Harrison	2022-23
26	LAAR15172W-42-1-3-1-3	*AR06024-7-2/AR06066-3-2*	Harrison	2022-23
27	LANC15040LDH-53	*MD09W272-8-4-13-3-15 / NC14-23372*	Harrison	2022-23
28	NC13217-W2111	*Hilliard /MD07026-12-30*	Murphy	2022-23
29	NC14706-25	*NC13-20076 / Hilliard*	Murphy	2022-23
30	NC14711-12	*VA11W-279 / NC13-20076*	Murphy	2022-23
31	NC16VT30-7-47	*NC8248-14 / VA12W-54 // MDC07026-F2-19-13-1*	Murphy	2022-23
32	NC19-19921	*NC09-20768 / NC11-22289*	Murphy	2022-23
33	NC19-19942	*Hilliard / NC09-20768*	Murphy	2022-23
34	NC19-20002	*Hilliard / BURR*	Murphy	2022-23
35	NCVT.D-33	*NC8248-14 / MDC07026-F2-19-13-4 // VA11W-279*	Murphy	2022-23
36	SC19WF3P0304-5	*ARLA06146E-1-4 / VA12W-68*	Boyles	2022-23
37	SC22W145	*NC-Yadkin / / NC11-22289 / NC07-24337*	Boyles	2022-23
38	SC22W198	*GA03564-12E6 / / VA11W-278 / NC8840-19*	Boyles	2022-23
39	SC22W205	*VA11W-279 / / NC11-22289 / YADKIN*	Boyles	2022-23
40	SC22W416	*MD09W272-8-4-13-3 / Hilliard*	Boyles	2022-23
41	SCLA18WF0304-13	*GA08070-EL21 / LA13235DH-40*	Boyles	2022-23
42	SCLA18WF0708-12-2	*VA13W-124 / ARLA06146E-1-4*	Boyles	2022-23
43	SCLA18WF0708-4-1	*VA13W-124 / ARLA06146E-1-4*	Boyles	2022-23
44	TX20D5056	*AGS2038/AGS 2055*	Sutton	2022-23
45	TX22D7193	*TX15D9264/GA081308-15LE19*	Sutton	2022-23
46	TX22D7332	*AGS 2055/TX14D8444*	Sutton	2022-23
47	TX22D7418	*AGS2055/TX14D8337*	Sutton	2022-23
48	UMD_16-463-13	*GA07169-14LE24 / SS8641 /McCormick*2/Ning7840*	Tiwari	2022-23
49	UMD_1-9-20	*HILLIARD/MDC07026-F2-19-13-3*	Tiwari	2022-23
50	UMD_1-9-33	*HILLIARD/MDC07026-F2-19-13-3*	Tiwari	2022-23
51	UMD_19-555-7	*GA07169-14LE24 / MDC07026-F2-19-13-4*	Tiwari	2022-23
52	UMD-21-MDW104	*MD07W280-12-3 // VA05W-151 / MD03-69-15*	Tiwari	2022-23
53	UMD-21-MDW107	*MD07W280-12-3 // VA05W-151 / MD03-69-15 (McCORMICK/25R42)*	Tiwari	2022-23
54	UMD-21-MDW73	*MDW272-11-5 / KY04C-1047-35-9-1*	Tiwari	2022-23
55	UMD-21-MDX10	*VA05W500//SS8641/VA02W713*	Tiwari	2022-23
56	VA20W-135	*GA041293-11E37 [Pion26R61/2*SS8641] / '102015123' (VA10W-123) // Hilliard (VA11W-108), F7*	Santantonio	2022-23
57	VA21W-18	*L11550 (VA11W-106, PI 679954) / GA13167-G1-G13-G2 [PION26R94(GA04570-10E16)*3/ 081628: Yr15,Lr37/Yr17,HF-Res.]*	Santantonio	2022-23

Entry List and Pedigrees, 2023 Nursery

ENTRY NO	CULTIVAR/ DESIGNATION	*PEDIGREE*	CONTRIBUTOR	IN NURSERY SINCE
58	17VDH-SRW02-125	*HILLIARD (VA11W-108) / MDC07026-F2-19-13-1 (SS8641// McCormick*2 / Ning7840)*	Santantonio	2022-23
59	17VDH-SRW05-169	*L11550 (VA11W-106 = PION 25R47 / JAMESTOWN) / VA09MAS6-122-7-1 [SHIRLEY / GA991371-6E13 //SS5205 (VA01W-205)]*	Santantonio	2022-23
60	18VDH-FHB-MAS07-173-03	*TXGA06343-17-3-5-EL2 (011638-G1-G1/ 981592-8-8-1// 991336-47-5W-1W) / MDC07026-F2-19-13-1 (SS8641// McCormick*2/ Ning7840) // USG 3118 (VA11W-279)*	Santantonio	2022-23
61	18VTK10-23	*KWS122 / 13VTK429-3*	Santantonio	2022-23
62	18VTK12-111	*KWS122 / USG 3118*	Santantonio	2022-23
63	DH17SRW136-038	*VA12FHB-8 [IL99-27048 (IL90-6364/Pioneer 2571)/ VA04W-486 {ERNIE//INW 9824 (P92823A1-1-4-4-5) /McCormick} // SHIRLEY] / DH11SRW070-14 [GA00067-8E35 (GA921204/AGS2000) /Shirley]*	Santantonio	2022-23

Fusarium Head Blight Rating
(0 - 9)

ENTRY NO	CULTIVAR/ DESIGNATION	F'LR SC	L'XTON KY	RAL NC	W'BORO LA	ALEX LA	C'STA TX	W'SAW VA	MEAN ALL LOC.	Rank	GEBV Rating
1	ERNIE	4.0	2.2	2.5	1.5	1.5	8.0	4.5	3.5	*39*	2.9
2	COKER9835	6.0	4.2	6.8	3.5	3.5	7.5	7.0	5.5	*61*	3.6
3	BESS	1.5	2.2	2.0	0.8	1.5	2.5	3.5	2.0	*1*	2.7
4	JAMESTOWN	5.5	2.4	3.5	1.8	2.0	6.0	5.5	3.8	*43*	2.7
5	SS 8641	7.0	6.1	8.0	4.0	4.0	5.5	6.5	5.9	*63*	5.2
6	15VDH-FHB-MAS22-14	2.5	2.4	2.5	1.3	1.5	4.5	2.5	2.5	*7*	3.1
7	GA12099-7-2-6-6-21LE35	2.5	3.7	4.0	1.8	2.5	2.0	4.5	3.0	*23*	3.3
8	GA12213-10-7-21LE24	6.5	5.2	4.8	3.8	3.8	4.0	7.0	5.0	*59*	4.2
9	GA131246LDH-86-21E2	3.5	3.1	4.5	3.3	3.3	5.5	4.5	3.9	*46*	4.5
10	GA141045-9-3-2-21LE7	2.5	2.2	3.0	2.3	3.0	5.0	3.5	3.1	*26*	3.9
11	GA141556-5-1-21LE22	4.5	4.9	5.0	2.3	2.5	4.0	6.0	4.2	*50*	3.7
12	GA15036 ID-13-21E22	8.0	4.5	4.5	5.0	5.0	6.0	6.5	5.6	*62*	3.7
13	GA15340 ID-3-2-21LE29	2.0	2.5	3.8	1.8	2.5	3.5	6.0	3.2	*29*	4.6
14	GA15490 ID-19-5-21LE2	4.0	3.8	3.8	2.8	3.0	5.0	5.5	4.0	*48*	4.0
15	GA17634DH-08-21E36	2.5	2.5	3.8	2.3	2.0	6.5	4.5	3.4	*35*	3.0
16	GANC12915-167-21E3	3.5	5.0	5.0	2.8	2.8	5.0	6.0	4.3	*52*	3.9
17	KWS369	2.0	1.7	3.5	0.5	1.0	2.5	5.0	2.3	*4*	3.3
18	KWS382	2.0	2.2	3.8	1.5	2.5	3.0	4.5	2.8	*15*	2.8
19	KWS456	2.5	1.7	4.0	1.8	2.5	4.5	5.0	3.1	*26*	3.0
20	KWS459	2.5	3.2	4.0	2.3	2.5	3.0	4.0	3.1	*26*	3.0
21	KWS460	1.5	2.3	3.8	1.8	2.5	3.0	5.0	2.8	*15*	.
22	LA13176CB-6-2	2.0	2.3	3.0	1.8	2.0	5.5	3.0	2.8	*15*	2.6
23	LA14188C-28-3-1-4-1-2	4.0	4.8	3.5	1.8	2.5	5.5	5.5	3.9	*46*	3.6
24	LA15099GBW-7-1-3	5.0	2.4	4.5	2.0	2.3	6.0	7.0	4.2	*50*	3.2
25	LAAR15166W-30-1-3	1.0	1.2	2.0	1.8	2.5	4.5	2.0	2.1	*2*	3.3
26	LAAR15172W-42-1-3-1-3	2.5	1.7	4.0	2.0	2.5	5.0	4.5	3.2	*29*	3.4
27	LANC15040LDH-53	2.5	1.7	2.5	1.8	2.0	4.0	3.5	2.6	*10*	2.4
28	NC13217-W2111	4.0	2.7	2.0	1.5	2.5	4.0	3.0	2.8	*15*	2.7
29	NC14706-25	3.5	4.4	2.5	3.0	3.3	5.5	4.0	3.7	*41*	3.1
30	NC14711-12	1.5	2.0	2.0	2.3	3.0	3.5	6.0	2.9	*15*	3.6
31	NC16VT30-7-47	3.0	3.3	5.0	2.5	3.0	4.0	5.0	3.7	*41*	2.7
32	NC19-19921	3.5	4.5	3.0	3.0	3.5	4.0	4.0	3.6	*40*	4.0
33	NC19-19942	1.5	3.3	4.0	2.0	2.3	3.0	4.5	2.9	*15*	3.2
34	NC19-20002	3.0	3.6	2.5	1.5	2.0	2.5	5.5	2.9	*15*	3.3
35	NCVT.D-33	4.0	2.3	4.0	2.0	2.5	4.0	4.0	3.3	*34*	3.3
36	SC19WF3P0304-5	2.0	3.2	3.0	3.8	3.8	6.5	4.5	3.8	*43*	3.0
37	SC22W145	2.0	2.2	2.5	2.5	3.0	3.0	3.0	2.6	*10*	3.0
38	SC22W198	2.5	1.5	2.5	2.3	2.5	4.5	3.5	2.7	*12*	4.1
39	SC22W205	2.0	3.2	4.0	2.0	2.5	3.0	5.5	3.2	*29*	3.1
40	SC22W416	1.5	1.8	2.0	1.8	2.5	3.0	3.5	2.3	*4*	2.4
41	SCLA18WF0304-13	4.0	4.3	5.5	3.3	3.5	4.0	6.5	4.4	*56*	4.7
42	SCLA18WF0708-12-2	4.5	3.4	3.5	4.0	4.0	5.0	4.0	4.1	*49*	3.9
43	SCLA18WF0708-4-1	3.5	1.9	3.8	2.8	3.3	4.5	2.5	3.2	*29*	3.0
44	TX20D5056	5.0	1.7	3.5	2.5	2.8	4.0	4.5	3.4	*35*	4.3
45	TX22D7193	7.0	4.1	5.0	5.0	5.0	7.0	5.0	5.4	*60*	4.0
46	TX22D7332	4.0	2.0	3.8	1.5	2.0	3.5	4.0	3.0	*23*	4.1
47	TX22D7418	2.0	4.7	4.8	4.0	4.0	5.5	5.0	4.3	*52*	3.4
48	UMD_16-463-13	1.5	3.8	3.5	2.8	3.0	5.5	3.5	3.4	*35*	3.3
49	UMD_1-9-20	3.5	3.5	2.0	1.3	2.0	2.5	4.0	2.7	*12*	3.3
50	UMD_1-9-33	1.5	2.3	3.5	2.5	3.0	4.5	5.0	3.2	*29*	3.4
51	UMD_19-555-7	0.5	2.6	3.0	2.3	2.8	3.5	4.0	2.7	*12*	.
52	UMD-21-MDW104	3.5	5.0	5.0	4.0	4.0	6.0	6.0	4.8	*58*	.
53	UMD-21-MDW107	2.5	4.8	4.5	3.5	3.5	5.0	6.0	4.3	*52*	.
54	UMD-21-MDW73	2.5	4.2	4.0	2.8	3.0	6.5	3.5	3.8	*43*	2.4
55	UMD-21-MDX10	5.5	2.1	2.0	2.0	2.0	6.5	3.5	3.4	*35*	3.1
56	VA20W-135	3.0	2.6	3.0	1.5	2.0	2.0	3.5	2.5	*7*	3.6
57	VA21W-18	6.5	3.1	3.0	5.5	2.0	7.0	6.0	4.7	*57*	3.8
58	17VDH-SRW02-125	2.5	2.5	2.5	1.5	2.0	2.5	4.0	2.5	*7*	3.3
59	17VDH-SRW05-169	3.5	4.3	5.5	2.5	3.0	6.5	4.5	4.3	*52*	3.1
60	18VDH-FHB-MAS07-173-03	3.0	2.5	2.0	1.5	2.0	2.0	4.0	2.4	*6*	3.7
61	18VTK10-23	1.5	3.3	3.0	2.3	3.0	2.5	4.5	2.9	*15*	2.7
62	18VTK12-111	1.5	3.1	2.5	1.0		1.0	4.0	2.1	*2*	3.1
63	DH17SRW136-038	3.5	2.4	3.5	1.8	2.5	3.0	4.1	3.0	*23*	3.2
	Mean	3.2	3.2	3.6	2.4	2.7	4.4	4.6	3.4		
	CV%	25.7	25.0	23.1	37.0	24.0	27.1	22.3	26.8		
	LSD(0.05)	1.4	1.5	1.6	1.5	1.1	2.4	2.1	1.8		
	R-Square	0.79	0.85	0.83	0.89	0.73	.	.	0.66		
	Correl w/ GEBV	0.45	0.37	0.46	0.43	0.39	0.08	0.46	0.49		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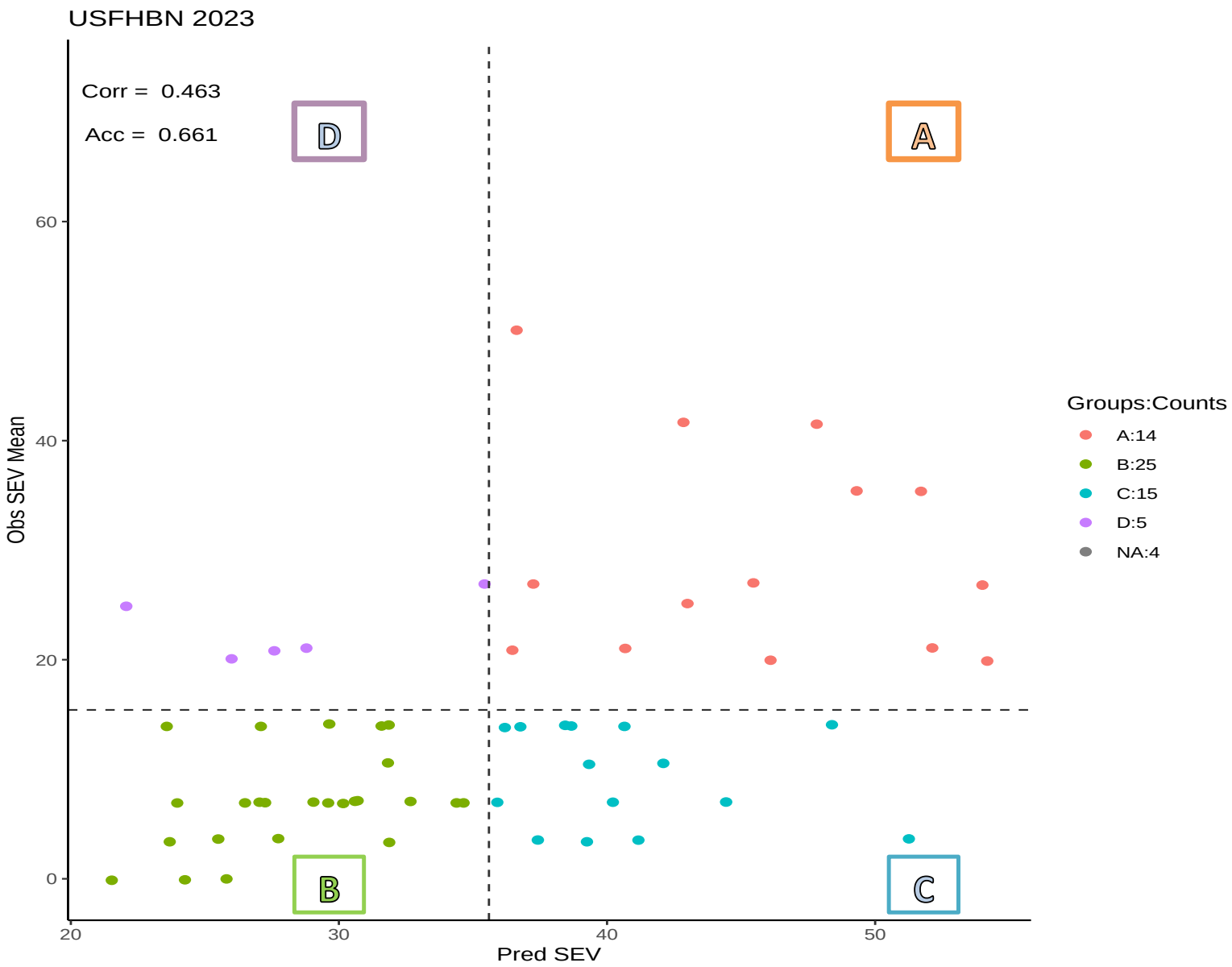
Acc = 0.695
D
A
B
C
Obs RAT 0–9 Mean
Pred SEV
6
5
4
3
2
20
30
40
50
Groups:Counts
A:17
B:24
C:12
D:6
NA:4

