

# **UNIFORM SOUTHERN SOFT RED WINTER WHEAT FUSARIUM HEAD BLIGHT SCREENING NURSERY**

## **2001 NURSERY REPORT**

Coordinated by:

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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.

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 agency or agencies involved.

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## LOCATION NOTES

### Bay, Arkansas

- Cooperators: June Hancock, David Hill, C. Allen, Luis Lazoanaya  
Syngenta Seeds Inc.
- Reps: 3            Plot size: 4 rows by 2 feet            Seed date: October 25, 2000
- Inoculation method: Corn kernel
- Precipitation during grain fill: Misted daily
- Avg temp. during grain fill: 70°

### Lake City, Arkansas

- Cooperator: Barton Fogleman  
Agripro Seed
- No data to report – Negligible FHB

### Fayetteville, Arkansas

- Cooperators: Gene Milus, Peter Rohman, Chris Weight, Bob Bacon  
University of Arkansas
- Reps: 3            Plot size: Single rows, 5' long            Seed date: October 19, 2000            Harvest date: June 18, 2001
- Fertilizer: 80 lb N (NH<sub>4</sub>NO<sub>3</sub>), split application
- Inoculation method: FHB-infected corn kernels applied 3x, total of 14 kernels/sq ft
- Precipitation during grain fill: 8 mist periods of 11 min each between midnight and 8 am on 23 nights between 18 April and 18 May
- Date/Feekes growth stage when scored: 5/23/2001 (soft dough)

### Urbana, Illinois

- Cooperators: Fred Kolb, Larry Boze  
University of Illinois
- Reps: 3            Plot size: 1 row x 3'            Seed date: October 2, 2000            Harvest date: July 2, 2001
- Fertilizer: 40 lb N/A preplant, no spring topdress, P and K okay
- Inoculation method: Grain spawn (wheat kernels) cultured with a mixture of isolates spread in nursery three times
- Precipitation during grain fill: Mist irrigation, approx. .25 inch/day + natural precipitation

### **Wooster, Ohio**

- Cooperators: Clay Sneller, Pat Lipps, Jessica Engle  
Ohio State University
- Reps: 3, randomized block Plot size: 1-m long row Seed date: October 5, 2000 Harvest date: July 10, 2001
- Fertilizer: 20-75-75 before planting, 60-0-0 applied March 28
- Inoculation method: Colonized corn kernel inoculation broadcast over plot
- Precipitation during grain fill: 1.3 in. of rain; plots also under irrigation
- Avg temp. during grain fill: 67.3 F
- Date/Feekes growth stage when scored: Approx. 11.2

### **Lexington, Kentucky**

- Cooperators: B. Kennedy, M. Hall, D. Van Sanford  
University of Kentucky
- Reps: 4 Plot size: Two 4' rows Seed date: October 17, 2000 Harvest date: July 5, 2001
- Fertilizer: P, K, acc. to soil tests, 110 lb N split application
- Inoculation method: Scabby corn plus macroconidial spray
- Precipitation during grain fill: 6.89 in.
- Avg temperature during grain fill: 66°F
- Date/Feekes growth stage when scored: GS 10.5 + 21 days

### **Blacksburg, Virginia**

- Cooperators: Carl A. Griffey, Jianli Chen, Daryoosh Nabati, Julie Wilson  
Virginia Tech
- Reps: 3, randomized complete block Plot size: 4 x 5 ft (20 ft<sup>2</sup>) Seed date: October 3, 2000 Harvest date: July 7, 2001
- Fertilizer: 25-100-120 before planting, 75-0-0 applied in April
- Inoculation method: Conidial suspension ( $5 \times 10^4$  spores/ml) sprayed on plots
- Precipitation during grain fill: 10.88 in. rain; plots also under irrigation
- Avg temperature during grain fill: 15.93°C
- Date/Feekes growth stage when scored: Approx. 10.5

**Kinston, North Carolina**

- Cooperators: Rene Navarro, Paul Murphy  
North Carolina State University
- Reps: 3            Plot size: 4 rows x 4'            Seed date: October 20, 2000
- Fertilizer: P, K acc. to soil tests, 120 lb N in February
- Inoculation method: Corn kernel plus macroconidial spray
- Precipitation during grain fill: 2 in. rainfall and misted daily
- Avg temperature during grain fill: 64.3°F
- Date/Feekes growth stage when scored: 10.5 + 21 days

