

UNIFORM SOUTHERN SOFT RED WINTER WHEAT FUSARIUM HEAD BLIGHT SCREENING NURSERY

2000 NURSERY REPORT

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This is a joint progress report of cooperative investigations underway and funded by the 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 cooperators and their official staff and those persons having direct interest in the development of agricultural research programs.

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LOCATION NOTES

Bay, Arkansas

- Cooperators: June Hancock, David Hill, Luis LazoAnaya
Novartis Seeds Inc.
- Reps: 3 Plot size: 4 rows by 3 feet Seed date: October 26, 1999
- Inoculation method: Corn kernels twice (3/27/00 and 4/14/00)
- Precipitation during grain fill: Sprinkler daily
- Avg temp. during grain fill: 70's
- Date/Feekes growth stage when scored: Ratings taken 21 days after last inoculation

Urbana, Illinois

- Cooperators: Fred Kolb, Larry Boze
University of Illinois
- Reps: 2 Plot size: Single 3' row Seed date: October 6, 1999
- Inoculation method: Grain spawn-infected wheat seed
- Precipitation during grain fill: Natural + mist irrigation, 6-7:30 AM and 7:30-9 PM (0.36"/day)
- Avg temp. during grain fill: Mod. cool, 70's and 80's

Wooster, Ohio

- Cooperators: Pat Lipps, Larry Herald, Audrey Johnston, Jessica Engle, Anju Gupta
Ohio State University
- Reps: 3 Plot size: 1-m long row Seed date: October 5, 1999 Harvest date: July 10-15, 2000
- Inoculation method: Infested corn kernels spread throughout plot
- Precipitation during grain fill: Mist irrigation supplied each day 6-9 AM and 8-10 PM during flower
- Avg temp. during grain fill: 69.1 F
- Date/Feekes growth stage when scored: 11.2

Lexington, Kentucky

- Cooperators: Dave Van Sanford, Brenda Kennedy, Maria Hall
University of Kentucky
- Plot size: Four-row plot, 4' by 4"
- Inoculation method: Plots were inoculated using the scabby corn seed method on April 24
- Precipitation during grain fill: Overhead misting system used intermittently during 6-10 AM and 8-10 PM

Blacksburg, Virginia

- Cooperators: Carl A. Griffey, Jianli Chen
Virginia Tech
- Field design: Randomized complete block Reps: 3 Plot size: 4 x 5 ft²
- Inoculation method: Spraying conidial suspension (5×10^4 spores/ml) used in field tests and floret inoculation (5×10^4 spores/ml) was applied in greenhouse tests; plots inoculated 3 times when 50%, 100% of heads were heading and 50% of heads were beginning to flower
- Data collection: 50 heads from each plot rated for incidence and severity at 21 and 28 days after inoculation; scabby seed hand-counted based on 200 kernels of each plot; severity for greenhouse test was 21 days rating

Kinston, North Carolina

- Cooperators: Rene Navarro, Goran Srnic, Paul Murphy
North Carolina State University
- Reps: 3 Plot size: 4 rows x 4' Seed date: October 29, 1999
- Inoculation method: Field: Colonized corn kernels applied twice (early and mid-boot stages) at a rate of 2 g/sq ft. Mist irrigation daily 8-10 AM and 4-6 PM. Greenhouse: Mix of five isolates, 50,000 conidia/ml. 10 μ l of inoculum applied to central floret. Transferred to humidity chamber for 72 hr. Symptoms read 21 days post-inoculation.
- Date/Feekes growth stage when scored: Approximately 28 days after heading.

Griffin, Georgia

- Cooperator: Jerry Johnson
University of Georgia
- No data to report--Negligible FHB

Baton Rouge, Louisiana

- Cooperator: Steve Harrison
Louisiana State University
- No data to report--Negligible FHB

Clemson, South Carolina

- Cooperator: Doyce Graham
Clemson University
- No data to report--Negligible FHB