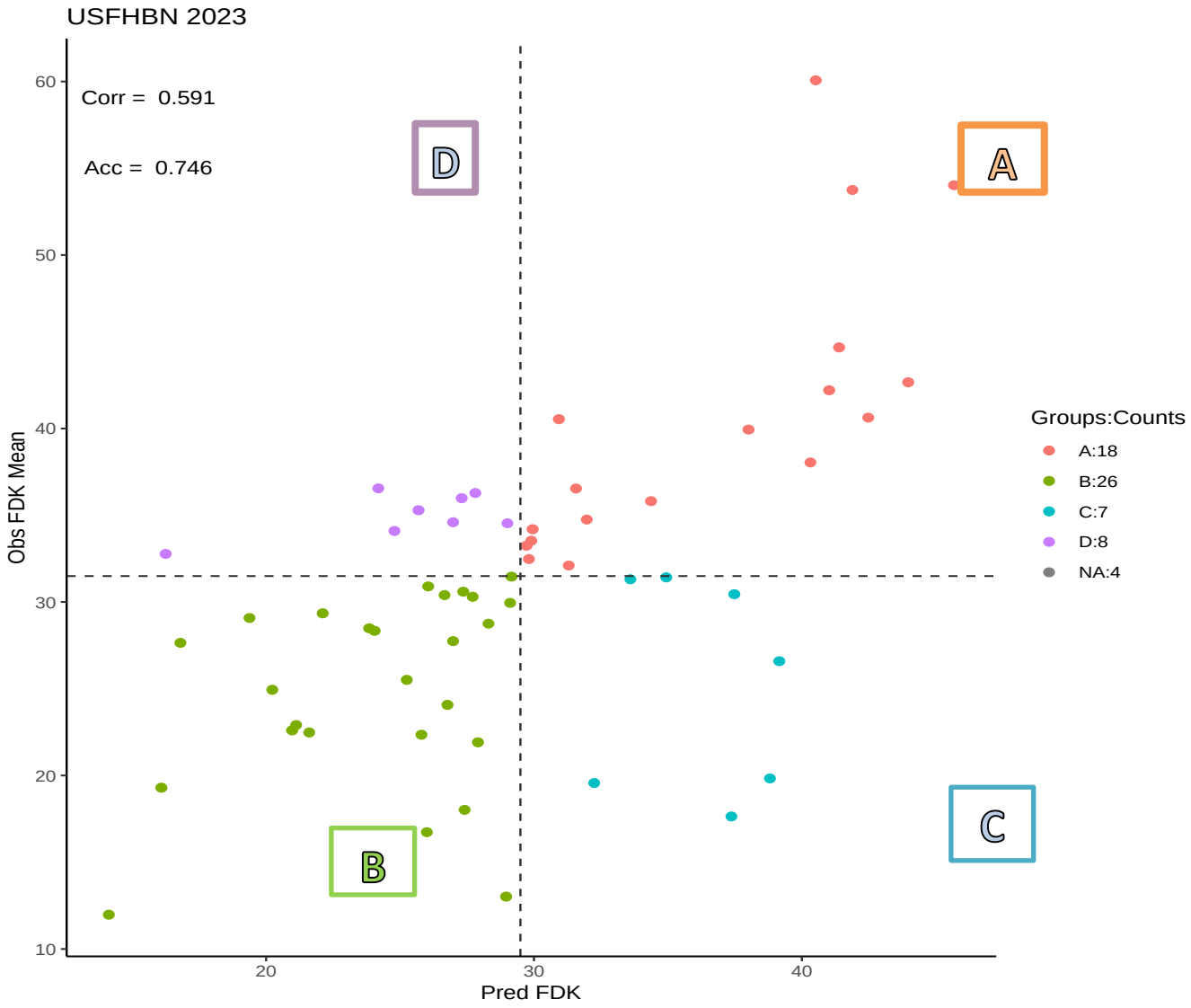
FHB Incidence and Severity (1-100)

ENTRY NO	CULTIVAR/ DESIGNATION	U'BANA IL INCIDENCE %	U'BANA IL SEVERITY %	Rank	GEBV SEVERITY %
1	ERNIE	1	7	13	27
2	COKER9835	55	27	53	45
3	BESS	0	25	51	22
4	JAMESTOWN	1	4	7	28
5	SS 8641	9	20	43	54
6	15VDH-FHB-MAS22-14	0	7	13	35
7	GA12099-7-2-6-6-21LE35	4	14	32	38
8	GA12213-10-7-21LE24	12	42	59	43
9	GA131246LDH-86-21E2	9	27	53	54
10	GA141045-9-3-2-21LE7	1	25	51	43
11	GA141556-5-1-21LE22	9	27	53	37
12	GA15036 ID-13-21E22	20	21	46	36
13	GA15340 ID-3-2-21LE29	2	14	32	48
14	GA15490 ID-19-5-21LE2	2	35	57	52
15	GA17634DH-08-21E36	5	7	13	27
16	GANC12915-167-21E3	2	21	46	41
17	KWS369	1	14	32	27
18	KWS382	2	3	4	32
19	KWS456	2	14	32	32
20	KWS459	4	7	13	31
21	KWS460	2	7	13	NA
22	LA13176CB-6-2	0	0	1	24
23	LA14188C-28-3-1-4-1-2	1	50	62	37
24	LA15099GBW-7-1-3	1	4	7	37
25	LAAR15166W-30-1-3	0	0	1	22
26	LAAR15172W-42-1-3-1-3	2	11	30	32
27	LANC15040LDH-53	1	3	4	24
28	NC13217-W2111	4	14	32	37
29	NC14706-25	3	7	13	36
30	NC14711-12	2	7	13	33
31	NC16VT30-7-47	2	14	32	30
32	NC19-19921	17	20	43	46
33	NC19-19942	2	7	13	34
34	NC19-20002	2	27	53	35
35	NCVT.D-33	3	14	32	32
36	SC19WF3P0304-5	1	7	13	30
37	SC22W145	0	14	32	24
38	SC22W198	1	11	30	42
39	SC22W205	5	7	13	31
40	SC22W416	0	0	1	26
41	SCLA18WF0304-13	4	35	57	49
42	SCLA18WF0708-12-2	3	7	13	44
43	SCLA18WF0708-4-1	1	7	13	27
44	TX20D5056	1	42	59	48
45	TX22D7193	5	4	7	51
46	TX22D7332	3	21	46	52
47	TX22D7418	1	14	32	36
48	UMD_16-463-13	4	4	7	41
49	UMD_1-9-20	0	10	29	39
50	UMD_1-9-33	0	3	4	39
51	UMD_19-555-7	1	4	7	NA
52	UMD-21-MDW104	6	73	63	NA
53	UMD-21-MDW107	3	44	61	NA
54	UMD-21-MDW73	8	7	13	24
55	UMD-21-MDX10	1	20	43	26
56	VA20W-135	1	14	32	41
57	VA21W-18	9	7	13	40
58	17VDH-SRW02-125	1	7	13	29
59	17VDH-SRW05-169	12	21	46	28
60	18VDH-FHB-MAS07-173-03	1	14	32	39
61	18VTK10-23	1	4	7	26
62	18VTK12-111	2	7	13	30
63	DH17SRW136-038	3	21	46	29
	Mean	4.1	15		
	CV%	88.0	66.0		
	LSD(0.05)	10.0	29		
	R-Square	77.0	36.0		
	Correl w/ GEBV		0.46		


USFHBN 2023
Corr = 0.463
Acc = 0.661
D
A
B
C
Obs SEV Mean
Pred SEV
0
20
40
60
20
30
40
50
Groups:Counts
A:14
B:25
C:15
D:5
NA:4

