

# **SOUTHERN UNIFORM WINTER WHEAT SCAB NURSERY**

## **2021 NURSERY REPORT**

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

### **ACKNOWLEDGEMENT AND DISCLAIMER**

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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 and Newport, Arkansas**

- Cooperator: David Moon.
- University of Arkansas.

### **Kinston, North Carolina**

- Cooperator: Paul Murphy
- North Carolina State University

### **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



***Above: FHB in misted nursery, Winnsboro, LA***



***Above: Cold, wet and tired -- but the misting system is up!!!!***



***Left: Foxgloves blooming ---  
time to check onset of FHB in  
the misted nursery***

## Entry List and Pedigrees, 2021 Nursery

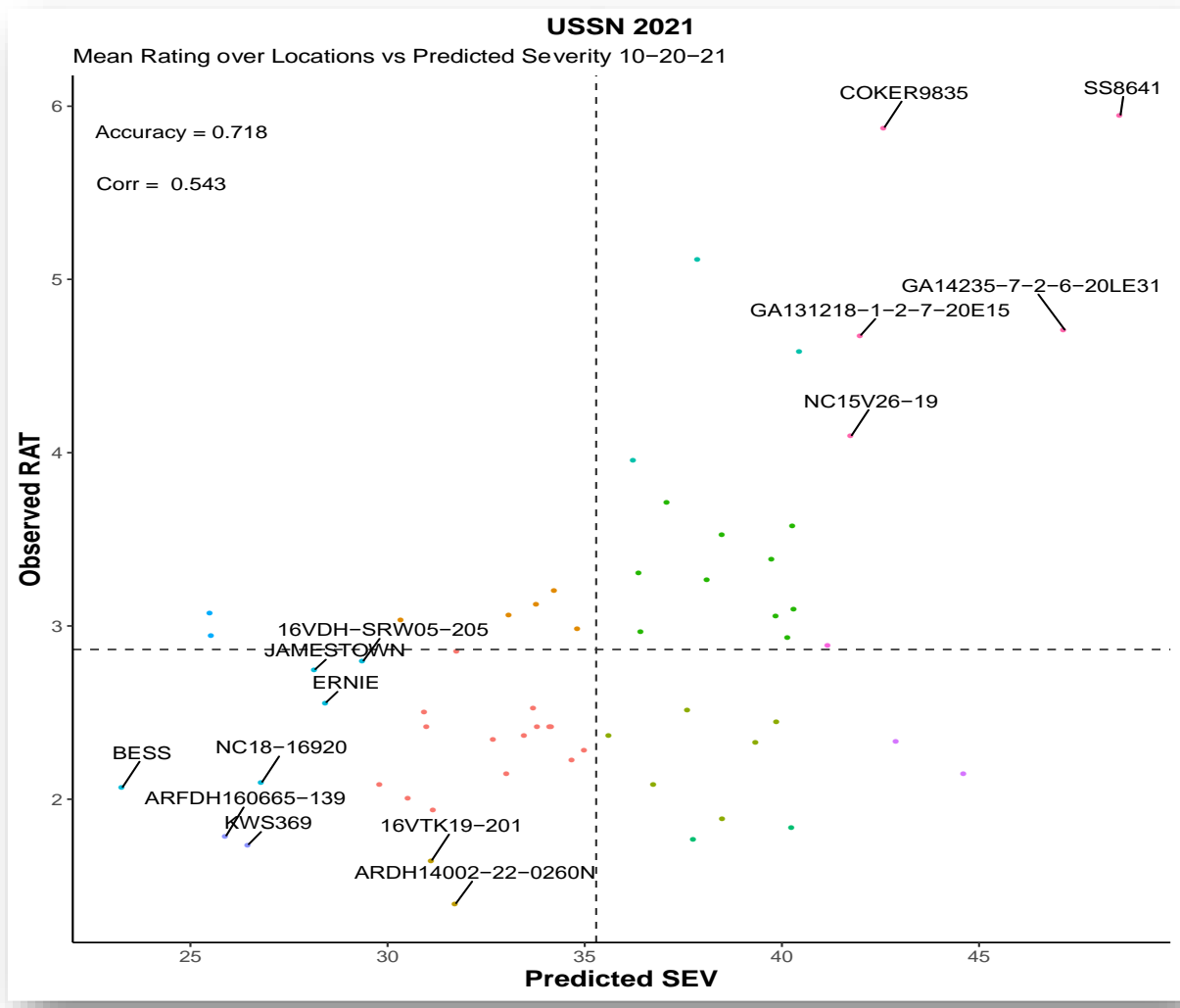
ENTRY NO	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	Check	CHECK(RES)	1999-00
2	COKER9835	Check	CHECK(SUS)	2000-01
3	BESS	MO11769/Madison	CHECK(RES)	2006-07
4	JAMESTOWN	Roane / Pioneer 2691	CHECK(RES)	2007-08
5	SS 8641	881130/2*881582 (formally GA96229-3A4)	CHECK(SUS)	2018-19
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	NC11363-25	Jamestown / NC09-22206	Murphy	2019-20
8	15VDH-FHB-MAS38-01	MD08-26-H2-7-12-9 [SS8641/McCormick*2/ Ning7840] / USG 3118"S" (VA11W-278) // VA12W-150 (IL99-15867/ JAMESTOWN)	Griffey	2019-20
9	NC16-19288	Jamestown / NC06-20401	Murphy	2020-21
10	NC13220-37	MD07026-12-30 / NC11-23321	Murphy	2020-21
11	NC15V25-20	MD08-26-H2-7-12-9 / VA11W-278 // Hilliard	Murphy	2020-21
12	NC13206-40	VA11W-230 / NC11-22289	Murphy	2020-21
13	NC15V26-19	MD08-26-H2-7-12-9 / VA11W-278 // Hilliard	Murphy	2020-21
14	NC12164-200T	NC8170-4-3 / Jamestown	Murphy	2020-21
15	NC18-16913	NC09-20986 // SHIRLEY / JAMESTOWN	Murphy	2020-21
16	NC18-16920	NC09-20986 // SHIRLEY / JAMESTOWN	Murphy	2020-21
17	AR11051-15-3	AR01029-2-2/AR99016-1-2	Mason	2020-21
18	AR12416-1897N	VA08MAS-369/LA02024E7	Mason	2020-21
19	AR12486-2425N	VA09W-75/LA03118E117	Mason	2020-21
20	AR15V25-19-2174N	MD08-26-H2-7-12-9 [SS8641/McCormick*2/ Ning7840] / VA11W-278 (NC00-15389/GF951079-2E31 //USG3555(VA02W-555) // HILLIARD (VA11W-108)	Mason	2020-21
21	ARDH13216-12	AR04001-3 / AR01167-3-1	Mason	2020-21
22	ARDH14002-22-0260N	AR05094-4-1/IL07-19334	Mason	2020-21
23	ARFDH160655-113	MDC07026-F2-19-13-3/AGS2055	Mason	2020-21
24	ARFDH160665-139	MDC07026-F2-19-13-3/VA11W-106	Mason	2020-21
25	SCLA19WF2110	HILLIARD / LA09264C-P2	Boyles	2020-21
26	SCLA19WF1917	MD08-26-H2-7-12-21 / LA13165, F1(LA841/GA 09285-G1-G1-G1-G1)	Boyles	2020-21
27	SCLA19WF2408	GA 04417-12E33 / LA06146E-P4	Boyles	2020-21
28	SCLA19WF1301	AGS 2060 / VA10W-112	Boyles	2020-21
29	SCLA19WF1110	GA04434-12LE28 / MD08-26-H2-7-12-21	Boyles	2020-21
30	SCLA19WF1604	AR01040-4-1 / NC09-20986	Boyles	2020-21
31	SCLA19WF1502	AR01040-4-1 / NC09-20986	Boyles	2020-21
32	SCGA151917-10	08199-1-3-6-G1 / 061050-13Esc18	Boyles	2020-21
33	KWS338	IL07-19334 / KY03C-1237-39	Murche	2020-21
34	KWS342	IL07-19334 / LCS19228	Murche	2020-21
35	KWS347	Pembroke2014 / LCS19228	Murche	2020-21
36	KWS358	MO110799 / VA11W-182	Murche	2020-21
37	KWS369	LCS19229 / VA12FHB-8	Murche	2020-21
38	LA13009D-23	AGS 2060/LA12280, F1(LA04041D-63/VA08W-294)	Harrison	2020-21
39	LA13045D-121	GA041293-11LE37/MD08-26-H2-7-12-21	Harrison	2020-21
40	LA13173D-WN26-4	MD07W272-11-5/LA06149C-P7	Harrison	2020-21
41	LA14173C-54	LA13059, F1(GK02.10/MD08-26-H2-7-12-21) / LA06146E-P04	Harrison	2020-21
42	LA14257C-48-1	VA10W-112 / LA06146E-P04	Harrison	2020-21
43	LA15203-LDH200	AGS3000 / HILLIARD	Harrison	2020-21
44	LANC11558-33	GA04570-10E46 / Jamestown	Harrison	2020-21
45	15VDH-FHB-MAS25-15	MD08-26-H2-7-12-9 [SS8641/McCormick*2/ Ning7840] / USG 3118"S" (VA11W-278) // HILLIARD (VA11W-108)	Santantonio	2020-21
46	15VDH-FHB-MAS33-13	MD08-26-H2-7-12-9 [SS8641/McCormick*2/ Ning7840] / USG 3118"S" (VA11W-278) // HILLIARD (VA11W-108)	Santantonio	2020-21
47	16VDH-SRW05-205	Pioneer 26R41 / Hilliard (VA11W-108) // Berkeley (VA12W-72)	Santantonio	2020-21
48	15VTK-1-101	L11550 (VA11W-106) / USG 3118"S" (VA12W-54)	Santantonio	2020-21
49	VA19W-31	GA041052-11E51 [GA931233/ USG3592 // GA941208-2E35] / Yorktown (VA08W-294)	Santantonio	2020-21
50	VA19W-79	Pioneer 26R10 / VA09W-52 [GF921221E16 / McCormick"S" (VA98W-590) // VA99W-200] // VA11W-31 [F/G 95195 / Jamestown]	Santantonio	2020-21
51	16VTK19-201	L11541 (MDC07026-F2-19-13-4 = SS8641 // McCormick*2/ Ning7840) / Jamestown // VA09MAS6-122-7-1 [SHIRLEY / GA991371-6E13 // SS5205 (VA01W-205)]	Santantonio	2020-21
52	VA19FHB-05	Yorktown (VA08W-294) / Hilliard (VA11W-108), F7	Santantonio	2020-21

## Entry List and Pedigrees, 2021 Nursery

ENTRY NO	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
53	GA161240LDH-59 -20E7	MD07026 / TXGA-13E2	Mergoum	2020-21
54	GA131218-1-2-7 -20E15	041323-11E63 / 031134-10E29	Mergoum	2020-21
55	GA12230-1 -6-6-3 -20E36	031134-10E29 / JAMESTOWN	Mergoum	2020-21
56	GA151313-LDH-192-20E48	AGS 2024 / PIO26R41 // JT141	Mergoum	2020-21
57	GA161240LDH-113 -20LE6	MD07026 / TXGA-13E2	Mergoum	2020-21
58	GAMD 13W-254-6-2-4 -20LE24	GA 031257-10LE34 / MD 12W-37	Mergoum	2020-21
59	GA14235-7-2-6-20LE31	VA10W-119 / PIO 26R94 // 061082-13E24	Mergoum	2020-21
60	GA161125NCDH-117 -20LE39	151917 (08199-1-3-6-G1/061050-13Esc18) / MDC07026-F2-19-13-3	Mergoum	2020-21