**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, 2001 Nursery

ENTRY NO	CULTIVAR/DESINATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	PIKE/3/STODDARD/BLUEBOY//STODDARD/D1707	CHECK	99-00
2	COKER 9835	CK68-19//CK61-19*3//IN4946A4-18-2-10-2/4/Bb/3/COKER 65-20*5/W17-TRANS//TIFT/5/P.2550	CHECK	00-01
3	COKER 9474	IN7176A4-31-5-48/WHEELER	HANCOCK	99-00
4	B950943	CK86-27//FL302/ROSEN	HANCOCK	00-01
5	B960208	CK 9877/8268G1-19-4	HANCOCK	00-01
6	B961378	PS840061/SALUDA//COKER 9877	HANCOCK	00-01
7	GA90524E1	COKER 9835/GA861278(GORE/FL302)	JOHNSON	00-01
8	GA921188E43	GA881404/GA861278	JOHNSON	00-01
9	GA921221E16	GA83519/GA85240//GA861278	JOHNSON	00-01
10	GA92485E15	GA831276(SALUDA/FL74265)/GA861278(GORE/FL302)	JOHNSON	00-01
11	VA96-54-326	SC861562/COKER9803	GRIFFEY	00-01
12	VA98W-591	92-51-39(IN71761A4-31-5-48//71-54-247/MCN1813)/AL870365(COKER 747*2/AMIGO)	GRIFFEY	00-01
13	VA98W-593	92-51-39(IN71761A4-31-5-48//71-54-247/MCN1813)/AL870365(COKER 747*2/AMIGO)	GRIFFEY	00-01
14	VA99W-550	WUHAN1//90-52-82/COKER 9835/3/FFR555W	GRIFFEY	00-01
15	VA99W-562	(CHILL"S"/YMI6)PION2548//PION2684	GRIFFEY	00-01
16	VA99W-565	(CHILL"S"/YMI6)PION2548//PION2684	GRIFFEY	00-01
17	VA99W-566	(CHILL"S"/YMI6)PION2548//PION2684	GRIFFEY	00-01
18	AW-D97-6075	PION 2545/89M-4032A	FOGLEMEN	00-01
19	AW-D97*6940	GORE/FL302	FOGLEMEN	00-01
20	AW-D97*6961	T84-331/COKER 9134	FOGLEMEN	00-01
21	AW-D97-6740	COKER 9803/89D-4776	FOGLEMEN	00-01
22	MDV 36-17	FFR555/GORE//COKER 9803/VA87-54-636(SALUDA/JUGOSLAVIA)	COSTA	00-01
23	NC96-13155	CK86-29//STELLA/CHD 45680/3/CK86-22	MURPHY	00-01
24	NC96-13156	CK86-29//STELLA/CHD 45680/3/CK86-22	MURPHY	00-01
25	NC96-13965	CK86-29//STELLA/CHD 45680/3/CK86-22	MURPHY	99-00
26	AR93048-8-2	MADISON/LOUVVIN 34	BACON	00-01
27	AR93035-4-2	PION 2548/4549-W1-2	BACON	00-01
28	AR93052-1-1	LA IDEOTYPE/4105-W2-14	BACON	00-01
29	AR908-8-2	AR369-4-2/FAN-1	BACON	00-01

## Heading Date (Julian Days\*)

	CULTIVAR/ DESIGNATION	BAY AR		KINSTON NC		B'BURG VA		URBANA IL		WOOSTER OH		LEX'TON KY		MEAN ALL LOC.	
		RANK		RANK		RANK		RANK		RANK		RANK		RANK	
1	ERNIE	110	9	104	7	129	8	126	1	142	1	125	6	123	6
2	COKER 9835	115	25	106	13	131	23	131	22	145	18	128	22	126	22
3	COKER 9474	112	16	107	19	129	9	128	10	143	3	126	14	124	9
4	B950943	115	26	107	20	131	24	132	26	147	27	131	26	127	26
5	B960208	111	13	106	14	129	10	127	5	143	4	125	7	124	10
6	B961378	116	27	111	26	131	25	133	27	149	29	131	27	129	27
7	GA90524E1	114	18	106	15	130	16	129	15	145	19	126	15	125	17
8	GA921188E43	111	14	105	9	130	17	130	17	143	5	127	20	124	11
9	GA921221E16	108	4	103	4	129	11	127	6	144	9	124	2	123	7
10	GA92485E15	110	10	104	8	128	6	128	9	144	10	125	8	123	8
11	VA96-54-326	110	11	111	27	129	12	129	12	144	11	125	9	125	18
12	VA98W-591	114	19	107	21	130	18	130	16	144	12	126	16	125	19
13	VA98W-593	111	15	105	10	130	19	128	11	144	13	125	10	124	12
14	VA99W-550	114	20	106	16	130	20	131	21	144	14	129	25	126	23
15	VA99W-562	109	6	105	11	129	13	130	19	145	20	126	17	124	13
16	VA99W-565	109	7	99	1	127	2	129	13	145	21	125	11	122	3
17	VA99W-566	106	1	99	2	127	3	126	2	144	15	124	3	121	1
18	AW-D97-6075	107	2	106	17	127	4	127	7	143	6	124	4	122	4
19	AW-D97*6940	110	12	106	18	129	14	128	8	143	7	125	12	124	14
20	AW-D97*6961	114	21	103	5	128	7	129	14	144	16	128	23	124	15
21	AW-D97-6740	107	3	102	3	126	1	126	3	142	2	123	1	121	2
22	MDV 36-17	108	5	103	6	127	5	127	4	143	8	124	5	122	5
23	NC96-13155	114	22	107	22	131	26	132	24	145	22	128	24	126	24
24	NC96-13156	114	23	107	23	129	15	131	23	145	23	126	18	125	20
25	NC96-13965	114	24	108	24	131	27	132	25	145	24	126	19	126	25
26	AR93048-8-2	109	8	105	12	130	21	131	20	145	25	125	13	124	16
27	AR93035-4-2	112	17	108	25	130	22	130	18	144	17	127	21	125	21
28	AR93052-1-1	118	28	112	28	131	28	134	29	148	28	133	29	129	28
29	AR908-8-2	120	29	116	29	131	29	133	28	146	26	131	28	130	29
	Mean:	111		106		129		129		.		126		125	
	L.S.D. (0.05)	2		2		1		1		.		2		2	
	C.V. (%)	1		0.7		0.6		0.5		3.0		17.5		1.2	