Percent Fusarium Damaged Kernels

ENTRY NO	CULTIVAR/ DESIGNATION	C'ARK MD	U'BANA IL	FL'NCE SC	RAL NC	W'BORO LA	ALEX LA	C'STA TX	W'SAW VA	MEAN ALL LOC.	Rank	GEBV FDK
1	ERNIE	1.7	45	21	33	5	25	14	15	22	*9*	22
2	COKER9835	3.7	85	19	85	28	45	45	70	54	*61*	42
3	BESS	2.7	10	17	8	35	38	16	13	19	*6*	16
4	JAMESTOWN	4.0	30	10	18	18	23	45	18	23	*12*	21
5	SS 8641	13.0	82	44	74	35	48	13	83	54	*61*	46
6	15VDH-FHB-MAS22-14	1.0	22	7	15	15	15	14	4	13	*2*	29
7	GA12099-7-2-6-6-21LE35	6.7	55	16	35	28	38	21	23	31	*29*	27
8	GA12213-10-7-21LE24	10.3	78	49	68	58	38	44	88	60	*63*	41
9	GA131246LDH-86-21E2	3.3	62	28	55	23	28	19	70	41	*55*	42
10	GA141045-9-3-2-21LE7	7.7	50	16	40	30	15	10	25	27	*17*	39
11	GA141556-5-1-21LE22	2.7	77	17	48	35	38	5	35	36	*47*	28
12	GA15036 ID-13-21E22	12.0	85	28	50	20	20	16	65	41	*55*	31
13	GA15340 ID-3-2-21LE29	5.0	35	11	40	45	50	17	15	30	*25*	37
14	GA15490 ID-19-5-21LE2	5.0	72	28	70	20	20	36	53	43	*59*	44
15	GA17634DH-08-21E36	5.0	60	10	35	33	35	14	15	29	*22*	28
16	GANC12915-167-21E3	4.0	52	21	55	13	20	14	45	31	*29*	34
17	KWS369	1.0	57	11	20	43	30	33	23	31	*29*	26
18	KWS382	0.0	62	8	28	40	20	48	33	34	*38*	25
19	KWS456	2.0	55	9	25	45	25	32	23	30	*25*	27
20	KWS459	2.3	60	14	35	33	43	33	25	35	*42*	27
21	KWS460	1.7	63	14	50	45	30	29	10	34	*38*	.
22	LA13176CB-6-2	1.0	25	4	20	25	18	18	8	17	*3*	26
23	LA14188C-28-3-1-4-1-2	0.3	60	7	28	23	35	9	8	24	*14*	27
24	LA15099GBW-7-1-3	0.0	33	11	38	43	33	32	45	33	*36*	30
25	LAAR15166W-30-1-3	1.3	25	4	5	20	20	7	3	12	*1*	14
26	LAAR15172W-42-1-3-1-3	1.7	70	10	25	50	18	25	15	30	*25*	28
27	LANC15040LDH-53	4.3	77	10	23	13	28	17	13	26	*16*	25
28	NC13217-W2111	1.0	60	9	23	18	30	24	13	25	*15*	20
29	NC14706-25	3.3	60	16	35	30	15	15	28	28	*18*	24
30	NC14711-12	1.3	45	10	18	25	25	26	5	22	*9*	28
31	NC16VT30-7-47	0.3	38	17	35	28	43	33	35	32	*34*	30
32	NC19-19921	4.0	32	13	33	10	23	21	8	20	*8*	39
33	NC19-19942	2.0	25	9	23	23	35	28	15	22	*9*	26
34	NC19-20002	1.7	70	13	30	38	35	34	28	35	*42*	26
35	NCVT.D-33	1.3	70	9	25	45	35	46	5	34	*38*	30
36	SC19WF3P0304-5	1.7	68	8	23	20	28	43	15	29	*22*	19
37	SC22W145	8.0	52	9	25	20	30	37	20	28	*18*	17
38	SC22W198	6.7	20	6	30	20	15	25	8	18	*4*	37
39	SC22W205	8.3	50	11	28	43	33	39	18	31	*29*	29
40	SC22W416	7.7	45	6	5	58	15	23	8	23	*12*	21
41	SCLA18WF0304-13	8.0	65	13	53	43	33	36	25	38	*52*	40
42	SCLA18WF0708-12-2	3.3	58	18	48	33	20	23	53	36	*47*	34
43	SCLA18WF0708-4-1	1.7	42	17	45	43	18	36	20	31	*29*	35
44	TX20D5056	1.0	55	24	35	25	43	40	58	40	*54*	38
45	TX22D7193	6.3	50	40	50	33	50	43	48	45	*60*	41
46	TX22D7332	3.3	60	16	40	30	30	44	75	42	*58*	41
47	TX22D7418	4.3	80	14	60	13	13	18	43	34	*38*	30
48	UMD_16-463-13	5.7	90	22	38	35	30	22	15	36	*47*	27
49	UMD_1-9-20	2.7	35	11	25	33	38	31	38	30	25	29
50	UMD_1-9-33	2.7	27	9	25	25	13	14	13	18	*4*	27
51	UMD_19-555-7	8.0	70	14	25	63	45	44	25	41	55	.
52	UMD-21-MDW104	4.0	82	27	55	33	18	20	38	39	*53*	.
53	UMD-21-MDW107	6.0	75	11	48	23	23	40	28	35	*42*	.
54	UMD-21-MDW73	4.0	78	13	35	18	28	42	18	33	*36*	16
55	UMD-21-MDX10	2.7	60	12	18	65	10	18	13	28	*18*	27
56	VA20W-135	3.0	52	10	30	50	38	47	30	37	*50*	32
57	VA21W-18	1.3	65	20	8	43	35	23	33	32	*34*	31
58	17VDH-SRW02-125	1.3	53	6	13	43	43	37	13	29	*22*	22
59	17VDH-SRW05-169	0.3	64	12	48	58	45	17	13	37	*50*	24
60	18VDH-FHB-MAS07-173-03	3.0	50	29	33	50	28	38	15	35	*42*	29
61	18VTK10-23	2.0	45	7	35	55	11	*32*	15	28	*18*	24
62	18VTK12-111	0.0	20	18	18	30		23	10	19	*6*	32
63	DH17SRW136-038	1.3	50	16	35	38	40	38	28	35	*42*	32
	Mean	4	55	15	34	33	29	27	27	32		
	CV%	.	17.0	23.3	25.2	54.0	48.0	36.3	42.7	40.7		
	LSD(0.05)	.	27	5.9	17.1	ns	ns	20	23	25		
	R-Square	.	0.73	0.87	0.88	0.55	0.57	.	.	0.60		
	Correl w/ GEBV	0.37	0.20	0.59	0.70	0.05	0.20	0.11	0.64	0.59		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D
A
B
C
Groups:Counts
A:18
B:26
C:7
D:8
NA:4
Obs FDK Mean
Pred FDK
60
50
40
30
20
10
20
30
40

DON
(ppm)

ENTRY NO	CULTIVAR/ DESIGNATION	FL'NCE SC	C. STA TX	LEX KY	RAL NC	W'BORO LA	ALEX LA	W'SAW VA	MEAN ALL LOC.	Rank	GEBV DON
1	ERNIE	2	0.1	0.9	7	0.4	4	7	3	*13*	10
2	COKER9835	14	0.4	5.6	17	0.7	6	22	9	*56*	16
3	BESS	1	0.2	0.6	3	1.0	2	4	2	*2*	9
4	JAMESTOWN	1	0.2	0.5	4	0.9	1	5	2	*2*	8
5	SS 8641	18	0.5	11.2	26	2.4	15	61	19	*62*	15
6	15VDH-FHB-MAS22-14	1	0.1	1.1	4	0.6	3	3	2	*2*	10
7	GA12099-7-2-6-6-21LE35	5	0.7	2.6	6	2.4	3	14	5	*39*	10
8	GA12213-10-7-21LE24	25	0.5	18.0	42	3.7	8	37	19	*62*	14
9	GA131246LDH-86-21E2	12	0.4	9.1	17	1.7	4	35	11	*60*	15
10	GA141045-9-3-2-21LE7	4	0.2	1.1	12	0.7	2	10	4	*27*	17
11	GA141556-5-1-21LE22	5	0.8	4.0	15	1.1	2	10	5	*39*	12
12	GA15036 ID-13-21E22	8	0.1	4.8	13	1.0	2	19	7	*51*	11
13	GA15340 ID-3-2-21LE29	4	0.9	0.7	10	1.9	2	10	4	*27*	11
14	GA15490 ID-19-5-21LE2	8	1.0	5.5	22	3.7	4	28	10	*58*	20
15	GA17634DH-08-21E36	4	0.2	1.5	8	0.3	1	9	4	*27*	12
16	GANC12915-167-21E3	4	0.1	5.1	16	1.9	2	19	7	*51*	9
17	KWS369	1	0.7	1.9	3	4.5	2	6	3	*13*	10
18	KWS382	1	0.1	2.0	4	2.4	1	5	2	*2*	7
19	KWS456	1	0.4	3.3	4	3.3	1	9	3	*13*	10
20	KWS459	2	0.7	5.7	8	3.0	1	10	4	*27*	10
21	KWS460	2	0.1	2.6	8	1.8	2	3	3	*13*	
22	LA13176CB-6-2	1	0.1	0.8	8	0.3	1	6	2	*2*	11
23	LA14188C-28-3-1-4-1-2	0	0.7	3.3	6	0.5	2	3	2	*2*	10
24	LA15099GBW-7-1-3	4	0.7	2.6	7	2.4	3	12	4	*27*	10
26	LAAR15166W-30-1-3	1	0.1	0.6	5	0.2	1	3	1	*1*	9
26	LAAR15172W-42-1-3-1-3	2	0.1	1.6	5	0.4	2	6	3	*13*	9
27	LANC15040LDH-53	3	0.1	0.6	7	0.9	2	4	2	*2*	8
28	NC13217-W2111	2	0.8	2.7	5	2.5	2	6	3	*13*	8
29	NC14706-25	6	0.5	1.6	7	1.8	3	11	5	*39*	10
30	NC14711-12	1	0.8	1.3	5	0.8	2	5	2	*2*	7
31	NC16VT30-7-47	3	0.9	4.2	7	1.6	2	13	5	*39*	10
32	NC19-19921	2	0.4	0.9	7	1.4	4	4	3	*13*	12
33	NC19-19942	2	1.0	0.9	5	2.0	2	8	3	*13*	9
34	NC19-20002	3	0.8	2.5	7	1.8	2	11	4	*27*	9
35	NCVT.D-33	1	0.8	0.3	3	1.6	5	4	2	*2*	9
36	SC19WF3P0304-5	3	0.4	2.5	8	1.2	6	8	4	*27*	9
37	SC22W145	2	0.2	0.9	10	2.0	1	4	3	*13*	6
38	SC22W198	1	0.2	1.5	7	1.6	4	4	3	*13*	14
39	SC22W205	2	1.7	1.8	8	2.9	2	7	4	*27*	9
40	SC22W416	1	0.1	1.4	3	2.2	1	6	2	*2*	7
41	SCLA18WF0304-13	4	0.3	0.9	13	2.2	5	9	5	*39*	17
42	SCLA18WF0708-12-2	6	0.2	4.0	10	1.6	5	16	6	*49*	11
43	SCLA18WF0708-4-1	4	0.6	4.4	10	4.3	7	18	7	*51*	11
44	TX20D5056	12	0.9	6.9	10	4.1	12	28	11	*60*	15
45	TX22D7193	16	1.4	5.5	14	1.5	6	18	9	*56*	18
46	TX22D7332	4	2.7	7.5	9	6.5	5	34	10	*58*	16
47	TX22D7418	3	0.8	5.9	14	2.3	6	18	7	*51*	9
48	UMD_16-463-13	4	0.4	2.5	9	2.1	3	4	4	*27*	10
49	UMD_1-9-20	1	2.5	5.7	7	3.7	3	16	5	39	6
50	UMD_1-9-33	1	0.2	1.0	6	0.6	1	4	2	*2*	5
51	UMD_19-555-7	2	1.2	4.5	5	3.1	2	6	3	13	.
52	UMD-21-MDW104	7	0.3	4.0	14	1.8	2	19	7	*51*	.
53	UMD-21-MDW107	2	1.3	6.5	10	1.5	2	13	5	*39*	.
54	UMD-21-MDW73	3	1.2	3.1	7	1.1	2	5	3	*13*	8
55	UMD-21-MDX10	3	0.2	4.3	7	1.7	1	10	4	*27*	9
56	VA20W-135	3	3.7	4.6	7	2.1	1	14	5	*39*	12
57	VA21W-18	7	0.2	1.0	3	4.8	2	12	4	*27*	15
58	17VDH-SRW02-125	1	1.9	2.1	5	2.3	3	9	3	*13*	8
59	17VDH-SRW05-169	5	1.0	3.6	10	4.0	4	8	5	*39*	13
60	18VDH-FHB-MAS07-173-03	3	1.9	0.4	9	3.1	2	11	4	*27*	9
61	18VTK10-23	2	0.7	0.7	8	2.3	2	5	3	*13*	9
62	18VTK12-111	1	3.0	5.4	6	4.5		8	5	*39*	10
63	DH17SRW136-038	4	2.7	5.7	6	2.3	3	18	6	*49*	13
	Mean	4	1	3	9	2	3	12	5		
	CV%	38.9	62.1	.	.	73.0	67.0	37.4	72.5		
	LSD(0.05)	3	1	.	.	3	4	9	9		
	R-Square	0.89	.	.	.	0.76	0.81	.	0.68		
	Correl w/ GEBV	0.62	0.0897	0.42	0.52	0.26	0.51	0.58	0.61		