Entry List, 2000 Nursery

ENTRY NO	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	PIKE/3/STODDARD/BLUEBOY//STODDARD/D1707	CHECK	99-00
2	FUTAI 8944	FUNO/TAIWANXIAOMAI	CHECK	99-00
3	SC 921285	SL4/67-78/7/TIFT72-60/ARTHUR 71//GABORA/3/LOVRIN II/4/TIFT72-60/ ARTHUR 71/5/BEAU/6/C76-22/8/BRULE	GRAHAM	99-00
4	SC921299	AS ABOVE	GRAHAM	99-00
5	SC 941292	FL 7925-G47-110/FL8062-E4-H7-J1	GRAHAM	99-00
6	COKER 9474	IN 7176A4-31-5-48/WHEELER	HANCOCK	99-00
7	B950799	COKER 81-20//MCNAIR 3271/FL 301	HANCOCK	99-00
8	B930390	AL 850046/ COKER 86-23	HANCOCK	99-00
9	B961092	COKER 9907/L870365	HANCOCK	99-00
10	GA89482-E7	PION 2555/PF 84301//FL 302	JOHNSON	99-00
11	GA901146-E15	GA 831127//GA 821264*3/GA 79102	JOHNSON	99-00
12	GA90524-E35	COKER 9835/GA 861278	JOHNSON	99-00
13	GA90552-AE33	GA 831276/GA 861278	JOHNSON	99-00
14	ROANE	SALUDA/4/MASSEY*2/3/MASSEY*3/BALKAN//SALUDA	GRIFFEY	99-00
15	VA96W-329	SC861562/VA87-54-558	GRIFFEY	99-00
16	VA96W-326	SC861562/COKER 9803	GRIFFEY	99-00
17	VA96W-158	FFR 555W/GORE	GRIFFEY	99-00
18	VA96W-348	IN 81401A1-32-2/FFR 555W	GRIFFEY	99-00
19	NC96-13848	COKER 86-29//STELLA/22-5/3/COMBO	MURPHY	99-00
20	NC96-13965	COKER 86-29//STELLA/CHD 45680/3/COKER 86-22	MURPHY	99-00
21	NC96-13374	COKER 86-29//STELLA/CHD 45680/3/COKER 86-27	MURPHY	99-00
22	NC96-14629	STELLA/MV14//NC866	MURPHY	99-00

Heading Date (Julian Days*)

	CULTIVAR/ DESIGNATION	BAY		KINSTON		B'BURG		URBANA		WOOSTER		MEAN	
		AR	RANK	NC	RANK	VA	RANK	IL	RANK	OH	RANK	ALL LOC.	RANK
1	ERNIE	104	8	101	10	124	5	129	8	139	8	119	10
2	FUTAI 8944	92	1	87	1	124	6	128	5	136	1	113	1
3	SC 921285	105	10	99	7	124	7	128	6	138	3	119	8
4	SC921299	104	9	99	8	124	8	129	9	138	4	119	9
5	SC 941292	100	2	93	2	124	9	129	10	140	13	117	2
6	COKER 9474	108	16	103	13	126	13	129	11	139	9	121	14
7	B950799	107	13	103	14	126	14	129	12	138	5	121	13
8	B930390	110	19	106	18	128	19	133	18	142	18	124	19
9	B961092	110	20	106	19	128	20	134	20	142	19	124	20
10	GA89482-E7	101	3	97	4	123	3	127	1	140	14	118	5
11	GA901146-E15	103	7	97	5	122	1	127	2	137	2	117	3
12	GA90524-E35	101	4	95	3	124	10	127	3	141	17	118	6
13	GA90552-AE33	102	5	97	6	122	2	127	4	139	10	117	4
14	ROANE	109	17	106	20	127	18	131	16	139	11	122	17
15	VA96W-329	107	14	102	11	126	15	131	17	140	15	121	15
16	VA96W-326	106	12	102	12	124	11	129	13	139	12	120	11
17	VA96W-158	102	6	99	9	123	4	128	7	138	6	118	7
18	VA96W-348	105	11	103	15	125	12	129	14	138	7	120	12
19	NC96-13848	110	21	106	21	126	16	134	21	142	20	124	18
20	NC96-13965	110	22	105	17	129	21	133	19	143	22	124	21
21	NC96-13374	107	15	104	16	126	17	130	15	140	16	121	16
22	NC96-14629	109	18	106	22	129	22	134	22	142	21	124	22