\*Days after December 31, 2000

## FHB Incidence (1-100)

CULTIVAR/ DESIGNATION	BAY AR		KINSTON NC		B'BURG VA		URBANA IL		WOOSTER OH		LEX'TON KY		MEAN ALL LOC.	
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	
1 ERNIE	18	2	7	2	19	2	2	1	80	2	66	3	32	1
2 COKER 9835	51	27	48	26	55	24	97	29	100	23	91	22	74	29
3 COKER 9474	30	14	26	20	17	1	6	5	93	8	66	1	40	3
4 B950943	39	23	37	25	71	29	91	27	95	13	91	23	71	27
5 B960208	17	1	16	7	33	8	3	3	88	6	74	5	39	2
6 B961378	25	6	6	1	53	21	68	24	78	1	91	21	54	16
7 GA90524E1	52	29	21	12	70	28	43	16	100	24	85	10	62	26
8 GA921188E43	30	15	32	24	44	15	65	21	100	25	91	19	60	23
9 GA921221E16	35	21	19	9	45	16	41	13	97	16	95	28	55	19
10 GA92485E15	32	16	27	21	33	9	45	17	98	19	83	9	53	14
11 VA96-54-326	25	7	23	16	39	14	3	2	87	4	66	2	41	4
12 VA98W-591	40	24	16	5	31	5	33	12	97	17	69	4	48	7
13 VA98W-593	25	8	23	15	30	4	7	6	95	14	91	18	45	5
14 VA99W-550	34	18	20	11	55	25	62	20	100	26	86	13	60	24
15 VA99W-562	25	9	25	18	32	6	47	19	92	7	93	26	52	13
16 VA99W-565	41	25	15	4	33	10	31	11	98	20	88	15	51	9
17 VA99W-566	24	5	23	14	53	22	17	7	100	27	86	12	51	10
18 AW-D97-6075	23	3	29	22	52	19	17	8	98	21	88	16	51	11
19 AW-D97*6940	27	10	25	19	58	26	24	10	98	22	93	27	54	17
20 AW-D97*6961	34	17	.	.	37	12	46	18	93	9	91	20	54	18
21 AW-D97-6740	29	11	19	10	32	7	4	4	93	10	93	25	45	6
22 MDV 36-17	29	12	16	6	46	18	20	9	100	28	85	11	49	8
23 NC96-13155	38	22	11	3	45	17	42	15	93	11	79	6	51	12
24 NC96-13156	35	19	24	17	23	3	65	22	97	18	92	24	56	20
25 NC96-13965	35	20	22	13	34	11	84	26	93	12	87	14	59	22
26 AR93048-8-2	29	13	31	23	52	20	41	14	85	3	80	7	53	15
27 AR93035-4-2	42	26	17	8	37	13	68	23	95	15	89	17	58	21
28 AR93052-1-1	51	28	.	.	61	27	95	28	87	5	96	29	72	28
29 AR908-8-2	24	4	.	.	53	23	72	25	100	29	82	8	60	25
Mean:	44		22		43		41		.		85		53	
L.S.D. (0.05)	31		15.0		26		30		15.2		17		13	
C.V. (%)	35.8		22.4		44.2		44.7		.		20.6		23.9	



## FHB Severity (1-100)

Cultivar/ Designation	BAY AR		KINSTON NC		B'BURG VA		URBANA IL		WOOSTER OH		F'VILLE AR		LEX'TON KY		MEAN ALL LOC.	
	RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK	
1 ERNIE	11	2	19	8	11	1	7	1	27	4	2	1	15	2	13	1
2 COKER 9835	26	22	79	26	39	24	53	28	55	22	20	25	58	26	47	28
3 COKER 9474	18	8	51	22	12	2	7	2	24	1	5	2	13	1	19	4
4 B950943	36	29	50	19	51	29	62	29	50	20	20	26	57	25	47	29
5 B960208	15	4	50	20	21	8	7	3	29	7	5	3	16	3	20	7
6 B961378	17	7	20	10	36	22	18	20	30	8	7	11	20	6	21	9
7 GA90524E1	31	27	36	14	34	21	13	11	60	25	13	18	29	16	31	20
8 GA921188E43	21	15	50	21	41	26	37	26	77	28	27	29	62	27	45	27
9 GA921221E16	26	23	33	13	31	17	17	19	59	24	23	27	69	29	37	25
10 GA92485E15	20	11	40	15	30	16	15	15	52	21	25	28	43	23	32	21
11 VA96-54-326	18	9	58	23	27	13	7	4	40	15	5	4	24	8	26	15
12 VA98W-591	25	20	18	6	14	3	15	13	29	6	12	15	22	7	19	5
13 VA98W-593	15	3	74	25	17	4	8	7	30	9	12	16	25	9	26	16
14 VA99W-550	19	10	42	16	46	28	22	23	66	27	13	19	36	20	35	24
15 VA99W-562	11	1	21	11	20	7	14	12	27	3	5	5	27	13	18	3
16 VA99W-565	15	5	18	7	19	6	8	8	27	5	5	6	28	14	17	2
17 VA99W-566	17	6	8	1	24	11	7	5	44	16	5	7	25	10	19	6
18 AW-D97-6075	31	28	48	18	32	20	17	17	46	17	15	21	41	22	33	23
19 AW-D97*6940	29	25	58	24	40	25	15	14	78	29	17	22	67	28	43	26
20 AW-D97*6961	29	26	.	.	22	9	11	10	39	14	18	23	37	21	24	14
21 AW-D97-6740	23	18	14	4	23	10	7	6	49	19	7	12	30	17	22	12
22 MDV 36-17	23	19	21	12	27	14	11	9	62	26	7	13	47	24	28	17
23 NC96-13155	25	21	19	9	28	15	16	16	31	10	5	8	25	12	21	10
24 NC96-13156	22	17	14	5	17	5	19	21	36	13	5	9	25	11	20	8
25 NC96-13965	27	24	9	2	31	18	28	25	24	2	7	14	28	15	22	13
26 AR93048-8-2	21	12	42	17	25	12	37	27	48	18	5	10	35	19	30	19
27 AR93035-4-2	21	14	12	3	31	19	17	18	33	12	12	17	20	5	21	11
28 AR93052-1-1	21	13	.	.	37	23	21	22	33	11	13	20	34	18	28	18
29 AR908-8-2	22	16	.	.	42	27	26	24	57	23	18	24	19	4	32	22