USFHBN 2023
Corr = 0.624
Acc = 0.831
D
A
B
C
Obs DON Mean
Pred DON
25
20
15
10
5
5
10
15
20
Groups:Counts
A:14
B:35
C:7
D:3
NA:4

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

	DESIGNATION	Rht	Fhb1	Fhb Massey 3BL	Fhb_1B_Jamestown	Fhb_1A_Neuse	Fhb_6A_Neuse	Fhb_2B_Bess	Fhb_3B_Bess	Yr_4BL	Yr17/Lr37/Sr38	Pm1a	Pm54	Lr9	Lr18	Sr36_Pm6	H13	HF_7D
1	ERNIE	B1b		Yes	Yes	Yes	Yes									Yes		
2	COKER9835	D1b					Yes			het			Yes	Yes		Yes	het	
3	BESS	B1b			Yes	het		Yes	Yes									
4	JAMESTOWN	D1b			Yes	Yes				Yes					Yes			
5	SS 8641	D1b								Yes	Yes	Yes			Yes			
6	15VDH-FHB-MAS22-14	D1b	Fhb1	Yes							Yes	het			Yes	Yes		
7	GA12099-7-2-6-6-21LE35	D1b			Yes										Yes			
8	GA12213-10-7-21LE24	D1b				Yes	Yes			Yes	Yes				Yes			Yes
9	GA131246LDH-86-21E2	D1b					het			Yes	Yes						het	
10	GA141045-9-3-2-21LE7	D1b				Yes				het	Yes						H13b	het
11	GA141556-5-1-21LE22	D1b				Yes					Yes				Yes		H13a	
12	GA15036 ID-13-21E22	D1b			Yes	Yes	Yes				Yes				Yes			
13	GA15340 ID-3-2-21LE29	ND								Yes	Yes				Yes		H13a	Yes
14	GA15490 ID-19-5-21LE2	D1b								het	Yes							
15	GA17634DH-08-21E36	D1b	Fhb1								Yes							
16	GANC12915-167-21E3	D1b					Yes			Yes	Yes	Yes			Yes		H13a	
17	KWS369	B1b		Yes	Yes											Yes		
18	KWS382	D1b				Yes				Yes								
19	KWS456	D1b	Fhb1		Yes					Yes					het			
20	KWS459	D1b			Yes					Yes					Yes			
21	KWS460	D1b								Yes			Yes					Yes
22	LA13176CB-6-2	D1b	Fhb1							Yes	Yes			Yes	het			
23	LA14188C-28-3-1-4-1-2	D1b		Yes		Yes				Yes	Yes				Yes		H13a	
24	LA15099GBW-7-1-3	D1b			Yes		Yes			Yes								
25	LAAR15166W-30-1-3	Neither	Fhb1		Yes	Yes				Yes	Yes							
26	LAAR15172W-42-1-3-1-3	D1b	Fhb1				Yes			Yes	het				Yes			
27	LANC15040LDH-53	D1b	Fhb1				Yes				Yes				Yes			
28	NC13217-W2111	D1b	Fhb1							Yes		Yes			Yes			
29	NC14706-25	D1b			Yes					Yes					Yes			
30	NC14711-12	D1b		Yes						Yes	Yes				Yes		H13a	
31	NC16VT30-7-47	het	het				het		Yes			Yes				Yes	NA	
32	NC19-19921	D1b		Yes			Yes			het	Yes				Yes		H13a	
33	NC19-19942	D1b	Fhb1		Yes										Yes			
34	NC19-20002	D1b			Yes					Yes					Yes			
35	NCVT.D-33	D1b	Fhb1	Yes	Yes	Yes	Yes			Yes	Yes			Yes	Yes	Yes	H13a	
36	SC19WF3P0304-5	D1b		Yes			het				het			Yes			het	
37	SC22W145	B1b	Fhb1	Yes	het	Yes	Yes			het	Yes	Yes			het			
38	SC22W198	D1b	Fhb1								Yes				het			
39	SC22W205	D1b		het		het	het							Yes	het	Yes	het	
40	SC22W416	D1b	Fhb1		Yes	Yes	het			het	Yes	Yes			Yes			
41	SCLA18WF0304-13	D1b		het			Yes			Yes	Yes							
42	SCLA18WF0708-12-2	D1b		het	het	Yes	het			het	Yes			Yes	het		H13a	het
43	SCLA18WF0708-4-1	D1b				Yes	het				Yes						het	het
44	TX20D5056	D1b				Yes	Yes			het	Yes				Yes			Yes
45	TX22D7193	D1b		Yes						Yes								
46	TX22D7332	B1b				Yes	Yes								het			het
47	TX22D7418	D1b			Yes	Yes	Yes			Yes								
48	UMD_16-463-13	D1b	Fhb1		Yes					Yes					Yes			
49	UMD_1-9-20	D1b		Yes	Yes		Yes			Yes					Yes		H13a	
50	UMD_1-9-33	D1b	Fhb1	Yes	Yes		Yes				Yes				Yes		H13a	
51	UMD_19-555-7	D1b	Fhb1		Yes		Yes	Yes		Yes		Yes			Yes			
52	UMD-21-MDW104	D1b	Fhb1			Yes									het			het
53	UMD-21-MDW107	D1b				Yes				Yes					Yes			
54	UMD-21-MDW73	het				het	Yes			Yes				Yes	Yes	Yes		
55	UMD-21-MDX10	D1b								het	Yes	Yes				Yes		
56	VA20W-135	D1b									het				Yes			
57	VA21W-18	D1b			Yes						het	Yes						
58	17VDH-SRW02-125	D1b	Fhb1		Yes					Yes	Yes	Yes			Yes			
59	17VDH-SRW05-169	D1b			Yes		Yes								Yes	Yes		
60	18VDH-FHB-MAS07-173-03	D1b	Fhb1			Yes	Yes			Yes	Yes	Yes			Yes		H13a	
61	18VTK10-23	D1b			Yes	Yes								Yes				
62	18VTK12-111	D1b		Yes		Yes				Yes	Yes					Yes	H13a	
63	DH17SRW136-038	B1b			Yes							Yes				Yes		

Efficacy of Selected FHB Resistance QTL

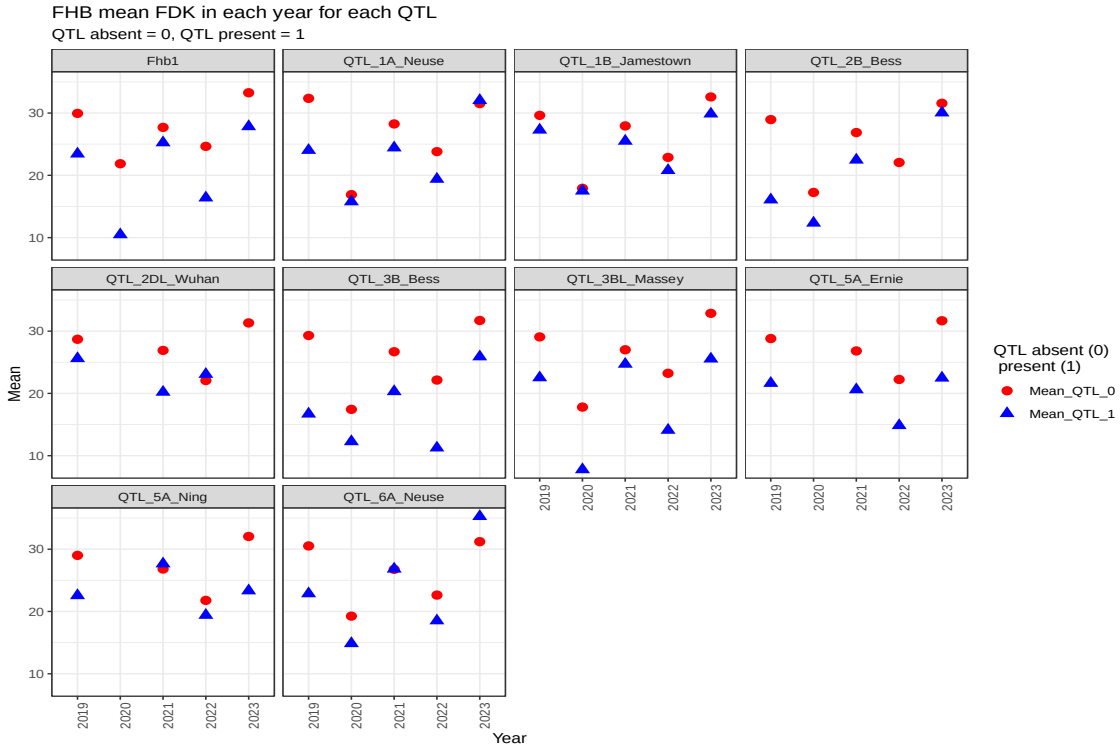
Mean Rating (RAT), Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2023 Uniform Southern Winter Wheat Scab Nurseries with and without resistance alleles at quantitative trait loci (QTL) associated with resistance to (FHB). FHB Rating (RAT) data included for 2018-2023 nurseries only

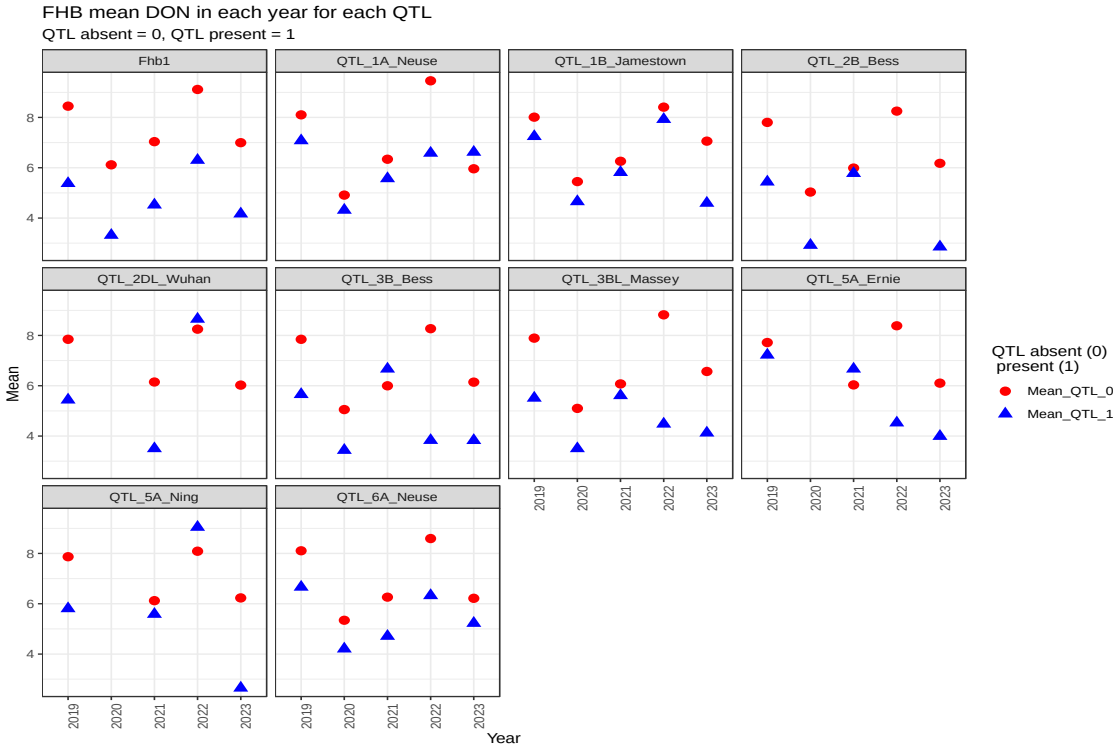
With data as of 11/14/23

QTL†	Allele‡	n§	RAT (2018-23)		FDK		DON	
Qfhb.nc-2B.1 (Bess)	S	471	3.5	p = 0.1201	28.9	p = 0.2131	7.9	p = 0.0448
	R	38	3.2	-0.3	27.6	-1.3	7.0	-0.9
Qfhb.nc-3B.2 (Bess)	S	501	3.5	p = 0.0037	29.0	p < 0.0001	7.9	p = 0.9967
	R	16	2.9	-0.5	23.3	-5.8	7.9	0.0
Ning_5A	S	465	3.5	p = 0.1378	30.1	p < 0.0001	8.3	p < 0.0001
	R	17	3.3	-0.2	23.1	-7.1	5.5	-2.8
Ernie_5A	S	458	3.5	p < 0.0001	29.5	p < 0.0001	8.1	p = 0.0014
	R	23	2.8	-0.7	35.5	5.9	9.4	1.3
Wuhan-1_2DL	S	467	3.5	p = 0.2121	29.9	p < 0.0001	8.2	p < 0.0001
	R	12	3.2	-0.2	22.0	-7.9	4.8	-3.4
Sumai 3_Fhb1	S	401	3.7	p < 0.0001	30.1	p < 0.0001	8.6	p < 0.0001
	R	108	2.9	-0.8	24.8	-5.3	5.8	-2.8
QTL_3BL (Massey)	S	465	3.5	p < 0.0001	29.0	p = 0.0367	8.0	p = 0.0001
	R	44	3.0	-0.4	27.4	-1.6	6.6	-1.4
QTL_1A (Neuse)	S	265	3.5	p = 0.0068	29.5	p = 0.0001	8.2	p < 0.0001
	R	218	3.3	-0.2	27.8	-1.7	7.4	-0.8
QTL_6A (Neuse)	S	367	3.5	p < 0.0001	29.0	p = 0.7529	8.2	p = 0.0036
	R	122	3.2	-0.3	29.3	0.3	7.0	-1.2
QTL_1B (Jamestown)	S	248	3.5	p = 0.0228	28.3	p = 0.0023	8.2	p < 0.0001
	R	147	3.4	-0.1	26.9	-1.4	6.8	-1.4