## Fusarium Head Blight Rating (0 - 9)

ENTRY NO	CULTIVAR/ DESIGNATION	LX*TON N'PORT C. STA			FLOR'CE KINSTON		W'BORO	ALEX	PLAINS	KWS	W'SAW	MEAN	GEBV SEVERITY
		KY	AR	TX	SC	NC	LA	LA	GA	IL	VA	ALL LOC.	
													Rank
1	ERNIE	1	1	5	2	5	7	2	1	2	2	3	28
2	COKER9835	4	7	7	5	8	7	8	3	5	7	6	59
3	BESS	3	1	4	3	3	2	2	0	1	3	2	2
4	JAMESTOWN	1	3	7	.	1	4	3	1	2	4	3	28
5	SS 8641	5	7	8	7	7	4	8	3	5	8	6	59
6	15VDH-FHB-MAS22-14	3	1	6	4	.	3	1	0	1	1	2	2
7	NC11363-25	5	3	3	3	2	2	3	2	1	2	2	2
8	15VDH-FHB-MAS38-01	2	2	6	5	1	6	1	1	0	1	2	2
9	NC16-19288	3	3	3	4	4	2	4	2	2	3	3	28
10	NC13220-37	2	6	4	5	3	6	1	1	2	2	3	28
11	NC15V25-20	4	1	3	3	1	3	2	0	2	3	2	2
12	NC13206-40	1	3	3	6	3	2	2	1	5	4	3	28
13	NC15V26-19	4	6	4	4	8	3	4	2	4	3	4	50
14	NC12164-200T	6	2	2	4	2	4	1	1	1	2	2	2
15	NC18-16913	4	2	5	4	2	5	1	1	2	5	3	28
16	NC18-16920	2	1	4	4	1	2	2	0	1	5	2	2
17	AR11051-15-3	6	1	3	5	1	2	1	1	1	2	2	2
18	AR12416-1897N	2	2	6	6	6	3	5	0	1	3	3	28
19	AR12486-2425N	2	2	5	3	3	2	3	1	2	1	2	2
20	AR15V25-19-2174N	4	2	5	3	2	3	2	1	2	2	2	2
21	ARDH13216-12	1	3	3	6	5	2	3	1	4	6	3	28
22	ARDH14002-22-0260N	4	1	1	2	4	1	1	0	1	0	1	1
23	ARFDH160655-113	2	3	4	3	4	1	3	2	1	1	2	2
24	ARFDH160665-139	3	1	3	3	2	2	2	0	1	2	2	2
25	SCLA19WF2110	2	3	5	3	2	4	2	1	5	4	3	28
26	SCLA19WF1917	5	8	7	3	8	4	8	1	4	5	5	55
27	SCLA19WF2408	2	1	5	4	3	3	2	0	2	1	2	2
28	SCLA19WF1301	4	6	4	3	5	3	5	2	3	3	4	50
29	SCLA19WF1110	6	6	5	3	5	3	8	2	5	4	5	55
30	SCLA19WF1604	3	4	5	4	4	2	3	1	5	3	3	28
31	SCLA19WF1502	2	6	4	4	3	5	2	1	3	2	3	28
32	SCGA151917-10	6	3	3	2	3	2	1	1	2	3	2	2
33	KWS338	4	1	2	1	4	2	1	0	2	2	2	2
34	KWS342	3	1	3	3	4	2	2	0	2	4	2	2
35	KWS347	4	1	3	3	2	2	2	1	1	2	2	2
36	KWS358	3	1	3	4	2	3	2	1	2	4	2	2
37	KWS369	4	1	1	3	3	2	1	0	1	2	2	2
38	LA13009D-23	4	6	3	2	6	1	6	1	3	6	4	50
39	LA13045D-121	2	2	4	6	3	1	3	3	2	2	3	28
40	LA13173D-WN26-4	1	1	4	.	2	4	2	0	2	3	2	2
41	LA14173C-54	1	1	4	5	7	3	2	0	4	5	3	28
42	LA14257C-48-1	4	3	3	5	5	3	6	2	4	3	4	50
43	LA15203-LDH200	7	2	3	3	3	1	1	1	2	2	2	2
44	LANC11558-33	1	2	4	5	4	4	4	0	4	4	3	28
45	15VDH-FHB-MAS25-15	1	2	4	5	3	2	2	1	3	1	2	2
46	15VDH-FHB-MAS33-13	3	1	2	2	4	3	2	0	1	1	2	2
47	16VDH-SRW05-205	5	1	6	4	4	3	3	0	2	2	3	28
48	15VTK-1-101	6	3	2	5	5	3	3	1	4	3	3	28
49	VA19W-31	3	2	5	5	5	2	3	1	5	5	3	28
50	VA19W-79	1	3	7	4	7	6	4	0	4	4	4	50
51	16VTK19-201	1	2	2	2	2	2	3	1	2	1	2	2
52	VA19FHB-05	1	2	6	2	1	3	2	1	2	1	2	2
53	GA161240LDH-59 -20E7	2	2	4	3	1	3	5	0	2	4	3	28
54	GA131218-1-2-7 -20E15	2	6	4	6	7	4	8	3	3	5	5	55
55	GA12230-1 -6-6-3 -20E36	2	2	6	4	4	3	4	1	3	2	3	28
56	GA151313-LDH-192-20E48	2	3	6	3	5	3	4	1	3	4	3	28
57	GA161240LDH-113 -20LE6	3	1	4	4	3	1	4	0	2	4	3	28
58	GAMD 13W-254-6-2-4 -20LE24	6	1	5	3	4	5	2	0	2	3	3	28
59	GA14235-7-2-6-20LE31	3	4	5	6	6	4	5	1	6	6	5	55
60	GA161125NCDH-117 -20LE39	5	0	1	2	2	1	2	1	2	5	2	2
Mean		3	3	4	4	3	3	3	1	2	3	3	
LSD (0.05)		1	2	3	2	3	1	1	2	1	2	3	
CV%		39.2	44.0	31.4	36.6	38.9	25.9	28.3	88.6	19.7	37.6	45.3	
Correl w/ GEBV		0.17	0.42	0.21	0.36	0.49	0.03	0.58	0.46	0.43	0.26	0.54	





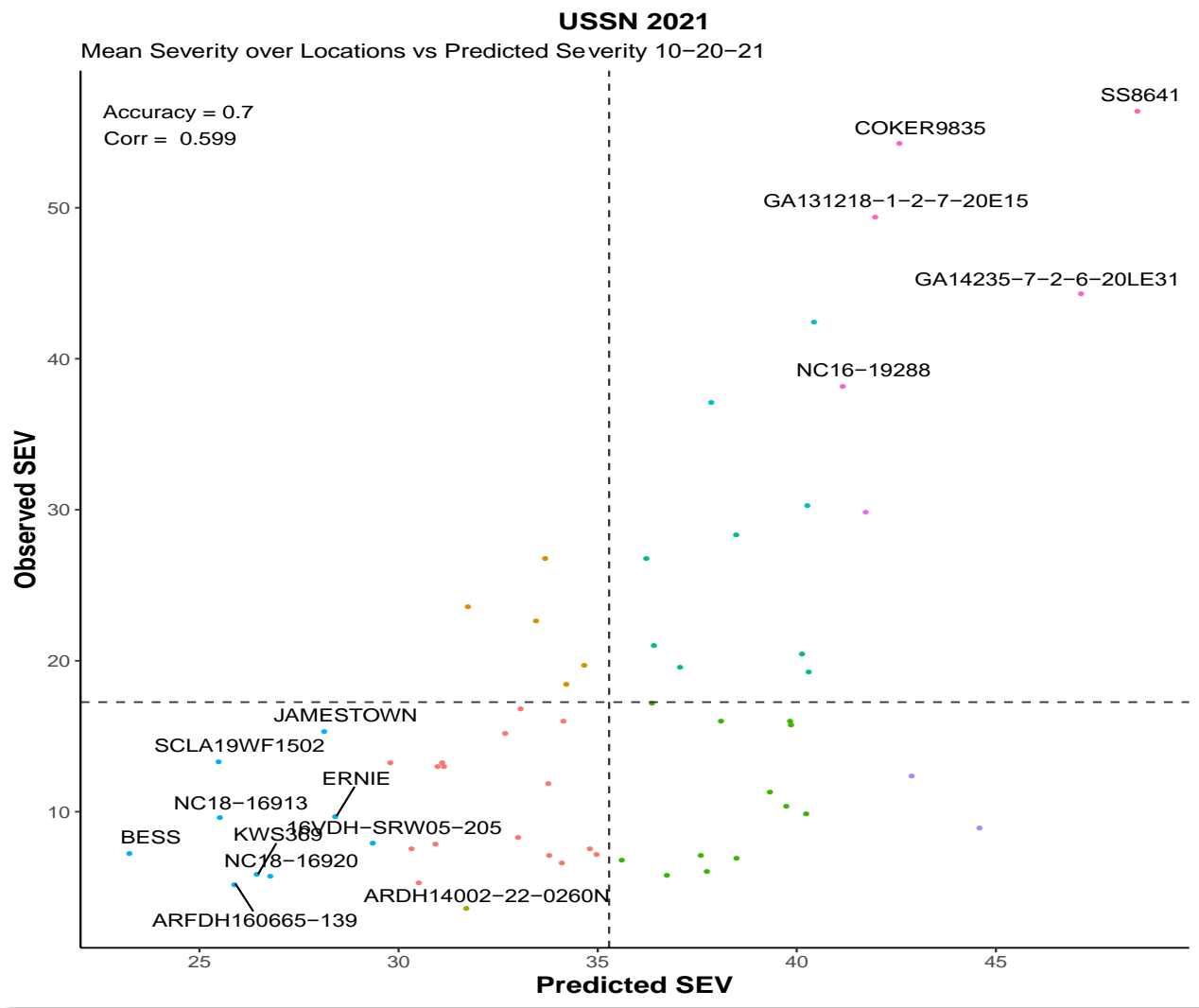
## FHB Incidence (1-100)

ENTRY NO	CULTIVAR/ DESIGNATION	URBANA	S'BURY	PLAINS	MEAN	RANK
		IL	MD	GA	ALL LOC.	
1	ERNIE	8	8	50	22	15
2	COKER9835	90	28	80	66	60
3	BESS	5	32	40	26	20
4	JAMESTOWN	21	24	50	32	33
5	SS 8641	91	16	60	56	56
6	15VDH-FHB-MAS22-14	5	12	30	16	5
7	NC11363-25	26	14	40	27	22
8	15VDH-FHB-MAS38-01	9	8	50	22	15
9	NC16-19288	71	20	60	50	54
10	NC13220-37	11	10	60	27	22
11	NC15V25-20	11	16	20	16	5
12	NC13206-40	46	14	70	43	49
13	NC15V26-19	80	14	40	45	50
14	NC12164-200T	18	24	70	37	41
15	NC18-16913	9	16	70	32	33
16	NC18-16920	17	24	20	20	12
17	AR11051-15-3	25	6	60	30	28
18	AR12416-1897N	20	22	40	27	22
19	AR12486-2425N	13	24	60	32	33
20	AR15V25-19-2174N	15	16	40	24	19
21	ARDH13216-12	55	28	30	38	42
22	ARDH14002-22-0260N	9	2	10	7	1
23	ARFDH160655-113	22	12	60	31	30
24	ARFDH160665-139	11	8	10	10	2
25	SCLA19WF2110	29	10	50	30	28
26	SCLA19WF1917	78	42	30	50	54
27	SCLA19WF2408	4	14	40	19	11
28	SCLA19WF1301	65	22	60	49	53
29	SCLA19WF1110	66	32	70	56	56
30	SCLA19WF1604	31	22	40	31	30
31	SCLA19WF1502	33	16	60	36	39
32	SCGA151917-10	36	18	50	35	37
33	KWS338	15	4	10	10	2
34	KWS342	32	16	0	16	5
35	KWS347	1	18	40	20	12
36	KWS358	8	16	40	21	14
37	KWS369	21	22	10	18	9
38	LA13009D-23	77	50	40	56	56
39	LA13045D-121	15	14	50	26	20
40	LA13173D-WN26-4	28	12	30	23	18
41	LA14173C-54	15	8	30	18	9
42	LA14257C-48-1	28	26	50	35	37
43	LA15203-LDH200	53	18	50	40	45
44	LANC11558-33	59	16	40	38	42
45	15VDH-FHB-MAS25-15	26	14	40	27	22
46	15VDH-FHB-MAS33-13	15	4	20	13	4
47	16VDH-SRW05-205	30	18	40	29	27
48	15VTK-1-101	88	8	40	45	50
49	VA19W-31	39	26	60	42	47
50	VA19W-79	44	24	50	39	44
51	16VTK19-201	19	18	30	22	15
52	VA19FHB-05	14	14	20	16	5
53	GA161240LDH-59 -20E7	37	6	50	31	30
54	GA131218-1-2-7 -20E15	80	34	70	61	59
55	GA12230-1 -6-6-3 -20E36	29	28	50	36	39
56	GA151313-LDH-192-20E48	58	28	40	42	47
57	GA161240LDH-113 -20LE6	58	12	50	40	45
58	GAMD 13W-254-6-2-4 -20LE24	27	24	50	34	36
59	GA14235-7-2-6-20LE31	84	6	50	47	52
60	GA161125NCDH-117 -20LE39	34	6	40	27	22
MEAN		33	18	44	32	
LSD (0.05)		27	.	41	32	
CV%		50.1	.	46.8	50.3	

### FHB Severity (1-100)

CULTIVAR/ DESIGNATION	URBANA IL	PLAINS GA	MEAN		GEBV
			ALL LOC.	Rank	
1 ERNIE	13	6	10	21	28
2 COKER9835	79	30	54	59	43
3 BESS	10	5	7	8	23
4 JAMESTOWN	21	10	15	33	28
5 SS 8641	83	30	56	60	49
6 15VDH-FHB-MAS22-14	7	4	6	4	37
7 NC11363-25	13	18	16	35	40
8 15VDH-FHB-MAS38-01	8	6	7	8	34
9 NC16-19288	60	16	38	55	41
10 NC13220-37	14	10	12	26	34
11 NC15V25-20	9	1	5	2	31
12 NC13206-40	34	14	24	48	32
13 NC15V26-19	42	18	30	52	42
14 NC12164-200T	8	6	7	8	34
15 NC18-16913	7	12	10	21	26
16 NC18-16920	9	2	6	4	27
17 AR11051-15-3	9	9	9	20	45
18 AR12416-1897N	17	4	10	21	40
19 AR12486-2425N	13	12	12	26	43
20 AR15V25-19-2174N	38	7	23	47	33
21 ARDH13216-12	27	10	18	41	34
22 ARDH14002-22-0260N	7	1	4	1	32
23 ARFDH160655-113	20	20	20	43	35
24 ARFDH160665-139	10	1	5	2	26
25 SCLA19WF2110	33	9	21	45	36
26 SCLA19WF1917	66	9	37	54	38
27 SCLA19WF2408	10	5	7	8	35
28 SCLA19WF1301	44	17	30	52	40
29 SCLA19WF1110	63	22	43	56	40
30 SCLA19WF1604	26	8	17	39	33
31 SCLA19WF1502	19	8	13	28	26
32 SCGA151917-10	22	10	16	35	34
33 KWS338	13	1	7	8	39
34 KWS342	14	0	7	8	36
35 KWS347	12	8	10	21	40
36 KWS358	16	10	13	28	31
37 KWS369	10	2	6	4	26
38 LA13009D-23	26	14	20	43	37
39 LA13045D-121	22	31	27	49	34
40 LA13173D-WN26-4	14	3	8	15	33
41 LA14173C-54	12	4	8	15	35
42 LA14257C-48-1	33	23	28	51	39
43 LA15203-LDH200	19	12	15	33	33
44 LANC11558-33	28	4	16	35	40
45 15VDH-FHB-MAS25-15	14	9	11	25	39
46 15VDH-FHB-MAS33-13	10	2	6	4	38
47 16VDH-SRW05-205	12	4	8	15	29
48 15VTK-1-101	25	8	16	35	38
49 VA19W-31	27	8	17	39	36
50 VA19W-79	50	4	27	49	36
51 16VTK19-201	20	6	13	28	31
52 VA19FHB-05	15	11	13	28	31
53 GA161240LDH-59 -20E7	11	4	7	8	38
54 GA131218-1-2-7 -20E15	69	30	49	58	42
55 GA12230-1 -6-6-3 -20E36	29	12	21	45	40
56 GA151313-LDH-192-20E48	30	9	19	42	40
57 GA161240LDH-113 -20LE6	12	4	8	15	31
58 GAMD 13W-254-6-2-4 -20LE24	10	5	8	15	30
59 GA14235-7-2-6-20LE31	76	13	44	57	47
60 GA161125NCDH-117 -20LE39	14	13	13	28	30

MEAN	24	10	17
LSD(0.05)	15	17	22
CV%	39.7	88.6	64.9
Correl w/ GEBV	0.59	0.46	0.60