Mean:	22	35	29	18	.	.	34	27
L.S.D. (0.05)	13	15.0	14	9	23	4	26	10
C.V. (%)	35.8	33.8	34.9	30	.	20.3	12.4	27.3

## FHB Index (1-100)

	CULTIVAR/ DESIGNATION	BAY AR		KINSTON NC		URBANA IL		WOOSTER OH		LEX'TON KY		MEAN ALL LOC.	
		RANK		RANK		RANK		RANK		RANK		RANK	
1	ERNIE	2	1	1	1	0.1	1	22	1	10	2	7	1
2	COKER 9835	15	28	38	26	52	28	55	22	53	26	43	29
3	COKER 9474	5	7	13	18	0.4	5	22	2	8	1	10	2
4	B950943	14	27	18	25	56	29	48	20	52	25	38	28
5	B960208	3	2	8	15	0.2	2	25	6	12	3	10	3
6	B961378	7	13	1	2	12	20	22	3	18	8	12	4
7	GA90524E1	15	29	7	14	7	17	60	25	25	14	23	21
8	GA921188E43	6	10	16	23	25	26	77	29	56	27	36	27
9	GA921221E16	12	26	6	13	3	11	57	23	66	29	29	25
10	GA92485E15	8	17	11	17	7	16	51	21	37	23	23	22
11	VA96-54-326	5	5	14	20	0.2	3	34	13	15	5	14	8
12	VA98W-591	11	25	3	7	5	13	29	8	14	4	12	5
13	VA98W-593	4	3	17	24	1	6	29	9	22	11	15	11
14	VA99W-550	7	15	8	16	14	22	66	27	31	19	25	24
15	VA99W-562	5	6	5	12	7	18	24	5	25	16	13	6
16	VA99W-565	7	14	3	8	3	10	27	7	25	13	13	7
17	VA99W-566	4	4	2	3	1	7	44	16	21	10	14	9
18	AW-D97-6075	8	16	14	21	4	12	45	17	36	22	21	18
19	AW-D97*6940	8	18	15	22	2	8	76	28	63	28	33	26
20	AW-D97*6961	11	24	.	.	6	14	37	15	34	21	19	16
21	AW-D97-6740	7	12	3	9	0.3	4	45	18	28	17	17	15
22	MDV 36-17	7	11	3	10	2	9	61	26	41	24	23	23
23	NC96-13155	10	21	2	4	7	15	30	12	21	9	14	10
24	NC96-13156	8	19	3	11	12	21	35	14	23	12	16	12
25	NC96-13965	10	22	2	5	23	25	22	4	25	15	16	13
26	AR93048-8-2	6	9	13	19	26	27	29	10	29	18	21	19
27	AR93035-4-2	9	20	2	6	7	19	46	19	18	7	16	14
28	AR93052-1-1	11	23	.	.	20	23	29	11	32	20	20	17
29	AR908-8-2	6	8	.	.	20	24	57	24	16	6	22	20
	Mean:	8		9		11		.		30		20	
	L.S.D. (0.05)	9		.		10		22		33		12	
	C.V. (%)	69.6		.		57.0		.		13.7		51.5	

## Kernel Quality (0-9) Seed Quality (0-2)\*

CULTIVAR/ DESIGNATION	URBANA IL (0-9)		F'VILLE AR (0-2)	
		RANK		RANK
1 ERNIE	1.3	1	1.3	3
2 COKER 9835	7.0	29	0.7	27
3 COKER 9474	1.3	2	1.7	2
4 B950943	4.7	18	1.0	6
5 B960208	4.3	14	1.0	7
6 B961378	3.3	7	1.0	8
7 GA90524E1	3.7	8	1.0	9
8 GA921188E43	5.3	23	1.0	10
9 GA921221E16	5.7	27	1.0	11
10 GA92485E15	4.7	19	1.0	12
11 VA96-54-326	4.7	20	0.3	29
12 VA98W-591	4.3	15	1.0	13
13 VA98W-593	3.7	9	1.3	4
14 VA99W-550	5.3	24	1.0	14
15 VA99W-562	4.0	11	1.0	15
16 VA99W-565	2.7	4	1.0	16
17 VA99W-566	1.3	3	2.0	1
18 AW-D97-6075	4.0	12	1.0	17
19 AW-D97*6940	4.3	16	1.0	18
20 AW-D97*6961	4.7	21	1.0	19
21 AW-D97-6740	2.7	5	1.3	5
22 MDV 36-17	3.7	10	1.0	20
23 NC96-13155	3.0	6	1.0	21
24 NC96-13156	4.0	13	1.0	22
25 NC96-13965	4.7	22	1.0	23
26 AR93048-8-2	6.7	28	1.0	24
27 AR93035-4-2	4.3	17	1.0	25
28 AR93052-1-1	5.3	25	1.0	26
29 AR908-8-2	5.3	26	0.7	28
Mean:	4.1		1.0	
L.S.D. (0.05)	1.4		0.5	
C.V. (%)	20.7		27.3	