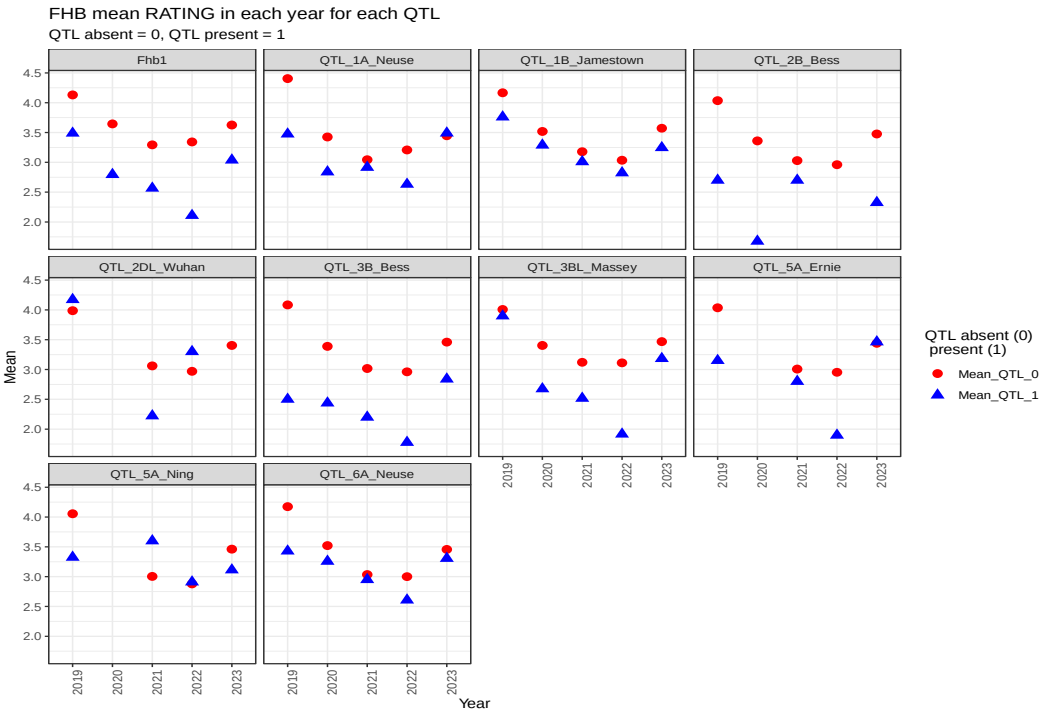
† QTL, quantitative trait loci.
‡ Indicates presence of resistance allele (R) or susceptibility allele (S) at the respective QTL.
§ n indicates the number of lines in the allele group.
¶ Significance levels of mean comparisons are indicated as: NS (P > 0.05), * (P < 0.05), ** (P < 0.01), * (P < 0.001).**

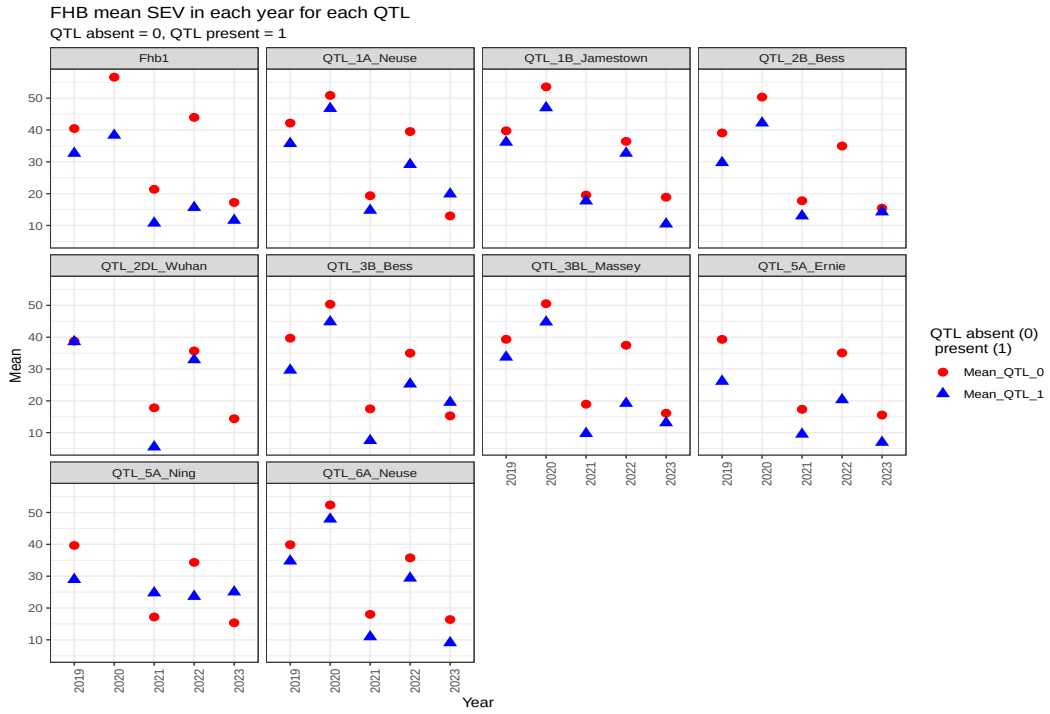
Efficacy of Selected FHB Resistance QTL For FDK (Top) and DON (Bottom), by year, for 2013 throuth 2023.





Efficacy of Selected FHB Resistance QTL For FHB Rating (Top) and Severity (Bottom), by year, for 2013 throuth 2023.





Heading Date (Julian Days*)

ENTRY NO	CULTIVAR/ DESIGNATION	C'STA TX	U'BANA IL	L'XTON KY	FLOR'CE SC	W'BORO LA	ALEX LA	W'SAW VA	MEAN ALL LOC.	Rank
1	ERNIE	87	137	125	93	88	88	125	106	*9*
2	COKER9835	84	142	129	96	82	88	123	106	*9*
3	BESS	96	139	125	99	93	93	121	109	*35*
4	JAMESTOWN	83	136	124	87	79	93	121	103	*3*
5	SS 8641	89	142	128	92	88	93	122	108	*23*
6	15VDH-FHB-MAS22-14	84	140	124	90	88	93	117	105	*6*
7	GA12099-7-2-6-6-21LE35	97	141	126	97	93	93	129	111	*49*
8	GA12213-10-7-21LE24	95	143	129	97	93	86	125	109	*35*
9	GA131246LDH-86-21E2	84	147	131	95	88	88	124	108	*23*
10	GA141045-9-3-2-21LE7	90	144	132	99	93	93	126	111	*49*
11	GA141556-5-1-21LE22	100	137	125	92	93	91	121	108	*23*
12	GA15036 ID-13-21E22	83	142	124	90	88	88	125	106	*9*
13	GA15340 ID-3-2-21LE29	96	140	123	95	93	91	121	108	*23*
14	GA15490 ID-19-5-21LE2	93	144	128	94	93	100	122	110	*42*
15	GA17634DH-08-21E36	83	140	125	91	83	93	115	104	*4*
16	GANC12915-167-21E3	85	141	126	92	88	93	122	107	*16*
17	KWS369	109	144	127	106	104	100	118	115	*62*
18	KWS382	103	140	127	97	97	93	127	112	*54*
19	KWS456	96	142	129	98	93	93	123	110	*42*
20	KWS459	99	141	125	96	93	93	120	109	*35*
21	KWS460	96	140	127	96	93	84	119	108	*23*
22	LA13176CB-6-2	82	145	124	94	86	94	121	106	*9*
23	LA14188C-28-3-1-4-1-2	91	134	123	90	88	83	118	104	*4*
24	LA15099GBW-7-1-3	92	139	123	94	93	97	120	108	*23*
25	LAAR15166W-30-1-3	84	140	127	94	88	93	121	107	*16*
26	LAAR15172W-42-1-3-1-3	84	139	125	92	88	97	124	107	*16*
27	LANC15040LDH-53	84	141	127	92	88	93	118	106	*9*
28	NC13217-W2111	104	139	125	101	97	88	122	111	*49*
29	NC14706-25	93	141	124	94	93	93	121	108	*23*
30	NC14711-12	100	140	128	94	91	91	119	109	*35*
31	NC16VT30-7-47	101	139	127	98	97	91	126	111	*49*
32	NC19-19921	96	135	122	92	93	97	116	107	*16*
33	NC19-19942	92	142	126	96	93	93	121	109	*35*
34	NC19-20002	97	142	125	99	93	93	120	110	*42*
35	NCVT.D-33	103	140	127	99	93	97	124	112	*54*
36	SC19WF3P0304-5	87	140	126	92	88	91	123	106	*9*
37	SC22W145	95	138	123	95	93	93	125	109	*35*
38	SC22W198	91	141	124	92	93	93	119	108	*23*
39	SC22W205	103	138	124	99	93	93	124	110	*42*
40	SC22W416	97	141	125	97	93	93	127	110	*42*
41	SCLA18WF0304-13	85	138	122	91	93	86	120	105	*6*
42	SCLA18WF0708-12-2	84	138	126	91	88	94	115	105	*6*
43	SCLA18WF0708-4-1	93	140	124	91	91	80	121	106	*9*
44	TX20D5056	96	146	129	104	93	97	121	112	*54*
45	TX22D7193	88	141	126	92	91	93	120	107	*16*
46	TX22D7332	108	142	129	102	100	100	118	114	*60*
47	TX22D7418	93	143	127	95	93	93	124	110	*42*
48	UMD_16-463-13	90	137	125	95	97	97	119	108	*23*
49	UMD_1-9-20	102	139	126	103	100	97	119	112	54
50	UMD_1-9-33	93	137	126	93	93	91	120	107	*16*
51	UMD_19-555-7	103	140	125	97	93	91	121	110	42
52	UMD-21-MDW104	92	142	126	94	93	93	122	109	*35*
53	UMD-21-MDW107	94	140	125	95	93	88	124	108	*23*
54	UMD-21-MDW73	90	138	128	93	93	86	123	107	*16*
55	UMD-21-MDX10	82	142	125	88	77	81	122	102	*2*
56	VA20W-135	105	140	125	102	100	97	116	112	*54*
57	VA21W-18	81	138	123	85	72	80	121	100	*1*
58	17VDH-SRW02-125	105	142	129	102	100	94	126	114	*60*
59	17VDH-SRW05-169	95	138	125	95	93	93	117	108	*23*
60	18VDH-FHB-MAS07-173-03	107	142	127	106	100	87	122	113	*59*
61	18VTK10-23	99	138	123	97	93	90.5	119	108	*23*
62	18VTK12-111	112	142	130	107	109		120	120	*63*
63	DH17SRW136-038	102	142	126	102	93	93	123	111	*49*
	Mean	94	140	126	95	92	92	121.2	103	
	CV%	2.2	1	1.4	1.3	3	6	3.2	4	
	LSD(0.05)	4	3	4	2	5	NS	8	8	
	R-Square	.	.	0.81	0.93	0.88	0.56	.	0.94	