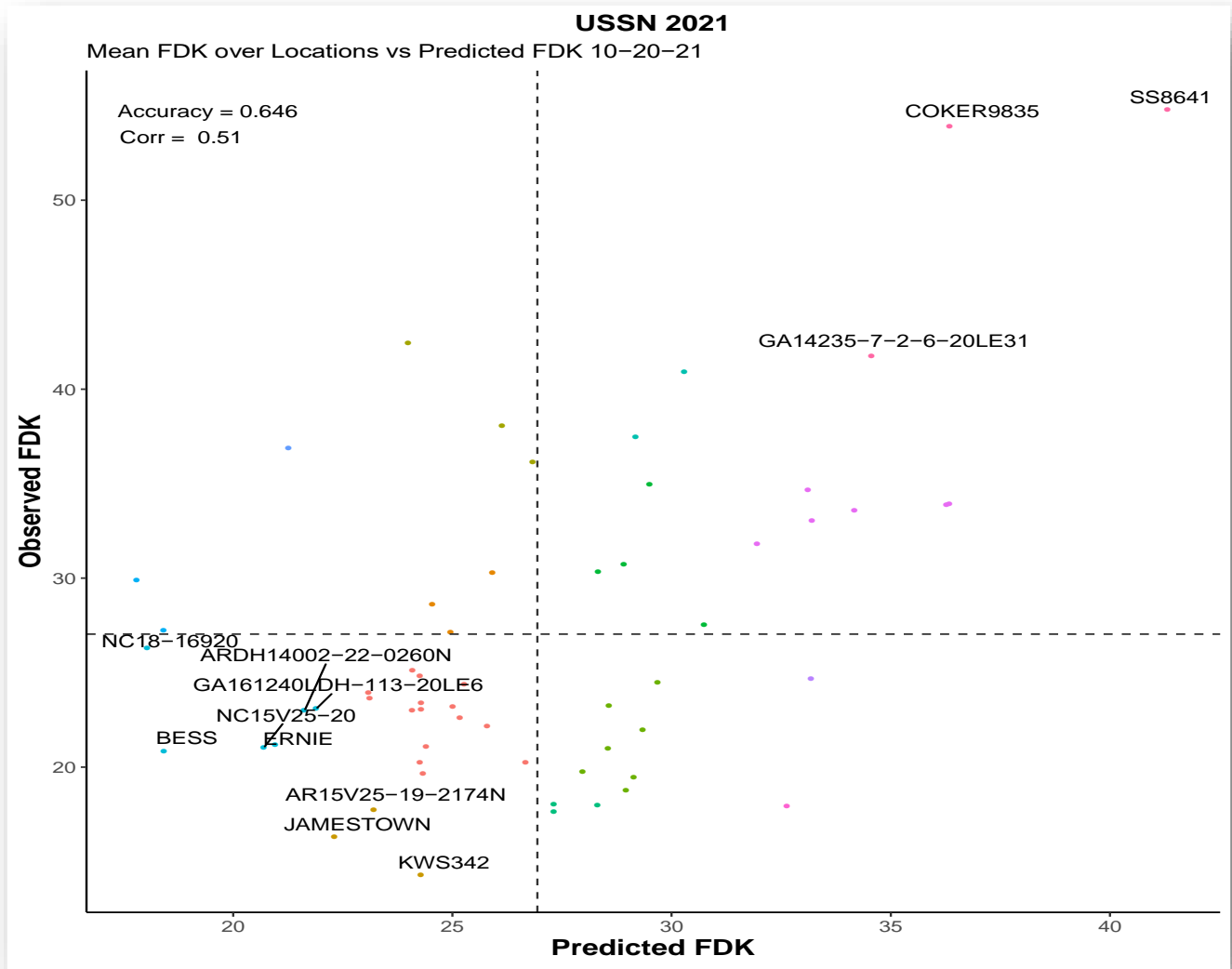
### FHB Index (1-100)

CULTIVAR/ DESIGNATION	URBANA	PLAINS	MEAN	
	IL	GA	ALL LOC.	RANK
1 ERNIE	1	3	2	11
2 COKER9835	71	25	48	60
3 BESS	1	2	1	2
4 JAMESTOWN	4	5	5	30
5 SS 8641	76	18	47	59
6 15VDH-FHB-MAS22-14	0	2	1	2
7 NC11363-25	3	7	5	30
8 15VDH-FHB-MAS38-01	1	3	2	11
9 NC16-19288	43	12	28	55
10 NC13220-37	2	6	4	25
11 NC15V25-20	1	0	1	2
12 NC13206-40	15	10	12	46
13 NC15V26-19	33	11	22	53
14 NC12164-200T	1	5	3	17
15 NC18-16913	1	8	4	25
16 NC18-16920	2	1	1	2
17 AR11051-15-3	2	5	4	25
18 AR12416-1897N	3	2	3	17
19 AR12486-2425N	2	7	4	25
20 AR15V25-19-2174N	6	4	5	30
21 ARDH13216-12	15	3	9	42
22 ARDH14002-22-0260N	1	0	0	1
23 ARFDH160655-113	4	12	8	40
24 ARFDH160665-139	1	0	1	2
25 SCLA19WF2110	10	5	7	38
26 SCLA19WF1917	51	2	27	54
27 SCLA19WF2408	0	2	1	2
28 SCLA19WF1301	28	11	20	52
29 SCLA19WF1110	41	16	29	56
30 SCLA19WF1604	8	3	6	36
31 SCLA19WF1502	6	4	5	30
32 SCGA151917-10	8	5	6	36
33 KWS338	2	0	1	2
34 KWS342	4	0	2	11
35 KWS347	0	4	2	11
36 KWS358	1	4	3	17
37 KWS369	2	0	1	2
38 LA13009D-23	20	7	13	49
39 LA13045D-121	3	25	14	51
40 LA13173D-WN26-4	4	1	2	11
41 LA14173C-54	2	1	2	11
42 LA14257C-48-1	9	17	13	49
43 LA15203-LDH200	10	7	9	42
44 LANC11558-33	16	2	9	42
45 15VDH-FHB-MAS25-15	4	4	4	25
46 15VDH-FHB-MAS33-13	2	0	1	2
47 16VDH-SRW05-205	4	1	3	17
48 15VTK-1-101	22	3	12	46
49 VA19W-31	11	5	8	40
50 VA19W-79	22	2	12	46
51 16VTK19-201	4	2	3	17
52 VA19FHB-05	2	4	3	17
53 GA161240LDH-59 -20E7	4	2	3	17
54 GA131218-1-2-7 -20E15	55	21	38	58
55 GA12230-1 -6-6-3 -20E36	8	6	7	38
56 GA151313-LDH-192-20E48	17	3	10	45
57 GA161240LDH-113 -20LE6	7	3	5	30
58 GAMD 13W-254-6-2-4 -20LE24	3	3	3	17
59 GA14235-7-2-6-20LE31	64	7	35	57
60 GA161125NCDH-117 -20LE39	5	5	5	30

MEAN	12	6	9
LSD(0.05)	.	14	22
CV%	.	127.4	121.3

### Percent Fusarium Damaged Kernels

CULTIVAR/ DESIGNATION	FLOR'CE	FLOR'CE	KINSTON	W.BORO	ALEX.	C. STA	F'VILLE	N'PORT	UIL	WSAW	MEAN	GEBV	
	SC	SC	NC	LA	LA	TX	AR	AR	IL	VA	ALL LOC.		
	Visual	Vibe									Rank		
1 ERNIE	15	35	0	8	28	40	48	15	12	5	21	14	21
2 COKER9835	33	24	23	80	83	41	63	37	95	40	54	59	36
3 BESS	13	37	5	13	30	40	20	22	14	9	21	14	18
4 JAMESTOWN	18	21	3	8	30	42	5	17	12	10	16	2	22
5 SS 8641	38	57	33	10	78	65	50	50	97	55	55	60	41
6 15VDH-FHB-MAS22-14	18	22	3	25	23	59	30	13	5	4	20	9	27
7 NC11363-25	28	45	0	15	55	27	12	23	32	11	25	32	30
8 15VDH-FHB-MAS38-01	23	23	0	33	43	51	17	25	13	13	24	29	23
9 NC16-19288	25	18	4	20	43	45	22	38	75	23	32	45	32
10 NC13220-37	20	39	0	85	18	39	73	50	12	10	36	52	27
11 NC15V25-20	18	32	0	20	20	32	17	22	28	20	21	14	21
12 NC13206-40	15	21	0	25	33	27	22	22	10	17	20	9	29
13 NC15V26-19	20	48	19	25	68	59	38	38	36	38	41	56	30
14 NC12164-200T	18	39	0	23	30	19	53	20	15	10	23	21	25
15 NC18-16913	20	38	10	48	23	60	57	15	13	6	30	41	18
16 NC18-16920	15	30	0	25	28	56	45	18	13	23	26	36	18
17 AR11051-15-3	25	38	0	18	33	35	8	15	20	23	21	14	29
18 AR12416-1897N	20	35	0	13	38	33	5	28	43	28	25	32	33
19 AR12486-2425N	20	29	3	13	30	35	10	20	20	10	19	8	29
20 AR15V25-19-2174N	13	35	3	10	18	36	7	22	20	11	18	3	23
21 ARDH13216-12	20	33	5	28	50	27	8	32	37	7	25	32	24
22 ARDH14002-22-0260N	18	22	8	10	33	62	5	13	31	25	23	21	22
23 ARFDH160655-113	35	55	4	20	50	32	32	35	40	9	31	44	29
24 ARFDH160665-139	25	55	0	18	40	27	23	22	19	9	23	21	24
25 SCLA19WF2110	25	34	3	23	33	38	13	30	18	17	23	21	24
26 SCLA19WF1917	28	29	8	28	48	51	58	42	90	30	42	57	24
27 SCLA19WF2408	20	40	3	3	30	18	23	28	37	17	22	19	29
28 SCLA19WF1301	25	39	13	8	43	38	33	45	66	21	34	47	36
29 SCLA19WF1110	13	39	15	10	53	44	45	45	23	25	33	46	33
30 SCLA19WF1604	18	30	0	25	35	54	37	20	33	24	29	40	25
31 SCLA19WF1502	10	29	0	33	30	35	70	30	11	7	27	37	18
32 SCGA151917-10	18	20	0	13	45	27	38	30	51	25	28	39	31
33 KWS338	25	24	0	18	35	25	7	17	21	16	18	3	33
34 KWS342	25	21	5	10	30	22	7	12	7	16	14	1	24
35 KWS347	18	39	3	10	33	35	5	20	10	9	18	3	28
36 KWS358	18	17	3	25	30	51	7	27	28	18	23	21	25
37 KWS369	28	37	16	28	35	15	32	27	21	35	27	37	25
38 LA13009D-23	30	29	8	15	48	20	43	37	91	48	37	53	29
39 LA13045D-121	23	60	0	15	33	28	32	13	28	15	25	32	24
40 LA13173D-WN26-4	15	34	0	23	30	41	15	10	16	10	20	9	28
41 LA14173C-54	25	51	10	35	28	54	7	10	49	30	30	41	26
42 LA14257C-48-1	10	38	0	26	43	31	40	33	73	20	34	47	34
43 LA15203-LDH200	23	30	5	18	33	20	5	35	27	18	21	14	24
44 LANC11558-33	13	18	4	3	30	38	8	17	32	13	18	3	27
45 15VDH-FHB-MAS25-15	23	37	1	18	50	41	27	18	20	9	24	29	25
46 15VDH-FHB-MAS33-13	20	27	0	28	30	36	13	10	11	5	18	3	27
47 16VDH-SRW05-205	33	52	5	8	50	45	5	25	91	25	34	47	36
48 15VTK-1-101	15	43	4	20	60	25	22	25	83	30	35	50	33
49 VA19W-31	28	41	3	13	38	53	5	27	22	13	24	29	23
50 VA19W-79	15	23	4	33	40	55	45	30	29	15	30	41	28
51 16VTK19-201	13	15	0	13	33	45	15	18	26	13	20	9	24
52 VA19FHB-05	18	17	0	15	30	59	15	22	21	4	20	9	24
53 GA161240LDH-59 -20E7	25	38	5	8	40	42	28	12	10	18	22	19	26
54 GA131218-1-2-7 -20E15	45	33	5	33	53	59	23	38	44	27	35	50	30
55 GA12230-1 -6-6-3 -20E36	18	27	5	20	38	43	7	25	34	13	23	21	29
56 GA151313-LDH-192-20E48	30	41	0	28	40	65	25	32	86	28	38	55	26
57 GA161240LDH-113 -20LE6	28	40	13	23	40	37	8	13	18	16	23	21	22
58 GAMD 13W-254-6-2-4 -20LE24	15	30	3	60	33	67	57	22	42	20	37	53	21
59 GA14235-7-2-6-20LE31	23	39	5	33	53	68	30	33	76	40	42	57	35
60 GA161125NCDH-117 -20LE39	25	43	11	5	43	26	17	7	45	12	23	21	24
MEAN	21	34	5	21	38	41	26	25	34	19	27		
LSD (0.05)	3	27	12	21.0	12	31	13	13	26	15	25		
CV %	32.5	32	136.7	58.3	18	37.7	38.0	37.6	47.7	40.3	48		
Correl w/ GEBV	0.35	0.20	0.40	-0.04	0.65	-0.04	0.01	0.50	0.62	0.54	0.51		