Location mean	105	101	125	130	140	120
LSD (0.05)	1	1	1	1	.	3
CV (%)	1	1	2	0.4	.	1.7

FHB Incidence (1-100)

CULTIVAR/ DESIGNATION	BAY AR		KINSTON NC		B'BURG VA		LEX'TON KY		URBANA IL		WOOSTER OH		MEAN ALL LOC.	
	RANK		RANK		RANK		RANK		RANK		RANK		RANK	
1 ERNIE	35	2	6	3	52	4	10	3	10	1	82	5	33	2
2 FUTAI 8944	6	1	5	1	26	1	9	2	17	2	48	1	19	1
3 SC 921285	78	20	10	15	50	3	18	10	73	15	98	19	55	11
4 SC921299	59	7	7	8	53	5	17	8	82	17	95	16	52	8
5 SC 941292	67	12	12	17	74	12	26	16	68	13	100	21	58	17
6 COKER 9474	47	3	6	4	55	7	23	12	23	3	83	7	40	3
7 B950799	87	22	10	16	78	13	26	15	65	11	100	20	61	19
8 B930390	77	19	6	5	72	11	16	7	89	20	80	4	57	15
9 B961092	64	11	7	9	66	10	26	18	83	18	85	8	55	12
10 GA89482-E7	61	9	20	21	87	19	21	11	53	7	83	6	54	10
11 GA901146-E15	58	5	19	20	92	21	16	6	53	8	98	18	56	14
12 GA90524-E35	73	16	20	22	82	16	26	17	80	16	90	11	62	20
13 GA90552-AE33	57	4	12	18	96	22	28	20	65	12	92	13	58	18
14 ROANE	76	17	5	2	86	18	29	22	58	9	88	10	57	16
15 VA96W-329	58	6	6	6	65	9	29	21	50	5	85	9	49	6
16 VA96W-326	59	8	8	11	48	2	23	13	53	6	93	14	47	5
17 VA96W-158	76	18	14	19	80	14	27	19	85	19	100	22	64	22
18 VA96W-348	62	10	9	14	82	15	10	4	60	10	98	17	54	9
19 NC96-13848	71	15	6	7	85	17	25	14	89	21	57	2	56	13
20 NC96-13965	68	13	7	10	53	6	18	9	38	4	68	3	42	4
21 NC96-13374	70	14	8	12	56	8	3	1	70	14	92	12	50	7
22 NC96-14629	82	21	8	13	90	20	11	5	90	22	95	15	63	21

Location Mean	63	10	69	20	62	87	52
LSD(0.05)	22	5	17	0.2	27	18	17
CV(%)	20.7	32.9	19	71.1	20.2	.	29.5

FHB Severity (1-100)

DESIGNATION CULTIVAR/	BAY AR		B'BURG VA		LEX'TON KY		URBANA IL		WOOSTER OH		MEAN ALL LOC	
		RANK		RANK		RANK		RANK		RANK		RANK
1 ERNIE	10	2	18	4	9	7	15	2	21	3	15	2
2 FUTAI 8944	7	1	11	1	13	21	8	1	8	1	9	1
3 SC 921285	21	12	17	2	10	15	43	15	72	20	33	16
4 SC921299	18	6	20	7	7	2	32	6	55	14	26	10
5 SC 941292	20	10	26	11	9	9	49	20	70	19	35	18
6 COKER 9474	10	3	18	5	10	16	15	3	21	4	15	3
7 B950799	36	22	42	22	9	14	34	8	76	21	39	22
8 B930390	25	18	31	17	9	12	59	22	30	8	31	13
9 B961092	15	4	29	13	2	1	44	17	31	9	24	7
10 GA89482-E7	25	19	37	20	14	22	41	13	52	13	34	17
11 GA901146-E15	21	13	39	21	11	19	30	5	61	17	32	14
12 GA90524-E35	32	21	30	15	9	11	33	7	58	15	32	15
13 GA90552-AE33	19	9	35	18	9	13	43	14	68	18	35	19
14 ROANE	17	5	24	9	8	5	27	4	29	7	21	5
15 VA96W-329	18	7	18	6	9	8	40	12	28	6	23	6
16 VA96W-326	25	20	24	10	8	6	47	19	46	11	30	12
17 VA96W-158	24	16	30	14	9	10	56	21	77	22	39	21
18 VA96W-348	24	17	26	12	7	3	35	9	47	12	28	11
19 NC96-13848	20	11	31	16	12	20	43	16	24	5	26	9
20 NC96-13965	18	8	21	8	10	17	37	10	14	2	20	4
21 NC96-13374	23	14	17	3	8	4	38	11	41	10	25	8
22 NC96-14629	23	15	36	19	11	18	46	18	58	16	35	20
Location mean	21		26		9		37		45		28	
LSD (0.05)	12		8		4		18		19		13	
CV %	35.2		28.9		31.7		22.6		.		36.6	