*Days after December 31, 2022

Leaf Disease Ratings

	CULTIVAR/ DESIGNATION	Powdery Mildew Reaction 0-9 Warsaw VA	Leaf Rust Reaction 0-9 Warsaw VA	Stripe Rust Reaction 0-100 AR
1	ERNIE	3	6.0	29
2	COKER9835	3	0.5	33
3	BESS	4	7.0	19
4	JAMESTOWN	3	0.5	4
5	SS 8641	1	0.5	1
6	15VDH-FHB-MAS22-14	2	0.0	7
7	GA12099-7-2-6-6-21LE35	3	0.0	1
8	GA12213-10-7-21LE24	4	1.0	0
9	GA131246LDH-86-21E2	5	0.0	5
10	GA141045-9-3-2-21LE7	3	0.0	0
11	GA141556-5-1-21LE22	4	0.0	2
12	GA15036 ID-13-21E22	4	0.5	0
13	GA15340 ID-3-2-21LE29	4	0.5	0
14	GA15490 ID-19-5-21LE2	5	0.5	1
15	GA17634DH-08-21E36	5	0.5	0
16	GANC12915-167-21E3	1	0.0	1
17	KWS369	3	0.5	15
18	KWS382	2	0.0	0
19	KWS456	5	0.5	1
20	KWS459	6	0.0	4
21	KWS460	3	7.0	1
22	LA13176CB-6-2	6	0.0	4
23	LA14188C-28-3-1-4-1-2	4	0.0	0
24	LA15099GBW-7-1-3	2	0.5	2
25	LAAR15166W-30-1-3	5	0.0	2
26	LAAR15172W-42-1-3-1-3	5	0.0	0
27	LANC15040LDH-53	3	0.5	0
28	NC13217-W2111	2	0.0	60
29	NC14706-25	3	1.5	1
30	NC14711-12	3	0.5	5
31	NC16VT30-7-47	1	0.5	35
32	NC19-19921	3	0.5	9
33	NC19-19942	4	0.0	1
34	NC19-20002	3	0.0	0
35	NCVT.D-33	1	0.0	0
36	SC19WF3P0304-5	3	0.5	5
37	SC22W145	0	0.0	5
38	SC22W198	3	0.0	0
39	SC22W205	1	0.0	11
40	SC22W416	2	0.0	2
41	SCLA18WF0304-13	2	2.5	5
42	SCLA18WF0708-12-2	4	0.0	4
43	SCLA18WF0708-4-1	4	0.5	0
44	TX20D5056	4	0.5	1
45	TX22D7193	5	5.5	60
46	TX22D7332	5	3.0	7
47	TX22D7418	6	0.0	2
48	UMD_16-463-13	3	0.0	5
49	UMD_1-9-20	3	0.0	19
50	UMD_1-9-33	5	0.0	16
51	UMD_19-555-7	2	0.0	30
52	UMD-21-MDW104	4	1.0	1
53	UMD-21-MDW107	4	0.0	1
54	UMD-21-MDW73	4	0.0	0
55	UMD-21-MDX10	0	0.5	4
56	VA20W-135	3	0.5	0
57	VA21W-18	2	0.5	29
58	17VDH-SRW02-125	2	0.0	0
59	17VDH-SRW05-169	3	0.5	1
60	18VDH-FHB-MAS07-173-03	1	0.0	5
61	18VTK10-23	3	0.0	2
62	18VTK12-111	2	0.5	0
63	DH17SRW136-038	1	3.0	23
	Mean	3.0	0.8	7
	CV%	28.7	103.2	.
	LSD(0.05)	2	1.6	.

Hessian Fly Screening
(Resistant - Susceptible Plants)[1]

ENTRY NO	CULTIVAR/ DESIGNATION	Bio B R-S	Bio C R-S	Bio D R-S	Bio O R-S	Bio L R-S	*H13*
1	ERNIE	0-18	0-17	0-17	0-17	0-19	
2	COKER9835	0-18	0-21	0-14	0-15	0-15	*het*
3	BESS	0-17	0-19	0-14	0-15	0-16	
4	JAMESTOWN	18-0	19-0	17-0	0-19	0-18	
5	SS 8641	17-0	19-0	15-0	0-16	0-17	
6	15VDH-FHB-MAS22-14	0-17	0-17	0-18	0-19	0-18	
7	GA12099-7-2-6-6-21LE35	14-0	18-0	17-0	0-12	0-16	
8	GA12213-10-7-21LE24	0-19	0-18	0-14	0-14	0-16	
9	GA131246LDH-86-21E2	20-0	17-0	17-0	16-0	16-0	*het*
10	GA141045-9-3-2-21LE7	19-0	19-0	16-0	15-0	14-0	*H13b*
11	GA141556-5-1-21LE22	18-0	17-0	17-0	16-0	18-0	*H13a*
12	GA15036 ID-13-21E22	0-18	0-17	0-18	0-15	0-16	
13	GA15340 ID-3-2-21LE29	15-0	15-0	10-0	13-0	17-0	*H13a*
14	GA15490 ID-19-5-21LE2	15-1	19-0	17-0	4-11	0-17	
15	GA17634DH-08-21E36	14-0	15-0	15-0	12-0	0-15	
16	GANC12915-167-21E3	20-0	15-0	20-0	15-0	18-0	*H13a*
17	KWS369	0-15	0-17	0-16	0-17	0-15	
18	KWS382	0-15	0-16	0-18	0-14	0-18	
19	KWS456	0-18	0-18	0-18	0-16	0-17	
20	KWS459	0-18	0-19	0-20	0-15	0-17	
21	KWS460	0-19	0-16	0-19	0-14	0-15	
22	LA13176CB-6-2	13-3	16-0	20-0	0-18	0-12	
23	LA14188C-28-3-1-4-1-2	14-0	21-0	18-0	17-0	16-0	*H13a*
24	LA15099GBW-7-1-3	0-9	0-16	0-12	0-13	0-14	
25	LAAR15166W-30-1-3	0-18	0-20	0-20	0-15	0-19	
26	LAAR15172W-42-1-3-1-3	10-4	11-3	3-11	0-15	0-20	
27	LANC15040LDH-53	20-0	16-0	18-0	0-11	0-16	
28	NC13217-W2111	18-0	16-0	17-0	0-16	0-16	
29	NC14706-25	18-0	15-0	18-0	0-15	0-17	
30	NC14711-12	21-0	19-0	16--0	18-0	17-0	*H13a*
31	NC16VT30-7-47	11-0	14-0	17-0	15-0	15-0	*NA*
32	NC19-19921	16-0	15-0	16-0	15-0	16-0	*H13a*
33	NC19-19942	14-3	18-0	17-0	0-18	0-18	
34	NC19-20002	14-0	16-1	13-2	0-19	0-16	
35	NCVT.D-33	17-0	15-0	15-0	17-0	20-0	*H13a*
36	SC19WF3P0304-5	0-15	0-15	0-13	0-16	0-14	*het*
37	SC22W145	4-12	0-16	0-19	0-19	0-20	
38	SC22W198	2-15	7-8	0-17	14-2	0-17	
39	SC22W205	15-0	18-0	15-0	18-0	16-0	*het*
40	SC22W416	0-17	0-19	0-16	0-19	0-17	
41	SCLA18WF0304-13	0-18	17-2	0-18	0-14	0-15	
42	SCLA18WF0708-12-2	17-0	19-0	19-0	15-0	10-4	*H13a*
43	SCLA18WF0708-4-1	16-3	19-1	19-1	0-17	11-5	*het*
44	TX20D5056	17-2	20-0	16-0	0-20	0-16	
45	TX22D7193	0-15	0-18	0-18	0-18	0-16	
46	TX22D7332	9-4	19-2	0-19	0-18	0-17	
47	TX22D7418	11-3	18-3	15-1	0-16	0-17	
48	UMD_16-463-13	0-15	11-2	0-15	0-14	0-15	
49	UMD_1-9-20	12-0	18-0	15-0	15-0	11-0	*H13a*
50	UMD_1-9-33	18-0	16-0	15-0	23-0	15-0	*H13a*
51	UMD_19-555-7	17-2	17-2	15-2	0-17	0-16	
52	UMD-21-MDW104	0-13	0-18	0-15	0-19	0-13	
53	UMD-21-MDW107	15-2	5-14	0-17	0-18	0-11	
54	UMD-21-MDW73	0-17	4-17	0-16	0-13	0-17	
55	UMD-21-MDX10	17-0	17-0	18-0	0-19	0-16	
56	VA20W-135	16-0	17-0	16-0	0-15	0-13	
57	VA21W-18	0-16	0-16	0-15	0-18	0-15	
58	17VDH-SRW02-125	18-0	17-0	17-0	0-13	0-15	
59	17VDH-SRW05-169	0-18	0-16	0-21	0-17	0-18	
60	18VDH-FHB-MAS07-173-03	22-0	17-0	19-0	19-0	18-0	*H13a*
61	18VTK10-23	0-17	5-12	0-16	0-16	0-16	
62	18VTK12-111	15-0	15-0	16-0	15-0	21-0	*H13a*
63	DH17SRW136-038	0-16	14-0	0-15	0-15	0-22	

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

Grain Yield and Test Weight

ENTRY NO	CULTIVAR/ DESIGNATION	W'SAW VA bu / ac	*Rank*	Test Weight lb / bu
1	ERNIE	80	*11*	52.5
2	COKER9835	84	*7*	54.1
3	BESS	89	*4*	59.0
4	JAMESTOWN	98	*1*	59.6
5	SS 8641	91	*3*	46.3
6	15VDH-FHB-MAS22-14	69	*23*	55.9
7	GA12099-7-2-6-6-21LE35	84	*6*	60.6
8	GA12213-10-7-21LE24	75	*13*	55.6
9	GA131246LDH-86-21E2	95	*2*	58.4
10	GA141045-9-3-2-21LE7	79	*12*	56.2
11	GA141556-5-1-21LE22	73	*17*	65.8
12	GA15036 ID-13-21E22	71	*21*	57.8
13	GA15340 ID-3-2-21LE29	63	*28*	58.7
14	GA15490 ID-19-5-21LE2	89	*5*	57.5
15	GA17634DH-08-21E36	74	*15*	58.4
16	GANC12915-167-21E3	67	*25*	51.0
17	KWS369	70	*22*	56.8
18	KWS382	81	*10*	55.3
19	KWS456	83	*8*	54.4
20	KWS459	82	*9*	60.9
21	KWS460	59	*32*	59.3
22	LA13176CB-6-2	50	*40*	49.4
23	LA14188C-28-3-1-4-1-2	47	*47*	51.6
24	LA15099GBW-7-1-3	62	*31*	64.6
25	LAAR15166W-30-1-3	74	*14*	47.6
26	LAAR15172W-42-1-3-1-3	47	*46*	44.2
27	LANC15040LDH-53	40	*58*	48.8
28	NC13217-W2111	71	*20*	50.1
29	NC14706-25	65	*27*	60.6
30	NC14711-12	69	*24*	56.8
31	NC16VT30-7-47	62	*29*	53.1
32	NC19-19921	57	*34*	55.9
33	NC19-19942	53	*36*	54.7
34	NC19-20002	72	*18*	58.1
35	NCVT.D-33	67	*26*	52.8
36	SC19WF3P0304-5	52	*37*	51.9
37	SC22W145	45	*48*	46.7
38	SC22W198	45	*49*	45.1
39	SC22W205	50	*43*	54.1
40	SC22W416	74	*16*	55.3
41	SCLA18WF0304-13	41	*56*	55.0
42	SCLA18WF0708-12-2	41	*57*	50.1
43	SCLA18WF0708-4-1	50	*39*	48.5
44	TX20D5056	51	*38*	48.2
45	TX22D7193	72	*19*	53.4
46	TX22D7332	42	*55*	45.1
47	TX22D7418	43	*54*	53.8
48	UMD_16-463-13	39	*59*	36.5
49	UMD_1-9-20	44	*52*	48.8
50	UMD_1-9-33	49	*45*	44.5
51	UMD_19-555-7	43	*53*	41.7
52	UMD-21-MDW104	34	*62*	32.4
53	UMD-21-MDW107	33	*63*	35.2
54	UMD-21-MDW73	37	*60*	46.0
55	UMD-21-MDX10	49	*44*	48.5
56	VA20W-135	50	*42*	57.5
57	VA21W-18	35	*61*	41.1
58	17VDH-SRW02-125	54	*35*	57.2
59	17VDH-SRW05-169	45	*50*	60.2
60	18VDH-FHB-MAS07-173-03	45	*51*	49.1
61	18VTK10-23	50	*41*	58.4
62	18VTK12-111	59	*33*	60.9
63	DH17SRW136-038	62	*30*	59.6
	Mean	60.7		52.8