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

CULTIVAR/ DESIGNATION	URBANA IL	WARSAW VA	MEAN ALL LOC.	Rank
1 ERNIE	11	9	10	5
2 COKER9835	89	39	64	59
3 BESS	10	15	13	13
4 JAMESTOWN	18	21	19	26
5 SS 8641	91	45	68	60
6 15VDH-FHB-MAS22-14	6	3	4	1
7 NC11363-25	25	12	18	25
8 15VDH-FHB-MAS38-01	10	6	8	3
9 NC16-19288	69	18	44	54
10 NC13220-37	12	9	11	7
11 NC15V25-20	17	15	16	19
12 NC13206-40	28	21	25	38
13 NC15V26-19	51	15	33	48
14 NC12164-200T	14	12	13	13
15 NC18-16913	10	27	19	26
16 NC18-16920	13	27	20	28
17 AR11051-15-3	18	12	15	17
18 AR12416-1897N	28	18	23	35
19 AR12486-2425N	16	6	11	7
20 AR15V25-19-2174N	24	9	16	19
21 ARDH13216-12	39	33	36	50
22 ARDH14002-22-0260N	17	3	10	5
23 ARFDH160655-113	28	3	16	19
24 ARFDH160665-139	14	9	11	7
25 SCLA19WF2110	26	21	23	35
26 SCLA19WF1917	79	27	53	57
27 SCLA19WF2408	19	6	12	11
28 SCLA19WF1301	59	18	39	51
29 SCLA19WF1110	48	21	34	49
30 SCLA19WF1604	30	15	23	35
31 SCLA19WF1502	20	12	16	19
32 SCGA151917-10	37	18	28	41
33 KWS338	17	12	14	15
34 KWS342	17	24	20	28
35 KWS347	8	9	8	3
36 KWS358	19	24	21	32
37 KWS369	18	12	15	17
38 LA13009D-23	67	33	50	56
39 LA13045D-121	23	9	16	19
40 LA13173D-WN26-4	19	15	17	24
41 LA14173C-54	28	27	27	40
42 LA14257C-48-1	48	15	31	45
43 LA15203-LDH200	33	12	22	33
44 LANC11558-33	39	21	30	43
45 15VDH-FHB-MAS25-15	20	3	11	7
46 15VDH-FHB-MAS33-13	12	3	7	2
47 16VDH-SRW05-205	49	12	31	45
48 15VTK-1-101	67	15	41	52
49 VA19W-31	29	27	28	41
50 VA19W-79	40	24	32	47
51 16VTK19-201	22	6	14	15
52 VA19FHB-05	17	6	12	11
53 GA161240LDH-59 -20E7	18	21	20	28
54 GA131218-1-2-7 -20E15	62	33	48	55
55 GA12230-1 -6-6-3 -20E36	31	9	20	28
56 GA151313-LDH-192-20E48	61	21	41	52
57 GA161240LDH-113 -20LE6	28	24	26	39
58 GAMD 13W-254-6-2-4 -20LE24	28	15	22	33
59 GA14235-7-2-6-20LE31	78	39	59	58
60 GA161125NCDH-117 -20LE39	32	27	30	43

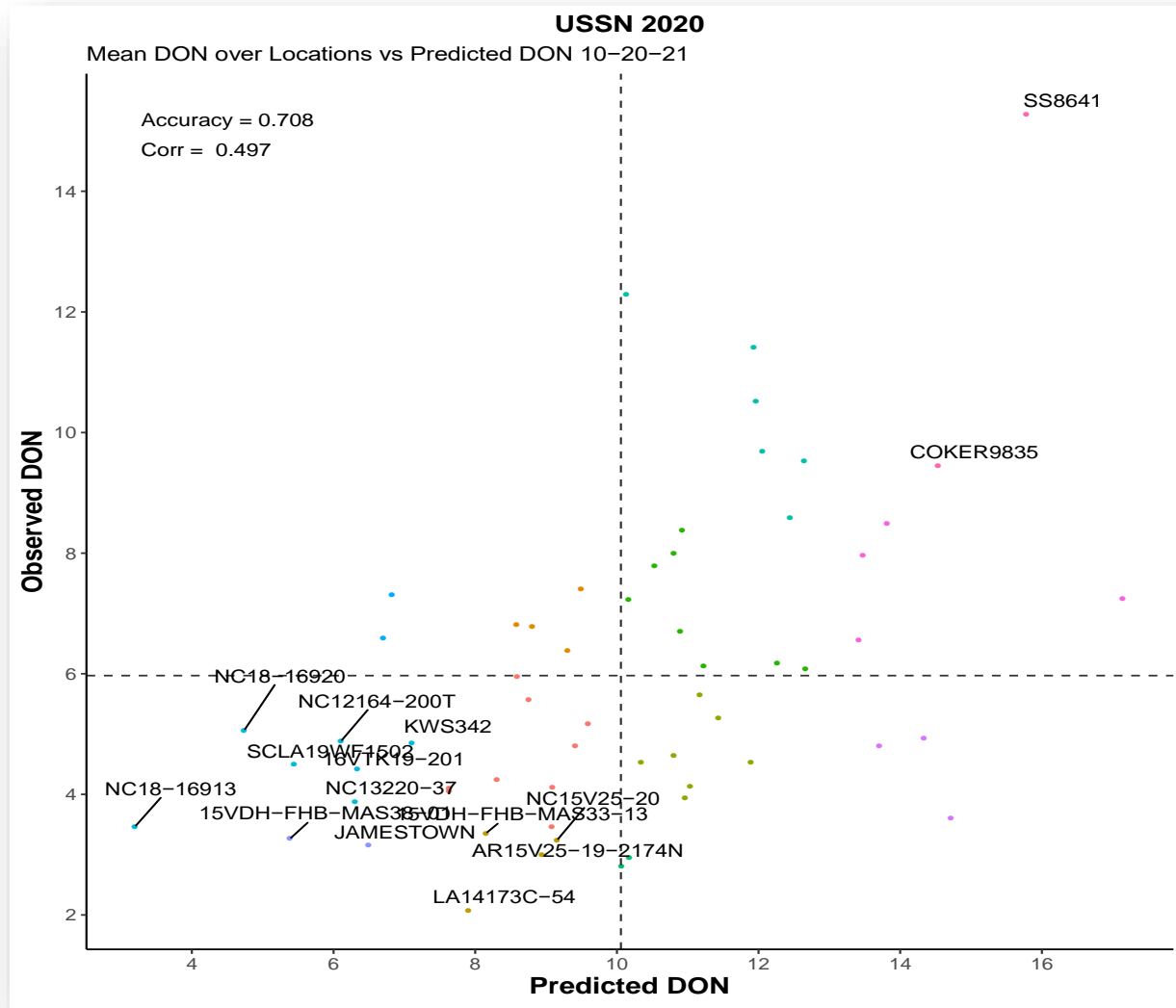
MEAN	32	17	24
LSD (0.05)	.	13	24
CV%	.	37.5	48.7

# DON (ppm)

CULTIVAR/ DESIGNATION	KIN'TON F'VILLE N'PORT ALEX S'BURY C. STAT						MEAN	GEBV	
	NC	AR	AR	LA	MD	TX	ALL LOC.	RANK	
1 ERNIE	1	6	20	7	1	5	7	39	9
2 COKER9835	10	11	10	20	4	4	9	52	15
3 BESS	4	7	12	6	2	9	7	39	9
4 JAMESTOWN	1	3	5	4	3	5	3	2	7
5 SS 8641	16	23	20	22	5	7	15	60	16
6 15VDH-FHB-MAS22-14	0	3	10	3	2	3	3	2	9
7 NC11363-25	2	8	6	9	3	10	6	32	11
8 15VDH-FHB-MAS38-01	0	3	7	5	1	3	3	2	5
9 NC16-19288	5	14	8	12	1	8	8	48	11
10 NC13220-37	2	5	10	5	1	1	4	11	6
11 NC15V25-20	2	3	4	3	3	5	3	2	9
12 NC13206-40	1	4	7	8	1	3	4	11	8
13 NC15V26-19	8	9	11	15	8	12	11	57	12
14 NC12164-200T	1	4	11	6	4	4	5	20	6
15 NC18-16913	1	4	11	3	1	2	3	2	3
16 NC18-16920	1	4	13	7	3	3	5	20	5
17 AR11051-15-3	0	5	5	11	2	8	5	20	11
18 AR12416-1897N	3	8	5	9	2	3	5	20	14
19 AR12486-2425N	2	7	5	10	3	2	5	20	14
20 AR15V25-19-2174N	1	5	4	4	3	2	3	2	9
21 ARDH13216-12	1	9	7	11	4	8	7	39	7
22 ARDH14002-22-0260N	2	4	2	10	1	19	6	32	9
23 ARFDH160655-113	2	8	8	7	4	8	6	32	12
24 ARFDH160665-139	1	4	5	8	1	5	4	11	9
25 SCLA19WF2110	1	8	5	9	4	9	6	32	13
26 SCLA19WF1917	5	18	15	15	10	10	12	59	10
27 SCLA19WF2408	2	8	9	11	4	6	7	39	13
28 SCLA19WF1301	5	15	13	15	5	5	10	55	13
29 SCLA19WF1110	3	13	10	12	5	5	8	48	13
30 SCLA19WF1604	2	5	14	8	3	4	6	32	9
31 SCLA19WF1502	1	7	11	5	2	1	5	20	5
32 SCGA151917-10	1	10	12	17	4	9	9	52	14
33 KWS338	1	6	4	5	1	7	4	11	11
34 KWS342	2	5	2	10	1	10	5	20	7
35 KWS347	3	6	2	6	3	8	5	20	12
36 KWS358	0	7	3	8	1	5	4	11	11
37 KWS369	3	6	6	13	4	9	7	39	11
38 LA13009D-23	5	13	12	10	6	2	8	48	11
39 LA13045D-121	1	3	6	4	1	3	3	2	10
40 LA13173D-WN26-4	0	3	6	5	2	1	3	2	10
41 LA14173C-54	0	3	4	3	1	1	2	1	8
42 LA14257C-48-1	2	11	15	9	4	3	7	39	10
43 LA15203-LDH200	4	11	4	8	3	3	6	32	9
44 LANC11558-33	1	7	7	7	3	2	5	20	10
45 15VDH-FHB-MAS25-15	2	6	5	17	3	1	6	32	11
46 15VDH-FHB-MAS33-13	1	5	8	3	2	2	3	2	8
47 16VDH-SRW05-205	5	14	9	15	6	3	9	52	12
48 15VTK-1-101	2	11	9	16	3	9	8	48	11
49 VA19W-31	3	9	4	9	2	2	5	20	9
50 VA19W-79	3	10	14	8	8	1	7	39	10
51 16VTK19-201	1	7	5	8	3	4	4	11	6
52 VA19FHB-05	1	6	7	9	1	3	5	20	11
53 GA161240LDH-59 -20E7	2	4	8	5	1	3	4	11	15
54 GA131218-1-2-7 -20E15	7	11	14	18	13	5	11	57	12
55 GA12230-1 -6-6-3 -20E36	4	8	4	8	5	3	5	20	10
56 GA151313-LDH-192-20E48	9	12	16	12	5	3	10	55	12
57 GA161240LDH-113 -20LE6	2	4	7	9	3	1	4	11	8
58 GAMD 13W-254-6-2-4 -20LE24	6	9	18	7	3	2	7	39	7
59 GA14235-7-2-6-20LE31	2	15	11	11	2	4	7	39	17
60 GA161125NCDH-117 -20LE39	6	2	6	9	0	1	4	11	8

Mean	3	8	9	9	3	5	6		
LSD (0.05)	4.0	4	4	7	.	6	6		
CV%	77.1	34.3	36.6	43.3	.	68.5	48.1		
Correl w/ GEBV	0.41	0.55	0.08	0.58	0.29	0.21	0.50		