\*0=POOR, 1=FAIR, AND 2=GOOD QUALITY

## Scabby Seed %

	CULTIVAR/ DESIGNATION	BAY AR		B'BURG VA		F'VILLE AR		WOOSTER OH		LEX'TON KY		MEAN ALL LOC.	
		RANK		RANK		RANK		RANK		RANK		RANK	
1	ERNIE	2	3	8	14	32	3	19	2	28	3	18	2
2	COKER 9835	21	20	18	29	60	24	98	29	69	25	53	29
3	COKER 9474	1	2	2	1	18	1	12	1	45	14	16	1
4	B950943	26	25	17	28	63	28	85	25	70	27	52	28
5	B960208	0	1	8	12	33	6	30	4	35	9	21	3
6	B961378	2	4	9	17	35	10	42	11	45	15	27	12
7	GA90524E1	31	27	14	23	42	14	75	22	58	21	44	20
8	GA921188E43	27	26	13	21	73	29	85	24	62	23	52	27
9	GA921221E16	13	17	14	22	53	21	89	26	70	28	48	24
10	GA92485E15	22	21	13	20	63	27	66	19	59	22	45	21
11	VA96-54-326	3	5	7	11	35	9	53	15	46	18	29	14
12	VA98W-591	6	9	4	2	42	13	30	5	32	7	23	7
13	VA98W-593	7	11	4	3	38	12	29	3	28	4	21	4
14	VA99W-550	22	22	14	25	52	20	79	23	69	26	47	23
15	VA99W-562	3	7	6	9	33	5	42	10	45	16	26	10
16	VA99W-565	9	13	7	10	37	11	52	14	45	17	30	15
17	VA99W-566	8	12	5	6	27	2	55	16	43	13	28	13
18	AW-D97-6075	18	19	9	18	45	18	48	13	51	19	34	17
19	AW-D97*6940	25	24	17	27	60	23	68	21	86	29	51	26
20	AW-D97*6961	10	15	8	13	63	25	38	8	34	8	31	16
21	AW-D97-6740	3	6	5	5	33	4	38	9	28	5	21	5
22	MDV 36-17	4	8	14	24	42	15	62	18	62	24	37	18
23	NC96-13155	6	10	8	15	33	7	43	12	35	10	25	8
24	NC96-13156	12	16	5	7	35	8	62	17	16	2	26	11
25	NC96-13965	10	14	6	8	48	19	33	6	29	6	25	9
26	AR93048-8-2	17	18	8	16	43	17	34	7	8	1	22	6
27	AR93035-4-2	24	23	5	4	43	16	68	20	51	20	38	19
28	AR93052-1-1	39	29	15	26	53	22	97	28	39	12	49	25
29	AR908-8-2	34	28	10	19	63	26	94	27	35	11	47	22

Mean:	14	9	.	.	46	31
L.S.D. (0.05)	.	5	8	40	.	14
C.V. (%)	.	40.3	10.6	.	.	34.1

## Vomitoxin (DON)\* (ppm)

	CULTIVAR/ DESIGNATION	BAY		B'BURG		Wooster		F'VILLE		MEAN	
		AR	RANK	VA	RANK	OH	RANK	AR	RANK	ALL LOC.	RANK
1	ERNIE	1.4	5	2.1	14	10	6	13	12	6.6	7
2	COKER 9835	3.6	15	2.9	24	18	14	22	22	11.6	15
3	COKER 9474	0.7	1	0.6	1	7	3	5	2	3.3	2
4	B950943	7.9	25	2.2	19	32	24	20	20	15.5	25
5	B960208	1.3	2	1.5	7	5	1	4	1	3.0	1
6	B961378	1.3	3	2.2	20	5	2	10	7	4.6	4
7	GA90524E1	8.2	26	2.1	15	25	19	13	13	12.1	17
8	GA921188E43	7.7	24	3.3	27	39	28	26	27	19.0	28
9	GA921221E16	3.9	17	3.5	28	20	16	19	17	11.6	16
10	GA92485E15	5.2	21	2.1	16	39	27	26	26	18.1	27
11	VA96-54-326	1.6	6	1.1	2	9	4	10	8	5.4	5
12	VA98W-591	1.9	8	1.1	3	12	7	9	4	6.0	6
13	VA98W-593	2.1	9	1.2	4	9	5	5	3	4.3	3
14	VA99W-550	6.7	23	2.1	17	33	25	23	24	16.2	26
15	VA99W-562	1.3	4	1.2	5	38	26	9	6	12.4	18
16	VA99W-565	4.2	19	2.5	22	29	23	16	16	12.9	20
17	VA99W-566	2.9	12	1.5	8	28	21	10	9	10.6	13
18	AW-D97-6075	3.7	16	1.8	10	29	22	16	15	12.6	19
19	AW-D97*6940	8.4	27	2.9	25	57	29	21	21	22.3	29
20	AW-D97*6961	3.9	18	1.9	11	18	15	31	28	13.7	21
21	AW-D97-6740	1.6	7	1.9	12	17	13	11	10	7.9	9
22	MDV 36-17	2.3	10	2.7	23	26	20	13	14	11.0	14
23	NC96-13155	2.9	13	2.3	21	12	9	42	29	14.8	24
24	NC96-13156	5.5	22	2.1	18	12	10	12	11	7.9	10
25	NC96-13965	2.6	11	1.7	9	12	8	20	18	9.1	11
26	AR93048-8-2	3.1	14	1.2	6	13	11	9	5	6.6	8
27	AR93035-4-2	4.5	20	3.2	26	13	12	20	19	10.2	12
28	AR93052-1-1	9.9	28	4.9	29	21	17	23	23	14.7	22
29	AR908-8-2	10.9	29	2.0	13	21	18	25	25	14.7	23
Mean:		4.2		2.1		21		16.7		11	
L.S.D. (0.05)		.		0.8		24.0		6.9		8.7	
C.V. (%)		.		26.5		.		25.4		62.4	