Means Across Locations 2022-23

	Cultivar/ Designation	FHB Rating	Rank	FHB Incidence	FHB Severity	Rank	FDK	Rank	DON	Rank	Head. Date	Rank
1	ERNIE	3	39	1	7	13	22	9	4	17	106	9
2	COKER9835	6	61	55	27	53	54	61	12	57	106	9
3	BESS	2	1	0	25	51	19	6	2	1	109	35
4	JAMESTOWN	4	43	1	4	7	23	12	3	5	103	3
5	SS 8641	6	63	9	20	43	54	61	25	63	108	23
6	15VDH-FHB-MAS22-14	2	7	0	7	13	13	2	2	1	105	6
7	GA12099-7-2-6-6-21LE35	3	23	4	14	32	31	29	6	38	111	49
8	GA12213-10-7-21LE24	5	59	12	42	59	60	63	23	62	109	35
9	GA131246LDH-86-21E2	4	46	9	27	53	41	55	14	61	108	23
10	GA141045-9-3-2-21LE7	3	26	1	25	51	27	17	6	38	111	49
11	GA141556-5-1-21LE22	4	50	9	27	53	36	47	7	47	108	23
12	GA15036 ID-13-21E22	6	62	20	21	46	41	55	9	51	106	9
13	GA15340 ID-3-2-21LE29	3	29	2	14	32	30	25	5	28	108	23
14	GA15490 ID-19-5-21LE2	4	48	2	35	57	43	59	13	59	110	42
15	GA17634DH-08-21E36	3	35	5	7	13	29	22	5	28	104	4
16	GANC12915-167-21E3	4	52	2	21	46	31	29	9	51	107	16
17	KWS369	2	4	1	14	32	31	29	3	5	115	62
18	KWS382	3	15	2	3	4	34	38	3	5	112	54
19	KWS456	3	26	2	14	32	30	25	4	17	110	42
20	KWS459	3	26	4	7	13	35	42	5	28	109	35
21	KWS460	3	15	2	7	13	34	38	3	5	108	23
22	LA13176CB-6-2	3	15	0	0	1	17	3	3	5	106	9
23	LA14188C-28-3-1-4-1-2	4	46	1	50	62	24	14	3	5	104	4
24	LA15099GBW-7-1-3	4	50	1	4	7	33	36	6	38	108	23
25	LAAR15166W-30-1-3	2	2	0	0	1	12	1	2	1	107	16
26	LAAR15172W-42-1-3-1-3	3	29	2	11	30	30	25	3	5	107	16
27	LANC15040LDH-53	3	10	1	3	4	26	16	3	5	106	9
28	NC13217-W2111	3	15	4	14	32	25	15	4	17	111	49
29	NC14706-25	4	41	3	7	13	28	18	6	38	108	23
30	NC14711-12	3	15	2	7	13	22	9	3	5	109	35
31	NC16VT30-7-47	4	41	2	14	32	32	34	5	28	111	49
32	NC19-19921	4	40	17	20	43	20	8	4	17	107	16
33	NC19-19942	3	15	2	7	13	22	9	4	17	109	35
34	NC19-20002	3	15	2	27	53	35	42	5	28	110	42
35	NCVT.D-33	3	34	3	14	32	34	38	3	5	112	54
36	SC19WF3P0304-5	4	43	1	7	13	29	22	5	28	106	9
37	SC22W145	3	10	0	14	32	28	18	4	17	109	35
38	SC22W198	3	12	1	11	30	18	4	4	17	108	23
39	SC22W205	3	29	5	7	13	31	29	5	28	110	42
40	SC22W416	2	4	0	0	1	23	12	3	5	110	42
41	SCLA18WF0304-13	4	56	4	35	57	38	52	7	47	105	6
42	SCLA18WF0708-12-2	4	49	3	7	13	36	47	8	50	105	6
43	SCLA18WF0708-4-1	3	29	1	7	13	31	29	9	51	106	9
44	TX20D5056	3	35	1	42	59	40	54	13	59	112	54
45	TX22D7193	5	60	5	4	7	45	60	11	56	107	16
46	TX22D7332	3	23	3	21	46	42	58	12	57	114	60
47	TX22D7418	4	52	1	14	32	34	38	9	51	110	42
48	UMD_16-463-13	3	35	4	4	7	36	47	5	28	108	23
49	UMD_1-9-20	3	12	0	10	29	30	25	6	38	112	54
50	UMD_1-9-33	3	29	0	3	4	18	4	2	1	107	16
51	UMD_19-555-7	3	12	1	4	7	41	55	3	5	110	42
52	UMD-21-MDW104	5	58	6	73	63	39	53	9	51	109	35
53	UMD-21-MDW107	4	52	3	44	61	35	42	6	38	108	23
54	UMD-21-MDW73	4	43	8	7	13	33	36	4	17	107	16
55	UMD-21-MDX10	3	35	1	20	43	28	18	5	28	102	2
56	VA20W-135	3	7	1	14	32	37	50	6	38	112	54
57	VA21W-18	5	57	9	7	13	32	34	6	38	100	1
58	17VDH-SRW02-125	2	7	1	7	13	29	22	4	17	114	60
59	17VDH-SRW05-169	4	52	12	21	46	37	50	6	38	108	23
60	18VDH-FHB-MAS07-173-03	2	6	1	14	32	35	42	5	28	113	59
61	18VTK10-23	3	15	1	4	7	28	18	4	17	108	23
62	18VTK12-111	2	2	2	7	13	19	6	4	17	120	63
63	DH17SRW136-038	3	23	3	21	46	35	42	7	47	111	49
	Mean	3		4	15		32		6		103	
	CV%	26.8		88.0	66.0		40.7		72.5		3.9	
	LSD(0.05)	2		10	28.8		25		9		8	
	R-Square	0.66		77	36		0.60		0.68		0.94	
	Correl w/ GEBV	0.49			0.46		0.59		0.62			

Means and Variances of Genotypic Estimated Breeding Values for FHB Rating of progenies from selected crosses between entries in the 2021-22 and 2022-23 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%
NC18-16901	USSN22	TX20D5032	USSN22	1.7	0.07	1.2
LA15005GBB-13-1-1	USSN22	NC18-16901	USSN22	1.6	0.07	1.2
15VDH-FHB-MAS22-14	USSN22	NC18-16901	USSN22	1.8	0.10	1.2
NC18-16901	USSN22	UMD-21-MDW73	USSN23	1.8	0.10	1.2
LA15005GBB-4-1-3	USSN22	NC18-16901	USSN22	1.7	0.06	1.3
NC18-16900	USSN22	TX20D5032	USSN22	1.8	0.07	1.3
NC18-16900	USSN22	UMD-21-MDW73	USSN23	1.9	0.10	1.3
LA15005GBB-13-1-1	USSN22	NC18-16900	USSN22	1.7	0.06	1.3
15VDH-FHB-MAS22-14	USSN22	NC18-16900	USSN22	1.8	0.10	1.3
ERNIE	USSN22	NC18-16901	USSN22	1.8	0.08	1.3
BESS	USSN22	NC18-16901	USSN22	1.8	0.08	1.3
NC18-16900	USSN22	NC18-16901	USSN22	1.5	0.01	1.3
NC18-16901	USSN22	18VTK12-111	USSN23	1.9	0.11	1.3
LA15005GBB-4-1-3	USSN22	NC18-16900	USSN22	1.8	0.06	1.4
NC18-16901	USSN22	LANC15040LDH-53	USSN23	1.9	0.09	1.4
TX20D5032	USSN22	UMD-21-MDW73	USSN23	2.0	0.12	1.4
LA14173CBW-30-1-4	USSN22	NC18-16901	USSN22	2.0	0.11	1.4
LA15092SBBW-25-1-2	USSN22	NC18-16901	USSN22	2.0	0.11	1.4
NC18-16901	USSN22	NC16VT30-7-47	USSN23	1.9	0.09	1.4
ERNIE	USSN22	NC18-16900	USSN22	1.9	0.08	1.4
NC18-16901	USSN22	SC19WF3P0304-5	USSN23	2.0	0.12	1.4
NC18-16901	USSN22	UMD-FHBN-7	USSN22	1.9	0.07	1.4
LA13176CBB-50-1-3	USSN22	NC18-16901	USSN22	1.9	0.09	1.4
15VDH-FHB-MAS22-14	USSN22	TX20D5032	USSN22	2.0	0.10	1.4
NC18-16900	USSN22	18VTK12-111	USSN23	2.0	0.11	1.4
NC18-16900	USSN22	LANC15040LDH-53	USSN23	2.0	0.10	1.4
ERNIE	USSN22	TX20D5032	USSN22	2.0	0.11	1.4
BESS	USSN22	NC18-16900	USSN22	1.9	0.08	1.4
LA15005GBB-13-1-1	USSN22	UMD-21-MDW73	USSN23	2.0	0.09	1.5
LA15005GBB-4-1-3	USSN22	UMD-21-MDW73	USSN23	2.0	0.10	1.5
NC18-16900	USSN22	NC16VT30-7-47	USSN23	2.0	0.11	1.5
BESS	USSN22	TX20D5032	USSN22	2.0	0.12	1.5
JAMESTOWN	USSN22	NC18-16901	USSN22	2.0	0.08	1.5
TX20D5032	USSN22	18VTK12-111	USSN23	2.1	0.14	1.5
LA13176CBB-50-1-3	USSN22	NC18-16900	USSN22	2.0	0.10	1.5
BESS	USSN22	LA15005GBB-13-1-1	USSN22	2.0	0.10	1.5
15VDH-FHB-MAS22-14	USSN22	LA15005GBB-13-1-1	USSN22	2.0	0.07	1.5
NC18-16901	USSN22	LA13176CB-6-2	USSN23	2.0	0.09	1.5
LA15005GBB-13-1-1	USSN22	TX20D5032	USSN22	1.9	0.05	1.5
BESS	USSN22	LA15005GBB-4-1-3	USSN22	2.1	0.11	1.5
NC18-16900	USSN22	UMD-FHBN-7	USSN22	2.0	0.08	1.5
LA15005GBB-13-1-1	USSN22	LANC15040LDH-53	USSN23	2.1	0.12	1.5
15VDH-FHB-MAS22-14	USSN22	LA15005GBB-4-1-3	USSN22	2.0	0.08	1.5
ERNIE	USSN22	LA15005GBB-4-1-3	USSN22	2.0	0.09	1.5
LA14173CBW-30-1-4	USSN22	NC18-16900	USSN22	2.1	0.10	1.5
LA15092SBBW-25-1-2	USSN22	NC18-16900	USSN22	2.0	0.10	1.5
LA15005GBB-13-1-1	USSN22	NC18-16920	USSN22	2.0	0.08	1.5
TX20D5032	USSN22	LANC15040LDH-53	USSN23	2.1	0.11	1.5
NC18-16901	USSN22	18VTK10-23	USSN23	2.1	0.11	1.5
NC18-16900	USSN22	SC19WF3P0304-5	USSN23	2.1	0.11	1.5

Means and Variances of Genotypic Estimated Breeding Values for Severity of progenies from selected crosses between entries in the 2021-22 and 2022-23 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%
LA15005GBB-13-1-1	USSN22	NC18-16901	USSN22	10.4	11.7	4.5
LA15005GBB-13-1-1	USSN22	LA15005GBB-4-1-3	USSN22	10.5	9.4	5.3
LA15005GBB-13-1-1	USSN22	NC18-16900	USSN22	11.0	11.0	5.4
LA15005GBB-13-1-1	USSN22	NC18-16920	USSN22	12.8	12.7	6.6
LA15005GBB-4-1-3	USSN22	NC18-16901	USSN22	11.3	7.3	6.7
LA15005GBB-4-1-3	USSN22	NC18-16900	USSN22	11.9	6.9	7.4
LA14173CBW-30-1-4	USSN22	LA15005GBB-4-1-3	USSN22	14.8	16.3	7.7
LA14173CBW-30-1-4	USSN22	NC18-16901	USSN22	14.8	16.0	7.8
LA14173CBW-30-1-4	USSN22	LA15005GBB-13-1-1	USSN22	13.8	10.8	8.1
LA15005GBB-13-1-1	USSN22	SC22W145	USSN23	15.8	19.3	8.1
LA15005GBB-4-1-3	USSN22	NC18-16920	USSN22	13.7	8.2	8.7
LA14173CBW-30-1-4	USSN22	NC18-16900	USSN22	15.4	14.8	8.7
LA15005GBB-13-1-1	USSN22	UMD-FHBN-7	USSN22	14.7	11.6	8.8
BESS	USSN22	LA15005GBB-13-1-1	USSN22	15.7	16.3	8.9
LA15005GBB-13-1-1	USSN22	SC19WF3P0304-5	USSN23	17.9	26.7	8.9
LA15005GBB-4-1-3	USSN22	UMD-FHBN-7	USSN22	15.6	14.9	9.0
LA15005GBB-13-1-1	USSN22	LANC15040LDH-53	USSN23	16.1	16.4	9.1
BESS	USSN22	LA15005GBB-4-1-3	USSN22	16.8	18.8	9.2
LA15005GBB-4-1-3	USSN22	LAAR15166W-30-1-3	USSN23	16.5	16.9	9.5
LA15005GBB-13-1-1	USSN22	TX20D5032	USSN22	14.9	9.7	9.5
LA15005GBB-13-1-1	USSN22	LAAR15166W-30-1-3	USSN23	15.7	12.5	9.6
NC18-16900	USSN22	NC18-16901	USSN22	12.0	1.9	9.6
BESS	USSN22	NC18-16901	USSN22	16.7	16.8	9.7
LA15005GBB-13-1-1	USSN22	UMD-21-MDW73	USSN23	17.4	19.4	9.7
LA15005GBB-4-1-3	USSN22	LANC15040LDH-53	USSN23	17.0	17.2	9.9
NC18-16901	USSN22	UMD-FHBN-7	USSN22	15.6	11.1	9.9
NC18-16901	USSN22	LAAR15166W-30-1-3	USSN23	16.6	14.2	10.0
LA15005GBB-13-1-1	USSN22	UMD-21-MDX10	USSN23	16.5	13.6	10.0
LA15005GBB-4-1-3	USSN22	SC22W145	USSN23	16.7	14.7	10.1
LA13176CBB-50-1-3	USSN22	LA15005GBB-13-1-1	USSN22	16.4	12.9	10.1
LA13176CBB-50-1-3	USSN22	LA15005GBB-4-1-3	USSN22	17.4	17.2	10.1
LA14173CBW-30-1-4	USSN22	NC18-16920	USSN22	17.1	16.0	10.2
BESS	USSN22	NC18-16900	USSN22	17.4	17.5	10.2
LA15005GBB-13-1-1	USSN22	18VTK10-23	USSN23	18.6	23.4	10.3
NC18-16900	USSN22	LAAR15166W-30-1-3	USSN23	17.2	15.7	10.3
LA15005GBB-13-1-1	USSN22	SCLA18WF0512-11-3	USSN22	19.0	24.7	10.3
NC18-16900	USSN22	UMD-FHBN-7	USSN22	16.3	11.8	10.3
15VDH-FHB-MAS22-14	USSN22	NC18-16901	USSN22	17.8	17.8	10.4
LA15005GBB-13-1-1	USSN22	SCLA18WF0708-4-1	USSN23	18.2	19.8	10.5
15VDH-FHB-MAS22-14	USSN22	LA15005GBB-13-1-1	USSN22	16.8	13.0	10.5
LA15005GBB-13-1-1	USSN22	LA15092SBBW-25-1-2	USSN22	17.6	15.5	10.8
LA15005GBB-13-1-1	USSN22	SCAR160643LDH-8	USSN22	17.0	13.0	10.8
NC18-16901	USSN22	TX20D5032	USSN22	15.8	8.4	10.8
NC18-16900	USSN22	LANC15040LDH-53	USSN23	17.7	15.3	10.8
LA13176CBB-50-1-3	USSN22	NC18-16901	USSN22	17.4	14.1	10.9
LA15005GBB-4-1-3	USSN22	SCAR160643LDH-8	USSN22	17.9	16.6	10.9
LA15005GBB-13-1-1	USSN22	18VTK12-111	USSN23	18.4	18.7	10.9
NC18-16901	USSN22	LANC15040LDH-53	USSN23	17.0	12.5	10.9
LA15005GBB-13-1-1	USSN22	LA13176CB-6-2	USSN23	17.2	13.0	10.9
LA15005GBB-4-1-3	USSN22	LA13176CB-6-2	USSN23	18.1	17.2	11.0
15VDH-FHB-MAS22-14	USSN22	NC18-16900	USSN22	18.4	18.0	11.1
NC18-16901	USSN22	NC18-16920	USSN22	13.7	2.2	11.1