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

DESIGNATION	Rht-B1	Rht-D1	Fhb1	Fhb_Massey_3BL	Fhb_1B_Jamestown	Fhb_1A_Neuse	Fhb_4A_Neuse	Fhb_6A_Neuse	Fhb_2B_Bess	Fhb_3B_Bess	Yr_4BL	Yr17/Lr37/Sr38	Lr9	Lr18	H13	Pm1a	Pm54
1 ERNIE	B1b	D1a	no	yes	no	yes	no	yes	no	no	yes	no	no	no	no	no	no
2 COKER9835	B1a	D1b	no	no	no	no	yes	no	no	no	no	no	yes	no	no	no	het
3 BESS	B1b	D1a	no	no	?	?	no	no	yes	yes	yes	no	no	no	het	no	no
4 JAMESTOWN	B1a	D1b	no	no	het	yes	no	no	no	no	yes	no	no	yes	no	no	no
5 SS 8641	B1a	D1b	no	no	no	no	no	no	no	no	no	yes	no	yes	no	het	no
6 15VDH-FHB-MAS22-14	B1a	D1b	Fhb1	yes	no	no	no	no	no	no	no	yes	no	yes	no	no	no
7 NC11363-25	B1a	het	no	no	yes	yes	het	yes	no	no	yes	het	yes	no	het	no	no
8 15VDH-FHB-MAS38-01	B1a	D1b	Fhb1	no	yes	no	no	no	no	no	yes	no	no	no	yes	yes	no
9 NC16-19288	B1a	het	no	no	no	no	no	het	no	no	yes	het	no	no	yes	no	no
10 NC13220-37	B1a	D1b	Fhb1	no	no	no	no	yes	no	no	no	no	no	yes	no	yes	no
11 NC15V25-20	B1a	D1b	Fhb1	no	het	no	no	no	no	no	yes	het	?	yes	no	no	no
12 NC13206-40	B1a	D1b	no	no	yes	het	no	het	no	no	no	het	yes	no	het	no	no
13 NC15V26-19	B1a	D1b	no	no	yes	no	no	no	no	no	no	yes	no	yes	no	het	no
14 NC12164-200T	B1a	D1b	Fhb1	no	het	het	no	no	yes	no	het	no	no	yes	no	het	no
15 NC18-16913	B1b	D1a	Fhb1	yes	het	yes	no	yes	no	no	no	no	no	yes	yes	yes	no
16 NC18-16920	B1b	D1a	Fhb1	yes	yes	Fail	no	no	no	no	no	yes	no	yes	yes	yes	no
17 AR11051-15-3	B1a	D1b	no	no	yes	no	?	no	no	no	yes	no	yes	no	no	no	no
18 AR12416-1897N	B1a	D1b	no	no	no	yes	yes	yes	no	no	yes	yes	no	yes	no	no	no
19 AR12486-2425N	B1a	D1b	no	no	no	yes	yes	no	no	no	yes	no	yes	yes	no	yes	no
20 AR15V25-19-2174N	B1a	D1b	Het	no	yes	no	no	no	no	no	het	yes	no	yes	het	no	no
21 ARDH13216-12	B1b	D1a	no	no	no	no	no	no	yes	no	yes	yes	no	yes	no	no	no
22 ARDH14002-22-0260N	het	het	no	het	het	yes	het	no	no	no	yes	no	no	no	no	no	no
23 ARFDH160655-113	B1a	D1b	Fhb1	no	no	no	no	no	no	no	no	yes	no	yes	no	yes	no
24 ARFDH160665-139	B1a	D1b	Fhb1	no	het	no	no	yes	no	no	yes	yes	no	yes	no	no	no
25 SCLA19WF2110	B1a	D1b	no	no	yes	yes	no	no	no	no	yes	no	no	no	no	no	no
26 SCLA19WF1917	B1a	D1b	no	no	no	yes	no	no	no	no	yes	yes	no	yes	no	no	yes
27 SCLA19WF2408	B1a	D1a	no	no	het	no	no	no	no	no	het	yes	yes	no	no	het	het
28 SCLA19WF1301	B1a	het	no	no	no	het	no	no	no	no	het	het	no	no	het	no	no
29 SCLA19WF1110	B1a	D1b	no	no	no	no	no	no	no	no	het	yes	no	no	no	yes	no
30 SCLA19WF1604	B1b	D1a	Fhb1	no	yes	yes	no	yes	het	no	no	?	no	no	yes	yes	no
31 SCLA19WF1502	B1b	D1a	Fhb1	no	yes	yes	no	no	no	no	no	yes	no	no	no	yes	no
32 SCGA151917-10	B1a	D1b	no	yes	het	no	yes	no	het	no	no	yes	no	no	no	no	no
33 KWS338	het	het	no	yes	het	yes	het	het	no	no	yes	no	yes	no	no	no	no
34 KWS342	B1b	D1a	no	no	yes	yes	no	no	no	no	yes	no	no	no	no	no	no
35 KWS347	B1b	D1a	Fhb1	no	no	no	no	no	no	no	yes	no	no	no	no	no	no
36 KWS358	B1b	D1a	no	yes	no	yes	no	no	yes	no	yes	no	no	no	no	no	yes
37 KWS369	B1b	D1a	no	yes	yes	no	no	no	no	no	yes	no	no	no	no	no	no
38 LA13009D-23	B1a	D1b	no	no	no	het	no	no	no	no	no	yes	yes	no	no	no	no
39 LA13045D-121	B1a	D1b	Fhb1	no	no	no	no	no	no	no	no	yes	no	yes	no	yes	no
40 LA13173D-WN26-4	B1a	D1b	Fhb1	no	no	no	yes	no	no	no	yes	no	no	yes	no	no	no
41 LA14173C-54	B1a	D1a	Fhb1	no	yes	yes	no	yes	no	no	yes	yes	yes	no	no	no	no
42 LA14257C-48-1	B1a	D1b	no	no	no	yes	yes	no	no	no	no	yes	no	yes	no	no	no
43 LA15203-LDH200	B1a	D1b	no	no	yes	no	no	no	no	no	yes	yes	yes	yes	no	no	no
44 LANC11558-33	B1a	D1b	no	no	yes	yes	no	no	no	no	yes	no	no	no	no	no	no
45 15VDH-FHB-MAS25-15	B1a	D1b	Fhb1	no	no	no	no	no	no	no	no	yes	no	yes	yes	no	no
46 15VDH-FHB-MAS33-13	B1a	D1b	Fhb1	yes	no	no	no	no	no	no	no	no	no	yes	yes	no	no
47 16VDH-SRW05-205	B1a	D1b	no	no	no	no	yes	no	no	no	yes	yes	no	yes	yes	no	no
48 15VTK-1-101	B1a	D1b	no	yes	het	no	no	no	no	no	no	yes	no	yes	yes	no	no
49 VA19W-31	B1a	D1b	no	no	no	het	yes	no	no	no	yes	yes	yes	yes	no	no	no
50 VA19W-79	B1a	D1b	no	no	no	yes	no	no	no	no	no	no	no	no	no	no	het
51 16VTK19-201	B1a	D1b	Fhb1	no	no	yes	yes	no	no	no	yes	yes	no	yes	no	no	no
52 VA19FHB-05	B1a	D1b	no	no	no	no	no	no	no	no	yes	no	no	no	no	no	no
53 GA161240LDH-59 -20E7	B1a	D1b	Fhb1	no	no	no	yes	no	no	no	yes	yes	no	no	no	no	no
54 GA131218-1-2-7 -20E15	B1a	D1b	no	no	yes	no	yes	no	no	no	no	yes	no	no	yes	no	no
55 GA12230-1 -6-6-3 -20E36	B1a	D1b	no	no	no	yes	no	no	no	no	yes	yes	no	yes	yes	no	no
56 GA151313-LDH-192-20E48	B1a	D1b	Fhb1	no	yes	yes	no	no	no	no	no	yes	no	yes	yes	no	no
57 GA161240LDH-113 -20LE6	B1a	D1b	Fhb1	no	no	yes	no	no	no	no	yes	yes	no	no	no	yes	no
58 GAMD 13W-254-6-2-4 -20LE24	B1a	D1b	?	no	no	no	yes	no	no	no	het	yes	no	yes	no	no	no
59 GA14235-7-2-6-20LE31	B1a	D1b	no	no	yes	no	yes	no	no	no	no	yes	no	yes	no	no	no
60 GA161125NCDH-117 -20LE39	B1a	D1b	Fhb1	no	no	yes	yes	no	no	no	het	het	no	het	no	het	no

## Efficacy of Selected FHB Resistance QTL

Mean Incidence (INC), Severity (SEV), Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2021 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 2018-2021 nurseries only

With data as of 10/20/21

Mean Incidence, Severity, Fusarium Damaged Kernels (FDK), and DON for entries in the 2013-2021 Uniform Southern Winter Wheat Scab Nurseries with and without

QTL†	Allele‡	n§	INC	SEV	FDK	DON	RAT (2018-21)
<i>Qfhb.nc-2B.1 (Bess)</i>	S	366	55.6	32.4	29.5	8.3	3.7
	R	38	54.8	31.0	28.3	7.2	3.4
<i>Qfhb.nc-3B.2 (Bess)</i>	S	396	55.6	32.2	29.7	8.2	3.7
	R	15	52.8	28.1	23.7	8.2	3.0
Ning_5A	S	363	55.7	31.7	31.1	8.7	3.7
	R	13	52.6	28.0	23.6	5.3	3.5
Ernie_5A	S	355	55.2	31.1	30.3	8.4	3.7
	R	20	60.6	36.7	38.4	10.6	3.4
Wuhan-1_2DL	S	362	55.8	31.9	31.1	8.6	3.7
	R	12	53.0	26.6	22.6	4.7	3.4
Sumai 3_Fhb1	S	330	57.0	33.9	30.6	8.8	3.9
	R	74	50.2	25.7	24.9	5.9	3.1
<i>QTL_3BL (Massey)</i>	S	377	56.1	32.6	29.5	8.2	3.7
	R	30	51.8	28.7	29.6	7.6	3.2
<i>QTL_1A (Neuse)</i>	S	202	56.0	33.4	30.2	8.6	3.7
	R	176	54.7	31.2	28.3	7.6	3.5
<i>QTL_4A (Neuse)</i>	S	215	53.1	31.3	28.0	8.0	3.6
	R	141	55.3	31.8	29.9	8.4	3.7
<i>QTL_6A (Neuse)</i>	S	273	55.5	32.1	29.5	8.7	3.7
	R	111	56.2	32.5	30.2	7.2	3.3
<i>QTL_1B (Jamestown)</i>	S	186	55.3	32.8	28.7	8.5	3.7
	R	102	53.7	30.4	27.3	7.2	3.7

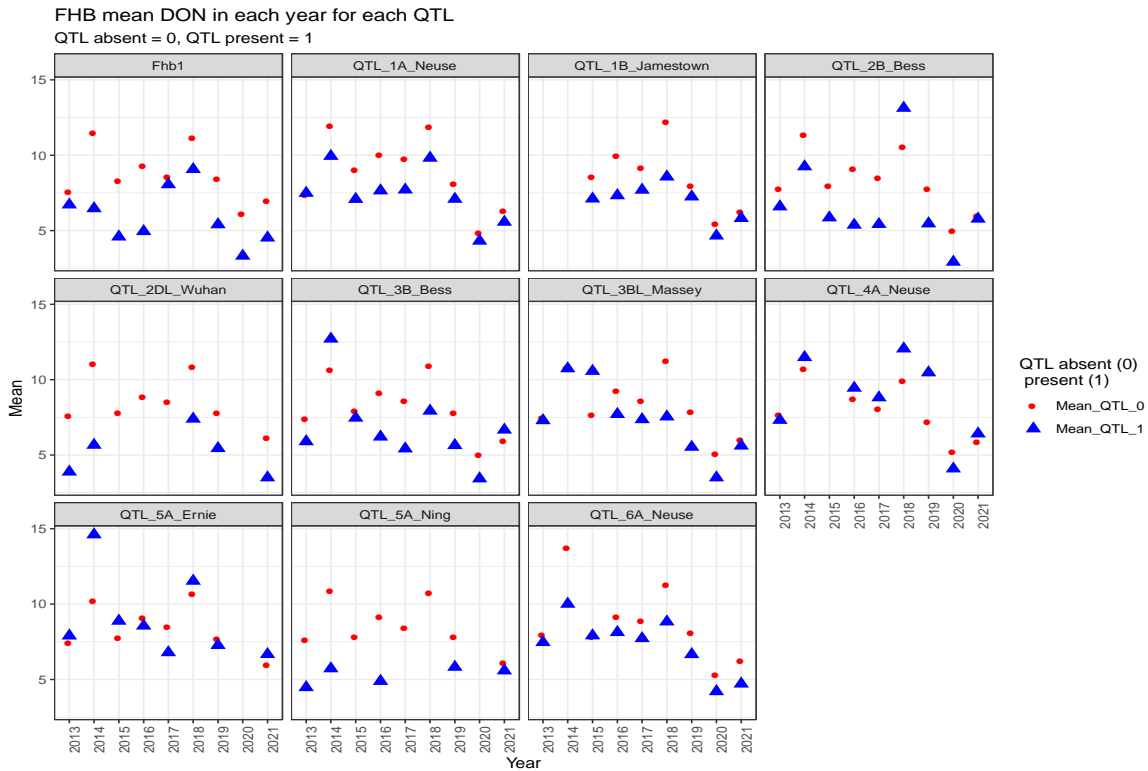
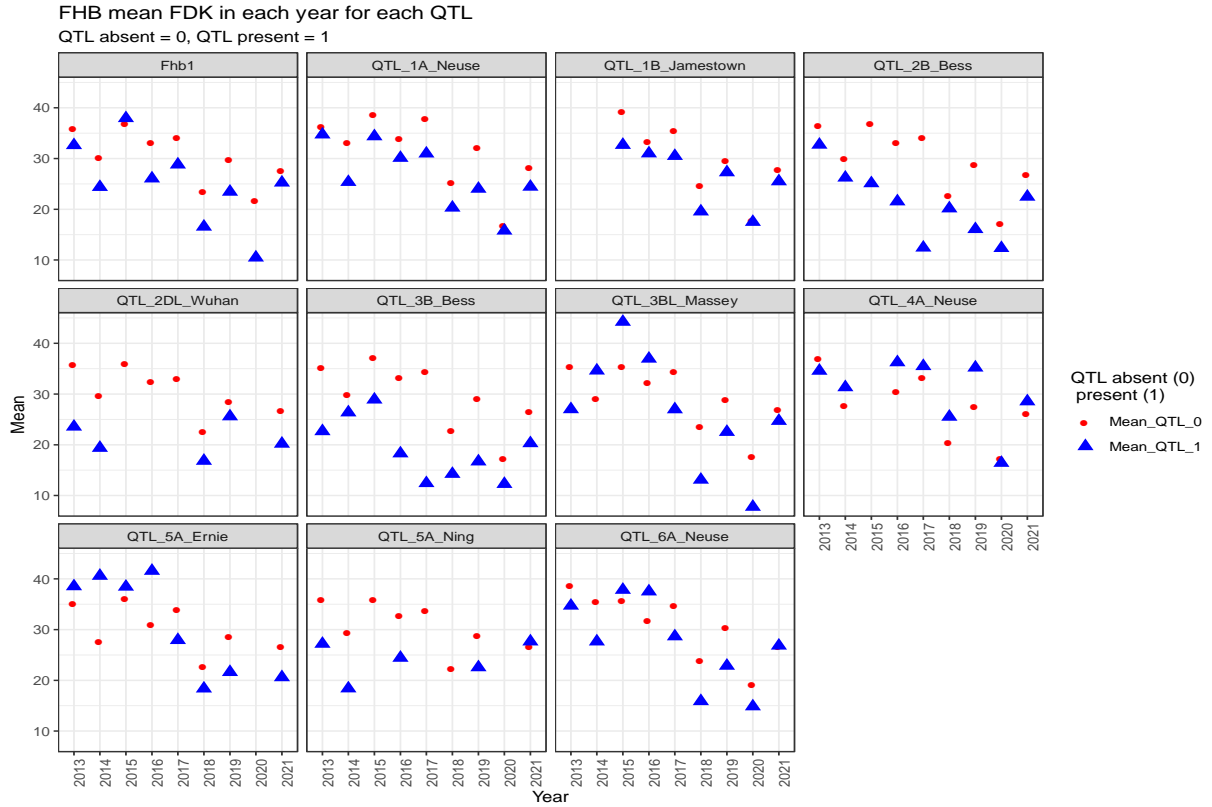
† QTL, quantitative trait loci.