\*DON analysis conducted by Pat Hart's laboratory at Michigan State University.

## Greenhouse Screening Data (Type 2 Resistance)

Cultivar/ Designation	NC SEVERITY		IL SEVERITY		AR SEVERITY		KY SEVERITY		SEVERITY ALL LOC. (LS MEANS)		NC KERNEL QUALITY		KY DISEASE SPREAD	
		RANK		RANK		RANK		RANK		RANK		RANK		RANK
1 ERNIE	15.6	3	43.5	1	17	3	26.7	5	25.7	2	2.7	4	3.2	4
2 COKER 9835	43.4	19	86.9	23	77	28	77.3	25	71.2	26	4.2	22	5.0	13
3 COKER 9474	18.1	6	48.4	2	31	8	28.0	7	31.4	3	2.8	5	2.8	3
4 B950943	55.6	23	95.4	28	72	26	49.5	14	68.1	23	4.3	25	4.4	10
5 B960208	26.7	11	51.5	3	40	11	8.6	3	31.7	4	3.0	8	2.5	2
6 B961378	11.4	2	94.1	27	20	5	8.5	2	33.5	5	3.9	20	2.8	3
7 GA90524E1	66.8	26	63.8	8	33	10	57.3	19	55.2	18	4.2	23	5.4	14
8 GA921188E43	53.0	22	85.8	18	50	16	68.2	23	64.3	21	4.0	21	5.0	13
9 GA921221E16	51.6	20	86.7	22	66	24	83.3	26	71.9	27	3.8	19	6.0	15
10 GA92485E15	17.4	5	75.1	14	60	20	52.5	16	51.3	15	3.4	12	4.2	8
11 VA96-54-326	77.4	27	86.1	19	71	25	92.3	28	81.7	29	4.8	26	6.0	15
12 VA98W-591	27.6	13	66.8	11	21	6	39.8	9	38.8	7	3.6	15	4.3	9
13 VA98W-593	37.9	18	64.1	9	48	14	44.7	12	48.7	14	3.6	16	3.6	5
14 VA99W-550	28.7	14	100.0	29	96	29	52.8	17	69.4	25	4.2	24	4.8	12
15 VA99W-562	34.0	16	64.5	10	57	19	27.3	6	45.7	11	4.9	27	3.2	4
16 VA99W-565	9.2	1	63.5	6	57	18	51.3	15	45.3	10	2.5	2	4.4	10
17 VA99W-566	.	.	52.8	4	42	13	30.2	8	35.9	6	.	.	3.8	6
18 AW-D97-6075	56.5	24	81.6	17	66	23	54.0	18	64.5	22	2.9	7	4.4	10
19 AW-D97*6940	23.2	8	86.4	20	76	27	87.5	27	68.3	24	3.2	10	6.0	15
20 AW-D97*6961	18.3	7	93.7	26	52	17	18.6	4	45.7	12	2.4	1	3.6	5
21 AW-D97-6740	24.7	10	87.7	24	41	12	57.6	20	52.8	17	2.8	6	4.0	7
22 MDV 36-17	31.4	15	78.4	16	60	21	66.6	22	59.1	20	3.3	11	4.8	12
23 NC96-13155	23.6	9	78.0	15	16	2	41.6	10	39.8	8	2.6	3	4.2	8
24 NC96-13156	27.1	12	89.4	25	24	7	48.8	13	47.3	13	3.4	13	4.8	12
25 NC96-13965	16.8	4	61.6	5	16	1	7.7	1	25.5	1	3.4	14	2.3	1
26 AR93048-8-2	.	.	74.6	13	49	15	61.8	21	56.1	19	.	.	4.8	12
27 AR93035-4-2	62.6	25	86.4	21	66	22	98.7	29	78.4	28	3.6	17	6.0	15
28 AR93052-1-1	51.7	21	69.2	12	18	4	69.9	24	52.2	16	3.7	18	6.0	15
29 AR908-8-2	37.6	17	63.5	7	32	9	41.9	11	43.8	9	3.0	9	4.6	11

Mean:	35.7	75.5	.	50.1	52.2	3.5	4.4
L.S.D. (0.05)	24.3	24.2	.	45.1	21.2	1.3	2.2
C.V. (%)	34.1	36.2	.	62.5	28.8	18.6	38.6

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.