FHB Index (1-100)

	CULTIVAR/ DESIGNATION	BAY AR		B'BURG VA		LEX'TON KY		URBANA IL		WOOSTER OH		MEAN ALL LOC.	
		RANK		RANK		RANK		RANK		RANK		RANK	
1	ERNIE	4	2	10	3	1	3	2	2	17	2	5	2
2	FUTAI 8944	1	1	3	1	1.1	4	1	1	4	1	2	1
3	SC 921285	17	16	9	2	1.8	9	30	16	71	16	19	16
4	SC921299	13	8	11	6	1.2	6	27	14	53	14	15	14
5	SC 941292	13	9	19	11	2.4	14	32	17	70	17	20	17
6	COKER 9474	5	3	10	5	2.2	12	3	3	17	3	6	3
7	B950799	33	22	33	20	2.4	16	22	10	76	10	24	10
8	B930390	19	19	22	14	1.4	7	52	22	25	22	20	22
9	B961092	9	4	19	10	0.4	22	38	18	27	18	18	18
10	GA89482-E7	18	18	32	18	3	20	21	8	44	8	19	8
11	GA901146-E15	13	10	36	22	1.7	8	16	6	60	6	18	6
12	GA90524-E35	23	21	24	15	2.3	13	27	12	54	12	20	12
13	GA90552-AE33	11	6	34	21	2.4	17	28	15	63	15	21	15
14	ROANE	13	11	21	12	2.4	15	16	5	26	5	13	5
15	VA96W-329	10	5	12	9	2.6	19	20	7	24	7	12	7
16	VA96W-326	15	13	12	8	1.8	11	25	11	43	11	15	11
17	VA96W-158	20	20	24	16	2.5	18	48	21	77	21	27	21
18	VA96W-348	15	14	21	13	0.7	2	22	9	46	9	15	9
19	NC96-13848	14	12	26	17	3.1	21	39	19	14	19	18	19
20	NC96-13965	12	7	11	7	1.8	10	14	4	10	4	8	4
21	NC96-13374	17	17	10	4	0.2	1	27	13	38	13	14	13
22	NC96-14629	16	15	32	19	1.1	5	41	20	56	20	23	20

Location mean	14	19	2	25	42	16
LSD (0.05)	11	.	.	21	22	14
CV (%)	47.6	.	.	37.8	.	54.3

**Kernel Quality (0-9)
Kernel Rating (0-100)**

	CULTIVAR/ DESIGNATION	URBANA IL (0-9)		WOOSTER OH (0-100)	
			RANK		RANK
1	ERNIE	2.0	1	15	2
2	FUTAI 8944	5.5	6	53	4
3	SC 921285	6.5	10	99	20
4	SC921299	6.5	11	98	19
5	SC 941292	8.0	20	81	13
6	COKER 9474	2.5	2	14	1
7	B950799	6.5	12	99	21
8	B930390	6.0	8	86	14
9	B961092	7.5	18	81	12
10	GA89482-E7	6.5	13	86	15
11	GA901146-E15	6.5	14	72	7
12	GA90524-E35	8.5	21	100	22
13	GA90552-AE33	6.5	15	91	17
14	ROANE	4.0	3	16	3
15	VA96W-329	7.0	17	90	16
16	VA96W-326	5.5	7	80	10
17	VA96W-158	5.0	4	96	18
18	VA96W-348	6.5	16	78	9
19	NC96-13848	7.5	19	62	5
20	NC96-13965	5.0	5	63	6
21	NC96-13374	6.0	9	81	11
22	NC96-14629	8.5	22	73	8
Location mean		6		73	
LSD (0.05)		1.2		36	
CV (%)		9.2		.	