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

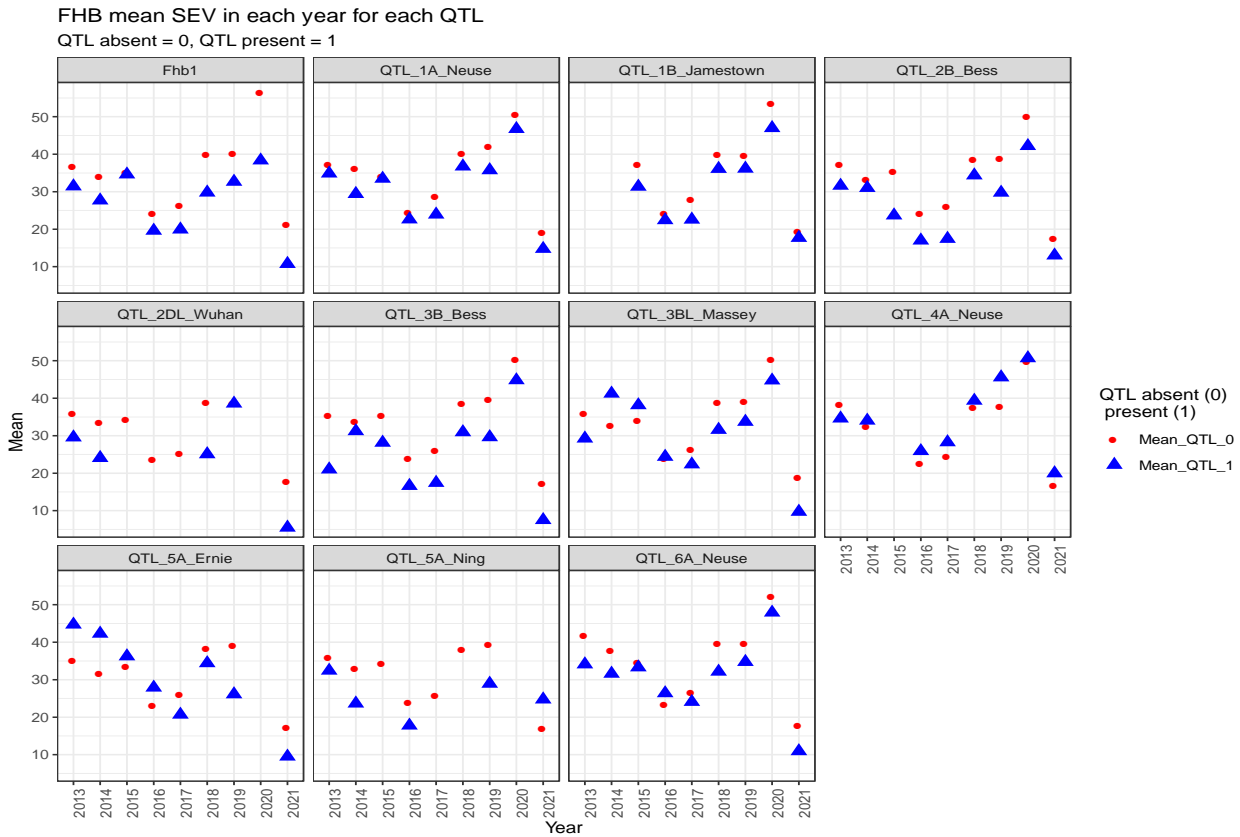
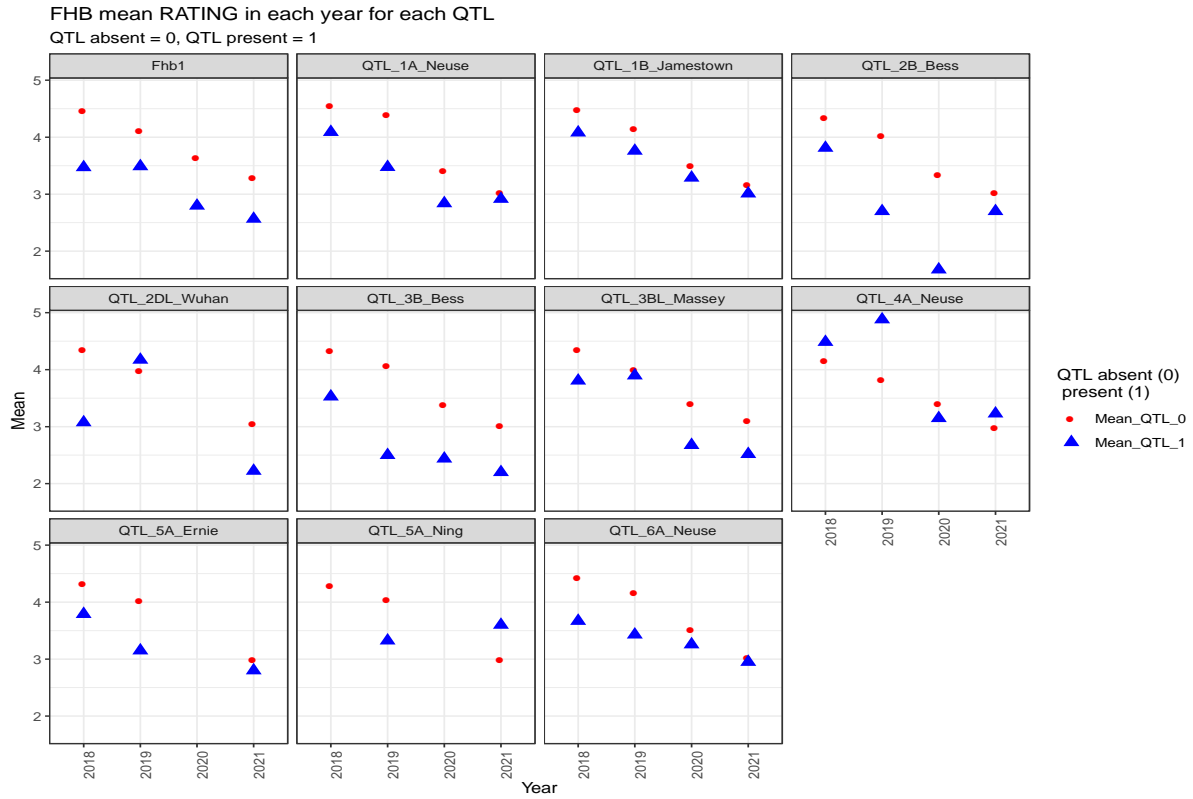
§ n indicates the number of lines in the allele group.

¶ 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 through 2021.



# Efficacy of Selected FHB Resistance QTL For FHB Rating (Top) and Severity (Bottom), by year, for 2013 through 2021.



### Heading Date (Julian Days\*)

CULTIVAR/ DESIGNATION	URBANA	KINSTON	WARSAW	ALEX	KWS	FLOR'CE	C. STAT	MEAN	Rank
	IL	NC	VA	LA	IL	SC	TX	ALL LOC.	
1 ERNIE	136	102	125	87	137	101	91	111	4
2 COKER9835	139	100	128	87	140	104	94	113	24
3 BESS	136	105	127	91	139	104	95	114	40
4 JAMESTOWN	136	101	124	85	135	98	92	110	3
5 SS 8641	137	100	127	88	138	102	92	112	8
6 15VDH-FHB-MAS22-14	136	101	124	88	137	102	92	112	8
7 NC11363-25	138	106	125	93	138	104	93	114	40
8 15VDH-FHB-MAS38-01	133	100	124	85	135	98	90	109	1
9 NC16-19288	139	106	127	93	140	104	101	116	55
10 NC13220-37	136	103	124	92	137	104	99	113	24
11 NC15V25-20	136	104	126	92	138	104	101	114	40
12 NC13206-40	135	104	125	93	136	103	105	114	40
13 NC15V26-19	139	105	128	93	137	105	101	115	47
14 NC12164-200T	138	103	126	89	138	103	98	113	24
15 NC18-16913	135	105	125	89	137	102	96	113	24
16 NC18-16920	137	106	128	91	138	104	100	115	47
17 AR11051-15-3	138	106	128	93	138	106	99	115	47
18 AR12416-1897N	137	106	126	90	138	103	92	113	24
19 AR12486-2425N	137	104	126	91	138	103	92	113	24
20 AR15V25-19-2174N	137	103	126	89	137	103	92	112	8
21 ARDH13216-12	136	101	124	91	136	102	101	113	24
22 ARDH14002-22-0260N	137	107	131	103	139	110	103	118	59
23 ARFDH160655-113	138	106	126	92	138	104	101	115	47
24 ARFDH160665-139	137	104	124	93	138	104	101	114	40
25 SCLA19WF2110	135	100	124	90	136	101	98	112	8
26 SCLA19WF1917	139	100	127	90	138	103	95	113	24
27 SCLA19WF2408	137	101	127	91	137	104	95	113	24
28 SCLA19WF1301	138	103	126	89	139	102	95	113	24
29 SCLA19WF1110	137	99	128	87	137	101	94	112	8
30 SCLA19WF1604	136	104	128	86	137	103	94	112	8
31 SCLA19WF1502	131	105	131	86	137	102	95	112	8
32 SCGA151917-10	138	105	131	93	138	103	101	115	47
33 KWS338	137	105	128	102	137	106	99	116	55
34 KWS342	135	105	124	107	137	106	98	116	55
35 KWS347	139	107	126	92	138	105	101	115	47
36 KWS358	138	105	131	93	138	104	95	115	47
37 KWS369	139	108	132	103	140	106	108	119	60
38 LA13009D-23	138	103	129	89	138	102	94	113	24
39 LA13045D-121	136	104	126	88	137	101	93	112	8
40 LA13173D-WN26-4	134	99	124	85	134	99	92	109	1
41 LA14173C-54	136	98	125	88	137	101	95	111	4
42 LA14257C-48-1	137	103	125	87	137	102	98	112	8
43 LA15203-LDH200	138	106	126	95	138	106	102	116	55
44 LANC11558-33	137	103	124	88	137	101	96	112	8
45 15VDH-FHB-MAS25-15	136	104	125	89	136	102	93	112	8
46 15VDH-FHB-MAS33-13	138	105	125	89	138	102	95	113	24
47 16VDH-SRW05-205	138	106	126	87	138	105	94	113	24
48 15VTK-1-101	139	107	129	89	139	104	93	114	40
49 VA19W-31	136	104	124	89	137	101	92	112	8
50 VA19W-79	136	99	124	87	137	100	93	111	4
51 16VTK19-201	136	104	124	92	137	103	98	113	24
52 VA19FHB-05	136	103	124	86	138	102	94	112	8
53 GA161240LDH-59 -20E7	136	99	124	86	137	102	96	111	4
54 GA131218-1-2-7 -20E15	137	104	125	90	137	102	96	113	24
55 GA12230-1 -6-6-3 -20E36	137	104	125	86	137	102	92	112	8
56 GA151313-LDH-192-20E48	139	105	125	92	139	106	93	114	40
57 GA161240LDH-113 -20LE6	137	102	129	90	138	104	93	113	24
58 GAMD 13W-254-6-2-4 -20LE24	136	102	125	88	137	102	93	112	8
59 GA14235-7-2-6-20LE31	135	103	124	89	136	102	94	112	8
60 GA161125NCDH-117 -20LE39	137	107	125	93	138	105	101	115	47

MEAN	137	102	126	90	137	103	96	113
LSD (0.05)	2	2	3	3	1	1	4	4
CV %	1.0	1.2	0.5	1.9	0.4	2	2	1.9

\*Days after December 31, 2020

## Plant Height (in)

	CULTIVAR/ DESIGNATION	KWS IL	RANK
1	ERNIE	37	15
2	COKER9835	34	2
3	BESS	40	45
4	JAMESTOWN	36	7
5	SS 8641	38	23
6	15VDH-FHB-MAS22-14	37	15
7	NC11363-25	38	23
8	15VDH-FHB-MAS38-01	36	7
9	NC16-19288	38	23
10	NC13220-37	39	37
11	NC15V25-20	39	37
12	NC13206-40	40	45
13	NC15V26-19	39	37
14	NC12164-200T	40	45
15	NC18-16913	39	37
16	NC18-16920	40	45
17	AR11051-15-3	42	59
18	AR12416-1897N	40	45
19	AR12486-2425N	43	60
20	AR15V25-19-2174N	40	45
21	ARDH13216-12	41	53
22	ARDH14002-22-0260N	41	53
23	ARFDH160655-113	37	15
24	ARFDH160665-139	38	23
25	SCLA19WF2110	39	37
26	SCLA19WF1917	39	37
27	SCLA19WF2408	41	53
28	SCLA19WF1301	40	45
29	SCLA19WF1110	35	4
30	SCLA19WF1604	41	53
31	SCLA19WF1502	38	23
32	SCGA151917-10	36	7
33	KWS338	37	15
34	KWS342	37	15
35	KWS347	38	23
36	KWS358	38	23
37	KWS369	35	4
38	LA13009D-23	35	4
39	LA13045D-121	38	23
40	LA13173D-WN26-4	38	23
41	LA14173C-54	40	45
42	LA14257C-48-1	38	23
43	LA15203-LDH200	38	23
44	LANC11558-33	36	7
45	15VDH-FHB-MAS25-15	37	15
46	15VDH-FHB-MAS33-13	37	15
47	16VDH-SRW05-205	36	7
48	15VTK-1-101	33	1
49	VA19W-31	38	23
50	VA19W-79	41	53
51	16VTK19-201	38	23
52	VA19FHB-05	39	37
53	GA161240LDH-59 -20E7	41	53
54	GA131218-1-2-7 -20E15	36	7
55	GA12230-1 -6-6-3 -20E36	36	7
56	GA151313-LDH-192-20E48	34	2
57	GA161240LDH-113 -20LE6	38	23
58	GAMD 13W-254-6-2-4 -20LE24	39	37
59	GA14235-7-2-6-20LE31	36	7
60	GA161125NCDH-117 -20LE39	37	15