Disease spread based on the following scale: 1=no symptoms, or symptoms restricted only to inoculated floret; 2=2 out of 3 florets with symptoms; 3=1 infected spikelet per head; 4=2 infected spikelets per head; 5=3 infected spikelets per head

## Plant Height (in)

	CULTIVAR/ DESIGNATION	B'BURG VA		LEX'TON KY		MEAN ALL LOC.	
		RANK		RANK		RANK	
1	ERNIE	25	4	33	3	29	3
2	COKER 9835	25	5	35	14	30	6
3	COKER 9474	27	11	35	15	31	8
4	B950943	28	20	38	26	33	23
5	B960208	26	7	38	25	32	14
6	B961378	27	12	37	22	32	15
7	GA90524E1	25	6	33	1	29	4
8	GA921188E43	29	23	38	27	34	28
9	GA921221E16	28	21	36	21	32	16
10	GA92485E15	31	28	34	8	33	24
11	VA96-54-326	29	24	35	9	32	17
12	VA98W-591	26	8	35	10	31	9
13	VA98W-593	27	13	36	20	32	18
14	VA99W-550	29	25	37	23	33	25
15	VA99W-562	27	14	36	18	32	19
16	VA99W-565	22	1	34	6	28	1
17	VA99W-566	23	2	33	2	28	2
18	AW-D97-6075	26	9	34	7	30	7
19	AW-D97*6940	29	26	35	17	32	20
20	AW-D97*6961	29	27	37	24	33	26
21	AW-D97-6740	27	15	35	12	31	10
22	MDV 36-17	24	3	33	4	29	5
23	NC96-13155	27	16	35	13	31	11
24	NC96-13156	27	17	36	19	32	21
25	NC96-13965	26	10	35	11	31	12
26	AR93048-8-2	27	18	38	28	33	27
27	AR93035-4-2	27	19	34	5	31	13
28	AR93052-1-1	31	29	44	29	38	29
29	AR908-8-2	28	22	35	16	32	22

Mean:	27	36	31
L.S.D. (0.05)	1.0	4	3
C.V. (%)	3.6	2.2	4.5

## Leaf Rust (Greenhouse)

	CULTIVAR/ DESIGNATION	F'VILLE AR
1	ERNIE	7.3
2	COKER 9835	4.2
3	COKER 9474	5.2
4	B950943	2.2
5	B960208	3.9
6	B961378	2.8
7	GA90524E1	2.9
8	GA921188E43	2.3
9	GA921221E16	2.7
10	GA92485E15	3.6
11	VA96-54-326	3.5
12	VA98W-591	3.1
13	VA98W-593	2.4
14	VA99W-550	5.5
15	VA99W-562	3.1
16	VA99W-565	3.8
17	VA99W-566	4.3
18	AW-D97-6075	4.6
19	AW-D97*6940	2.9
20	AW-D97*6961	5.2
21	AW-D97-6740	4.8
22	MDV 36-17	2.9
23	NC96-13155	2.8
24	NC96-13156	2.8
25	NC96-13965	1.9
26	AR93048-8-2	5.6
27	AR93035-4-2	3.7
28	AR93052-1-1	1.0
29	AR908-8-2	1.9

Inoculated with mixture of three leaf rust races (TLGL, TNRL, MCRL) with combined virulences to Lr1, 2a, 2c, 3, 3ka, 9, 10, 11, 24, 26, 30)  
 Rated 21 days post inoculation using a scale of 0=no disease to 9= very susceptible



## SSR MARKER GENOTYPES

	CULTIVAR/ DESIGNATION	Sumai 3 allele at	
		<i>Xgwm 493</i> Locus	<i>Xgwm533</i> Locus
1	ERNIE	NO	NO
2	COKER 9835	NO	NO
3	COKER 9474	YES	SIMILAR (144 bp) <sup>2</sup>
4	B950943	NO	NO
5	B960208	SIMILAR (192 bp) <sup>1</sup>	NO
6	B961378	SIMILAR (190 bp)	NO
7	GA90524E1	NO	NO
8	GA921188E43	NO	NO
9	GA921221E16	SIMILAR (191 bp)	NO
10	GA92485E15	NO	NO
11	VA96-54-326	SIMILAR (190 bp)	NO
12	VA98W-591	NO	NO
13	VA98W-593	SIMILAR (190 bp)	NO
14	VA99W-550	SIMILAR (190 bp)	NO
15	VA99W-562	SIMILAR (190 bp)	NO
16	VA99W-565	NO	NO
17	VA99W-566	SIMILAR (190 bp)	NO
18	AW-D97-6075	SIMILAR (190 bp)	NO
19	AW-D97*6940	NO	NO
20	AW-D97*6961	NO	NO
21	AW-D97-6740	SIMILAR (190 bp)	NO
22	MDV 36-17	SIMILAR (191 bp)	NO
23	NC96-13155	SIMILAR (190 bp)	NO
24	NC96-13156	SIMILAR (190 bp)	NO
25	NC96-13965	SIMILAR (190 bp)	NO
26	AR93048-8-2	NO	NO
27	AR93035-4-2	SIMILAR (190bp)	NO
28	AR93052-1-1	NO	NO
29	AR908-8-2	SIMILAR (190bp)	NO

<sup>1</sup> FRAGMENT OF 194 bp OBSERVED IN SUMAI 3.

<sup>2</sup> FRAGMENT OF 142 bp OBSERVED IN SUMAI 3.