Scabby Seed %

	CULTIVAR/ DESIGNATION	BAY		B'BURG		WOOSTER		MEAN	
		AR	RANK	VA	RANK	OH	RANK	ALL LOC.	RANK
1	ERNIE	19	8	21	11	6	3	15	7
2	FUTAI 8944	20	9	7	1	12	11	13	5
3	SC 921285	21	11	24	16	21	17	22	16
4	SC921299	25	14	17	7	20	15	21	12
5	SC 941292	47	22	35	22	36	20	39	22
6	COKER 9474	12	2	15	5	3	2	10	3
7	B950799	37	21	20	10	35	19	31	19
8	B930390	28	17	24	17	14	13	22	17
9	B961092	21	13	13	4	13	12	16	8
10	GA89482-E7	29	18	24	18	19	14	24	18
11	GA901146-E15	18	7	28	21	11	10	19	11
12	GA90524-E35	34	20	26	20	56	22	39	21
13	GA90552-AE33	28	16	22	14	11	9	20	13
14	ROANE	13	4	10	2	3	1	9	1
15	VA96W-329	13	3	17	6	9	7	13	4
16	VA96W-326	25	15	21	12	8	6	18	10
17	VA96W-158	14	5	26	19	20	16	20	14
18	VA96W-348	16	6	20	8	9	8	15	6
19	NC96-13848	21	12	22	13	7	5	17	9
20	NC96-13965	11	1	12	3	7	4	10	2
21	NC96-13374	20	10	20	9	25	18	22	15
22	NC96-14629	31	19	23	15	42	21	32	20

Location mean	23	20	18	20
LSD (0.05)	20	8	21	11
CV (%)	54.5	30	.	34

**Vomitoxin (DON)*
(ppm)**

	CULTIVAR/ DESIGNATION	B'BURG VA		Wooster OH		URBANA IL		MEAN ALL LOC.	
			RANK		RANK		RANK		RANK
1	ERNIE	5.4	9	19.6	15	5.8	11	10.3	12
2	FUTAI 8944	1.0	1	5.4	1	1.0	1	2.5	1
3	SC 921285	7.1	15	13.9	9	3.9	5	8.3	6
4	SC921299	4.9	7	10.0	2	5.9	12	6.9	4
5	SC 941292	12.0	19	31.5	21	1.4	2	15.0	20
6	COKER 9474	2.7	2	11.8	6	3.4	4	6.0	2
7	B950799	10.2	17	21.0	17	5.2	9	12.1	16
8	B930390	6.2	11	18.8	13	8.5	15	11.2	14
9	B961092	4.4	6	10.9	3	17.8	22	11.0	13
10	GA89482-E7	18.8	22	33.9	22	12.6	19	21.8	22
11	GA901146-E15	13.9	21	22.8	18	5.9	13	14.2	18
12	GA90524-E35	8.8	16	20.1	16	15.4	21	14.8	19
13	GA90552-AE33	11.9	18	28.8	20	1.4	3	14.0	17
14	ROANE	4.9	8	11.1	4	13.9	20	10.0	11
15	VA96W-329	6.8	13	13.7	8	9.0	17	9.8	10
16	VA96W-326	5.4	10	19.4	14	8.9	16	11.2	15
17	VA96W-158	12.8	20	37.1	23	7.4	14	19.1	21
18	VA96W-348	6.7	12	14.1	10	5.3	10	8.7	7
19	NC96-13848	3.6	4	12.4	7	4.5	7	6.8	3
20	NC96-13965	3.7	5	17.4	12	4.9	8	8.7	8
21	NC96-13374	3.3	3	16.5	11	9.2	18	9.7	9
22	NC96-14629	6.9	14	11.6	5	4.3	6	7.6	5

Location mean	7.3	17	.	10.9
LSD (0.05)	3.0	8.9	.	7.8
CV (%)	30.2	.	.	46.3

Greenhouse Screening Data (Type 2 Resistance)