Means and Variances of Genotypic Estimated Breeding Values for FDK of progenies from selected crosses between entries in the 2021-22 and 2022-23 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	USSN22	NC18-16901	USSN22	14.6	10.4	8.9
BESS	USSN22	LAAR15166W-30-1-3	USSN23	15.3	12.4	9.2
NC18-16901	USSN22	LAAR15166W-30-1-3	USSN23	14.7	9.5	9.4
BESS	USSN22	SC22W145	USSN23	16.0	13.8	9.5
BESS	USSN22	LA15005GBB-13-1-1	USSN22	15.7	12.1	9.6
NC18-16901	USSN22	UMD-21-MDW73	USSN23	15.2	10.4	9.7
BESS	USSN22	TX20D5032	USSN22	16.0	12.5	9.8
NC18-16900	USSN22	LAAR15166W-30-1-3	USSN23	15.8	12.0	9.8
NC18-16901	USSN22	SC19WF3P0304-5	USSN23	15.7	11.9	9.8
TX20D5032	USSN22	LAAR15166W-30-1-3	USSN23	16.1	13.0	9.9
BESS	USSN22	NC18-16900	USSN22	15.7	10.9	9.9
BESS	USSN22	UMD-21-MDW73	USSN23	15.8	11.1	10.1
TX20D5032	USSN22	UMD-21-MDW73	USSN23	16.5	13.1	10.2
LAAR15166W-30-1-3	USSN23	UMD-21-MDW73	USSN23	15.9	10.1	10.5
LA15005GBB-13-1-1	USSN22	NC18-16901	USSN22	15.1	6.7	10.5
LAAR15166W-30-1-3	USSN23	SC19WF3P0304-5	USSN23	16.5	11.8	10.6
SC19WF3P0304-5	USSN23	SC22W145	USSN23	17.2	13.8	10.7
LA15005GBB-13-1-1	USSN22	LAAR15166W-30-1-3	USSN23	15.8	8.8	10.7
LAAR15166W-30-1-3	USSN23	SC22W145	USSN23	16.2	9.7	10.8
BESS	USSN22	SC19WF3P0304-5	USSN23	16.3	10.1	10.8
ERNIE	USSN22	NC18-16901	USSN22	16.5	10.6	10.9
LA15005GBB-13-1-1	USSN22	UMD-21-MDW73	USSN23	16.3	9.4	10.9
NC18-16900	USSN22	UMD-21-MDW73	USSN23	16.3	9.8	10.9
BESS	USSN22	LA14173CBW-30-1-4	USSN22	18.3	17.6	11.0
SC22W145	USSN23	UMD-21-MDW73	USSN23	16.6	10.8	11.0
NC18-16901	USSN22	TX20D5032	USSN22	15.4	6.1	11.1
TX20D5032	USSN22	SC19WF3P0304-5	USSN23	17.1	11.8	11.1
BESS	USSN22	LA15005GBB-4-1-3	USSN22	17.3	12.3	11.2
BESS	USSN22	JAMESTOWN	USSN22	17.8	13.4	11.4
NC18-16901	USSN22	SC22W145	USSN23	15.4	5.2	11.4
LA15005GBB-4-1-3	USSN22	LAAR15166W-30-1-3	USSN23	17.4	11.8	11.4
NC18-16900	USSN22	SC19WF3P0304-5	USSN23	16.8	9.9	11.4
LA15005GBB-13-1-1	USSN22	SC22W145	USSN23	16.5	8.4	11.5
ERNIE	USSN22	SC22W145	USSN23	17.9	13.6	11.5
NC18-16920	USSN22	LAAR15166W-30-1-3	USSN23	17.5	11.9	11.5
ERNIE	USSN22	BESS	USSN22	17.0	10.2	11.5
TX20D5032	USSN22	SC22W145	USSN23	16.8	9.2	11.5
NC18-16900	USSN22	SC22W145	USSN23	16.5	7.8	11.6
LA15092SBBW-25-1-2	USSN22	NC18-16901	USSN22	17.8	13.1	11.6
LA14173CBW-30-1-4	USSN22	LAAR15166W-30-1-3	USSN23	18.4	15.5	11.7
LA15005GBB-13-1-1	USSN22	SC19WF3P0304-5	USSN23	16.8	8.9	11.7
ERNIE	USSN22	LAAR15166W-30-1-3	USSN23	17.3	10.0	11.7
ERNIE	USSN22	TX20D5032	USSN22	17.9	12.4	11.8
LA15005GBB-13-1-1	USSN22	NC18-16900	USSN22	16.1	6.2	11.8
LA15092SBBW-25-1-2	USSN22	LAAR15166W-30-1-3	USSN23	18.6	15.0	11.9
LA15005GBB-13-1-1	USSN22	TX20D5032	USSN22	16.4	6.7	11.9
LA14173CBW-30-1-4	USSN22	NC18-16901	USSN22	17.6	10.6	12.0
BESS	USSN22	15VDH-FHB-MAS22-14	USSN22	18.5	13.8	12.0
LA14173CBW-30-1-4	USSN22	UMD-21-MDW73	USSN23	18.9	15.6	12.0
ERNIE	USSN22	NC18-16900	USSN22	17.6	10.5	12.0
BESS	USSN22	SC22W416	USSN23	18.9	15.6	12.0
BESS	USSN22	NC18-16920	USSN22	17.4	9.7	12.1

Means and Variances of Genotypic Estimated Breeding Values for DON of progenies from selected crosses between entries in the 2021-22 and 2022-23 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%
LA15005GBB-13-1-1	USSN22	TX20D5032	USSN22	3.3	1.6	1.0
LA15005GBB-13-1-1	USSN22	NC18-16900	USSN22	3.4	1.5	1.2
LA15005GBB-13-1-1	USSN22	NC18-16901	USSN22	3.6	1.8	1.3
LA14173CBW-30-1-4	USSN22	LA15005GBB-13-1-1	USSN22	3.7	1.6	1.5
LA14173CBW-30-1-4	USSN22	LA15005GBB-4-1-3	USSN22	4.2	2.4	1.5
NC18-16900	USSN22	TX20D5032	USSN22	3.7	1.5	1.6
LA15005GBB-13-1-1	USSN22	UMD-1-9-33	USSN23	4.2	2.2	1.6
LA14173CBW-30-1-4	USSN22	TX20D5032	USSN22	4.0	1.8	1.7
NC18-16901	USSN22	TX20D5032	USSN22	3.9	1.6	1.7
LA15005GBB-4-1-3	USSN22	NC18-16900	USSN22	3.8	1.5	1.7
LA15005GBB-4-1-3	USSN22	NC18-16901	USSN22	4.0	1.7	1.7
LA15005GBB-4-1-3	USSN22	TX20D5032	USSN22	3.7	1.3	1.7
TX20D5032	USSN22	VA20W-69	USSN22	4.4	2.4	1.7
LA14173CBW-30-1-4	USSN22	NC18-16900	USSN22	4.1	1.9	1.7
LA15005GBB-13-1-1	USSN22	VA20W-69	USSN22	4.1	1.9	1.8
LA15005GBB-13-1-1	USSN22	LA15005GBB-4-1-3	USSN22	3.4	0.9	1.8
LA14173CBW-30-1-4	USSN22	NC18-16901	USSN22	4.3	2.1	1.8
LA15005GBB-4-1-3	USSN22	UMD-1-9-33	USSN23	4.7	2.7	1.9
TX20D5032	USSN22	UMD-1-9-33	USSN23	4.5	2.3	1.9
LA15005GBB-13-1-1	USSN22	NC18-16920	USSN22	4.3	1.8	2.0
LA15005GBB-13-1-1	USSN22	LANC15040LDH-53	USSN23	4.8	2.6	2.0
LA15005GBB-4-1-3	USSN22	VA20W-69	USSN22	4.6	2.2	2.0
LA15005GBB-13-1-1	USSN22	LA15092SBBW-25-1-2	USSN22	4.7	2.3	2.0
LA15005GBB-13-1-1	USSN22	18VDH-FHB-MAS07-173-0	USSN23	5.3	3.4	2.1
LA15005GBB-13-1-1	USSN22	SC22W145	USSN23	4.7	2.2	2.1
LA14173CBW-30-1-4	USSN22	VA20W-69	USSN22	4.9	2.4	2.2
LA15005GBB-4-1-3	USSN22	LANC15040LDH-53	USSN23	5.2	3.1	2.2
LA15005GBB-13-1-1	USSN22	UMD-FHBN-7	USSN22	5.0	2.5	2.2
NC18-16900	USSN22	VA20W-69	USSN22	4.6	1.8	2.3
NC18-16920	USSN22	TX20D5032	USSN22	4.6	1.8	2.3
LA15005GBB-13-1-1	USSN22	UMD-1-9-20	USSN23	5.0	2.5	2.3
NC18-16901	USSN22	VA20W-69	USSN22	4.8	2.0	2.3
TX20D5032	USSN22	SC22W145	USSN23	5.0	2.4	2.3
LA15005GBB-4-1-3	USSN22	UMD-FHBN-7	USSN22	5.4	3.1	2.4
NC18-16900	USSN22	UMD-1-9-33	USSN23	4.6	1.7	2.4
LA15005GBB-13-1-1	USSN22	SCLA18WF0512-11-3	USSN22	5.3	2.7	2.4
LA14173CBW-30-1-4	USSN22	UMD-1-9-33	USSN23	5.0	2.2	2.4
LA15092SBBW-25-1-2	USSN22	NC18-16900	USSN22	5.0	2.3	2.4
LA15005GBB-13-1-1	USSN22	SC22W416	USSN23	5.2	2.5	2.4
LA15005GBB-13-1-1	USSN22	SC19WF3P0304-5	USSN23	5.4	2.9	2.4
LA15005GBB-4-1-3	USSN22	18VDH-FHB-MAS07-173-0	USSN23	5.7	3.6	2.4
TX20D5032	USSN22	SC19WF3P0304-5	USSN23	5.7	3.4	2.4
LA15005GBB-13-1-1	USSN22	NC14711-12	USSN23	5.1	2.3	2.4
LA15005GBB-13-1-1	USSN22	17VDH-SRW02-125	USSN23	5.5	3.0	2.5
LA15005GBB-4-1-3	USSN22	SC22W145	USSN23	5.1	2.3	2.5
NC18-16901	USSN22	UMD-1-9-33	USSN23	4.8	1.9	2.5
LA15005GBB-4-1-3	USSN22	SC22W416	USSN23	5.6	3.2	2.5
NC18-16900	USSN22	LANC15040LDH-53	USSN23	5.2	2.5	2.5
TX20D5032	USSN22	UMD-1-9-20	USSN23	5.3	2.5	2.5
LA15005GBB-4-1-3	USSN22	NC18-16920	USSN22	4.8	1.7	2.5
LA15092SBBW-25-1-2	USSN22	TX20D5032	USSN22	4.9	1.9	2.5
TX20D5032	USSN22	LANC15040LDH-53	USSN23	5.1	2.1	2.5