Mean	38
LSD (0.05)	2
CV%	3

## Leaf Disease Ratings

CULTIVAR/ DESIGNATION	Leaf Rust	Leaf Rust	Leaf	Leaf	Stripe	Stripe	Stripe
	Seedling	Seedling	Rust	Rust	Rust	Rust	Rust
	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
	TCRKG	TNRJJ	0-9	0-9	0-9	0-9	0-9
	Blacksburg	Blacksburg	Florence	KWS	F'VILLE	N'PORT	KWS
	VA	VA	SC	IL	AR	AR	IL
1 ERNIE	3.0	3.0	2	6	6	3	6
2 COKER9835	0;Tr3	3.0	0	5	7	3	6
3 BESS	3-	3-	2	6	8	1	5
4 JAMESTOWN	23.0	23-;	0	1	5	0	1
5 SS 8641	;1=	0;	0	1	5	1	2
6 15VDH-FHB-MAS22-14	2;	;1-	0	1	8	5	7
7 NC11363-25	;1-	0;	1	1	4	0	1
8 15VDH-FHB-MAS38-01	0;	0;	0	1	7	4	3
9 NC16-19288	3-	1;	1	2	2	0	1
# NC13220-37	23;	12;	0	1	9	6	8
# NC15V25-20	12;	0;tr23	0	1	7	3	4
# NC13206-40	0;1	21;TR3	0	1	8	3	6
# NC15V26-19	23;	;1=	0	1	6	3	3
# NC12164-200T	3.0	1;	1	2	7	3	4
# NC18-16913	32;	21;	1	2	9	4	7
# NC18-16920	23-;	1;	1	1	8	3	7
# AR11051-15-3	0;	23;	1	2	6	0	2
# AR12416-1897N	;1-Tr3	;1=	1	3	1	0	1
# AR12486-2425N	0;	23;	1	1	3	0	1
# AR15V25-19-2174N	;1-	0;TR23	1	1	5	0	3
# ARDH13216-12	21;Tr3	12;	0	1	4	0	1
# ARDH14002-22-0260N	3.0	23-;	0	4	3	0	1
# ARFDH160655-113	23-;	12-;	0	1	5	0	2
# ARFDH160665-139	1;	0;	0	1	4	0	3
# SCLA19WF2110	3.0	23;	3	5	2	0	1
# SCLA19WF1917	23;	23-;	0	1	7	2	6
# SCLA19WF2408	0;Tr23	1;TR23	0	1	6	1	3
# SCLA19WF1301	12-;	12;	0	4	8	4	4
# SCLA19WF1110	0;	23-;	0	4	7	5	3
# SCLA19WF1604	21;Tr3	23-;	1	3	7	3	6
# SCLA19WF1502	3-;	12;	0	5	9	6	8
# SCGA151917-10	3-;	3-	1	3	5	3	3
# KWS338	3.0	3-	4	6	6	4	5
# KWS342	3.0	3.0	1	5	6	1	2
# KWS347	23-	23.0	2	6	1	0	1
# KWS358	23.0	3-	0	3	1	0	2
# KWS369	3-	3-	0	3	5	1	2
# LA13009D-23	0;	1;	0	1	6	2	3
# LA13045D-121	1;	;1=	0	1	6	4	4
# LA13173D-WN26-4	23-	1;	0	2	8	3	3
# LA14173C-54	0;Tr23;	;1=	0	1	7	2	4
# LA14257C-48-1	1;Tr3	;1=	1	1	7	3	4
# LA15203-LDH200	0;	12;	1	1	1	0	1
# LANC11558-33	12;Tr23	23.0	0	2	1	0	1
# 15VDH-FHB-MAS25-15	1-;	0;	0	1	7	1	4
# 15VDH-FHB-MAS33-13	;2-	2;	0	1	8	3	4
# 16VDH-SRW05-205	;1-	0;	0	1	0	0	1
# 15VTK-1-101	21;Tr3	0;	1	1	4	0	3
# VA19W-31	0;	;1-	0	1	2	0	2
# VA19W-79	3-;	23;	1	4	7	2	7
# 16VTK19-201	3-	21;	1	1	5	0	5
# VA19FHB-05	3-;	3-	1	3	3	0	2
# GA161240LDH-59 -20E7	1-;	1;	0	3	6	4	8
# GA131218-1-2-7 -20E15	3-	21;	0	2	5	0	2
# GA12230-1 -6-6-3 -20E36	1;Tr3	;1=	0	1	3	0	1
# GA151313-LDH-192-20E48	1-;	;1=	1	1	3	0	2
# GA161240LDH-113 -20LE6	23;	21;	0	1	3	0	1
# GAMD 13W-254-6-2-4 -20LE24	23;	21;	1	1	8	1	7
# GA14235-7-2-6-20LE31	3-;	12;	0	2	6	0	4
# GA161125NCDH-117 -20LE39	2;	1;	1	1	8	1	6

Mean			0	2	5	1	3
LSD (0.05)			1	1	2	2	1
CV%			171.9	23.1	26.6	108.1	20.5



## Means Across Locations 2020-21

Cultivar/ Designation	FHB Rating		FHB Incidence		FHB Severity		FHB Index		FDK		ISK		DON	
	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	
1 ERNIE	3	28	22	15	10	21	2	11	21	14	10	5	7	39
2 COKER9835	6	59	66	60	54	59	48	60	54	59	64	59	9	52
3 BESS	2	2	26	20	7	8	1	2	21	14	13	13	7	39
4 JAMESTOWN	3	28	32	33	15	33	5	30	16	2	19	26	3	2
5 SS 8641	6	59	56	56	56	60	47	59	55	60	68	60	15	60
6 15VDH-FHB-MAS22-14	2	2	16	5	6	4	1	2	20	9	4	1	3	2
7 NC11363-25	2	2	27	22	16	35	5	30	25	32	18	25	6	32
8 15VDH-FHB-MAS38-01	2	2	22	15	7	8	2	11	24	29	8	3	3	2
9 NC16-19288	3	28	50	54	38	55	28	55	32	45	44	54	8	48
10 NC13220-37	3	28	27	22	12	26	4	25	36	52	11	7	4	11
11 NC15V25-20	2	2	16	5	5	2	1	2	21	14	16	19	3	2
12 NC13206-40	3	28	43	49	24	48	12	46	20	9	25	38	4	11
13 NC15V26-19	4	50	45	50	30	52	22	53	41	56	33	48	11	57
14 NC12164-200T	2	2	37	41	7	8	3	17	23	21	13	13	5	20
15 NC18-16913	3	28	32	33	10	21	4	25	30	41	19	26	3	2
16 NC18-16920	2	2	20	12	6	4	1	2	26	36	20	28	5	20
17 AR11051-15-3	2	2	30	28	9	20	4	25	21	14	15	17	5	20
18 AR12416-1897N	3	28	27	22	10	21	3	17	25	32	23	35	5	20
19 AR12486-2425N	2	2	32	33	12	26	4	25	19	8	11	7	5	20
20 AR15V25-19-2174N	2	2	24	19	23	47	5	30	18	3	16	19	3	2
21 ARDH13216-12	3	28	38	42	18	41	9	42	25	32	36	50	7	39
22 ARDH14002-22-0260N	1	1	7	1	4	1	0	1	23	21	10	5	6	32
23 ARFDH160655-113	2	2	31	30	20	43	8	40	31	44	16	19	6	32
24 ARFDH160665-139	2	2	10	2	5	2	1	2	23	21	11	7	4	11
25 SCLA19WF2110	3	28	30	28	21	45	7	38	23	21	23	35	6	32
26 SCLA19WF1917	5	55	50	54	37	54	27	54	42	57	53	57	12	59
27 SCLA19WF2408	2	2	19	11	7	8	1	2	22	19	12	11	7	39
28 SCLA19WF1301	4	50	49	53	30	52	20	52	34	47	39	51	10	55
29 SCLA19WF1110	5	55	56	56	43	56	29	56	33	46	34	49	8	48
30 SCLA19WF1604	3	28	31	30	17	39	6	36	29	40	23	35	6	32
31 SCLA19WF1502	3	28	36	39	13	28	5	30	27	37	16	19	5	20
32 SCGA151917-10	2	2	35	37	16	35	6	36	28	39	28	41	9	52
33 KWS338	2	2	10	2	7	8	1	2	18	3	14	15	4	11
34 KWS342	2	2	16	5	7	8	2	11	14	1	20	28	5	20
35 KWS347	2	2	20	12	10	21	2	11	18	3	8	3	5	20
36 KWS358	2	2	21	14	13	28	3	17	23	21	21	32	4	11
37 KWS369	2	2	18	9	6	4	1	2	27	37	15	17	7	39
38 LA13009D-23	4	50	56	56	20	43	13	49	37	53	50	56	8	48
39 LA13045D-121	3	28	26	20	27	49	14	51	25	32	16	19	3	2
40 LA13173D-WN26-4	2	2	23	18	8	15	2	11	20	9	17	24	3	2
41 LA14173C-54	3	28	18	9	8	15	2	11	30	41	27	40	2	1
42 LA14257C-48-1	4	50	35	37	28	51	13	49	34	47	31	45	7	39
43 LA15203-LDH200	2	2	40	45	15	33	9	42	21	14	22	33	6	32
44 LANC11558-33	3	28	38	42	16	35	9	42	18	3	30	43	5	20
45 15VDH-FHB-MAS25-15	2	2	27	22	11	25	4	25	24	29	11	7	6	32
46 15VDH-FHB-MAS33-13	2	2	13	4	6	4	1	2	18	3	7	2	3	2
47 16VDH-SRW05-205	3	28	29	27	8	15	3	17	34	47	31	45	9	52
48 15VTK-1-101	3	28	45	50	16	35	12	46	35	50	41	52	8	48
49 VA19W-31	3	28	42	47	17	39	8	40	24	29	28	41	5	20
50 VA19W-79	4	50	39	44	27	49	12	46	30	41	32	47	7	39
51 16VTK19-201	2	2	22	15	13	28	3	17	20	9	14	15	4	11
52 VA19FHB-05	2	2	16	5.0	13	28	3	17	20	9	12	11	5	20
53 GA161240LDH-59 -20E7	3	28	31	30	7	8	3	17	22	19	20	28	4	11
54 GA131218-1-2-7 -20E15	5	55	61	59	49	58	38	58	35	50	48	55	11	57
55 GA12230-1 -6-6-3 -20E36	3	28	36	39	21	45	7	38	23	21	20	28	5	20
56 GA151313-LDH-192-20E48	3	28	42	47	19	42	10	45	38	55	41	52	10	55
57 GA161240LDH-113 -20LE6	3	28	40	45	8	15	5	30	23	21	26	39	4	11
58 GAMD 13W-254-6-2-4 -20LE24	3	28	34	36	8	15	3	17	37	53	22	33	7	39
59 GA14235-7-2-6-20LE31	5	55	47	52	44	57	35	57	42	57	59	58	7	39
60 GA161125NCDH-117 -20LE39	2	2	27	22	13	28	5	30	23	21	30	43	4	11

Mean	3	32	17	9	27	24	6
LSD (0.05)	3	32	22	22	25	24	6
CV%	45.3	50.3	64.9	121.3	48	48.7	48
Correl w/ GEBV	0.54	.	0.60	.	0.51	.	0.5

## Means Across Locations 2020- 2021

Cultivar/ Designation	Head. Date	Plant Ht.	Rank		H13	Fhb1	Fhb Massey 3BL	Jamestown 1B	Bess 2B	Bess 3B	NC-Neuse 1A	NC-Neuse 6A
			Rank	Rank								
1 ERNIE	111	4	37	15	no	no	M3BL	no	no	no	N1A	no
2 COKER9835	113	24	34	2	no	no	no	no	no	no	no	N6A
3 BESS	114	40	40	45	het	no	no	?	B2B	B3B	?	no
4 JAMESTOWN	110	3	36	7	no	no	no	het	no	no	N1A	no
5 SS 8641	112	8	38	23	no	no	no	no	no	no	no	no
6 15VDH-FHB-MAS22-14	112	8	37	15	no	Fhb1	M3BL	no	no	no	no	no
7 NC11363-25	114	40	38	23	het	no	no	J1B	no	no	N1A	het
8 15VDH-FHB-MAS38-01	109	1	36	7	H13	Fhb1	no	J1B	no	no	no	no
9 NC16-19288	116	55	38	23	H13	no	no	no	no	no	no	no
10 NC13220-37	113	24	39	37	no	Fhb1	no	no	no	no	no	no
11 NC15V25-20	114	40	39	37	no	Fhb1	no	het	no	no	no	no
12 NC13206-40	114	40	40	45	het	no	no	J1B	no	no	het	no
13 NC15V26-19	115	47	39	37	no	no	no	J1B	no	no	no	no
14 NC12164-200T	113	24	40	45	no	Fhb1	no	het	B2B	no	het	no
15 NC18-16913	113	24	39	37	H13	Fhb1	M3BL	het	no	no	N1A	no
16 NC18-16920	115	47	40	45	H13	Fhb1	M3BL	J1B	no	no	?	no
17 AR11051-15-3	115	47	42	59	no	no	no	J1B	no	no	no	?
18 AR12416-1897N	113	24	40	45	no	no	no	no	no	no	N1A	N6A
19 AR12486-2425N	113	24	43	60	no	no	no	no	no	no	N1A	N6A
20 AR15V25-19-2174N	112	8	40	45	het	Het	no	J1B	no	no	no	no
21 ARDH13216-12	113	24	41	53	no	no	no	no	B2B	no	no	no
22 ARDH14002-22-0260N	118	59	41	53	no	no	het	het	no	no	N1A	het
23 ARFDH160655-113	115	47	37	15	no	Fhb1	no	no	no	no	no	no
24 ARFDH160665-139	114	40	38	23	no	Fhb1	no	het	no	no	no	no
25 SCLA19WF2110	112	8	39	37	no	no	no	J1B	no	no	N1A	no
26 SCLA19WF1917	113	24	39	37	no	no	no	no	no	no	N1A	no
27 SCLA19WF2408	113	24	41	53	no	no	no	het	no	no	no	no
28 SCLA19WF1301	113	24	40	45	het	no	no	no	no	no	het	no
29 SCLA19WF1110	112	8	35	4	no	no	no	no	no	no	no	no
30 SCLA19WF1604	112	8	41	53	H13	Fhb1	no	J1B	het	no	N1A	no
31 SCLA19WF1502	112	8	38	23	no	Fhb1	no	J1B	no	no	N1A	no
32 SCGA151917-10	115	47	36	7	no	no	M3BL	het	het	no	no	N6A
33 KWS338	116	55	37	15	no	no	M3BL	het	no	no	N1A	het
34 KWS342	116	55	37	15	no	no	no	J1B	no	no	N1A	no
35 KWS347	115	47	38	23	no	Fhb1	no	no	no	no	no	no
36 KWS358	115	47	38	23	no	no	M3BL	no	B2B	no	N1A	no
37 KWS369	119	60	35	4	no	no	M3BL	J1B	no	no	no	no
38 LA13009D-23	113	24	35	4	no	no	no	no	no	no	het	no
39 LA13045D-121	112	8	38	23	no	Fhb1	no	no	no	no	no	no
40 LA13173D-WN26-4	109	1	38	23	no	Fhb1	no	no	no	no	no	N6A
41 LA14173C-54	111	4	40	45	no	Fhb1	no	J1B	no	no	N1A	no
42 LA14257C-48-1	112	8	38	23	no	no	no	no	no	no	N1A	N6A
43 LA15203-LDH200	116	55	38	23	no	no	no	J1B	no	no	no	no
44 LANC11558-33	112	8	36	7	no	no	no	J1B	no	no	N1A	no
45 15VDH-FHB-MAS25-15	112	8	37	15	H13	Fhb1	no	no	no	no	no	no
46 15VDH-FHB-MAS33-13	113	24	37	15	H13	Fhb1	M3BL	no	no	no	no	no
47 16VDH-SRW05-205	113	24	36	7	H13	no	no	no	no	no	no	N6A
48 15VTK-1-101	114	40	33	1	H13	no	M3BL	het	no	no	no	no
49 VA19W-31	112	8	38	23	no	no	no	no	no	no	het	N6A
50 VA19W-79	111	4	41	53	no	no	no	no	no	no	N1A	no
51 16VTK19-201	113	24	38	23	no	Fhb1	no	no	no	no	N1A	N6A
52 VA19FHB-05	112	8	39	37	no	no	no	no	no	no	no	no
53 GA161240LDH-59 -20E7	111	4	41	53	no	Fhb1	no	no	no	no	no	N6A
54 GA131218-1-2-7 -20E15	113	24	36	7	H13	no	no	J1B	no	no	no	N6A
55 GA12230-1 -6-6-3 -20E36	112	8	36	7	H13	no	no	no	no	no	N1A	no
56 GA151313-LDH-192-20E48	114	40	34	2	H13	Fhb1	no	J1B	no	no	N1A	no
57 GA161240LDH-113 -20LE6	113	24	38	23	no	Fhb1	no	no	no	no	N1A	no
58 GAMD 13W-254-6-2-4 -20LE24	112	8	39	37	no	?	no	no	no	no	no	N6A
59 GA14235-7-2-6-20LE31	112	8	36	7	no	no	no	J1B	no	no	no	N6A
60 GA161125NCDH-117 -20LE39	115	47	37	15	no	Fhb1	no	no	no	no	N1A	N6A