	Cultivar/ Designation	NC SEVERITY	IL SEVERITY	KY SEVERITY	VA SEVERITY	MEAN		NC	
						ALL LOC.	RANK	KERNEL QUALITY	RANK
1	ERNIE	26.5	15.7	7.0	32.1	20.3	4	1.9	1
2	FUTAI 8944	23.5	17.3	13.0	22.9	19.2	3	2.1	2
3	SC 921285	61.0	56.5	82.4	22.7	55.7	14	3.6	10
4	SC 921299	65.0	56.2	100.0	21.3	60.6	18	3.6	11
5	SC 941292	61.2	66.6	54.8	26.7	52.3	13	4.6	19
6	COKER 9474	11.0	43.0	30.2	19.5	25.9	6	2.9	4
7	B950799	86.1	78.6	47.4	39.7	63.0	19	4.8	21
8	B930390	65.0	58.2	23.3	22.5	42.3	11	3.7	12
9	B961092	53.8	28.8	17.2	35.3	33.8	10	3.3	7
10	GA89482-E7	86.0	75.2	80.3	33.3	68.7	22	3.7	13
11	GA901146-E15	62.6	56.9	62.4	53.1	58.8	16	3.8	14
12	GA90524-E35	63.3	46.8	29.9	39.5	44.9	12	4.8	22
13	GA90552-AE33	76.5	55.8	63.9	41.3	59.4	17	4.2	17
14	ROANE	10.3	14.0	8.6	9.2	10.5	1	2.7	3
15	VA96W-329	42.7	25.9	17.9	38.0	31.1	8	4.0	16
16	VA96W-326	84.0	68.3	71.9	34.9	64.8	20	4.5	18
17	VA96W-158	88.5	83.8	60.2	27.9	65.1	21	4.6	20
18	VA96W-348	22.6	99.0	61.7	46.3	57.4	15	3.8	15
19	NC96-13848	35.7	14.2	14.3	36.0	25.1	5	3.4	8
20	NC96-13965	22.3	36.8	11.0	42.9	28.3	7	2.9	5
21	NC96-13374	18.1	16.1	13.0	24.0	17.8	2	2.9	6
22	NC96-14629	25.8	67.0	7.9	25.9	31.7	9	3.5	9

Mean:	48	49	40	29	43.0	3.5
L.S.D. (0.05)	27	28	30	.	28	1.6
C.V. (%)	28.2	35	.	.	40.9	22.3

Severity data based on the percentage of infected spikelets/total spikelets 21 to 28 days post inoculation.
 Kernel quality data based on a weighted average of the number of kernels in an inoculated head falling into the following categories: 1=sound, 2=slightly shriveled, 3=moderately shriveled, 4=very shriveled, 5=tombstone.

Plant Height (in)

	CULTIVAR/ DESIGNATION	LEX'TON KY		B'BURG VA		MEAN ALL LOC.	
			RANK		RANK		RANK
1	ERNIE	32	3	34	6	33	3
2	FUTAI 8944	37	19	32	2	35	10
3	SC 921285	32	4	35	9	34	4
4	SC921299	31	2	36	13	34	5
5	SC 941292	37	20	35	12	36	13
6	COKER 9474	35	11	37	15	36	14
7	B950799	36	14	37	16	37	16
8	B930390	38	21	36	14	37	19
9	B961092	33	6	34	7	34	6
10	GA89482-E7	36	15	37	17	37	17
11	GA901146-E15	32	5	33	3	33	2
12	GA90524-E35	30	1	31	1	31	1
13	GA90552-AE33	36	16	38	20	37	20
14	ROANE	34	8	38	19	36	15
15	VA96W-329	34	9	35	11	35	11
16	VA96W-326	36	17	38	21	37	21
17	VA96W-158	38	22	38	22	38	22
18	VA96W-348	36	18	37	18	37	18
19	NC96-13848	35	12	34	8	35	12
20	NC96-13965	35	13	33	5	34	8
21	NC96-13374	34	10	33	4	34	7
22	NC96-14629	33	7	35	10	34	9
Location mean		35		35		35	
LSD (0.05)		2		2		3	
CV (%)		3		4		4.5	