## Means Across Locations

CULTIVAR/ DESIGNATION	FHB Incidence (0-100)		FHB Severity (0-100)		FHB Index (0-100)		Scabby Seed %		Kernel Quality (0-9)		Seed Quality (0-2)		Vomitoxin DON (ppm)		Heading Date (Julian)		Plant Height (in)		Greenhse Type 2 (0-100)		
	RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK
1 ERNIE	32	1	13	1	7	1	18	2	1.3	1	1.3	3	6.6	7	123	6	29	3	25.7	2	
2 COKER 9835	74	29	47	28	43	29	53	29	7.0	29	0.7	27	11.6	15	126	22	30	6	71.2	26	
3 COKER 9474	40	3	19	4	10	2	16	1	1.3	2	1.7	2	3.3	2	124	9	31	8	31.4	3	
4 B950943	71	27	47	29	38	28	52	28	4.7	18	1.0	6	15.5	25	127	26	33	23	68.1	23	
5 B960208	39	2	20	7	10	3	21	3	4.3	14	1.0	7	3.0	1	124	10	32	14	31.7	4	
6 B961378	54	16	21	9	12	4	27	12	3.3	7	1.0	8	4.6	4	129	27	32	15	33.5	5	
7 GA90524E1	62	26	31	20	23	21	44	20	3.7	8	1.0	9	12.1	17	125	17	29	4	55.2	18	
8 GA921188E43	60	23	45	27	36	27	52	27	5.3	23	1.0	10	19.0	28	124	11	34	28	64.3	21	
9 GA921221E16	55	19	37	25	29	25	48	24	5.7	27	1.0	11	11.6	16	123	7	32	16	71.9	27	
10 GA92485E15	53	14	32	21	23	22	45	21	4.7	19	1.0	12	18.1	27	123	8	33	24	51.3	15	
11 VA96-54-326	41	4	26	15	14	8	29	14	4.7	20	0.3	29	5.4	5	125	18	32	17	81.7	29	
12 VA98W-591	48	7	19	5	12	5	23	7	4.3	15	1.0	13	6.0	6	125	19	31	9	38.8	7	
13 VA98W-593	45	5	26	16	15	11	21	4	3.7	9	1.3	4	4.3	3	124	12	32	18	48.7	14	
14 VA99W-550	60	24	35	24	25	24	47	23	5.3	24	1.0	14	16.2	26	126	23	33	25	69.4	25	
15 VA99W-562	52	13	18	3	13	6	26	10	4.0	11	1.0	15	12.4	18	124	13	32	19	45.7	11	
16 VA99W-565	51	9	17	2	13	7	30	15	2.7	4	1.0	16	12.9	20	122	3	28	1	45.3	10	
17 VA99W-566	51	10	19	6	14	9	28	13	1.3	3	2.0	1	10.6	13	121	1	28	2	35.9	6	
18 AW-D97-6075	51	11	33	23	21	18	34	17	4.0	12	1.0	17	12.6	19	122	4	30	7	64.5	22	
19 AW-D97*6940	54	17	43	26	33	26	51	26	4.3	16	1.0	18	22.3	29	124	14	32	20	68.3	24	
20 AW-D97*6961	54	18	24	14	19	16	31	16	4.7	21	1.0	19	13.7	21	124	15	33	26	45.7	12	
21 AW-D97-6740	45	6	22	12	17	15	21	5	2.7	5	1.3	5	7.9	9	121	2	31	10	52.8	17	
22 MDV 36-17	49	8	28	17	23	23	37	18	3.7	10	1.0	20	11.0	14	122	5	29	5	59.1	20	
23 NC96-13155	51	12	21	10	14	10	25	8	3.0	6	1.0	21	14.8	24	126	24	31	11	39.8	8	
24 NC96-13156	56	20	20	8	16	12	26	11	4.0	13	1.0	22	7.9	10	125	20	32	21	47.3	13	
25 NC96-13965	59	22	22	13	16	13	25	9	4.7	22	1.0	23	9.1	11	126	25	31	12	25.5	1	
26 AR93048-8-2	53	15	30	19	21	19	22	6	6.7	28	1.0	24	6.6	8	124	16	33	27	56.1	19	
27 AR93035-4-2	58	21	21	11	16	14	38	19	4.3	17	1.0	25	10.2	12	125	21	31	13	78.4	28	
28 AR93052-1-1	72	28	28	18	20	17	49	25	5.3	25	1.0	26	14.7	22	129	28	38	29	52.2	16	
29 AR908-8-2	60	25	32	22	22	20	47	22	5.3	26	0.7	28	14.7	23	130	29	32	22	43.8	9	

Mean:	53	27	20	31	4.1	1.0	11	125	31	52.2
L.S.D. (0.05)	13	10	12	14	1.4	0.5	8.7	2	3	21.2
C.V. (%)	23.9	27.3	51.5	34.1	20.7	27.3	62.4	1.2	4.5	28.8

### Correlations Between Traits Over Locations.

	SEVERITY	INDEX	SCABBY SEED	KERNEL QUALITY	SEED QUALITY	VOMITOXIN DON	G'HOUSE TYPE 2	HEADING DATE	PLANT HEIGHT
INCIDENCE	0.64	0.72	0.77	0.62	ns	0.56	0.41	0.53	0.38
SEVERITY		0.97	0.85	0.66	ns	0.61	0.68	ns	ns
INDEX			0.86	0.64	ns	0.65	0.66	ns	ns
SCABBY SEED				0.58	-0.38	0.78	0.65	ns	ns
KERNEL QUALITY					-0.69	ns	0.55	0.40	0.53
SEED QUALITY						ns	-0.49	-0.44	ns
VOMITOXIN (DON)							0.41	ns	ns
G'HOUSE TYPE 2								ns	ns
HEADING DATE									0.52