Mean	113	38
LSD (0.05)	4	2
CV%	1.9	3.0

**Means and Variances of Genotypic Estimated Breeding Values for Severity of progenies from selected crosses between entries in the 2019-20 and 2020-21 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	2021	15VDH-FHB-MAS38-01	2021	22	12.9	16
15VDH-FHB-MAS22-14	2021	15VDH-FHB-MAS38-01	2021	22	7.6	17
15VDH-FHB-MAS38-01	2021	NC18-16913	2021	23	9.0	18
BESS	2021	15VDH-FHB-MAS22-14	2021	23	10.0	18
15VDH-FHB-MAS17-23	2020	15VDH-FHB-MAS38-01	2021	24	12.7	18
15VDH-FHB-MAS38-01	2021	ARFDH160665-139	2021	23	10.4	18
NC12193-49	2020	BESS	2021	25	16.6	18
NC12193-49	2020	15VDH-FHB-MAS38-01	2021	24	11.2	18
16VDH-SRW01-120	2020	15VDH-FHB-MAS38-01	2021	23	10.0	18
LANC9337-63-4	2020	15VDH-FHB-MAS22-14	2021	24	12.3	18
LANC9337-63-4	2020	15VDH-FHB-MAS38-01	2021	23	9.3	18
15VDH-FHB-MAS38-01	2021	VA19FHB-05	2021	24	12.8	18
BESS	2021	NC18-16913	2021	24	12.2	18
15VDH-FHB-MAS38-01	2021	ARDH14002-22-0260N	2021	25	13.9	18
BESS	2021	ARFDH160665-139	2021	25	13.4	18
ERNIE	2021	15VDH-FHB-MAS38-01	2021	24	12.0	18
VA18FHB-58	2020	15VDH-FHB-MAS38-01	2021	24	8.9	18
15VDH-FHB-MAS38-01	2021	SCLA19WF1502	2021	24	9.8	18
16VDH-SRW01-120	2020	BESS	2021	24	12.1	18
BESS	2021	SCLA19WF1502	2021	25	15.3	18
15VDH-FHB-MAS38-01	2021	NC18-16920	2021	24	9.5	19
15VDH-FHB-MAS22-14	2021	NC18-16913	2021	24	8.5	19
16VDH-SRW06-131	2020	15VDH-FHB-MAS38-01	2021	25	12.3	19
15VDH-FHB-MAS22-14	2021	ARFDH160665-139	2021	24	10.2	19
AR15V31-26-2285N	2020	15VDH-FHB-MAS38-01	2021	24	11.1	19
LANC9337-63-4	2020	BESS	2021	24	11.0	19
AR15V31-26-2285N	2020	15VDH-FHB-MAS22-14	2021	25	14.1	19
15VDH-FHB-MAS17-23	2020	BESS	2021	25	14.1	19
JAMESTOWN	2021	15VDH-FHB-MAS38-01	2021	24	10.1	19
16VDH-SRW01-120	2020	15VDH-FHB-MAS22-14	2021	24	9.2	19
NC12193-49	2020	15VDH-FHB-MAS22-14	2021	24	10.5	19
JAMESTOWN	2021	15VDH-FHB-MAS22-14	2021	25	12.2	19
16VDH-SRW06-131	2020	15VDH-FHB-MAS22-14	2021	25	14.1	19
15VDH-FHB-MAS22-14	2021	VA19FHB-05	2021	25	13.3	19
GANC12642-12-19LE16	2020	15VDH-FHB-MAS38-01	2021	25	10.7	19
15VDH-FHB-MAS22-14	2021	SCLA19WF1502	2021	25	10.8	19
VA18FHB-58	2020	BESS	2021	25	11.0	19
AR15V31-26-2285N	2020	BESS	2021	26	13.9	19
ERNIE	2021	15VDH-FHB-MAS22-14	2021	25	12.3	19
GANC12642-12-19LE16	2020	BESS	2021	26	14.6	19
LANC9337-63-4	2020	ARFDH160665-139	2021	26	12.2	19
15VDH-FHB-MAS17-23	2020	15VDH-FHB-MAS22-14	2021	25	9.0	19
NC12193-49	2020	LANC9337-63-4	2020	26	12.5	19
15VDH-FHB-MAS22-14	2021	NC18-16920	2021	25	8.9	19
BESS	2021	NC18-16920	2021	25	11.2	20
LANC9337-63-4	2020	NC18-16913	2021	25	10.2	20

**Means and Variances of Genotypic Estimated Breeding Values for FDK of progenies from selected crosses between entries in the 2019-20 and 2020-21 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%
15VDH-FHB-MAS34-18	2020	BESS	2021	16	14.6	9
15VDH-FHB-MAS34-18	2020	15VDH-FHB-MAS22-14	2021	16	11.0	10
GAFHBMAS14031-201	2020	15VDH-FHB-MAS34-18	2020	15	9.0	10
AR15V31-26-2285N	2020	15VDH-FHB-MAS22-14	2021	16	11.1	10
AR15V31-26-2285N	2020	15VDH-FHB-MAS34-18	2020	15	7.2	10
AR15V31-26-2285N	2020	BESS	2021	16	11.9	10
15VDH-FHB-MAS34-18	2020	15VDH-FHB-MAS38-01	2021	16	11.0	10
15VDH-FHB-MAS34-18	2020	NC18-16913	2021	15	6.7	11
AR15V31-26-2285N	2020	GAFHBMAS14031-201	2020	16	8.6	11
AR15V31-26-2285N	2020	NC18-16913	2021	15	7.5	11
AR15V31-26-2285N	2020	15VDH-FHB-MAS38-01	2021	17	11.2	11
LANC9337-63-4	2020	15VDH-FHB-MAS34-18	2020	16	9.5	11
15VDH-FHB-MAS34-18	2020	NC18-16920	2021	16	7.8	11
15VDH-FHB-MAS17-23	2020	BESS	2021	18	16.5	11
BESS	2021	15VDH-FHB-MAS22-14	2021	17	12.1	11
AR15V41-10-2443N	2020	BESS	2021	18	17.4	11
15VDH-FHB-MAS34-18	2020	ARDH14002-22-0260N	2021	16	8.9	11
AR15V31-26-2285N	2020	VA18FHB-58	2020	17	11.3	11
15VDH-FHB-MAS22-14	2021	NC18-16913	2021	16	7.4	11
AR15V31-26-2285N	2020	ARDH14002-22-0260N	2021	17	10.0	11
NC12193-49	2020	15VDH-FHB-MAS34-18	2020	16	7.9	11
LANC9337-63-4	2020	15VDH-FHB-MAS22-14	2021	17	11.4	11
NC12193-49	2020	AR15V31-26-2285N	2020	17	8.9	11
NC12193-49	2020	BESS	2021	18	13.4	11
BESS	2021	NC18-16913	2021	17	9.2	11
AR15V41-10-2443N	2020	GAFHBMAS14031-201	2020	18	12.5	12
15VDH-FHB-MAS34-18	2020	VA19FHB-05	2021	18	13.7	12
GAFHBMAS14031-201	2020	NC18-16913	2021	16	6.1	12
AR15V41-10-2443N	2020	15VDH-FHB-MAS34-18	2020	17	8.9	12
15VDH-FHB-MAS22-14	2021	NC18-16920	2021	17	9.1	12
15VDH-FHB-MAS34-18	2020	VA18FHB-58	2020	17	8.1	12
GAFHBMAS14031-201	2020	BESS	2021	17	8.5	12
AR15V41-10-2443N	2020	NC18-16913	2021	17	10.5	12
GAFHBMAS14031-201	2020	15VDH-FHB-MAS22-14	2021	16	7.1	12
15VDH-FHB-MAS38-01	2021	NC18-16913	2021	17	7.8	12
15VDH-FHB-MAS34-18	2020	VA19W-31	2021	18	15.1	12
AR15V31-26-2285N	2020	LANC9337-63-4	2020	17	7.5	12
15VDH-FHB-MAS34-18	2020	SCLA19WF1502	2021	16	7.2	12
AR15V31-26-2285N	2020	16VDH-SRW01-120	2020	18	10.7	12
15VDH-FHB-MAS34-18	2020	ERNIE	2021	17	9.0	12
AR15V31-26-2285N	2020	NC18-16920	2021	16	6.3	12
AR15V41-10-2443N	2020	LANC9337-63-4	2020	19	14.4	12
AR15V31-26-2285N	2020	SCLA19WF1502	2021	17	7.9	12
LA13181D-151A	2020	BESS	2021	19	15.3	12
GANC12642-12-19LE16	2020	15VDH-FHB-MAS34-18	2020	17	7.6	12
15VDH-FHB-MAS17-23	2020	NC18-16913	2021	17	9.0	12
BESS	2021	15VDH-FHB-MAS38-01	2021	18	11.2	12

**Means and Variances of Genotypic Estimated Breeding Values for DON of progenies from selected crosses between entries in the 2019-20 and 2020-21 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%
AR15V41-10-2443N	2020	NC18-16913	2021	4.3	4.2	0.8
NC12193-49	2020	NC18-16913	2021	3.7	2.7	0.9
NC13220-37	2021	NC18-16913	2021	3.7	2.2	1.1
NC13206-40	2021	NC18-16913	2021	4.2	3.4	1.1
LANC9337-63-4	2020	NC18-16913	2021	3.6	1.8	1.3
NC12164-200T	2021	NC18-16913	2021	4.2	2.6	1.4
NC18-16913	2021	SCLA19WF1502	2021	3.5	1.5	1.4
15VDH-FHB-MAS34-18	2020	NC18-16913	2021	4.0	2.1	1.5
15VDH-FHB-MAS38-01	2021	NC18-16913	2021	4.1	2.2	1.5
NC12193-49	2020	NC18-16920	2021	4.7	3.4	1.6
AR15V41-10-2443N	2020	NC18-16920	2021	5.4	4.6	1.7
NC13220-37	2021	NC18-16920	2021	4.7	2.9	1.8
LA13181D-151A	2020	NC18-16913	2021	4.2	2.0	1.8
15VDH-FHB-MAS22-14	2021	NC18-16913	2021	4.8	3.0	1.8
16VDH-SRW01-120	2020	NC18-16913	2021	4.3	2.1	1.8
NC18-16913	2021	ARDH13216-12	2021	4.3	2.0	1.9
NC18-16913	2021	GA161125NCDH-117-20LE39	2021	4.8	2.8	1.9
JAMESTOWN	2021	NC18-16913	2021	4.1	1.6	1.9
NC18-16913	2021	GAMD-13W-254-6-2-4--20LE24	2021	4.6	2.2	2.0
NC18-16913	2021	NC18-16920	2021	3.2	0.5	2.0
BESS	2021	NC18-16913	2021	5.5	4.0	2.0
NC12193-49	2020	SCLA19WF1502	2021	5.0	2.9	2.1
NC18-16920	2021	SCLA19WF1502	2021	4.6	2.1	2.1
LANC9337-63-4	2020	SCLA19WF1502	2021	5.0	2.9	2.1
NC18-16913	2021	16VTK19-201	2021	4.6	2.1	2.1
15VDH-FHB-MAS17-23	2020	NC18-16913	2021	5.4	3.6	2.1
LANC9337-63-4	2020	NC13220-37	2021	5.2	3.1	2.1
ERNIE	2021	NC18-16913	2021	5.2	3.2	2.2
NC12193-49	2020	NC13220-37	2021	5.2	3.0	2.2
NC13206-40	2021	NC18-16920	2021	5.3	3.1	2.3
NC12164-94	2020	NC18-16913	2021	5.1	2.8	2.3
NC18-16913	2021	GA12230-1-6-6-3-20E36	2021	5.3	3.0	2.3
AR12002-0024N	2020	NC18-16913	2021	4.7	1.8	2.3
AR15V41-10-2443N	2020	SCLA19WF1502	2021	5.7	3.8	2.3
NC12193-49	2020	LANC9337-63-4	2020	5.2	2.6	2.4
NC18-16913	2021	15VDH-FHB-MAS33-13	2021	5.2	2.5	2.4
LANC9337-63-4	2020	NC18-16920	2021	4.7	1.7	2.4
NC13220-37	2021	NC13206-40	2021	5.8	3.7	2.4
NC12164-200T	2021	NC18-16920	2021	5.2	2.5	2.4
15VDH-FHB-MAS34-18	2020	NC18-16920	2021	5.1	2.3	2.4
16VDH-SRW01-120	2020	NC18-16920	2021	5.3	2.7	2.4
NC12642-81	2020	NC18-16913	2021	4.6	1.5	2.5
LA13181D-151A	2020	NC18-16920	2021	5.3	2.6	2.5
NC18-16913	2021	ARDH14002-22-0260N	2021	5.2	2.4	2.5
NC13206-40	2021	SCLA19WF1502	2021	5.6	3.2	2.5
AR15V41-10-2443N	2020	LANC9337-63-4	2020	5.8	3.5	2.5
15VDH-FHB-MAS38-01	2021	NC18-16920	2021	5.1	2.3	2.5