Means Across Locations

CULTIVAR/ DESIGNATION	FHB Incidence (0-100)	FHB Severity (0-100)	FHB Index (0-100)	Scabby Seed %	Kernel Quality (0-9)	Kernel Rating (0-100)	Vomitoxin DON (ppm)	Heading Date (Julian)	Plant Height (in)	Greenhse Type 2 (0-100)										
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK										
1 ERNIE	33	2	15	2	5	2	15	6	2.0	1	15	2	10.3	12	119	8	33	3	20	4
2 FUTAI 8944	19	1	9	1	2	1	13	4	5.5	6	53	4	2.5	1	113	1	35	10	19	3
3 SC 921285	55	11	33	16	19	14	22	15	6.5	14	99	20	8.3	6	119	10	34	5	56	14
4 SC921299	52	8	26	9	15	8	21	13	6.5	13	98	19	6.9	4	119	9	34	4	61	18
5 SC 941292	58	17	35	18	20	18	39	21	8.0	20	81	13	15.0	20	117	3	36	13	52	13
6 COKER 9474	40	3	15	3	6	3	10	2	2.5	2	14	1	6.0	2	121	13	36	14	26	6
7 B950799	61	19	39	21	24	21	31	18	6.5	16	99	21	12.1	16	121	16	37	20	63	19
8 B930390	57	15	31	13	20	16	22	16	6.0	9	86	14	11.2	14	124	22	37	21	42	11
9 B961092	55	12	24	7	18	11	16	8	7.5	18	81	12	11.0	13	124	21	34	9	34	10
10 GA89482-E7	54	9	34	17	19	15	24	17	6.5	15	86	15	21.8	22	118	5	37	17	69	22
11 GA901146-E15	56	13	32	14	18	13	19	11	6.5	11	72	7	14.2	18	117	2	33	2	59	16
12 GA90524-E35	62	20	32	15	20	17	39	20	8.5	22	100	22	14.8	19	118	7	31	1	45	12
13 GA90552-AE33	58	18	35	19	21	19	20	12	6.5	12	91	17	14.0	17	117	4	37	16	59	17
14 ROANE	57	16	21	5	13	6	9	1	4.0	3	16	3	10.0	11	122	17	36	15	11	1
15 VA96W-329	49	6	23	6	12	5	13	5	7.0	17	90	16	9.8	10	121	15	35	11	31	8
16 VA96W-326	47	5	30	12	15	10	18	10	5.5	7	80	10	11.2	15	120	12	37	19	65	20
17 VA96W-158	64	22	39	22	27	22	20	22	5.0	5	96	18	19.1	21	118	6	38	22	65	21
18 VA96W-348	54	10	28	11	15	9	15	7	6.5	10	78	9	8.7	7	120	11	37	18	57	15
19 NC96-13848	56	14	26	10	18	12	17	9	7.5	19	62	5	6.8	3	124	18	35	12	25	5
20 NC96-13965	42	4	20	4	8	4	10	3	5.0	4	63	6	8.7	8	124	19	34	7	28	7
21 NC96-13374	50	7	25	8	14	7	22	14	6.0	8	81	11	9.7	9	121	14	34	6	18	2
22 NC96-14629	63	21	35	20	23	20	32	19	8.5	21	73	8	7.6	5	124	20	34	8	32	9
Mean	52		28		16		20		6		73		10.9		120		35		43	
LSD(0.05)	17		13		14		11		1.2		36		7.8		3		3		28	
CV(%)	29.5		36.6		54.3		34		9.2		.		46.3		1.7		4.5		40.9	

Correlations Between Traits Over Locations.

	SEVERITY	INDEX	SCABBY SEED	VOMITOXIN DON	G'HOUSE TYPE 2	HEADING DATE	PLANT HEIGHT
INCIDENCE	0.78**	0.80**	0.56**	0.43*	0.41	0.34	0.02
SEVERITY		0.98**	0.69**	0.67**	0.76**	-0.04	0.26
INDEX			0.69**	0.62**	0.71**	-0.02	0.23
SCABBY SEED				0.43*	0.42*	-0.22	-0.16
VOMITOXIN (DON)					0.61**	-0.23	0.26
G'HOUSE TYPE 2						-0.39	0.33
HEADING DATE							0.02